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# China and East Asia Trade Policy



**Volume III**

China and the World Trade System

AUSTRALIA-JAPAN RESEARCH CENTRE







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A U S T R A L I A - J A P A N R E S E A R C H C E N T R E





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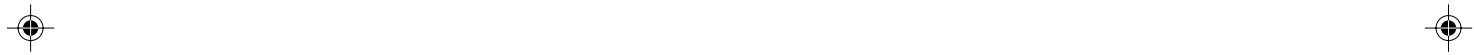


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## Preface

The papers contained in this volume, and its two companion volumes, derive from an ongoing collaborative research project on China GATT/WTO membership by the Economics Division of the Research School of Pacific and Asian Studies at the Australian National University in Canberra and the Chinese Academy of Social Sciences (CASS) in Beijing. This project has drawn together experts from Australia, China, Japan, Korea and Southeast Asia to study the potential impact of China's membership of the GATT/WTO and the strategic issues associated with China's negotiation of or admission to the WTO.

The first phase of the research resulted in a conference on 'China and East Asia Trade Policy', hosted by the Australia–Japan Research Centre at the Australian National University on 1–2 September 1994, with participation by over seventy analysts from throughout the region. A summary of the conference discussion is contained in a report published in February 1995 by the Australia–Japan Research Centre entitled *China and East Asia Trade Policy*.

The second phase of the research concluded with a conference on 'China, East Asia and International Trade Policies', held in Beijing on 22–23 March 1995. The views expressed at the conference — which saw participation by over fifty researchers, government officials and analysts from China, Japan and Australia — are presented in a report just published by the Australia–Japan Research Centre in October 1995 entitled *China, East Asia and International Trade Policies*.

A further conference on the next phase of the research project is scheduled to be held in Tokyo in 1996, leading up to the publication of a major research report that summarises the main results of this research.

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# China's Trade Policy Agenda in the 1990s

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## **China's trade policy agenda in the 1990s**

The next few months will be a defining time for the accommodation of China into the international trading system. It is 'high noon' for China's application for entry into GATT and the new World Trade Organisation (WTO). China's application has been on the table for eight years. It is of more than symbolic importance that China should wish to become a foundation member of the WTO from January 1995. Chinese economic reform has reached a point where trade liberalisation is a top priority in the marketisation of the economy. Equally important, the scale of the change that has occurred already in China and the momentum of continuing change means that China's trade relations with the rest of the world from this point forward will have a profound impact not only on the success of China's industrial transformation but also on the international economic and political system, most especially within Asia and the Pacific but also more broadly.

Why is entry to the GATT/WTO so important to China? And why is accommodating China's entry on terms which define an end point to China's achieving equal status within the GATT/WTO so important to China's major economic partners and the international trading system more generally?

This paper addresses these two questions. It considers them in the context of progress with economic reform and an assessment of China's integration into the international economy. It explores briefly the corollary question of the impact of GATT/WTO entry on the choice of trade policy strategy in China, and the relationship between trade policy strategy and the reform process. It sets these questions in the context of economic diplomacy in Asia and the Pacific. Of course, admission to GATT on terms that are acceptable to China and satisfy the interests of China's trading partners will not be the end of Chinese trade policy history. The process of implementing protocols associated with China's admission to GATT will take time. The rapid change in the scale and structure of the Chinese economy and trade will continue to require careful policy management in a framework the elements of which are not yet firmly in place. And the impact of these changes in China on international markets and trade adjustment with particular economies, including the United States and China's partners in the Asia Pacific economy, requires the elaboration of cooperative policy strategies, the architecture of which has yet to be drawn.



### *China's GATT priority*

China is already one of the world's largest traders (see Table 1). There has been a remarkable increase in the scale of China's merchandise trade since the late 1970s, after commitment to modernisation and 'open-door' economic policies. The elevation of China's status in world trade has accelerated over the last five years, as the reform process has deepened. Already China's share of world imports and exports, at 2.4 per cent in 1993, makes it the world's 11th largest trader, having ranked only 34th in export trade and 58th in import trade at the end of the 1970s (see Tables 2a and 2b). If the European Union (EU) is treated as one economy, China ranks 6th, after the EU, the United States, Japan, Canada and Hong Kong, and is now ahead of Korea and Taiwan. In terms of the share of trade in its GNP as well as in terms of world trade share, China is already deeply integrated into the international economy (see Table 3).

Yet China is still outside the important global institutions which govern the rules and arrangements of the multilateral trading system. China has no access through membership of GATT to representation or redress over matters of trade cooperation and application of the rules of trade it embodies, or over matters of trade disputation. China's political weight in international affairs and the power of mutual interests in bilateral economic arrangements does provide it with influence in dealings with its international trading partners — even the United States as we saw most dramatically earlier in 1994. But the fact remains that China has a much less confident basis on which to proceed in such dealings than other nations of comparable importance in international trade (Drysdale and Elek 1992, p. 1).

This is the crux of China's claim to founding membership of the WTO. But there is a second issue of more fundamental importance to those in China who are trying to guide the complex process of modernisation and economic reform to success. A commitment to GATT rules and to meeting the standards of trade policy behaviour already achieved by the major players within GATT — inadequate though these standards often appear — implies a further radical change in China's economic policy regime, the necessary next step in meeting the objectives of reform. Accession to GATT, and meeting the critical international obligations it must entail, can vastly assist the management of the reform process in China. The gains from the significant liberalisation of trade that China will phase in — through more efficient allocation of resources and its impact on the productivity of resource use — will be large, but there will also be costs in the process of adjustment, and the political resistance to these adjustments is not trivial. The resistance to change has its origins in ideology (Chen 1994), as

**Table 1 China in the Pacific and world economy, 1992**

	Population (million)	GNP (US\$ billion)	Land area (thousand sq. km)	GNP per capita (US\$)	Land area per capita (sq. km)	Skill structure (%)	Share in world GNP and trade		
							GNP	Exports	Imports
China	1,162.2	432.9	9,597	371	0.008	5.1	2.0	3.6	2.0
HongKong	5.8	95.9	1	16,513.3	0	8.2	0.4	0.9	3.3
Taiwan	20.8	211	36	10,165.2	0.002	6.9	1.0	2.2	1.7
Korea, Rep.	43.7	293.7	99	6,729.5	0.002	6.3	1.3	2.2	2.2
ASEAN (incl. Singapore)	327.9	379.1	3,048	1,157.5	0.009	3.45	1.7	5.1	5.1
Japan	124.5	3,702.8	378	29,788.5	0.003	10.2	17	9.6	6.3
East Asia	1,684.9	5,115.5	13,159	3,028.7	0.008	12.8	23.4	23.5	20.5
Australia	17.5	282.5	7,687	16,107.9	0.438	5.23	1.3	1.1	1.1
North America	282.8	6,444.1	19,349	22,805.3	0.068	14.3	29.5	15.6	18.2
NZ and other Pacific	8.7	44.3	782	5,121.3	0.090	0.2	0.2	0.3	0.3
Pacific	1994	11,886.4	40,977	5,949.8	0.020	13.3	54.4	40.5	40.2
Western Europe	760.6	7,524.8	4,748	9,893.1	0.006		34.4	47.6	47.2
Rest of world	2,683.5	2438	88,166	170.5	0.006		11.2	11.9	12.6
World	5,438.1	21,849.2	133,891	1,280.6	0.008		100	100	100

(Table 1 cont'd)

	Income and export growth (average annual growth, %)		Share of trade with Pacific		GDP (US\$ billion)	GNP (US\$ billion)	GNP per capita— Atlas method (US\$ current)	GNP per capita (US\$ current)	Population (million)
	Real GNP per capita 1980–92	Real exports 1980–92	Exports as a share of GDP 1992	Exports Imports					
China	6.5	11.3	29.5	80.1	434	433	371	1,162.2	
Hong Kong	7.7	11.2	31.5	73.9	96	84.9	380	5.8	
Taiwan	7.2	10.3	37.3	75.7	207	81.5	15,370	20.8	
Korea, Rep.	8.5	11.0	26.0	67.9	296	68.5	6,790	43.7	
ASEAN (incl. Singapore)	3.7	8.9	47.6	74.7	387	73.4	379	327.9	
Japan	3.7	4.9	9.2	66.2	3,670	63.2	28,220	124.5	
East Asia	3.4	6.0	16.3	71.5	73.4	73.4	17,070	1,684.9	
Australia	1.4	7.0	13.5	71.9	293	68.1	283	17.5	
North America	1.6	5.8	8.6	57.8	62.7	62.7	282.8	8.7	
NZ and other Pacific	-0.3	-2.8	24.5	70.0	74.8	74.8			
Pacific	2.1	2.7	12.1	66.2	68.4	68.4			
Western Europe	2.1	4.4	22.4	14.1	7,580	18.4	19,786.1	760.6	
Rest of world	24.3	19.3	17.3	40.6	37.8	37.8		2,683.5	
World	16.8	13.6	16.2	38.4	22,400	40.9	21,800	1,877.4	
								5,438.1	

Source: International Economic Databank, Australian National University.

**Table 2a Leading exporters, importers and total traders in world merchandise trade, 1980 (billion US dollars)**

	Export	Share	Import	Share	Total trade	Share
World	2,007.9	100	2,069.1	100	4,076.9	100
United States	220.1	11.0	257.1	12.4	477.9	11.7
Germany, West	192.8	9.6	188.0	9.1	380.8	9.3
Japan	130.4	6.5	141.3	6.8	271.7	6.7
France	116.0	5.8	134.9	6.5	250.9	6.2
United Kingdom	110.1	5.5	115.7	5.6	225.8	5.5
Saudi Arabia	103.4	5.2	99.5	4.8	177.2	4.4
Italy	77.7	3.9	78.1	3.8	151.9	3.7
Netherlands	73.9	3.7	71.8	3.5	136.5	3.4
Belgium-Luxembourg	67.7	3.4	67.1	3.2	134.8	3.3
Canada	64.6	3.2	45.8	2.2	133.5	3.3
USSR	48.4	2.4	36.4	1.8	94.2	2.3
Iraq	31.3	1.6	34.1	1.7	66.0	1.6
Sweden	30.9	1.5	33.4	1.6	64.3	1.6
Switzerland	29.6	1.5	30.2	1.5	54.8	1.3
Nigeria	26.2	1.3	26.5	1.3	46.9	1.2
Libya	22.3	1.1	24.9	1.2	45.1	1.1
Australia	22.0	1.1	24.4	1.2	44.3	1.1
Indonesia	21.9	1.1	22.4	1.1	43.8	1.1
United Arab Emirates	21.8	1.1	22.3	1.1	41.9	1.0
Kuwait	20.8	1.0	22.3	1.1	41.7	1.0
Spain	20.7	1.0	21.2	1.0	40.7	1.0
Singapore	20.4	1.0	20.2	1.0	40.0	1.0
Brazil	20.1	1.0	19.8	1.0	39.8	1.0
Taiwan	19.8	1.0	19.5	0.9	39.3	1.0
China	19.5	1.0	19.4	0.9	38.6	1.0
Hong Kong	19.3	1.0	16.9	0.8	36.4	0.9

Source: UN trade data, International Economic Databank, Australian National University.



**Table 2b Leading exporters, importers and total traders in world merchandise trade, 1993 (billion US dollars)**

Exporter	Export	Share	Importer	Import	Share	Total trader	Total trade	Share
World	3,710.1	100	World	3,887.4	100	World	7,597.5	100
United States	461.6	12.4	United States	597.1	15.4	United States	1,058.7	13.9
Germany, West	366.2	9.9	Germany, West	328.7	8.5	Germany, West	694.9	9.2
Japan	362.2	9.8	Japan	240.0	6.2	Japan	602.2	7.9
France	207.9	5.6	United Kingdom	205.1	5.3	France	407.8	5.4
United Kingdom	180.4	4.9	France	199.9	5.1	United Kingdom	385.5	5.1
Italy	164.3	4.4	Canada	148.0	3.8	Italy	310.2	4.1
Canada	141.6	3.8	Italy	145.9	3.8	Canada	289.7	3.8
Hong Kong	133.4	3.6	Hong Kong	144.8	3.7	Hong Kong	278.2	3.7
Netherlands	114.5	3.1	Netherlands	132.9	3.4	Netherlands	247.5	3.3
Belgium-Luxembourg	97.3	2.6	Belgium-Luxembourg	125.4	3.2	Belgium-Luxembourg	222.8	2.9
China	91.3	2.5	China	91.1	2.3	China	182.4	2.4
Taiwan	88.1	2.4	Korea, Rep.	84.7	2.2	Taiwan	166.3	2.2
Korea, Rep.	75.1	2	Spain	82.2	2.1	Korea, Rep.	159.8	2.1
Singapore	71.3	1.9	Singapore	81.2	2.1	Singapore	152.5	2
Switzerland	63.3	1.7	Taiwan	78.2	2	Spain	145.0	1.9
Spain	62.8	1.7	Mexico	65.2	1.7	Switzerland	124.1	1.6
Sweden	49.4	1.3	Switzerland	60.8	1.6	Mexico	112.2	1.5
Saudi Arabia	48.0	1.3	Austria	48.7	1.3	Sweden	91.7	1.2
Malaysia (IMF data)	47.5	1.3	Australia	46.6	1.2	Malaysia (IMF data)	89.5	1.2
Mexico	47.0	1.3	Thailand	45.4	1.2	Australia	89.3	1.2
Australia	42.8	1.2	Sweden	42.3	1.1	Austria	88.6	1.2

Source: UN trade data, International Economic Databank, Australian National University.



**Table 3 China's import shares in total world imports and in its GDP, 1970–92 (billion US dollars)**

	Imports	World imports	Share in world imports	GDP	Imports/GDP
1970	1.6	166.6	0.6	93.2	1.8
1971	1.6	163.8	0.5	100.5	1.6
1972	0.6	211.4	0.5	113.4	1.9
1973	6.9	387.3	0.7	138.8	2.8
1974	8.1	591.3	0.7	142.6	4.1
1975	3.0	596.0	0.7	160.3	3.7
1976	1.4	468.3	0.5	148.8	3.1
1977	1.7	556.3	0.5	169.4	3.3
1978	8.2	876.6	0.7	212.9	4.1
1979	17.2	1,259.9	0.8	256.2	4.9
1980	37.5	1,706.5	0.9	298.1	5.7
1981	36.0	1,635.2	0.8	279.9	5.8
1982	29.1	1,466.3	0.8	274.2	5.3
1983	21.7	1,641.9	0.9	293.3	5.6
1984	30.0	2,277.8	1.2	299.1	7.6
1985	38.5	3,561.9	1.9	291.1	12.2
1986	31.1	3,368.3	1.6	280.9	12.0
1987	34.9	3,661.8	1.5	304.4	12.0
1988	49.6	4,825.4	1.7	378.7	12.7
1989	58.1	4,858.3	1.6	426.0	11.4
1990	48.1	4,577.2	1.3	370.0	12.4
1991	62.8	5,827.7	1.7	371.5	15.7
1992	74.5	7,534.2	2.0	434.1	17.4

Source: UN trade data, International Economic Databank, Australian National University.

well as in the vested interests in the highly protected and inefficient state enterprise sector and in the inefficient rural sector (Lu 1994). Connecting this next important round of liberalisation in the Chinese economy to the benefits of more reliable access to the international market place, delivered through GATT accession, assists with the politics of reform. The successful conclusion of the Uruguay Round considerably enhances the economic and political benefit of the accession bargain for China, since faithful implementation of the Round will result in substantial liberalisation of the MFA arrangements governing the textile trades, an area of key interest in Chinese trade growth (McKibbin and Salvatore 1994).

#### *What's in it for the rest of the world*

The flip side of the reform agenda in China is the interest of China's trading partners in pushing the entrenchment of trade liberalisation as far as possible. Defining the limits to that side of the



bargain is, of course, the source of the impasse in settling arrangements for China's accession to the WTO. Reasonably, the terms of accession must be defined with two elements in mind: what should be expected of China consistent with the undertakings of other GATT members of similar importance in world trade and at a similar stage of economic development; and what targets might be set which are consistent with Chinese ambitions to develop a modern economy operating according to market principles.

The resolution of the tension between these two principles is by no means clear cut. In terms of the scale of China's impact on the world trading system, there is no simple precedent by which to set the standards of entry that might apply to China. The resolution of the terms of entry requires a considerable measure of trust and understanding because, sensibly, it involves forward commitment by China to a program of reform towards full compliance with GATT and some of its voluntary agreements and protocols. There was a significant corrosion of trust and understanding in the early months of 1994, partly in consequence of the fall-out from the Clinton Administration's persistence, to the eleventh hour, with attaching political conditionality to the extension of its most-favoured-nation (MFN) treatment to China and partly because of negative dynamics in the accession talks themselves.

China's partners in GATT now have a powerful incentive to rebuild the trust and understandings necessary to do a deal on accession. There will never again be a time so favourable to negotiating the commitments necessary to lock China into its own self-declared reform agenda. China has a good record in terms of adhering to international undertakings, so agreement to a forward program of reform towards full compliance with GATT can be expected to be honoured. China's partners have no interest in imposing special safeguard measures against China beyond the accepted criterion of 'serious injury' — a major sticking point in the negotiations — since the selective application of safeguards would seriously disadvantage China's entry to new markets and contravene the basic non-discriminatory guiding principle of the GATT. Any concerns over this issue could be covered separately in China's bilateral agreements with major partners.

China's partners should not seek recourse to Article XXXV of GATT (which allows separate and discriminatory treatment of new members) in an agreement on membership. The question of whether China is resuming the seat vacated by Taiwan's government, or applying as a new member, is sometimes considered relevant in this context. Article XXXV, which could restrict China's rights under the GATT, would not be applicable in the case of resumption based on the original terms of accession by Taiwan. This is one of the reasons why China argues that



it is resuming the membership which, in China's view, had been vacated invalidly (Jacobson and Oksenberg 1990, p. 95). This argument is rather hypothetical since no current GATT member would have any interest in admitting China in the absence of a substantially re-negotiated protocol of succession. Nonetheless, if current members were to insist on the application of Article XXXV to China, the effect would be a fundamental change in the character of the international trade regime — introducing systemic discrimination against one of the world's largest and increasingly open trading nations. It would constitute an inversion of the China objective in seeking accession and a shock to the trading system, the repercussions of which would be quite unpredictable. The precedent of Japan's entry to GATT on these terms after the Second World War is not relevant, since Japan had a powerful patron in the United States, through its abrogation of the right to invoke Article XXXV and its prior negotiation — in the terms of the San Francisco Peace Treaty and the wartime mutual aid agreements with the Allies — of the steady extension of Article I to Japan.

The purpose here is not to review in detail all the elements that need to be resolved quickly in order to secure the benefits of accession both for China and the rest of the world but rather to underline the key principles that need to be satisfied to ensure success. The benefits to the rest of the world of entrenching Chinese liberalisation are likely to be very large. Indeed, there is no single trade policy initiative likely to result in larger gains in international trade over the coming decade than China's accommodation within GATT. An idea of the magnitude of these gains can be gauged from estimates of the impact of Chinese economic and trade reforms in the past. Our estimate suggests that Chinese imports were 92 per cent, or US\$36 billion, higher in 1992 than they would have been in the absence of economic and trade reform in the preceding decade. This represents a big fillip to international trade over this period, but additional trade growth induced by the liberalisation associated with entry to GATT is likely to be even larger over the coming decade.

### *Trade strategy and economic reform*

China's ambition to enter GATT and become a foundation member of the WTO is a central element in the trade policy agenda for the 1990s. But this element needs to be viewed in the broader context of the relationship between trade strategy and economic reform.

China's trade and economic policies are already considerably more in line with GATT principles than when it first applied for membership in July 1986 (Li 1987; McDonnell 1987).



China undertook substantial economic reform in the 1980s and the process of reform accelerated after 1989 (Raby 1991; Lardy 1992, ch. 3; Song 1994). Careful studies of the relationship between China's changing resource endowments and the structure of specialisation in the international economy provide strong evidence of the convergence between these problems and what would be expected from market-determined outcomes (Song 1993). The marketisation of the Chinese economy — even of its enterprise sector — is confirmed in a study of the behaviour of state enterprises in the course of reform (Zhao 1994). While the state enterprise sector enjoys considerable direct and indirect support and there remains an array of measures, including direct controls and subsidies, that are inconsistent with the letter, as well as the spirit, of GATT, the stage has now been set for going the extra mile in a definable period of time in meeting the objectives of GATT membership. The trade law of May 1994 laid an appropriate basis for ensuring the necessary transparency and uniformity in trade policy and a retreat from administrative in favour of market measures in the management of trade. The service sector (including banking and transportation) remains sheltered, but trade in commodities and technology will be thrown open to market principles.

In practice, trade policy strategy is inextricably linked with other aspects of the reform process, such as foreign exchange reform (already taken a long way through unification of the two-tiered exchange rate), state enterprise reform, financial market reform, and macro-economic policy reform.

The liberalisation of trade policy associated with accession to GATT and the WTO would, in effect, force the pace of reform in other areas, especially in the management of the state enterprise sector and financial markets. Policy leaders, both inside and outside China, have a very substantial interest in forcing the pace.

The alternative would mean a loss of momentum and serious misdirection of the process of reform and industrial transformation. One aspect is the potential for a shift towards costly 'import substitution' fostered by the maintenance and extension of subsidies and state controls, and away from the thrust towards 'export orientation' or, more accurately, 'open market' strategies. Advancing the trade liberalisation agenda, through accession to GATT or by whatever means, promotes reform of the enterprise system through the positive effect of the export sector and enhanced market discipline on industrial activity.

In agriculture, the stakes are now set to become very high. China (this year) switched from being an agriculture-taxing to an agriculture-subsidising industrialising economy (Garnaut and Ma 1992; Huang 1994). The burden of agricultural protection will become higher and higher,



and more and more difficult to unravel, unless the moment is taken to negotiate a relatively open trade regime now.

Protectionist sentiment abroad and reactionary sentiment in China find common cause in focusing on strategies which eschew ‘export-oriented’ development and focus on ‘self-sustaining’ growth in a huge domestic market. Such thinking (Lau 1994) is based on incorrect understanding of the nature of industrialisation in the East Asian economies. Chinese economic modernisation is not an independent event. In all the major East Asian economies, domestic market growth *as well as* openness to international market disciplines have been key elements in the development of dynamic comparative advantage and internationally competitive economies. China is far from reaching its full potential in the development of externally oriented activities and will continue to realise significant gains through trade, investment and technology flows and integration into the international economy.

### **The Asia Pacific trade policy context**

China’s trade and other foreign economic relations are overwhelmingly concentrated in the Asia Pacific economy (see Table 4). The Asia Pacific Economic Cooperation (APEC) group of economies includes all China’s most important trading partners and accounts for over 80 per cent of its import and export trade. Among them are the United States and Japan. While the relationship with the United States is not free of problems (the human rights issue, arms sales, intellectual property rights, illegal textile trans-shipments, and market access for US products in China) and the relationship with Japan carries the burden of history, China shares more interests with the Asia Pacific economies than with other trading nations. Trade ties have grown strongly within the region — even around diplomatic barriers to trade, such as those affecting trade with Taiwan or, until recently, with Korea. The growing depth of trade and business ties between China and the United States has begun to constrain the more divisive elements in bilateral relations and to encourage a strategy of engagement over the inclination towards confrontation. APEC countries enjoy directly and disproportionately the benefits of China’s economic growth and are natural allies in international economic diplomacy (Garnaut and Drysdale 1994).

The pioneering efforts by the Pacific Economic Cooperation Council (PECC), tensions in trans-Pacific trade relations, the slow progress of the Uruguay Round and the European movement towards a single market all contributed to the launching of the APEC process (Elek

**Table 4 China's geographic trade structure, 1970 to 1993 (per cent)**

Partner	Export share				Import share				Total trade						
	1970	1980	1985	1990	1993	1970	1980	1985	1990	1993	1970	1980	1985	1990	1993
NIEs incl. Singapore	31.2	24.5	33.7	48.0	30.9	1.9	3.8	11.8	39.3	20.3	17.1	14.1	20.4	43.8	25.6
Hong Kong	24.6	22.4	26.2	42.9	24.2	0.6	2.9	11.2	24.6	11.5	13.1	12.5	17.1	34.1	17.6
Taiwan				1.2	1.1				12.8	0.1				6.8	0.7
Korea				0.7	3.1				0.4	5.9				0.6	4.5
ASEAN	5.7	4.0	2.7	2.9	2.7	1.2	2.3	2.1	3.7	3.7	3.5	3.2	2.3	3.2	3.2
Japan	13.4	20.7	22.3	14.6	17.3	32.4	26.1	35.7	12.9	25.6	22.5	23.4	30.5	13.8	21.4
East Asia	50.3	49.3	58.7	65.5	50.8	35.5	32.3	49.6	55.9	49.6	43.2	40.7	53.2	60.9	50.2
Australia	2.1	1.2	0.7	0.7	1.2	7.4	5.4	2.7	2.3	2.1	4.6	3.3	1.9	1.5	1.7
Nth America	1.1	5.8	9.4	9.1	19.9	7.7	23.5	14.9	13.7	13.2	4.3	14.7	12.8	11.3	16.5
NZ and other Pacific	0.5	0.3	0.2	0.1	0.2	0.3	0.9	0.4	0.2	0.4	0.4	0.6	0.3	0.2	0.3
Asia Pacific	53.8	56.5	68.9	75.5	72.1	50.8	62.1	67.6	72.1	65.3	52.4	59.3	68.1	73.8	68.7
W. Europe	21.8	14.3	9.4	10.3	13.9	29.9	17.7	17.2	16.5	18.6	25.7	16.0	14.2	13.3	16.2
Rest of world	24.4	29.3	21.7	14.2	14.1	19.2	20.2	15.2	11.4	16.1	21.9	24.7	17.7	12.8	15.1
World total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: UNtradedata, International Economic Databank, Australian National University.



1992, 1993). The PRC, Taiwan and Hong Kong were invited to join the process at the second ministerial-level meeting in Singapore in 1990, and all three participated in the third meeting in Seoul in November 1991. The inauguration of the informal leaders meeting in Seattle in November 1993 gave APEC new clout and direction.

The APEC framework provides a useful vehicle for Chinese foreign economic diplomacy in four main ways. First, APEC provides a valuable forum within which the three Chinese economies can find common cause in regional economic cooperation. Second, APEC's objectives and principles, which stress the desirability of liberalisation in ways that are not to the detriment of other economies, reinforces China's claim to MFN treatment in the international trading system, especially by its APEC partners. Third, APEC's focus on the facilitation of trade and other international transactions, and the regional infrastructure to support it, provides encouragement to sub-regional integration on a basis consistent with the guiding principle of open regionalism. The avoidance of sheltered, discriminatory, sub-regional markets is important to China's ability to manage its integration with the Northeast Asian economies (notably Hong Kong, Taiwan and Korea) and develop its relations with the ASEAN and Indochinese economies. Asymmetry in China's relations with its neighbours has the potential to bedevil them unless they are part of an open trade and economic system in the region. This aspect of China's sub-regional relationships is also relevant to its response to Malaysia's East Asian Economic Caucus (EAEC) proposal. China's involvement in any tight arrangement limited to the East Asian economies (even including Japan) is likely to be fraught with economic and political difficulty because of both the perception and the reality of asymmetry in such sub-regional arrangements. China is already a big economy and a big power and will have more comfortable relationships with smaller economies and polities, the more open these relationships are. Hence, finally and most importantly, APEC is of particular value to China in the pursuit and projection of interests in the global system. The APEC framework offers the opportunity for a constructive and cooperative partnership between China and its major partners in the Asia Pacific region — the United States and Japan — and a role in fostering peace, stability and prosperity on the world stage in ways helpful to China's own ambitions for reform and development.

### *Strategic issues*

Trade liberalisation and trade reform is a key component of China's overall economic reform and modernisation program. There is clearly an important, though rapidly disappearing,





opportunity to force the pace of trade and economic reform through China's accession to the GATT/WTO. The protocols of accession must allow time for China to adjust policies to the full application of GATT principles and define the principal elements in the schedule of adjustment, if accession is to secure China's reform objectives at the same time as satisfy China's major economic partners that the momentum towards full marketisation will be maintained. Agriculture is a critical interest for the United States. Others are worried about safeguards against market disruption. China rightly rejects the selective application of safeguard measures other than provided for in the Articles of GATT and the application of selective treatment under Article XXXV of GATT. Selective treatment would offend China's fundamental interest in accession and constitute a serious blow to the core principles of GATT embodied in Article I.

This issue, of avoiding discriminatory treatment, is at the heart of China's interest in regional economic diplomacy. Discriminatory trade policy strategies, such as those that have emanated from the United States around the formation of the North American Free Trade Agreement (NAFTA) and thinking about trade policy strategy in Asia and the Pacific beyond the Uruguay Round (Bergsten 1994), are anathema to China's trade policy agenda. They are also anathema to the successful accommodation of China into the international economic system. China could not deliver reciprocity in any preferential free trade deal in the region: the United States could not digest a clean free trade arrangement incorporating China (Garnaut 1994); and China is already too big an economy and a polity to be included comfortably in any trading arrangement other than global arrangements. As China grows and changes its economic structure the impact on particular import and export markets globally will be very large. These adjustments will most successfully be accommodated under global arrangements (Song 1994).

It suits both China and Taiwan to use the framework which APEC has provided for cooperation and consultation on regional economic matters. The APEC framework is a useful safety net within which both can promote the further and rapid integration of their two economies. There is no chance that Chinese and Taiwanese applications for admission to the GATT/WTO can be handled separately without a serious setback to regional diplomacy.

Of more immediate interest is whether the will and effort can be mustered to do a deal on Chinese accession to the GATT/WTO before the clock stops this time round. There are very powerful reasons why it is important to do a deal soon. Chinese negotiators lost significant ground at home in the first half of 1994. The slippage will continue, not so as to prevent eventual accession but so as to produce a less satisfactory outcome for both sides.




If the elements of a deal are not in place by the November APEC leaders meeting in Bogor, certainly the APEC agenda for liberalisation of trade within the region will seem a hollow vision and all will turn to ask why the biggest single deal on trade liberalisation in Asia and the Pacific likely over the next ten to fifteen years was allowed to slip away into the distant future.

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**China and the Future**  
**International Trading System**



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## **Accommodating China**

Alongside implementation of the Uruguay Round, the accommodation of sustained, rapid, internationally-oriented growth in China is the greatest challenge facing the trading system over the next decade. Success will increase the gains from trade—obviously for China, but also for the rest of the world and for most if not all of its economies. Failure will lead to corrosion of the open international system, well beyond the rules governing China's interaction with the rest of the world.

The investment of effort in the accommodation of internationally-oriented growth in China is important and potentially rewarding for three reasons: firstly, China is a large economy, whose production and trade are rapidly becoming larger; secondly, its relative resource endowments are very different from an average of the rest of the world; and, thirdly, remnants of central planning make China potentially an unstable participant in international exchange.

China's emergence as a major player in the world economy will be reflected in rapid increases in its share of world imports and exports, concentrated disproportionately in a fairly narrow range of markets. This is mostly a source of gain for China's international partners, except for those which happen to be highly competitive with China in exports or imports. The main costs of China's growth to outsiders, usually short term and transitional, is adjustment. But viewed analytically, the adjustment challenge to the international community is of modest scale despite China's size—proportionately no larger than that associated with the trade growth of Japan until 1960s or the newly industrialised economies (NIEs) in the 1970s.<sup>1</sup>

If adjustment to the emergence of China is achieved within clear and stable rules, it will turn out to be as smooth and as difficult as adjustment to the rise of Japan and NIEs. One danger, however, is that the size and political weight of China will lead to perceptions of competition with an emerging China in the zero-sum context that is common in security but alien to economic analysis. This could interact with resistance to adjustment to weaken the international rules as they apply to China, and therefore to the international system more generally.

### **A big country**

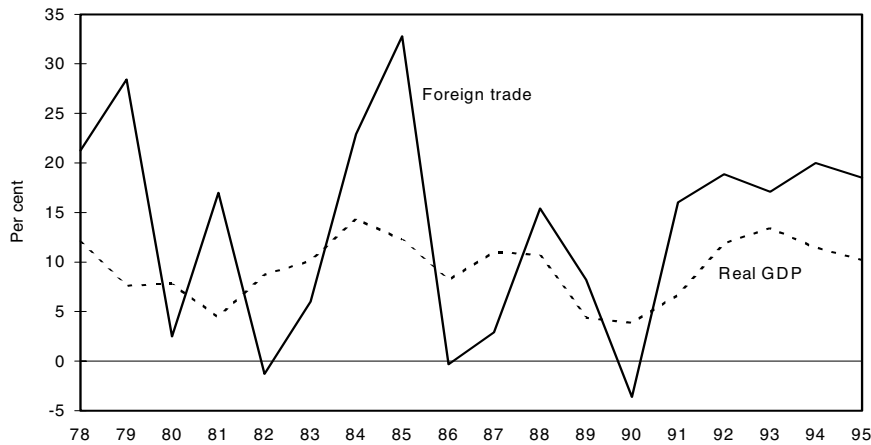
The Chinese economy has roughly quadrupled its output of goods and services since reform began in 1978. Real growth rates have averaged 9 per cent, and foreign trade has grown even more rapidly (Figure 1). When China's income is measured in a comparable manner to other developing economies (Garnaut and Ma 1993a; Garnaut, Ma and Huang, forthcoming), China





is already a middle-income country, the world's fourth largest after the United States, Japan and Germany.<sup>2</sup> China's share in world GDP rose from 3 per cent in 1978 to 7 per cent in 1993.<sup>3</sup>

**Figure 1 Growth rates of GDP and trade in China, 1978–95 (per cent)**



*Notes:* Trade includes exports and imports of commodities and non-factor services. Growth rates of both trade and GDP are calculated from their values at constant prices in Chinese currency (yuan).

*Sources:* International Economic Databank, Australian National University — data compiled from World Bank statistics; SSB (1986–93); Asia–Pacific Economic Group (1994).

Summers and Heston (1991) have sought to measure real purchasing power, and calculated that China's per capita income was US\$2,300 in 1988. On these estimates China's total GDP in 1988 (US\$2,500 billion) was half that of the United States (US\$4,490 billion) and substantially larger than Japan (US\$1,560 billion) and West Germany (US\$803 billion).

We expect China's growth to continue to be highly variable, on the pattern of recent years, but to maintain something like the average of the reform years for the (imperfectly) foreseeable future. If China grows at an annual rate of 8.5 per cent and all of the rest of the world at 4 per cent (the latter unrealistically high for the old industrial economies), in the year 2000 China's GDP, measured on a similar basis to other developing countries, and underestimating purchasing power in the usual manner for developing countries, will be 40 per cent larger than Germany's and 40 per cent smaller than Japan's. It will represent 11 per cent of world GDP.<sup>4</sup>

Total trade has grown faster than GDP in the reform period, at an average rate of 13 per cent in 1978–93 (Figure 1). The share of exports in GDP rose from 3 per cent in 1978 to 5.6



per cent in 1992.<sup>5</sup> China's share of world exports rose from less than 1 per cent in 1978 to 4 per cent in 1993. Nevertheless, China's current export/GDP share is much lower than other East Asian developing countries, and low even in comparison with large economies such as the United States and Japan.

There is a question about whether Chinese trade will continue to grow so much more rapidly than output. China's size and diversity of resource endowments, and the separation of a vast inland population from opportunities for low-cost participation in an international division of labour argue that China's trade share of output will remain below that of other economies. The relatively large difference between relative resource endowments in China and the rest of the world, the relatively low transactions cost of trade within an extensive Chinese community abroad, the concentration of the most rapid growth among perhaps 400 million people in coastal regions, and the extraordinarily high cost of internal trade and specialisation for coastal communities argue that trade shares will be high. The reduction of currently high official barriers to international trade, both in China and abroad, will tend to raise trade shares. The reduction of currently extraordinarily high barriers to internal trade will have some effect in the opposite direction—although rather less in the context of increasingly fine specialisation in production and intra-industry trade.

Lau (1993) predicts that the export ratio will fall in future, because the world economy will not be able to adjust to continued rapid increases in Chinese exports and because there will be opportunities for increasing the relative importance of internal trade. Lau's view implies a sharp and large break from the past relationship between trade and growth in China in the reform era, and from the pattern in other East Asian developing countries. Our own assessment is that, within an effective, rules-based international trading system, and with continued trade liberalisation in the framework of the Uruguay Round settlement, China's foreign trade will continue to grow more rapidly than output, although the average trade growth rate of the reform era so far might reasonably be considered an upper limit to future growth.

If China's exports expand at the average rate of the reform period so far, its share of world trade in goods and non-factor services will rise from about 1.7 per cent in 1990 to 3.6 per cent in 2000, and to 6.6 per cent in 2010 (Table 1). On balance, this seems a reasonable prospect. A higher rate of growth of exports is a possibility; but a number of factors will work against it, as discussed later.

How difficult will it be for the world economy to accommodate the scale of growth in China's output and trade that seems likely or possible to the years 2000 and 2010? How will



**Table 1 East Asian economies' shares in world merchandise trade, 1960–2010 (per cent)**

	Japan	NIEs	Japan + NIEs	China
1960	3.3	0.8	4.1	0.5
1965	4.8	1.0	5.8	0.8
1970	6.3	2.1	8.4	0.6
1975	6.5	2.6	9.1	0.7
1980	6.5	3.8	10.3	1.0
1985	9.3	6.0	15.3	1.4
1990	8.0	7.7	15.7	1.7
1993	9.5	9.9	19.3	2.4
1994	9.1	7.6	16.7	2.6
2000				3.6
2010				6.6

*Note:* China's shares in 2000 and 2010 are projections based on growth rates in the reform period.

*Source:* International Economic Databank, Australian National University — data compiled from the World Bank's *World Tables*.

the dimension of the required adjustment compare with that to the expansion of Japanese output and trade in the 1960s, and the NIEs in the 1970s?

It is true that China's economy is considerably larger than Japan's three decades ago or that of the NIEs two decades ago. But the world economy is now two or three times as large as in the 1960s, and considerably more integrated across international borders, and China's production is likely to remain less export-oriented than Japan's, and obviously much less so than the NIEs'. Table 2 presents projections of China's share of world trade, on the reasonable assumption that China's exports will continue to grow at the rate of the reform era. More arbitrarily, world trade is projected also to increase at the average of the past fifteen years. The resulting increase in China's share of world trade in the 1990s is similar to that experienced by the NIEs in the 1980s. The projected increase in China's trade share in the decade to 2000 is less than that of Japan in the 1960s, and the projected increase in the following decade is less than that of the NIEs in the 1980s. A rapid and large increase in the Chinese trade share is in prospect, but we can take comfort from the fact that proportionately similar structural changes have been achieved before. China's trade share in 2010 is similar to Japan's share in 1980 and much lower than the NIEs' share in 1990. Not only is world output and trade much larger now,



**Table 2 Shares of developing countries and China in world and OECD country imports of manufactured products, 1992 (per cent)**

	Australia and New Zealand	North America	European Community	Japan	OECD	World
Chemicals						
Developing	14.64	19.98	5.92	20.88	10.79	14.01
China	3.53	1.64	0.89	5.20	1.55	1.90
Machines						
Developing	17.05	24.29	6.94	21.64	13.27	13.59
China	0.58	0.99	0.28	0.95	0.54	0.81
Transport equipment						
Developing	3.49	8.71	2.48	4.63	4.75	6.41
China	0.40	0.21	0.11	0.44	0.16	0.29
Clothing						
Developing	77.40	91.05	43.20	81.14	62.57	61.46
China	48.62	16.63	6.74	43.43	13.97	18.37
Textiles						
Developing	51.05	49.43	17.16	67.30	26.93	42.43
China	9.74	9.91	2.27	25.54	5.34	8.35
Total manufactures						
Developing	21.09	32.43	10.34	39.26	18.85	20.95
China	4.22	5.11	1.51	9.82	3.14	3.92
Share of manufactured imports in GDP						
Developing	2.11	2.37	1.57	1.20	1.82	2.06
China	0.31	0.26	0.17	0.20	0.21	0.30

*Sources:* International Economic Databank, Australian National University— data compiled from United Nations trade statistics; World Bank (1993).

but now a substantial part of the adjustment can be carried by other East Asian economies which are more flexible than the old industrial economies of North America and Europe.

The growth of Japanese trade in the 1960s and the NIEs in the 1970s was accompanied by the proliferation of exceptions to the liberal international trading rules: the voluntary export constraints—including the Multi-fibre Arrangement (MFA)—and other ‘grey area measures’ that were among the major reasons why a multilateral negotiation in the form of the Uruguay Round had become necessary by the 1980s. It would be unfortunate for the international system if the rise in Chinese output and trade were accompanied by a similar proliferation of exceptions.

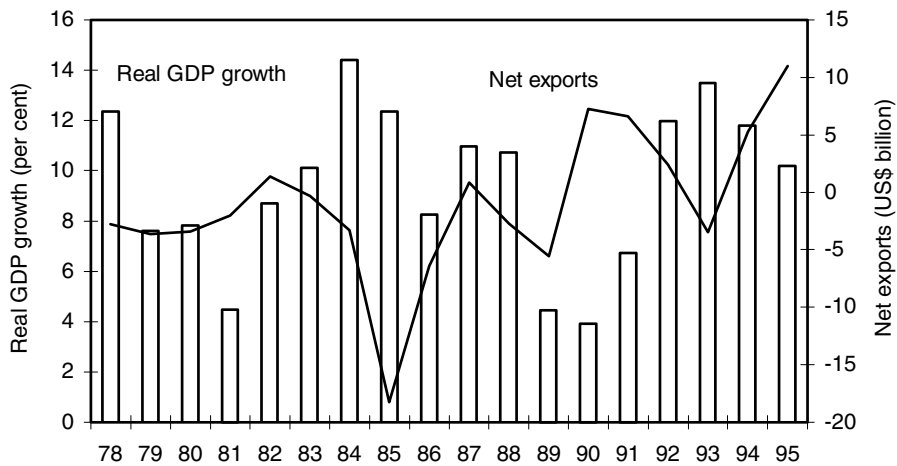
The rest of the world’s adjustment to China’s growth will be eased by the fact that, over time, imports will expand more or less as rapidly as exports. From 1978 to 1993, while China’s



exports and real GDP grew on average at 14 per cent and 9 per cent, respectively, imports grew at an annual rate of 12 per cent. While there are large short term fluctuations in China's current account and net exports, there is no general tendency towards surplus (Figure 1). This is not very different from Japan in the 1960s and the NIEs in the 1970s—tensions associated with these economies' tendencies to large current account surpluses came later.

The instability in China's trade balance, described in Figure 2, itself is a potential source of adjustment problems in the rest of the world, especially if contraction of economic activity and net imports coincides with recession in the rest of the world. There has been a fortuitous correlation between the Chinese and international business cycles over the past decade, most fortunately in the coincidence between China's boom and recession in the OECD countries in the early 1990s. The periods of large increase in Chinese net exports have tended to coincide with economic expansion in OECD economies notably through the period of Chinese macro-economic contraction around 1989. Among other things, the fortunate timing of the Chinese boom in the early 1990s helped to maintain growth in the other East Asian developing economies through the OECD recession.

**Figure 2 Fluctuations in China's net exports through business cycles, 1978–95**



Source: International Economic Databank, Australian National University — data compiled from the World Bank's *World Tables*; SSB, *China Statistical Yearbook*, various issues.



There is no reason to expect the fortunate inverse relationship between the Chinese and international cycles to continue. The possibility that future periods of sharp increases in Chinese net exports might coincide with international recession and so exacerbate international adjustment problems and trade tensions adds to the importance of domestic reforms to promote stability in the Chinese macro-economic system (Garnaut and Ma 1993b).

### **Sectoral effects**

Viewed as an integrated, unified economy, China, relative to those parts of the world economy that participate intensively in an international division of labour, has a relative abundance of (especially unskilled) labour and a relative scarcity of agricultural land and other natural resources (Garnaut and Anderson 1980; Garnaut 1989). This is true most strongly for the coastal provinces, which have been most deeply involved in international trade and experiencing the most rapid growth. China's trade specialisation in the early stages of rapid, internationally-oriented growth has followed closely that of other densely populated East Asian economies, with strong and increasing focus on labour-intensive exports, and imports of capital goods and a range of natural resource-based products. The resulting concentration of Chinese exports and imports in a relatively narrow range of commodities has the potential to exacerbate adjustment problems in the rest of the world—in advanced industrial economies with labour-intensive import-competing industries, and in competing labour-abundant developing economies seeking to rely on international markets for agricultural and mineral products.

China's foreign trade structure has shifted significantly in recent years in line with its relative resource endowment (Table 3). Before reform, China's exports were dominated by agricultural-intensive products, whose share has fallen rapidly since 1978. The share of mineral-intensive products has fallen sharply since the mid-1980s. The share of labour-intensive manufactured goods rose rapidly, in 1992 reaching 56 per cent, or four times these commodities' shares of world trade. Textile and clothing alone accounted for an extraordinary 40 per cent of Chinese exports in 1992, or almost six times their share of total world trade—despite severe restriction on exports to North America and Western Europe with the MFA.

By 1992 China supplied about 4 per cent of world exports. China's position in world markets was larger than this only in a limited range of labour-intensive products, notably clothing (18 per cent) and textiles (8 per cent) (Table 2).



**Table 3 China's exports and imports by groups of commodities, 1978, 1980, 1985, 1990 and 1992 (per cent)**

	1978	1980	1985	1990	1992	Comparator World's share 1992
<b>Exports</b>						
Agricultural intensive	36.1	26.3	21.7	12.5	10.6	13.3
Capital intensive	15.2	15.6	12.8	26.7	27.0	58.0
Labour intensive	31.1	30.2	35.4	50.9	55.7	13.7
Textiles and clothing	19.8	20.8	27.0	37.8	40.0	7.1
Mineral intensive	17.0	27.3	28.8	9.4	5.9	13.1
<b>Imports</b>						
Agricultural intensive	29.0	33.8	10.8	16.3	10.8	13.4
Capital intensive	59.0	52.8	73.3	60.5	65.7	57.2
Labour intensive	4.2	8.1	9.7	16.0	14.8	13.5
Textiles and clothing	1.7	4.3	5.2	9.3	9.5	7.1
Mineral intensive	7.0	4.2	5.1	5.1	7.3	14.0

*Note:* The shares of the four groups do not sum up to 100 per cent.

*Source:* International Economic Databank, Australian National University— data compiled from United Nations trade statistics.

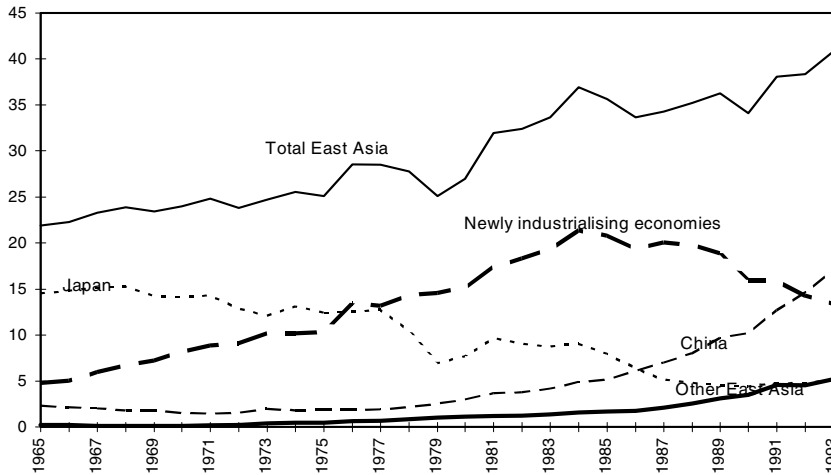
The concentration of China's exports in a relatively narrow range of labour-intensive exports is more marked than in most other East Asian economies at similar stages of development.

The rest of the world's adjustment to expansion of Chinese labour-intensive exports has been facilitated by its coincidence with rapid falls in the shares of Japan (especially up to 1986) and the NIEs (after 1983). By 1992 China's share of world exports of labour-intensive products was higher than that of the four NIEs, but at 15 per cent still well below the NIEs' peak in the mid-1980s. The increase in China's share coincided with a rapid increase (on a smaller scale) of Southeast Asia's role in world trade (Figure 3). East Asia's total share of world exports of labour-intensive products has risen hardly at all since 1984; rising Chinese and other ASEAN shares have been balanced by declines elsewhere in Japan and the NIEs.

There is now some anxiety in lower-income Southeast Asian economies in the early stage of internationally-oriented growth that continued rapid expansion of Chinese labour-intensive exports will crowd out their own opportunities. Certainly, the competition is severe, especially in textiles and clothing, where it will intensify in North America with the removal of the MFA



**Figure 3 Changing share of some East Asian economies in world's total labour-intensive manufactured exports, 1965-93 (per cent)**



Source: International Economic Databank, Australian National University—data compiled from United Nations trade statistics.

constraints on Chinese export expansion as the Uruguay Round is implemented over the next decade.

The World Bank (1993) notes that shares of European Community, Japanese and North American imports of clothing from developing countries in total consumption were 19.1, 27.9 and 13.1 per cent, respectively, in 1988. The respective shares of imports from China were 1.6, 3.0 and 3.4 per cent. The World Bank projects future shares on the assumptions that China's exports will continue to grow at about 15 per cent per annum, and other developing countries at Korea's growth rate between 1980 and 1990, and that apparent consumption of clothing will continue to expand at the rate of the past decade. The bank projects the shares of clothing imports from developing countries and from China in 1988 to be, respectively, 23.5 per cent and 1.9 per cent for the European Community, 34.3 per cent and 3.8 per cent for North America and 16.1 per cent and 4.2 per cent for Japan. Comparison of these data with Table 4 shows immediately that China's shares of exports from developing countries grew through 1988-92 at a rate well in excess of the World Bank projections

If China's and the world's exports of all labour-intensive manufactured goods continued to grow at their rates of the 1980s (23 and 9 per cent respectively), by the year 2000 China would account for 34 per cent of the world's exports of these products. This is roughly the same as the





**Table 4 China, many regional economies, 1992**

	Population (million)	Per capita income (US\$)	Arable land/population (hectares per thousand people)
Beijing	11.0	4,025	37.2
Tianjing	9.2	2,746	46.7
Hebei	62.8	1,076	104.2
Shanxi	29.8	1,021	123.5
Inner Mongolia	22.1	1,021	229.9
Liaoning	40.2	1,885	85.9
Jilin	25.3	1,196	155.4
Heilongjiang	36.1	1,461	246.7
Shanghai	13.5	4,647	23.5
Jiangsu	69.1	1,492	65.4
Zhejiang	42.4	1,608	39.9
Fujian	31.2	1,255	39.4
Shandong	86.1	1,306	79.0
Guangdong	65.3	2,359	37.4
Hainan	6.9	1,145	63.1
Anhui	58.3	732	74.3
Jiangxi	39.1	844	59.8
Henan	88.6	794	77.7
Hubei	55.8	1,103	61.3
Hunan	62.7	891	52.6
Guangxi	43.8	737	59.6
Sichuan	110.0	822	56.9
Guizhou	33.6	620	55.0
Yunan	38.3	799	74.6
Tibet	2.3	966	97.2
Shaanxi	34.1	900	102.3
Gansu	23.1	789	150.7
Qinghai	4.6	1,108	126.0
Ningxia	4.9	1,010	163.5
Xinjiang	15.8	1,425	198.4
China	1,165	1,164	81.9

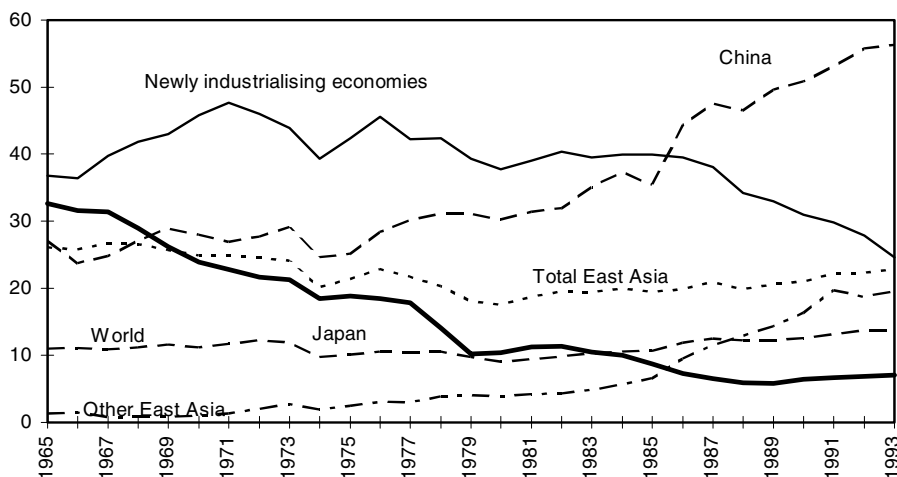
*Note:* Per capita income is on comparable basis according to Garnaut and Ma (1993) and Garnaut, Ma and Huang (forthcoming).

*Source:* SSB, *China Statistical Yearbook*, various issues.



combined shares of Japan and the NIEs in the mid-1980s, and would be achieved over a period during which these exports from Japan and the NIEs fell to very low levels (Figure 4). Nevertheless, China's exports of labour-intensive goods would be growing so rapidly that growth in Southeast Asian and other developing countries taken as a whole would be limited, or else the increased competitiveness of developing countries as a whole would need to force an increased role for labour-intensive products in world trade, with exports growing more rapidly than consumption. The latter response would continue the pattern observed since rapid export-oriented industrialisation emerged in China and the lower-income economies of Southeast Asia became entrenched in the first half of the 1980s (Figure 4).

**Figure 4 Shares of labour-intensive goods in total exports: world and some East Asian economies, 1965–93 (per cent)**



Source: International Economic Databank, Australian National University — data compiled from United Nations trade statistics.

Chinese export expansion at this rate on this scale would reduce opportunities for other relatively labour-abundant economies embarking on export-oriented industrialisation strategies — Indonesia, India, Bangladesh, Vietnam and the Philippines amongst others — if it remained concentrated strongly in simple products. But is it likely to be?

The regional diversity of China's relative resource endowments, and a history of heavy public investment, including in education — relevant to comparative advantage in more



sophisticated production and therefore support for early diversification of exports — suggests qualifications to first impressions.

China is not an integrated economy with a per capita income a bit above US\$1,000. Rather, it is a set of provincial and regional economies, with widely differing resource endowments and comparative advantages and separated by high resistances to trade and factor flows. Table 4 makes one aspect of the point at a provincial level.

The dynamic southeast coastal economies—from Hainan and Guangdong around to Shanghai and Jiangsu, with a total population over 300 million, have per capita incomes well into the range of middle-income economies. The richer and more dynamic parts of this region are already experiencing labour shortages, rising labour costs, and pressure to transform production and exports into more sophisticated and capital-intensive activities.

Over the next decade, many of the opportunities for the sale of labour-intensive products from lower-income inland economies, with per capita incomes closer to Indonesia's and, perhaps, India's and Vietnam's, will come from the provision of labour-intensive products to dynamic coastal provinces undergoing structural change. Coastal regions, for their part, will upgrade specialisation into more sophisticated versions of old products, and more capital-intensive processes and goods and services. Parts of coastal China will support industrialisation of inland China through structural change in trade and production in much the same way as structural transformation of the NIEs supported export-oriented growth in China in the 1980s.

It is noteworthy that the share of capital-intensive goods in China's total exports also started to rise after the mid-1980s. At the disaggregated commodity level, exports of some capital-intensive goods indeed experienced dramatic expansion both in relative (to total exports) and absolute terms in the 1980s. Exports of telecommunications equipment accounted for 5.7 and 5.4 per cent of total exports in 1990 and 1992. Similarly, the shares of domestic electric equipment exports were also 2.1 per cent in 1990 and 2.3 per cent in 1993. Other commodities such as office machines, electric power machines, watches and clocks, and sound recorders are now among the top twenty largest exporting commodities (SITC 3-digit statistics). This suggests that China is quickly accumulating the physical and human capital to produce some capital-intensive products at internationally competitive costs. One explanation is that some parts of China are already relatively capital-abundant, as discussed in the preceding paragraphs. Another is that some 'capital-intensive' goods are produced labour-intensively in China. Another important factor is that in the thirty years of central planning, there was a huge investment in capital-intensive and technology-intensive industries. Although these invest-



ments including in human capital represented a misallocation of resources, once the capital was sunk, it was the source of comparative advantage at the margin in producing some capital-intensive and technology-intensive manufactured goods. The space industry including satellite-launching is an example.

These signs of China's rising competitiveness in some technology-intensive manufactured goods may indicate that, given its size, and history, the pattern of export specialisation in China may be more complicated than in other East Asian economies.

More generally, China's comparative advantage will shift from labour-intensive industry to capital-intensive and technology-intensive industries as physical and human capital accumulate and labour costs rise in the process of economic development. This has been illustrated in the experiences of Japan and the NIEs (Figure 4). Japan in the 1960s and Taiwan and Korea in the 1970s all had a period of rapid expansion of labour-intensive manufactured exports. After that, electronic industries replaced textile industries, becoming the leading industry of the economy. Japan's share in the world's total exports of labour-intensive manufactured goods started to decline from 15 per cent at the beginning of the 1970s to below 5 per cent 1992, while its share of total exports still increased from 7 per cent to 10 per cent during the same period. The share of the NIEs' in world labour-intensive manufactured exports increased steadily from 5 per cent in the mid-1960s to more than 20 per cent in the mid-1980s and then fell to about 15 per cent in 1992, while their share in total world exports continued to increase from 1 per cent in 1965 to 7 per cent in 1992. The increasing shares of total exports in later stages (after 1968 in the case of Japan and after 1984 in the case of the NIEs) were contributed mainly by export expansion of capital-intensive manufactured goods.<sup>6</sup>

Evolving from labour-intensive to capital-intensive and technology-intensive manufacturing will be easier for China because of China's historical investment in human capital relevant to technologically sophisticated industry. This will accelerate the emergence of new export sectors and smooth the path of structural change as labour-intensive industries lose competitiveness.

The special features of China, including its size and diversity, will cause the capital-intensification to take an unusual form. China will remain a competitive supplier of labour-intensive products for a longer period of internationally-oriented growth than other East Asian economies, as it will take several more decades of rapid growth for labour to become scarce and expensive throughout this big country. It will, of course, lose competitiveness in the simplest, most labour-intensive products more quickly the more effective are growth-enhancing reforms



in lower-income countries, most notably in South Asia. At the same time, it will emerge as an important supplier of more sophisticated products at a relatively early date.

The result is likely to be a more diverse export pattern, emerging relatively early in the growth process, with more of China's exports being focused on the deeper world markets for more technologically sophisticated products. This will ease the problems of competition for other low-income countries.

Developing countries will share the opportunities to expand exports to China itself. This has already been important for many agricultural and mineral products. China's growth will deepen world markets, too, for a range of manufactured commodities in which some developing countries have revealed comparative advantage. In the larger world market associated with the emergence of China, there will be more opportunities for gains from trade through fine specialisation in production. This will place a premium on flexibility and capacity to transform production through rapid expansion of activities that have proven their international competitiveness.

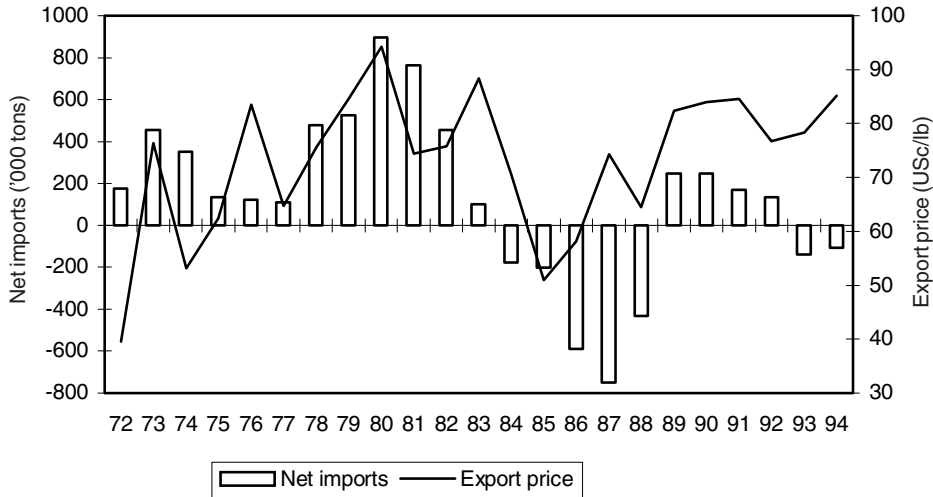
China's size mean that its trade liberalisation, economic expansion or structural change have the capacity to affect prices on world markets. Certainly, internationally-oriented growth in China has depressed to some extent the terms of trade of competing developing countries. In addition to secular tendencies of these kinds, fluctuations in Chinese imports and exports of particular commodities can lead to instability in world prices.

The point can be made by reference to cotton. Basically, China seeks self-sufficiency. But it also actively participates in the international market because there are changes in domestic demand and supply, for example with seasonal conditions affecting yield. Therefore, in some years, as between 1986 and 1988, China exported about 500–750,000 tonnes of cotton a year to the world market, while in some other years as in 1980 and 1981, it imported about 80 thousand tonnes a year. In some years China was the world's largest importer and in some the largest exporter, adding one important unstable factor to existing cotton market fluctuations. Cotton prices tended to be low when China's net imports were low (or net exports were high), and high when China's net imports were high (Figure 5).

China is the world's largest producer and consumer of many commodities, including a wide range of simple manufactured goods and industrial raw materials (coal, cotton, grain, steel and wool), so that normal fluctuations in Chinese supply or demand inevitably have a substantial effect on world markets. These effects have been exacerbated by policy instability in China in the partially reformed economy of the past fifteen years, especially in relation to industrial



**Figure 5 China's net imports of cotton and world cotton prices, 1972–94**



Source: International Economic Databank, Australian National University—data compiled from FAO statistics; ABARE (1992).

inputs. Fluctuations in Chinese supply and demand have their greatest impact in commodities in which international markets are separated from major domestic markets by quantitative restrictions and other controls, so that the international market is simply a residual market, potentially highly volatile in response to relatively small fluctuations in net exports from a major economy.

The impact of fluctuations in Chinese net exports in world market prices for particular commodities has already been a source of international concern. The effects of the expansion of Chinese wool imports in the mid-1980s followed by sudden contraction in 1989 and 1990 provides an example with dramatic relevance to Australia. If this is not to lead to demands for special restrictions on Chinese participation in international markets, China and its trading partners will be wise to search systematically for cost-effective means of minimising these effects. One is the general internationalisation of markets, with the removal of quantitative restraints on trade, whether imposed in China or abroad. This will have the effect of extending the market to cover more of world production and trade, reducing the impact of fluctuations of any given size in China's net exports. A larger world market will be a more stable world market. A second is trade and industry reform in China, to remove arbitrary changes in policy that



introduce artificial fluctuations in supply and demand for particular products. Instability in markets for commodities in which China is a major player also adds to the reasons for giving priority to reform designed to reduce macro-economic instability within China.

### **Whose adjustment?**

There has been some discussion in old industrial economies in recent years of the effects of rapid expansion of trade with labour-abundant China on advanced economies' employment levels and full employment wage rates (Forsyth 1993; Krugman and Lawrence 1993; McDougall and Tyers 1993). In reality, trade expansion with the old industrial economies has been less rapid and has less adjustment than in East Asia.

East Asian economies' adjustments following China's expansion will be greater than the rest of the world's for three reasons. First, these economies all maintain relatively open economies for manufactured goods, so that changes in the international markets will be quickly transmitted to these economies. Second, East Asian economies are separated from China by relatively low resistances to trade, on account of proximity and a range of factors affecting transaction costs. Third, some of these economies, especially Korea and Taiwan, have had large sectors which are directly competitive with emerging sectors of the Chinese economy. Their existing labour-intensive industries will be affected by China's rising market share.

The world's most dramatic example of structural adjustment associated with the expansion of trade with China is in Hong Kong. Only a decade ago, Hong Kong strongly specialised in exports of labour-intensive manufactured goods. It had a large manufacturing sector, employing about 1.1 million people. Increased confidence in Hong Kong-China economic relations following China's commitment to economic reform and the Sino-British agreement of 1984 led to rapid transfer into China of virtually all of the labour-intensive end of Hong Kong manufacturing. Employment in manufacturing had fallen to less than half a million by mid-1994. But far from the dismal outcomes for labour in the high-income country predicted by the factor price equalisation theorem, and now finding their ways into popular discussion in the West, full employment was maintained through the adjustment, and real wages rose dramatically. Hong Kong is now re-specialised internationally, particularly into export of high-value services, notably to China. This year for the first time its per capita income will exceed Britain and Australia.

Beyond Hong Kong, the most rapid expansion of trade with an emerging China, and of structural change to accommodate the characteristics of an emerging China's trade, has been in other neighbouring Northeast Asian economies, and then in the wider Western Pacific region, and wider area Pacific regions. Table 5 makes the point. North America has grown rapidly as a trading partner since the establishment of full diplomatic relations, catching up with the ground lost in earlier times of political tension and distance.

**Table 5 Destinations of exports and sources of imports in China, 1980, 1985, 1990 and 1993 (million US dollars; per cent)**

	1980	1985	1990	1993
<b>Exports</b>				
Total value (US\$ billion)	19.5	27.3	63.2	91.3
Share (%)	100.0	100.0	100.0	100.0
Of which:				
NIEs	24.6	33.7	38.6	39.8
Other East Asia	4.0	2.7	2.9	2.4
Japan	20.7	22.3	14.2	13.6
American OECD	5.7	9.4	9.1	17.6
Oceanian OECD	1.3	0.8	0.8	1.2
European OECD	12.2	8.4	9.5	11.3
Former USSR	1.2	3.8	3.2	3.0
Rest of the world	30.3	18.9	21.7	11.1
<b>Imports</b>				
Total value (US\$ billion)	19.8	42.5	59.2	104.1
Share (%)	100.0	100.0	100.0	100.0
Of which:				
NIEs	26.5	27.4	49.4	41.5
Other East Asia	2.3	2.1	3.7	3.7
Japan	26.1	35.7	12.9	19.2
American OECD	23.4	14.9	13.6	13.1
Oceanian OECD	6.2	3.0	2.5	2.4
European OECD	14.2	14.5	14.2	13.7
Former USSR	1.3	2.4	3.7	6.4
Rest of the world	22.6	15.6	23.6	11.5

*Note:* Shares for the NIEs in China's total exports and imports reported under the year 1993 are actually 1992 numbers, because the calculated shares dropped unbelievably, indicating some serious data problems in the database.

*Source:* International Economic Databank, Australian National University — data compiled from the International Monetary Fund's *Direction of Trade* statistics.

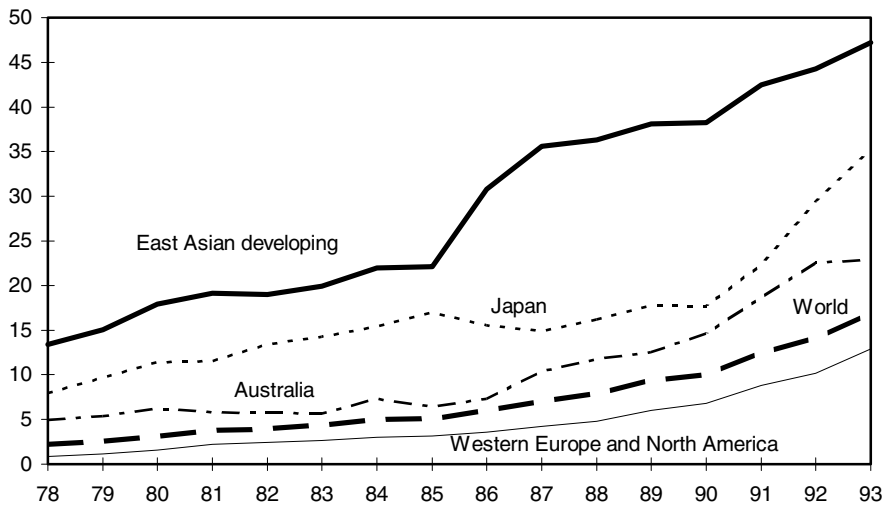




In the main labour-intensive commodities, too, neighbouring East Asian countries have borne the largest weight of adjustment to China's emergence as a major trading economy. The difference in China's share of various markets can be seen in Figures 6, 7 and 8. China's share of other East Asian imports is around four times larger than in 'other OECD' markets for labour-intensive goods. The difference is greatest with textiles and clothing, due in large part to the artificial constraints of the MFA in North America and Western Europe.

The MFA's effects in artificially reducing China's market share can be observed in Table 4. China in 1992 accounted for over 40 per cent of clothing imports into OECD countries that are not participants as importers in the MFA (Australia, New Zealand and Japan), but only 17 per cent in North America and 7 per cent in the European Community.

**Figure 6 China's shares in world's and selected countries' labour-intensive manufactured imports, 1978-93 (per cent)**

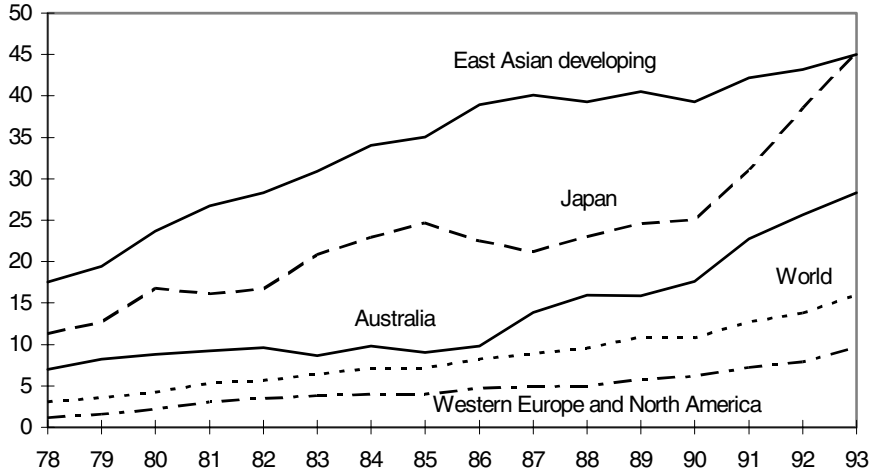


Note: 1993 numbers are preliminary estimates.

Sources: International Economic Databank, Australian National University — data compiled from World Bank statistics; Asia-Pacific Economics Group (1994).

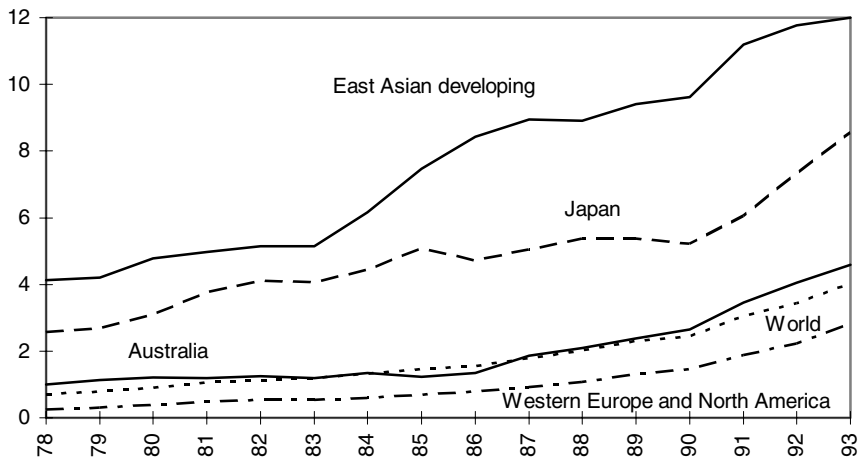


**Figure 7** China's shares in world's and selected countries' imports of textile and clothing, 1978–93 (per cent)



Source: International Economic Databank, Australian National University — data compiled from World Bank statistics

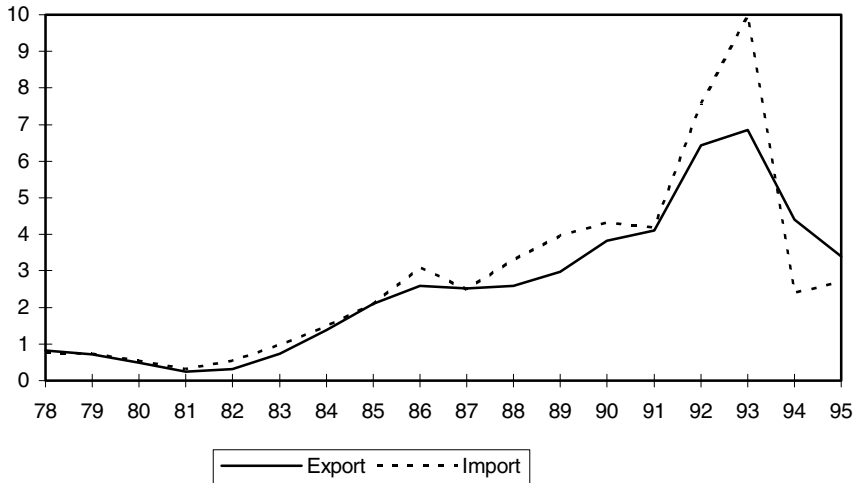
**Figure 8** China's shares in world's and selected countries' total imports, 1978–93 (per cent)



Source: International Economic Databank, Australian National University — data compiled from World Bank statistics



**Figure 9 China's share in the former USSR's imports and exports, 1978–95 (per cent)**



Source: International Economic Databank, Australian National University — data compiled from World Bank statistics.

There will be some more ‘catching up’ in the North Atlantic’s adjustment to China’s trade expansion with the dismantling of the MFA as the Uruguay Round is implemented. This is the region that has felt most threatened by the expansion of China’s trade, and the additional adjustment associated with removal of the MFA will exacerbate perceptions of an adjustment problem in the North Atlantic, and, no doubt, strengthen pressures for ‘safeguards’ to constrain China’s trade.

One advantage that the world economy has in accommodating new participants now, relative to the 1960s and 1970s, is the increased number of internationally-oriented economies that are now sharing the adjustment burden and the gains from trade. China has emerged rapidly as an important trading partner of Russia since the collapse of socialism (Figure 9). This is an important source of gains for each, and if Russia (and its neighbours in the West and East) are able to establish a stable basis for economic growth in the years ahead, this will ease to some extent the adjustment in the rest of the world associated with the expansion of China’s trade.

It is noteworthy that the economies that have adjusted most to the new Chinese trade opportunities are most inclined to weaken the opportunities above the threats: Hong Kong, Taiwan, Korea, the rest of the Western Pacific and after that North America and Western



Europe. There is in their experiences a hint that special measures artificially to inhibit trade expansion and economic adjustment are not helpful to the political economy of adjustment to new opportunities.

### **China and Japan**

The accommodation of China's internationally-oriented growth is complicated by its timing, in a period of disillusionment with the liberal multilateral system in the North Atlantic and tension in US trade relations with East Asia and particularly Japan.

Tensions in US–Japan trade relations in the late 1980s and early 1990s were overlain by popular perceptions that in the aftermath of the Cold War, economic rivalry between Japan and the United States would have political significance. Japan was identified by some scholars in the United States as having characteristics that made it a poor citizen of the world economy: a chronic surplus in current payments; low intra-industry trade; low shares of manufactured goods in total imports; and low levels of inwards direct foreign investment.

Trade with China will become as contentious as with Japan. The adjustment challenge will be as large as that to the emergence of Japan at a similar stage of economic development. The overlay of political rivalry will be as great, or larger, as awareness grows of China's real economic size, and given China's political self-confidence and ambitions for military modernisation.

China will do much better on the tests of good international economic citizenship that have been concocted artificially for Japan. Intra-industry trade is larger and increases more rapidly (Table 6), the current account and net exports fluctuate around zero in the reform era, manufactured goods dominate imports and direct foreign investment is now being committed in China at a rate that has no precedent in East Asia or the developing world. This will not protect China from criticism: the political economy of trade policy and protectionism places modest value on logical consistency. The differences between China and Japan on these and some other points of public concern, however, will make it less likely that tensions in US relations separately with Japan and China will be made less tractable by their merging into a general 'East Asian' problem.



**Table 6 Indexes of intra-industry trade for China and Japan, 1970, 1980 and 1990**

	All commodities		Manufactured goods	
	Japan	China	Japan	China
1970	0.24	0.14	0.33	0.19
1980	0.22	0.22	0.27	0.28
1990	0.32	0.38	0.36	0.40

*Source:* International Economic Databank, Australian National University — data compiled from the United Nations *Trade Statistics*; Drysdale and Garnaut (1993).

### What rules?

The GATT membership negotiation provides China and the international community with a rare opportunity to set some basic principles governing trade relations between the two sides. An appropriate settlement of China's GATT membership and related agreement will not only increase China's confidence in further opening up its economy and participating more actively in international trade, but can also lay out some clear constraints on China's behaviour and push it for further reform.

To achieve this, it is important to have a correct perspective on gains and losses from China GATT membership and trade reform. China realises the benefits from trade reform and participation in international exchange. But there are many occasions when it has been inclined to accept constraints on reform that are damaging both to itself and its trading partners, notably in the cases of agriculture and motor vehicles. On the international side, it is also crucial to be aware of the current state of China's institutional setting and the adjustment costs it may have to incur in transition.

One key problem in the negotiation of China's membership is whether China should join the GATT as a developing or a developed country. What real difference does this make? According to the current GATT rules, developing countries are exempt from some of the trade disciplines. As a low-income country, the member can maintain a certain degree of quantitative restrictions, such as on the ground of food security or infant industry. Another difference, following the Uruguay Round settlement signed this year, is that developed countries are required to reduce their domestic agricultural support by 36 per cent within six years of implementation, while developing countries are only required to reduce it by 24 per cent and



virtually no reform is required for least developed countries with per capita income of less than US\$1,000.

These concessions, however, would not contribute positively to China's welfare improvement. This is proven by the experiences of other East Asian economies and reinforced by China's experience of unilateral trade liberalisation during the whole reform period.

The adjustment problems and costs to China of movement to the new regime must be considered. The international community has to be aware that China has in the past reform period pursued a gradual approach to economic reform. Whereas there are some shortcomings in this approach, it helps the government to accumulate experiences during the process and to limit those adverse consequences like instability and fluctuations.

Whether China joins the GATT as a developed country or as a developing country may not have crucial importance to the trading relationship between China and the international community. The key to the problem is for both sides to work out an announced trade policy agenda for China.

A realistic solution, therefore, is for China to join the GATT as a developing country, especially considering its current income level and its institutional framework, but unilaterally to make commitments to further reforms towards achievement of conditions similar to those for developed country members within a finite period. Commitment to movement to a developed country regime on a short timetable for some commodities would be helpful to China's acceptance in the international community.

The recently concluded Uruguay Round trade negotiation provide a favourable environment for China to deliver further reforms. First, the phasing out of the MFA will support faster growth of China's exports of textile and clothing products in the North America and Western European markets. Second, the world economy will start agricultural reform, reversing the trend in the 1980s. This will have some positive effects on China's agricultural policy choices—which is also one of the key issues in the membership negotiation. Moreover, the expected rises in international agricultural prices following implementation of the settlements may raise China's confidence in internationalisation of its agricultural sector as the adjustment costs are expected to be low.

The significance of the Uruguay Round negotiation goes beyond issues in specific sectors. Phasing out of the MFA, for instance, will help China's overall trade reform. As confidence in its exchange earnings rises, China will find it easier to abolish some of its own restrictions on trade which have been motivated by anxiety about access to foreign exchange.



Beyond the global economic organisations like the GATT/WTO, the Asia Pacific Economic Cooperation (APEC) fora provide an important framework through which China can interact with the wider international community. In particular, trade and investment facilitation and credible commitment to eventual free trade within the Asia Pacific region have the capacity to increase confidence in China and its trading partners that the exchange opportunities in the international community are a secure basis China's future development.

### **The challenge**

China's rapid, internationally-oriented economic growth is a major challenge to the international economy and trading system, because of China's size, rapid growth, skewed relative resource endowments and tendencies to instability. In scale and structural implications, however, the challenge is no greater than that which has already been (imperfectly) met in the rise of Japan and the NIEs.

There will be assertions in other economies affected by China's growth that China's trade expansion is reducing opportunities of others, reducing labour returns elsewhere, disrupting the international system, and that China is denying to others reasonable gains from access to its own markets.

This is a management challenge to China. It can best answer that challenge through unequivocal commitment to reform, to the eventual goal of free trade for itself and the international community, and to application of the rules of the international system. China will be wise to stay ahead of international pressure, linking liberalisation at the border to its domestic reform.

If the rest of the world supports China's entry into the world trading system under the general rules, as strengthened by the Uruguay Round, the widening of the international market will increase potential gains from specialisation and trade, and for some commodities is likely to lead to greater stability in international prices. The large scale of China's exports will depress relative prices for some commodities, and increase the importance of flexibility in other developing economies seeking internationally-oriented growth.

The main downside to the international system from the emergence of China as a major trading economy will materialise if the rest of the world baulks at the adjustment task, and seeks to manage closely the scale and content of interaction with China. Such a response would lead quickly to a decline of Chinese confidence in deep integration into the world economy. The prospects of China being able to integrate sectors which had been the subject of special



commitments to self-sufficiency in Maoist times into the international market would decline at a critical time. Political competition would overlay trade relations between China and the largest external economies, especially the United States. The end point would be retreat from the rules-based system, with large consequences for internationally-oriented growth in China, East Asia and beyond.

### Notes

- 1 In this paper, NIEs include Hong Kong, Singapore, Taiwan and Korea.
- 2 According to the official statistics, such as the World Bank's *World Tables*, China's current GNP per capita is about US\$400. However, recent studies have suggested that, for China's income data to be comparable with other low-income economies, these official numbers must be adjusted upward by a factor at least three (Garnaut and Ma 1993a; Garnaut, Ma and Huang, forthcoming). If China's official income is multiplied by three, its size of real GDP was already the same as Germany's and slightly lower than half of Japan's.
- 3 The shares are 1 and 3 per cent, respectively, in 1978 and 1993, according to the official statistics.
- 4 An average annual growth rate of 8.5 per cent for real GDP is the same as 7.2 per cent for real per capita income growth which is assumed in other studies. An average annual growth rate of 4 per cent for the rest of the world is high. The average annual growth rate for the world was 2.6 per cent between 1978 and 1992.
- 5 These shares were 9.1 and 13.9 per cent, respectively, in 1978 and 1992, as calculated using official income data.
- 6 The preceding data derive from the International Economic Databank, Australian National University.

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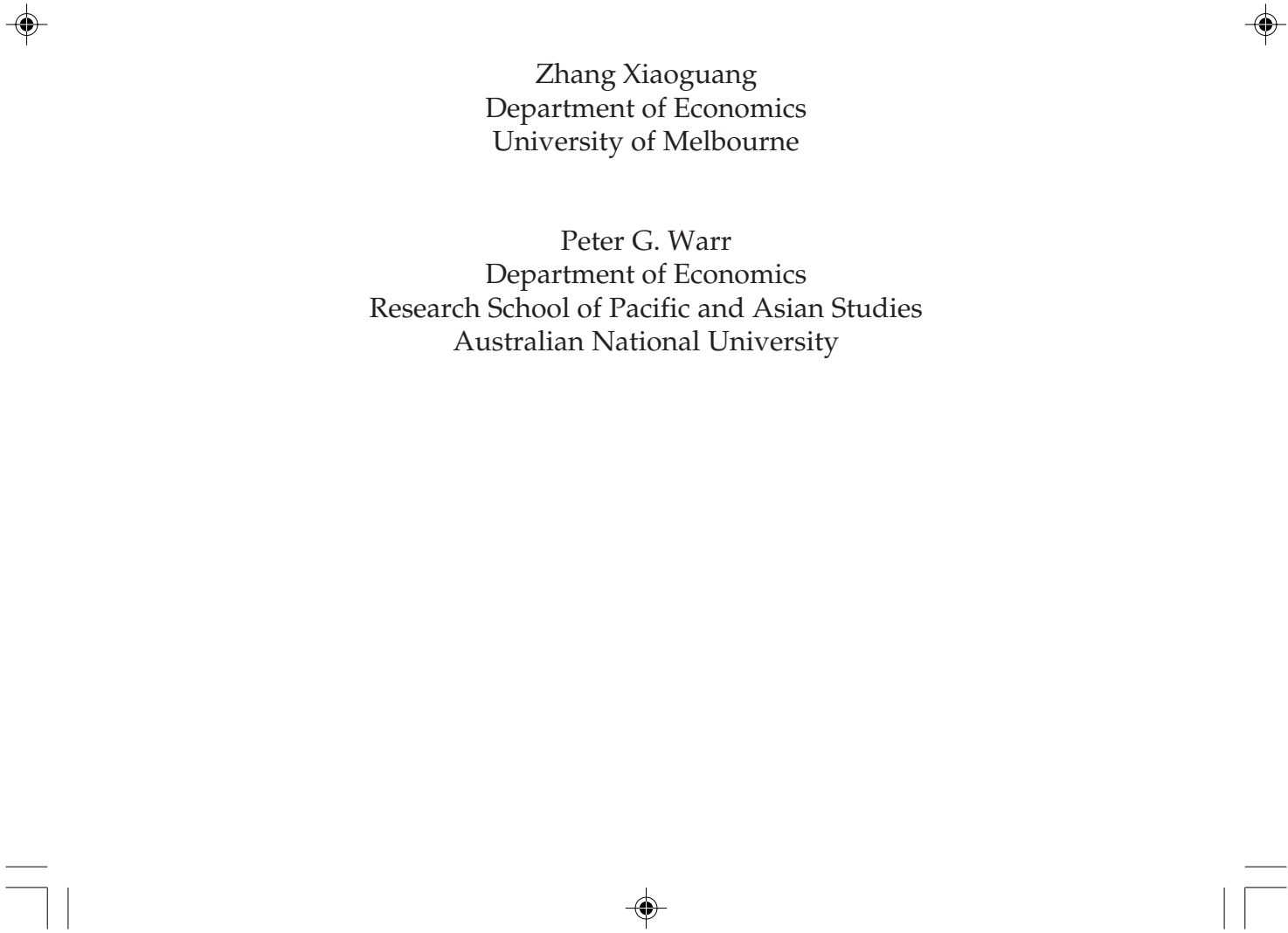
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# **China's Re-entry to GATT: A General Equilibrium Analysis of Tariff Reduction**

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## Introduction

Since formally lodging its application to rejoin GATT in 1986, China has made serious efforts to accelerate its reform process so as to make its economic system conform with GATT requirements. One such requirement is access to China's domestic market. China had long pursued a policy of protecting its national industries against foreign competition. In the pre-reform era, this protection was secured by a centrally planned economic system. Foreign trade transactions were then dominated by a dozen state foreign trade corporations. Domestic firms were completely insulated from the outside world. The result was low productivity and resource misallocation. Since adoption of the economic reform and open-door policies, central plans have been largely replaced by the market.

During the economic reform period, China's protection policy has undergone a three-stage transition. In the pre-reform years, China's protection measures were dominated by direct controls of the prices and quantities of traded goods. Since the late 1970s, this direct plan control has been largely replaced by administrative control measures such as export and import licensing. Though they are still quantitative in nature, the move from plan control to administrative control is a major step towards a less distorted protection system. As the domestic market expands to cover more products and more producers become financially independent market entities, administrative control over traded goods has begun to be replaced by tax control measures, such as tariffs or other border charges. This shift will move China's protection system away from quantitative towards value measures which are consistent with internationally accepted codes of conduct and, therefore, more in line with GATT requirements.

China has passed through the first two stages and is now moving towards the third stage. Some tax control measures have been implemented already, along with existing quantitative measures such as licences and quotas. Among them, tariffs are the most important measure. Nominal tariff rates had been high in the pre-reform years. Since 1980, when the General Customs Administration was restored as a national administrative body, China has unilaterally reduced its import tariffs. In 1985 the new customs regulation was passed in the National Congress and the Export and Import Tariff Schedule was thoroughly amended. In the new schedule, nominal tariff rates were reduced in many categories, reflecting the policy shift towards a more open economy.

After applying for GATT membership in 1986, China accelerated its process of domestic market liberalisation. From March 1986 to 1991 tariffs were cut in 83 tariff lines in the schedule. In January 1992, when China converted its old customs classification of commodities into the



new Harmonised System, the tariff rates for 225 items in the new schedule were reduced. At the beginning of 1993 import tax rates for another 3,371 import categories were reduced. This covered 53.6 per cent of total tariff lines in the tariff schedule. The cut brought down the trade weighted average of nominal tariff protection by 7.3 per cent. It constituted the largest single tariff reduction undertaken by the government since 1949.

Immediately after the reform of the customs tariff system in 1985, the average tariff rate for imports in China was 38.4 per cent. Since then the domestic market has been liberalised substantially in terms of falling tariff barriers. The trade weighted average rate of import tariffs in China was reported in recent years to be 22.5 per cent (Ju and Wu 1993; Editorial Committee 1993), or higher, at 28 per cent (Chen et al. 1993).

Despite the dramatic decline in tariff barriers, however, the average tariff rate is still regarded as too high to justify full GATT membership for China. In 1990 the average rate of nominal import tariffs was 5.84 per cent in Japan, 8.13 per cent in the EEC, 11.4 per cent in Korea and 10 per cent in Taiwan. Since the establishment of GATT fifty years ago the average rate of import tariffs in developed country members has been reduced from 36 to about 5 per cent, after seven rounds of tariff negotiations. Average tariff protection in the developing country members is about 13 per cent (Ju and Wu 1993). With the successful completion of the Uruguay Round, the tariff rates of the GATT contracting parties are expected to fall even further. To gain membership, China needs to contemplate even more drastic cuts in import tariffs. The target will be to reduce the average tariff rate to no more than 13 per cent. This implies that China's current nominal tariff levels have to be reduced by an average of 50 per cent.

The Chinese government has expressed its readiness to meet this requirement. During its negotiation with the GATT contracting parties, it made the commitment to reduce the nominal tariff by 50 per cent and to abolish two-thirds of current import licences in three years. What are the possible impacts on the economy of such a large-scale tariff cut and domestic market liberalisation?

During the reform period, China's foreign trade has expanded rapidly: exports have grown constantly at an annual rate of 16 per cent in current US dollars. Especially in recent years, the current account has enjoyed a continuous surplus and foreign exchange reserves have been accumulated to a record level of more than US\$40 billion. In addition, a large amount of foreign exchange has already been traded outside the jurisdiction of the central plan authority. The combination of an adequate foreign exchange reserve and a flexible, though partial, exchange rate mechanism will create favourable conditions for further market liberalisation.



The actual impacts of the proposed tariff cut may be substantially discounted by the existence of widespread tariff exemptions. Tariff exemption has been used by provincial governments and Special Economic Zone (SEZ) authorities as an important means of attracting foreign investors since the early years of reform. Under the existing regulations, imports associated with technology transfer and foreign investment in joint venture and export-processing activities attract little or no tariffs at all. As foreign direct investment in China has accelerated in recent years, imports with tariff exemption have expanded dramatically. It has been estimated that import duties actually collected by customs accounted for only 12–13 per cent of total import value and that the trade weighted average nominal tariff rate was over 22 per cent (Editorial Committee 1993). Taking these widespread tariff exemptions into account suggests that the impact of a large tariff reduction may be much less than it would otherwise be.

However, such large-scale tariff cuts will certainly generate far-reaching economic consequences. At the sectoral level, export-producing industries are expected to benefit and import-competing industries to suffer from a sharp fall in tariff barriers.

To account properly for the likely outcomes of a tariff reduction, we need to consider not only the direct impact of the cut itself on the industry affected, but also the indirect impacts that could be generated from the cut on related industries and other parts of the economy, such as household consumption, the government budget and the current account.

This paper attempts to contribute to the current debate by providing a general equilibrium analysis of a 50 per cent across-the-board tariff reduction. The analysis is undertaken using a computable general equilibrium (CGE) model of the Chinese economy (Zhang 1994) and is incorporated into a two-tier price system, the most distinctive feature of the transitional Chinese economy. The model was designed to provide an analytical tool for examining the transition of a centrally planned economy to a market system, and is used here for modelling China's unique reform approach, which allows the market to grow steadily out of the plan. It was designed for a wide range of policy simulations, including trade policy reforms. In the following, we first briefly outline the model structure and database before reporting on the simulation results.

### **A summary description of the model**

The CGE model has developed rapidly over the past decade and has proven to be a powerful tool for policy analysis in various countries. However, little attempt has been made to model a transitional economy such as China, in which a two-tier price structure and plan/market



interactions can be explicitly incorporated. An important early work of CGE modelling for China is Martin (1992). His model is built entirely on observed market prices and makes no distinction between the plan and the market part of the economy. The underlying assumption is that economic agents respond to market prices for inputs and outputs rather than to plan prices. The plan prices are thus irrelevant for the behaviour of the model. This assumption draws to a large extent on early studies by Byrd (1987) and Wu and Zhao (1987). Although it is recognised that the income distribution effect induced by divergences between the plan and market prices may have an impact on demand behaviour, this second-round effect is regarded as unlikely to have a large impact on the results and hence has been ignored.

The major limitation of the single-price model is the underestimation of the government's role in the economic transition. Many important reform policies in China have been imposed by the government directly through its control over the plan sector. The policy-induced change in the plan sector then, through its various contacts with the market, indirectly affects the operation of markets. Without explicitly incorporating plan variables such as plan prices and output quotas, those reform policies imposed by the government in relation to the plan sector cannot be expressed in the model.

In the model, each good or service has two prices, the plan price and the market price. The role of the central plan is confined to part of the economy only. The government controls a portion of total output of goods and services produced or provided by each sector. The prices and quantities of these planned goods and services remain administratively determined and distributed. However, the same goods and services are available in the market at flexible prices determined only by the forces of supply and demand.

In each industry or sector, two types of producers, state and non-state, can be distinguished. The state enterprise uses plan-allocated and priced intermediate inputs to produce the planned quota of output at the plan price. After satisfying the output plan, the state enterprise is allowed to sell its above-quota output to the market. The plan output target is normally set below the enterprise's full capacity, so as to permit production for the market. The state enterprise thus performs a dual role as a plan producer and a market producer. It is assumed that there is no joint production in state plan and state market production. Therefore, the state enterprise can be seen as two separate producers, one producing entirely for the plan and the other solely for the market.

In each industry or sector, there is also a non-state enterprise producing the same goods and services exclusively for the market. The non-state producer is encouraged by the government to compete with the state enterprise in the market-place.





Households are aggregated into a representative one and no distinction is made in terms of income groups. As no well-developed theory of state enterprise behaviour is available, no attempt is made here to differentiate the behaviour of state enterprises from that of non-state enterprises in forming their demands for primary factors of production.

The role of the government is explicitly represented in the model. It determines the prices and quantities of inputs and outputs that state enterprises buy and sell. The government is also performing the role of owner of state capital assets in all sectors: it collects and redistributes capital returns among state enterprises. By supplying goods and services at prices below marginal costs, the government also provides implicit subsidies to producers and consumers.

The foreign trade regime is modelled to link the domestic economy to the rest of the world. The planned exports and imports are distinguished from their market counterparts. Taxes or subsidies are imposed on individual traded goods, which reflects the protection structure of the economy. The two-tier price system is also extended to the foreign exchange regime, which is characterised by a foreign exchange retention scheme and a foreign exchange market in which the retained foreign exchange can be traded at flexible rates.

All plan variables in the model are administratively determined. The behaviour of market producers and consumers is assumed to be consistent with the standard neoclassical premises of competitive markets, cost minimisation and utility maximisation.

An important feature of the model is the introduction of rent to restore the zero pure profit conditions in the presence of fixed plan prices and quantities. The rent for a given sector is defined in terms of the differences between the market and plan prices of both intermediate inputs and outputs. A positive rent implies a profit tax while a negative rent means a subsidy. The rents from the state sectors are retained by the government while those from the non-state sector are treated as a part of the capital income which, after tax, is taken by the household. The inclusion of rents balances the total revenue and the cost of the production. It also captures the income effects that cannot be traced by single price models.<sup>1</sup>

The model is calibrated to Chinese data of 1987, for which the most recent and published Chinese input–output table is available (State Statistical Bureau of China 1991). The basic structure of the database is designed to show explicitly the flows between plan and market production and between state and non-state producers in each sector.

The model contains 22 industries and sectors, each of which produces a distinctive commodity or service. There are thus 22 types of goods or services. Each good or service is produced or supplied simultaneously by two producers: the state and the non-state enterprises.



The outputs of goods and services produced by state enterprises under plan quotas are exchanged at the plan prices. The above quota output of the state enterprises and the outputs of the non-state enterprises are bought and sold at the market prices. Therefore, each good and service can be seen as coming from three different suppliers: the state plan producer (SP), the state market producer (SM) and the non-state market producer (NS). Similarly, each good or service can be seen to be demanded by the same three different buyers. A schematic representation of the resultant benchmark database used in this model is shown in Figure 1.

The theoretical structure of the model and the detailed procedure of decomposing the input–output table and compiling the benchmark database are described in Zhang (1994). Here, we briefly outline the part of the database that is related to external trade for the purpose of this paper.

In the Chinese input–output table, only net export values are presented. To restore exports and imports for individual sectors and the protection structure, additional information is needed. The US dollar f.o.b. values of exports and c.i.f. values of imports are collected and aggregated from over 2,000 5-digit SITC (Standard International Trade Classification) items in the trade data compiled by the Customs General Administration of the People’s Republic of China (1988). The nominal *ad valorem* tariff rate for each import category in the model is the import value weighted average of the tariff rates for individual commodities included in that category (Table 1). For non-merchandise imports in sectors 15–22, a minimum tariff rate of 3 per cent is applied. The trade weighted average of tariff rates for total imports is 21.8 per cent, close to the reported figure of 22.5 per cent.

The use of *ad valorem* tariffs as the import protection structure needs further justification. China has a complicated protection structure. In addition to tariffs, various non-tariff barriers (NTBs) are imposed on a wide range of imports. These restrictions push up the domestic market prices of traded goods, which calls for an upward adjustment if nominal tariff rates are used as the main protection measure. However, the exact magnitude of the *ad valorem* tariff equivalence of NTB for each traded good is difficult to estimate, especially when the domestic prices of some imported goods are more or less controlled.

On the other hand, as discussed above, the widely observed practice of tariff exemptions in many regions of China has substantially reduced the import duties actually collected by the customs authorities. A World Bank study recently reports an effective duty collection rate in China as low as 5.6 per cent of total import value of 1991 (World Bank 1993). A Chinese source puts the figure at 12–13 per cent of the total value of import (Editorial Committee 1993, p. 73).

**Figure 1 A schematic representation of the database**

	Industries			Household consumption											Sum of rows
	SP	NS		D	E	F	G	H	I	J	K	Less import tariffs	SP import subsidies		
		SM	C												
Domestically produced commodities	A	AA 22*22	AB 22*22	AC 22*22	AD 22*1	AE 22*1	AF 22*1	AG 22*1	AH 22*1	AI 22*1				Domestic absorption	
	B	BA 22*22	BB 22*22	BC 22*22	BD 22*1	BE 22*1	BF 22*1	BG 22*1	BH 22*1	BI 22*1				Domestic absorption	
	C	CA 22*22	CB 22*22	CC 22*22	CD 22*1	CE 22*1	CF 22*1	CG 22*1	CH 22*1	CI 22*1				Domestic absorption	
Imported commodities	D	DA 22*22	DB 22*22	DC 22*22	DD 22*1	DE 22*1	DF 22*1	DG 22*1				DJ 22*1	DK 22*1	Total imports	
	E	EA 22*22	EB 22*22	EC 22*22	ED 22*1	EE 22*1	EF 22*1	EG 22*1				EJ 22*1		Total imports	
	F	FA 22*22	FB 22*22	FC 22*22	FD 22*1	FE 22*1	FF 22*1	FG 22*1				FJ 22*1		Total imports	
Primary factors	G	GA 2*22	GB 2*22	GC 2*22										Total factor returns	
Rent	H	HA 1*22	HB 1*22	HC 1*22										Total rent	
Production taxes	I	IA 1*22	IB 1*22	IC 1*22										Total production taxes	
Sum of columns		Gross output	Gross output	Gross output	Total household consumption	Total government expenditure	Total investment demands	Total stock demands	Total exports	Total export taxes/subsidies	Total import tariffs revenue	Total SP import subsidies			

**Table 1 The value of exports and imports (million US dollars) and import tariff rates (per cent) in China, 1987**

Sector	Exports	Imports	Tariff rate
1 Crops	3,001	1,995	9.3
2 Animal husbandry	1,808	334	19.7
3 Metallurgy	2,562	5,910	10.6
4 Coal	536	63	15.0
5 Crude petroleum	2,829	3	15.0
6 Refined petroleum	862	357	11.0
7 Chemicals	2,309	5,418	22.3
8 Machinery	2,925	14,490	24.4
9 Building materials	855	339	42.6
10 Wood	633	1,050	27.0
11 Processed food	2,792	1,175	43.2
12 Textiles and clothing	9,788	2,096	56.7
13 Paper	2,042	1,247	19.3
14 Misc. manufactures	15	194	35.9
15 Electricity and water	9	86	3.0
16 Construction	0	0	0.0
17 Transport	2,895	60	3.0
18 Commerce	74	2,445	3.0
19 Services	1,303	348	3.0
20 Education and sport	7	126	3.0
21 Finance	270	83	3.0
22 Administration	0	0	0.0
Total	37,513	37,815	21.8

Sources: Customs General Administration of the People's Republic of China (1988); and State Administration of Taxation (1992).

Taking these tariff exemptions into account, the biases caused by the structure of China's nominal *ad valorem* tariff rates are not as serious as they may at first appear.

Both state and non-state importers pay tariffs at the same rates for their imports. However, SP imports are distributed at domestic plan prices converted from import costs at the official exchange rate. This means that the part of the c.i.f. import costs exceeding the domestic sales revenues are subsidised by the government. The market producers, on the other hand, receive imports at the domestic market prices converted from c.i.f. import costs at the market exchange rate. The domestic currency prices of imports are thus directly linked to the market prices of domestic goods in the same category.



The export side is more complicated, due to the existence of various export incentive measures and remaining plan measures. These include state export monopoly, the foreign exchange retention scheme and export subsidies.

State monopoly over exports is confined to a few staple exports, such as grains, coal and crude petroleum. They are dominated by specialised state foreign trade corporations. The domestic costs of export purchasing of these controlled products are valued at their plan prices. All foreign exchange revenues arising from these exports are obtained by the government. Other non-controlled exports are assumed to be purchased at either plan or market prices, depending on the regulations in individual sectors. The same output shares are applied to the decomposition of each type of exporters.

Foreign exchange retention rates are determined on a commodity-by-commodity basis. This effectively leads to multiple exchange rates for exportables. The actual exchange rate applicable to the export of a particular product is the retention-rate-weighted average of the official and market exchange rates. The introduction of exchange retention provides a further incentive for export of certain commodities by effectively devaluing the domestic currency. If individual exporters were still unable to balance their budgets through the exchange retention scheme, they would be granted financial subsidies by the government as a last resort.

The trade regime described in the model is the one observed in 1987. Since then, great changes have taken place in the Chinese economic system. In January 1991 China abolished all export subsidies and implemented a tax-rebate scheme as an alternative for encouraging exports. At the same time, foreign exchange retention rates were raised from 25 per cent in 1987 to 80 per cent. Three years later, in early 1994, China merged its official exchange rate with the market rate and terminated the fourteen-year-old foreign exchange retention system.

The current structure of the economy in terms of the plan and market split is also different from that of the late 1980s. The plan share in the economy has fallen rapidly. By the end of 1993 state plan-priced goods accounted for about 10 per cent of total retail sales, 15 per cent of agricultural purchases and 20 per cent of industrial outputs valued at ex-factory prices. About 80 per cent of imports were priced by negotiation between importers and domestic end-users. Only the central government's import of 8 categories of goods, mainly grains and chemical fertilisers, remained to be subsidised. About 90 per cent of exportables were purchased at domestic market prices (Ma 1993).

Such policy changes can all be simulated in the model. In fact, the model was designed for such policy experiments. For the purpose of this paper, however, it would be ideal to update



the database to the current year and take account of all the latest developments in the economy. Such an exercise is hampered by the lack of sufficient information on China's current economic structure. An alternative is to implement all the reform policies that have been introduced since 1987 as policy shocks in the model to create an environment closely resembling the current situation. Then, a tariff cut can be carried out on top of it. The problem with such an experiment is that the tariff cut must be implemented with all other policy shocks simultaneously. As a result, it will be difficult, if not impossible, to separate the impacts of the tariff cut from other policy changes.

For present purposes, therefore, we present in the following only the simulation results of an across-the-board tariff cut derived from the 1987 database. This exercise is intended to reveal merely the adjustment mechanisms of the economy rather than to provide accurate projections. It is not our intention to provide such projections also because the values of the parameters used in the model are not all estimated using Chinese data. Most are drawn from previous works on other developing economies.<sup>2</sup> Nevertheless, the results should enhance our understanding of the nature and function of a transitional economy.

### **Model closure and shocks**

The model is composed mainly of the behavioural equations of individual economic agents. It is a microeconomic model by nature. The macro-conditions in which micro-agents react with each other must be set exogenously. This is done by the so-called 'macro-closure'. Different macro-closures will certainly affect the behaviour of economic agents and lead to different projections. The simulation to be discussed in the following is conducted with the short-run assumption of fixed industry-specific capital stocks, fixed wage rates and a slack labour market, and fixed average propensities to spend of the household and the government. The experiment is designed to show the effects of the policy change in a period of two or three years. The model simulation uses the GAMPACK software (Codsì and Pearson 1988).

Since the tariff on each imported commodity is cut by the same proportion in this experiment, the most highly protected industries will have the highest absolute levels of tariff reduction. The immediate impacts of the cut would be a fall in import prices in all sectors. Domestic import-competing sectors are therefore expected to contract to the extent that their output prices decline, which, in turn, depends on their substitutability with imports. However, as imported intermediate inputs become cheaper, the cost of exports will decline and exports will gain competitiveness in the world market. The export-competing sectors will expand. Which

impact will eventually dominate, contraction or expansion, can only be determined by taking into account all the indirect effects such as resultant changes in the foreign exchange market, the current account balance, household income and the government budget deficit and their impacts on sectoral outputs and employment.

### Simulation results

A summary of the simulation results on the economy as a whole are reported in Tables 2 and 3. In general, the simulated overall effects of a 50 per cent across-the-board tariff cut are beneficial. At the macroeconomic level, the tariff cut liberalises imports and hence stimulates the market demand for foreign currencies. The market exchange rate is pushed up by more than 8 per cent. The rise of the market exchange rate depreciates the domestic currency. The depreciation of the yuan in the secondary foreign exchange market raises the market price of imports and, to some extent, offset the effects of tariff cuts on import demands. The currency depreciation also helps to lower the costs and raise the return to market production for exports. The result is that export volume increases by 3.69 per cent while import volume increases by only 1.45 per cent. The current account balance is thus improved.

The key to understanding these results is an increase in the market exchange rate in response to reduced protection of around 8 per cent. This market exchange rate depreciation is a consequence of the reduction of tariff levels increasing the demand for imports able to be purchased at the secondary rate. The increase in the secondary rate in turn causes an expansion of export production because the operation of the export retention scheme then makes

**Table 2 Simulation effects on aggregate indicators (per cent)**

Indicator	Simulated change
Real GDP	0.29
GDP deflator	-0.07
Export volume	3.69
Import volume	1.45
Real gross output	0.16
Government net revenue	-3.01
Household income	0.51
Market exchange rate	8.08
Employment	0.32



**Table 3 Simulation effects on sectoral indicators (per cent)**

Sector	Export volume	Import volume	Domestic output	Total output	Employment
1 Crops	-0.08	-5.98	0.40	0.39	0.43
2 Animal husbandry	4.16	0.65	0.16	0.36	0.42
3 Metallurgy	0.06	-1.79	0.37	0.35	1.25
4 Coal	-0.28	-0.19	0.21	0.19	0.36
5 Crude petroleum	0.07	5.14	0.18	0.16	0.55
6 Refined petroleum	-0.12	-0.62	0.24	0.21	0.86
7 Chemicals	3.93	1.23	0.02	0.29	0.74
8 Machinery	10.29	2.23	-0.73	0.06	0.11
9 Building materials	4.49	10.16	-0.36	-0.18	-0.31
10 Wood	4.38	3.19	-0.62	-0.13	-0.28
11 Processed food	3.37	9.65	-0.28	-0.05	-0.11
12 Textiles and clothing	5.42	13.45	-0.90	0.29	0.63
13 Paper	4.72	0.02	0.09	0.79	1.57
14 Other manufactures	5.97	8.85	-1.25	-1.21	-2.08
15 Electricity and water	0.92	-4.05	0.17	0.18	0.67
16 Construction	-	-	-0.23	-0.23	-0.26
17 Transport	3.41	-3.61	0.15	0.55	1.42
18 Commerce	3.01	-2.90	0.19	0.19	0.23
19 Services	2.15	-3.77	0.12	0.25	0.48
20 Education and sport	1.33	-4.25	-0.25	-0.25	-0.33
21 Finance	0.33	-1.97	0.18	0.18	2.20
22 Administration	-	-	-0.09	-0.09	-0.10

production for export more profitable. These industries are more labour intensive, on average, than the import-competing industries, which contract in response to the reduced protection levels. Consequently, the aggregate demand for labour rises. The fixed wage and slack labour market assumption means that employment levels then rise and this is the principal source of the increase in real GDP.

At the sectoral level, as shown in Table 3, the increase in exports concentrates mostly in manufactured products. Among them, the export of machinery expands by over 10 per cent, the highest among the industries. This is partly the result of the preferential treatment of export retention received by the machinery industry.

As the prices of some imported goods become cheaper relative to those of domestically produced goods, trade-oriented industries tend to use more imported and less domestic products as their inputs. This leads to a reduction in the supplies of domestically-produced outputs in some





industries. However, export growth, on average, is stronger than the decline of domestic output in many sectors. Therefore, most sectors experience an expansion of gross output. Total real gross output increases by 0.16 per cent.

The expansion of output in most sectors increases the demand for labour. Total employment rises by 0.32 per cent, higher than the rise in output. This implies that labour-intensive manufacturing industries on average are the major beneficiaries of tariff reduction. Although some highly protected labour-intensive industries suffer a decline in output and employment, the increase in employment in other expanding industries seems more than enough to make up for the loss of employment in those which contract. The rise in employment is also a major contributor to the increase in household real income of 0.51 per cent.

The rise in output increases the government tax revenue and the capital returns from the state sectors (Table 4). However, the cut in nominal tariff rates and the subsequent increase in both imports and exports reduce the tariff revenue and increase the payment for export subsidies. Despite increases in other tax and rental income, the government net revenue declines by about 3 per cent (Table 4).

As mentioned above, the tariff cut reduces the costs of imports and thereby brings down their domestic market prices while the consequent depreciation of the yuan offsets the effects of the tariff reduction. The net outcome on the general price level seems to be favourable: the GDP deflator is quite stable and falls slightly. Real GDP rises by 0.29 per cent.

**Table 4 Simulation effects on the government budget (per cent)**

Revenue and tax	Percentage change
Capital return from the state plan producers (SP)	0.70
Capital return from the state market producers (SM)	0.78
Production tax	0.80
Corporation tax	1.05
Import duties	-41.03
Export tax (net of subsidies)	-42.16
Rents from the state sector (SP and SM)	2.32
Total government net nominal revenue	-2.99
Price deflator	0.02
Total government net real revenue	-3.01



It should be noticed that, in this experiment, the responses of the economy to the tariff cut all come from the market sector. This is because all variables in the plan sector, the plan prices and quantities, remain constant. Table 5 shows how the market responds to the tariff cut.

It can be seen from the table that the market responses are much greater than that of the economy as a whole in all quantity estimates. In sectoral exports, for instance, the range of percentage change in the market is between -1.05 and 16.63 while, on the economy average, it is between -0.28 to 10.29. This indicates that, in a partially planned economy, a parallel market

**Table 5 Simulated response of the market sector to a 50 per cent across-the-board tariff cut (per cent)**

Sector	Export volume	Import volume	Domestic output	Total output
<b>Sectoral results</b>				
1 Crops	-0.10	-7.31	0.50	0.48
2 Animal husbandry	6.82	0.86	0.26	0.60
3 Metallurgy	0.17	-3.01	1.00	0.94
4 Coal	-0.97	-1.41	0.71	0.64
5 Crude petroleum	3.01	7.10	7.42	6.68
6 Refined petroleum	-1.05	-0.96	2.62	2.28
7 Chemicals	6.61	2.27	0.03	0.48
8 Machinery	16.63	2.99	-1.12	0.10
9 Building materials	5.81	14.80	-0.47	-0.23
10 Wood	6.64	4.01	-0.99	-0.20
11 Processed food	6.55	14.66	-0.56	-0.10
12 Textiles and clothing	8.71	20.22	-1.47	0.47
13 Paper	7.09	0.03	0.13	1.15
14 Other manufactures	6.03	9.15	-1.26	-1.22
15 Electricity and water	6.60	-12.58	0.59	0.59
16 Construction	-	-	-0.39	-0.39
17 Transport	5.69	-11.16	0.26	0.91
18 Commerce	6.51	-11.49	0.32	0.33
19 Services	7.24	-11.64	0.41	0.82
20 Education and sport	6.56	-13.69	-1.21	-1.20
21 Finance	2.96	-6.62	1.64	1.66
22 Administration	-	-	-2.89	-2.89
<b>Aggregate results</b>				
Real GDP	0.53			
GDP deflator	-0.08			
Export volume	6.91			
Import volume	2.55			
Real gross output	0.29			



needs to adjust itself more intensively in order to restore a new equilibrium after a policy shock. If the policy change calls for substantial readjustments in the economy, the market variables will show large fluctuations. Therefore, it is also very important for the policy-makers to know how the market would respond to a proposed policy change.

Among all market variables, market prices are the most effective indicators of market responses. The simulated market price changes are shown in Table 6 along with the projected changes in average prices. The average prices are the output weighted averages of the market and the plan prices. It is evident from the table that the estimated changes in sectoral market prices are, in general, much higher than economy-wide averages. In some industries, the market price variations could be as high as 40 times the average prices. This happens in those highly controlled industries such as crude petroleum in which only small amount of output is available

**Table 6 Simulated changes in sectoral market prices and average prices (per cent)**

Sector	Export supply		Import demand		Domestic output		Total output	
	Market	Total	Market	Total	Market	Total	Market	Total
1 Crops	0.01	0.01	3.76	3.07	0.21	0.17	0.20	0.16
2 Animal husbandry	2.31	1.41	-0.15	-0.11	0.12	0.08	0.24	0.14
3 Metallurgy	1.17	0.43	3.27	1.94	1.45	0.54	1.43	0.53
4 Coal	0.03	0.01	1.55	0.20	0.59	0.17	0.57	0.17
5 Crude petroleum	-0.01	-0.00	1.61	1.16	1.46	0.04	1.22	0.03
6 Refined petroleum	0.01	0.00	3.12	2.02	1.23	0.11	1.12	0.10
7 Chemicals	2.33	1.39	-1.04	-0.56	0.14	0.08	0.29	0.17
8 Machinery	5.91	3.66	-1.71	-1.27	0.01	0.00	0.31	0.27
9 Building materials	2.28	1.76	-6.76	-4.64	0.19	0.14	0.27	0.21
10 Wood	2.29	1.51	-2.53	-2.01	-0.25	-0.16	0.01	0.01
11 Processed food	2.39	1.23	-6.90	-4.54	0.02	0.01	0.18	0.09
12 Textiles and clothing	2.19	1.36	-9.89	-6.57	-1.21	-0.73	-0.53	-0.34
13 Paper	2.26	1.50	0.01	0.00	-0.01	-0.04	0.28	0.19
14 Other manufactures	2.13	2.11	-5.03	-4.87	-0.30	-0.30	-0.28	-0.28
15 Electricity and water	2.64	0.37	6.58	2.13	0.63	0.19	0.63	0.19
16 Construction	-	-	-	-	0.42	0.25	0.42	0.25
17 Transport	2.39	1.43	6.58	2.13	0.58	0.35	0.80	0.48
18 Commerce	2.43	1.12	6.59	1.66	0.38	0.22	0.38	0.22
19 Services	2.51	0.75	6.58	2.13	0.24	0.07	0.37	0.11
20 Education and sport	2.60	0.52	6.58	2.04	0.01	0.00	0.01	0.00
21 Finance	2.70	0.30	6.60	1.97	2.26	0.25	2.27	0.25
22 Administration	-	-	-	-	0.10	0.00	0.10	0.00



to the market. When demand rises, domestic market supply of the goods is restricted, which forces the market price to jump. However, it should be noticed that, in this experiment, the projected variations in market prices are quite moderate in all sectors. The price index for gross market output is estimated as 0.29. The high differentials between market and average prices in few industries are mainly caused by the remaining large proportion of plan outputs instead of high market prices.

The Chinese approach to economic reform, characterised as ‘growing out of the plan’, can be captured in the model. The simulation has shown that, if the consequence of a policy change is expansionary, like this one, the share of the market in the whole economy will grow even if the plan sector remains intact. Many reform policies implemented since the late 1970s have indeed had expansionary effects. These policies have benefited the market sector more than the plan sector because it is the market that has the flexibility to react to the policy initiatives. The plan sector, due to various restrictions, cannot take full advantage of reform policies. In fact, the plan sector has been constantly reduced during the reform period to allow for an even greater role for the market. The simulation has shown that, with a constant plan sector, the market can still expand and improve resource allocation outside the plan sector.

Another aspect of change in the economy worthy of note is the possible shift in the relative share of the state and non-state sectors. As mentioned before, the state sector consists of both state plan producers and state market producers. Although the state plan outputs remain constant in this experiment, state market production has expanded just like that of other market producers. The simulated sectoral responses of the state and non-state sectors to the tariff cut are revealed in Table 7. The state sector expands its output in most industries. The magnitude of the expansion depends on the relative size of market production within the state sector in individual industries. In general, state enterprises with small market shares respond slowly while those with large market shares respond more quickly. Compared with the state sector, the non-state sector expands or contracts in much larger magnitudes. This is partly because it is highly flexible in terms of responding to market signals, and partly because of its relatively small size, which normally requires large adjustments to a given shock.

The aggregate indicators show that both the state and the non-state sectors expand their outputs. The non-state sector outgrows the state sector in all projected estimates (Table 8). This will certainly raise the importance of the non-state sector in the economy. Considering the small size of the non-state sector relative to the state sector, however, the ownership structure of the



**Table 7 Simulated response of the state and non-state sectors to a 50 per cent across-the-board tariff cut, sectoral results (per cent)**

Sector	Export volume		Import volume		Domestic output		Total output	
	ST	NS	ST	NS	ST	NS	ST	NS
1 Crops	-0.01	-0.10	-0.39	-7.31	0.02	0.50	0.02	0.48
2 Animal husbandry	0.17	6.82	0.04	0.85	0.01	0.26	0.02	0.60
3 Metallurgy	0.00	0.22	-1.05	-2.94	0.15	1.07	0.13	1.00
4 Coal	-0.14	-0.96	-0.08	-1.44	0.12	0.68	0.10	0.61
5 Crude petroleum	0.02	8.92	3.51	12.99	0.10	13.32	0.09	12.59
6 Refined petroleum	-0.07	-1.69	-0.46	-1.61	0.20	1.97	0.18	1.62
7 Chemicals	3.08	6.59	0.93	2.25	0.02	0.01	0.23	0.45
8 Machinery	6.29	16.70	1.74	3.09	-0.59	-1.02	-0.12	-0.49
9 Building materials	3.44	5.76	6.84	14.76	-0.22	-0.52	-0.08	-0.29
10 Wood	2.76	6.65	2.37	4.02	-0.39	-0.98	-0.07	-0.18
11 Processed food	2.83	6.54	8.40	14.65	-0.22	-0.58	-0.02	-0.14
12 Textiles and clothing	3.61	8.67	9.00	20.19	-0.55	-1.51	0.25	0.37
13 Paper	3.82	7.04	0.03	-0.02	0.09	0.08	0.64	1.11
14 Other manufactures	4.63	6.03	4.91	9.61	-1.21	-1.26	-1.18	-1.21
15 Electricity and water	0.72	6.54	-3.79	-12.56	0.16	0.52	0.17	0.53
16 Construction	-	-	-	-	-0.17	-0.39	-0.17	-0.39
17 Transport	2.43	5.69	-2.15	-11.15	0.11	0.26	0.39	0.92
18 Commerce	0.00	6.51	-1.22	-11.46	0.09	0.35	0.09	0.36
19 Services	0.88	7.19	-1.59	-11.71	0.06	0.37	0.11	0.78
20 Education and sport	0.00	6.56	-0.29	-13.69	-0.01	-1.21	-0.01	-1.21
21 Finance	0.04	2.93	-0.24	-6.64	0.02	1.61	0.02	1.64
22 Administration	-	-	-	-	-0.06	-2.89	-0.06	-2.89

Note: ST — state sector; NS — non-state sector.

**Table 8 Simulated response of the state and non-state sectors to a 50 per cent across-the-board tariff cut, aggregate results (per cent)**

Indicator	State	Non-state
Export volume	2.41	6.22
Import volume	1.36	1.83
Real gross output	0.06	0.34
Real GDP	0.12	0.56



economy is unlikely to vary significantly. If marketisation of the state sector accelerates, the state sector could benefit more from the market reform policies.

### **Concluding remarks**

The main conclusions to be drawn from the simulation are as follows. The cut is projected to increase imports as expected, but the increase is not large enough to eliminate any domestic import-competing industries. The reduction in domestic costs relative to world prices caused by the cut (under the assumption of fixed wage) significantly increases the profitability of exporting. This generates rises in export revenues and in output and employment in the export-producing industries. The model projects that these expansionary effects in the export sector would more than outweigh the contraction in the import-competing sector. Thus both aggregate employment and the balance of trade surplus are projected to increase. The central source of these results is that a tariff cut causes an increase in the secondary market exchange rate and that this induces the expansion of labour-intensive exports.

As this expansion occurs in the market sector, the cut would facilitate the transition from plan to market. The share of market in the economy would increase despite the plan sector remaining intact. The state and the non-state sectors would all expand in this experiment but the latter would expand at a faster rate than the former.

It is perhaps ironic that while unification of China's two-tier exchange rate system will, in itself, promote economic efficiency, it may indirectly dilute the expansionary effects of tariff reductions that we have identified. The reason is that by eliminating the simulation of export production through depreciation of the market exchange rate, unification of the exchange rate will eliminate this source of employment expansion in response to reduced protection. Despite this, exchange rate unification will reduce the distortionary effects of China's overall trade regime and can be expected to be welfare-increasing.

### **Notes**

- \* Zhang Xiaoguang is grateful to the Ford Foundation for financial support and to Professor Ross Garnaut and Professor Peter Drysdale for providing an excellent research environment at the Australian National University, where he worked as a visiting fellow on the Chinese model.
- 1 Rent-seeking activities are not modelled because this problem is highly debatable. The two-tier price system has indeed generated enormous rents in the economy. However,



most rents are related to the remaining planned products and, therefore, largely redistributed among state enterprises. China's particular ownership structure explains why rent-seeking activities may not be as serious as in some other economies.

- 2 See Zhang (1994) for a detailed discussion of parameter settings.

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# The Subsidisation of Chinese State Enterprises



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## Introduction

For decades, the Chinese government channelled the bulk of its resources to the state-owned and government-run enterprises (hereafter state enterprises) at subsidised prices. The targets of subsidy included state industrial and commercial enterprises. The subsidy effectively distorted market prices and resulted in inefficiency in resource allocation in the economy.

Since the government launched its program of economic reform in 1978, significant changes have taken place in the state sector. The reform process was guided by two principles: opening up to the outside world and marketising the domestic economy. Under the reform policies, both the domestic economy and international trade have grown significantly. The Chinese economy is becoming increasingly integrated into the world market. At the moment, China is currently making intensive efforts to join the GATT/WTO, in an attempt to further internationalise its economy.

But there is still the unanswered question of what the likely impact will be of remaining subsidies on the prices of products from state enterprises and, therefore, on the trade of Chinese products as a whole in the world market. Since China is a significant and increasingly important player in the world market, distorted prices may have serious implications for the competitiveness of Chinese products in that market, depending on the degree of subsidy.

This paper seeks to answer two questions. First, what has been the trend of state subsidy in the past one and half decades and what is the likely rate of subsidy under the present economic system? Second, how significant is the impact of the current subsidisation on the prices of traded goods? So far no systematic attempt has been made in the economic literature to measure the rate of subsidy, but the measurement proposed in this study, though imperfect, can serve as a starting point.

The following discussion focuses on the development of state enterprises in 1978 and then introduces a measurement of subsidy. This is followed by estimation of subsidy in four major categories. Finally, the paper summarises the results and draws some implications for future government subsidisation.

### **The state sector in the economy and foreign trade, 1978–92**

The Chinese economy has grown at an impressive rate in the last fifteen years. GNP increased from 358.8 billion yuan in 1978 to 2,403.6 billion yuan in 1992 (at current prices). The size of



China's economy in terms of GNP (at constant price) was 3.3 times larger in 1992 than in 1978 (*Statistical Yearbook of China*, 1993, p. 31).

In the past one and a half decades both the industrial sector and international trade have expanded quickly. Gross industrial output value increased from 423.7 billion yuan in 1978 to 3,706.6 billion yuan in 1992 (at current price) (*Statistical Yearbook of China*, 1993, p. 412). In the meantime, development of the domestic market has been accompanied by increasingly intense foreign trade. Two-way foreign trade increased from US\$20.6 billion in 1978 to US\$165.6 billion in 1992, which represents a growth rate of 16 per cent per annum (*Statistical Yearbook of China*, 1992, p. 633). As a result, foreign trade as a proportion of GNP increased from 9.9 per cent in 1978 to 38 per cent in 1992 (*Statistical Yearbook of China*, 1992, pp. 31, 633)<sup>1</sup> and China's share of world merchandise trade increased from 0.8 per cent in 1979 to 2.1 per cent in 1992 (International Economic Databank, Australian National University).

In 1978–92 the structure of China's economy also experienced dramatic changes. Due to the rapid growth of the non-state sectors — including township and village enterprises in the rural areas, collective and private enterprises in the urban areas and enterprises funded or partly funded by foreign capital — the state sector's contribution as a share in the national economy fell significantly (Table 1). In 1978 the state sector's share was 77.63 per cent, falling to a mere 48.09 per cent in 1992.

Economic reform has brought about significant changes in the structure of international trade. In 1978 nearly all traded goods were produced by the state sector. One and a half decades later, exports from township and village enterprises accounted for more than 50 per cent of total exports in value terms. Furthermore, joint ventures and foreign firms also accounted for a significant share in total exports as a result of the boom in this sector. Consequently, the significance of state enterprises in China's international trade declined dramatically.

#### **Sources of subsidy for the state sector: an overview**

In China, government subsidy, as far as its impact on the prices of traded industrial goods is concerned, is a complex issue in that the subsidy takes not only an explicit form but also an implicit one. While tariffs fall into the former category, the implicit subsidy can take many forms such as a price subsidy on raw materials and intermediate inputs used by industrial firms, tax concessions and compensation for losses sustained by industrial firms and those providing services to state industrial firms.



**Table 1 Industrial output by state and non-state sectors, 1978–92 (billion yuan)**

	Total output <sup>a</sup> (1)	State enterprises (2)	Collective enterprises <sup>b</sup> (3)	Other enterprises <sup>c</sup> (4)	State sector's share (%) (2)/(1)
1978	423.70	328.92	94.78	na	77.63
1979	468.13	367.36	100.77	na	78.47
1980	515.43	391.56	121.34	2.53	75.97
1981	539.98	403.71	132.94	3.33	74.76
1982	581.12	432.60	144.24	4.28	74.44
1983	646.10	473.94	166.31	5.79	73.35
1984	761.73	526.27	226.31	9.15	69.09
1985	971.65	630.21	311.72	29.72	64.86
1986	1,119.43	697.11	375.15	47.16	62.27
1987	1,381.30	825.01	478.17	78.12	59.73
1988	1,822.40	1,035.13	658.75	128.58	56.80
1989	2,201.71	1,234.29	785.81	181.61	56.06
1990	2,392.44	1,306.38	852.27	233.79	54.60
1991	2,824.80	1,495.46	1,008.48	320.87	52.94
1992	3,706.57	1,782.42	1,410.12	514.04	48.09

Notes: na—not available.

a Output values in the table are in current prices.

b 'Collective enterprises' include township and village enterprises owned and operated by the authorities at and above village level.

c 'Other enterprises' include joint ventures funded by foreign capital.

Source: *Statistical Yearbook of China*, 1993.

The complex system makes it very difficult for researchers to define precisely what the subsidy consists of. The subsidy considered in this study includes all implicit subsidies which may have an impact on the prices of final products.

In such a complex economic system, it is obviously very difficult to accurately estimate the actual amount and rate of subsidy. There are two possible methods to do so. One is to measure the impact of subsidy by comparing the actual prices of goods with the prices of similar goods without subsidy, for which a free market equilibrium price of goods can provide a basis for comparison. The difference is obviously due to the government subsidy. However, there are enormous difficulties in applying this method. First of all, there is very little information about market-determined prices in both the Chinese official statistics and the relevant literature. Furthermore, given the fact that the economy continues to be heavily regulated, the market-determined price may still deviate from what will prevail in a reasonably well-developed free market system and therefore distortion may still be embodied in some prices of goods. Second,



and more important, there is enormous incomparability between prices of similar goods, due to such factors as different technology. This makes it almost impossible to adopt this approach.

The second method by which to estimate the actual amount and rate of subsidy is to work out the major sources of subsidy for the state sector. Summing up the various subsidies and dividing the total by the output value can produce an approximate rate of subsidy for the state sector as a whole. The limitation of estimating the overall rate of subsidy is that it can only produce a crude estimate and is not as accurate as the first approach in the presence of complete price information. Furthermore, it is necessary to include all possible subsidies and to put them together properly in order to make the estimation meaningful and reliable. In such an exercise, the critically important step is to identify these sources.

In terms of the possible impact on the prices of traded industrial goods, we can classify the government's implicit subsidy (without taking tariffs into account) into the following six categories (S denotes 'subsidy'):<sup>2</sup>

- S1) subsidy on the prices of various raw materials and intermediate inputs used by state enterprises;
- S2) provision of capital at low interest rates;
- S3) tax concessions;
- S4) subsidy for loss-making enterprises;
- S5) direct subsidies for state-owned commercial enterprises; and
- S6) direct import and export subsidies.

S1 mainly refers to the benefits state enterprises receive from the allocation of raw materials and intermediate goods used in the production process, which are directed through the planned channels.

In the pre-reform era, state enterprises relied totally on the government to procure material inputs and market output. Under the heavy-industry development strategy, the government took control of most resources and their pricing and intentionally and systematically distorted the relative prices of industrial goods in order to finance the development of key industrial sectors (Lin, Cai and Li 1994). Prices of both inputs and outputs were in general set at a level lower than the market-determined one. Although enterprises may not have directly benefited from lower input prices, there is little doubt that such a practice would have had an impact on the price of the final products.

In the process of economic reform, two significant changes took place. First, the government significantly increased the price of raw materials and intermediate goods supplied



to the state enterprises. Second, the state enterprises could no longer rely on the government for material inputs and were obliged to increasingly purchase more raw materials and intermediate inputs directly from the market. As a result, the subsidy in this category must have been reduced significantly. But, in the literature this subsidy has been identified as an important source of protection of state enterprises by the government, and thus deserves detailed investigation.

Under S2, state enterprises have been able to access both long-term investment capital and short-term working capital at interest rates lower than what would have been determined by the market. Before 1978 both types of capital were provided by the government free of charge. The situation has changed considerably over the past one and a half decades, however. Since early 1980, free government allocation has been gradually replaced by interest-bearing bank loans and investment has also increasingly been financed by credit from banks. However, the current interest rates for both working capital and long-term credit are still too low to reflect the true costs.

In 1992 state industrial enterprises accumulated net fixed assets equivalent to 1,098.3 billion yuan and used 1,009.6 billion yuan of working capital (*Statistical Yearbook of China*, 1993, p. 429). At the same time, the interest rate on fixed capital investment has been consistently below the shadow price of capital.<sup>3</sup> The interest rate for working capital was 8.10–8.64 per cent a year in 1991–92 (*Statistical Yearbook of China*, 1993, p. 671). However, independent sources suggest that the market interest rate for short-term lending was around 20 per cent in early 1993 (Lin, Cai and Li 1994, p. 20; Zhang 1994). Interest rate differences are still playing a significant role in the overall subsidy provided by government for the state enterprises.

Tax concessions (S3) arise from irregularity either in the tax rules or the enforcement of taxes. It has been reported in the Chinese press that the collection of income tax has been subject to enormous irregularity. Zhao (1994) found that in the 1980s these irregularities resulted in average income tax paid by state enterprises being lower than the government-stipulated rate of 55 per cent.

It is difficult to assess the impact of tax concessions on the prices of final products. First, tax concessions mainly arose from irregularity in the rules and in the enforcement of the tax system. State-owned firms may have enjoyed various kinds of preferential treatment, including permission to repay bank loans before being taxed and exemption from paying levies when running in the red.<sup>4</sup> But it is difficult in practice to assess the impact of tax concessions on the prices of final products. It is believed that the irregularity in the tax system will not be long term and that it will disappear as the enforcement system improves. Second, the tax system before





1992 disadvantaged state enterprises, with their income being taxed at a rate of 55 per cent as against the rate imposed on other enterprises of 35 per cent on average. The tax burden for state enterprises remained high until January 1994 when it was reduced to 33 per cent. The state sector accounted for 64 per cent of gross industrial value but contributed 79 per cent of government revenue in 1991. Zhao (1994) shows that state enterprises actually paid more than 40 per cent income tax on average in the 1980s. The combined effect of tax concessions and the higher tax rate may well have seriously disadvantaged the state enterprises, and thus this study assumes that the combined effect (S3) will be insignificant on the prices of final products.

The Chinese government has always been compelled to compensate for the financial losses of state enterprises (S4). Since the early 1990s the situation has deteriorated; in 1993 it was widely reported that about one-third of state enterprises were making losses (Ni and Zhao 1993). Despite this, very few bankruptcies have been filed since 1985 when the government introduced the bankruptcy law. It is obvious that the loss-making enterprises were in one way or another compensated by the government. In 1992 the government allocated 44.4 billion yuan in order to bail out such enterprises (*Statistical Yearbook of China*, 1993, p. 219), which sustained losses either as a result of operational incompetence or irrational official prices. Such compensation constitutes another source of subsidy to the state sector.

As far as the prices of domestically traded goods are concerned, the last stage of government subsidisation is the compensation for losses incurred in the state commercial sector (S5).<sup>5</sup> Although former state commercial enterprises have been either leased or operated under contract on a massive scale since the mid-1980s (World Bank 1992),<sup>6</sup> it seems that subsidies to the state-owned commercial sector are continuing albeit in diminishing quantities.

In fact, subsidy to the state-owned commercial sector is not significant in regard to industrial goods. The losses of commercial enterprises were mainly incurred as a result of differences between purchasing and retailing prices for farm produce, which are compensated directly by the central government. For example, the government allocated 32.2 billion yuan to compensate for the losses to the state commercial sector due to price differences, with 81.2 per cent being used to compensate for the price differentials in farm produce such as grain, cotton, oil and meat (*Statistical Yearbook of China*, 1993, p. 231). Compensation for non-agricultural goods and services amounted to only 18.8 per cent (5.95 billion yuan). The impact of subsidisation to the state-owned commercial sector is very small indeed.

The export subsidy (S6) constitutes the last stage of distortion in the price of traded industrial goods. The subsidy to the state-owned trading companies was one of the various



distortions existing in the trading system, particularly in the early years of economic reform. The system has been significantly improved in recent years as reform has intensified and especially since the abolition of the two-tier exchange system early in 1995.

The import and export subsidies could take two forms. First, the government provides explicit price subsidies for state enterprises involved in foreign trade. The impact of this subsidy on the price of Chinese products in the international market was direct and possibly significant in the early years of economic reform. Although the amount of subsidy may have fallen during the period of reform of the foreign trade system, the policy of subsidisation remained intact until 1991, when the government decided to completely phase out the price subsidy in favour of a more implicit exchange rate and tariff rate to adjust the balance of trade.

Anecdotal information suggest that the subsidy in this areas has been substantially reduced and that the remaining subsidy is playing an insignificant role in the current system; thus it is reasonable to assume that such a subsidy will disappear completely in the near future. This is confirmed by the fact that the total subsidy on the prices of non-farm produce was no more than US\$5.59 billion, an unknown percentage of which might have been directed to the state-owned trading companies. Compared with the size of the state industry, this is negligible.

The second distortion in the price of Chinese goods in the international market was caused by the existence of a two-tier exchange rate. This system came into being in the mid-1980s along with a similar system applied to domestically traded goods. The system was abolished in January 1994, however, and thus is no longer relevant.

The previous discussion suggests that, as far as the impact of the government subsidy goes, the most important concerns are S1, S2, S4 and S5, which constitute the major implicit subsidies for the state enterprises and are the potentially important sources of price distortion. Each of these subsidies needs detailed analysis before we estimate the rate of subsidy for the Chinese state industry. The next section analyses three types of implicit subsidy.

### **Analysis of overall subsidy**

Each of these three types of subsidy played different roles in determining product prices from the state sector in international trade before economic reform. As shown earlier, however, significant changes have taken place since 1978. As a result, the significance of the impact of these subsidies on the prices of industrial goods also experienced dramatic changes in the past one and a half decades. This implies that we need to investigate the dynamics of reform if we



are to produce a reasonable estimate of the overall subsidy and offer a relevant interpretation of the results.

### *Subsidy on material inputs (S1)*

The existence of a subsidy on the price of input materials has been strongly implied in the literature in the context of the distortion of prices arising from government protection of state industrial enterprises. It is well known, however, that urban economic reform commenced from the reform of the goods market and available information suggests that as the state enterprises relied increasingly on the market for their raw materials and the substantial increase in government prices, the above subsidy decreased significantly.

In this section, we analyse the trend of marketisation of state enterprises to show that the subsidy was gradually reduced in the 1980s. By analysing a paradox in early 1990—improvements in productivity associated with increasingly lower profits in state enterprises—it is argued that this process accelerated in the 1990s. Finally, we suggest a method of revealing and estimating the remaining subsidy under S1 for the whole industry.

#### *Impact of market reform in the 1980s: an overview of the subsidisation trend*

In the pre-reform period, the planning system determined the prices of all industrial goods; industry was virtually monopolised by government at the central, provincial, prefectural or county levels. Industrial goods were defined as either materials and equipment (*wuzi*) or commodities (*shangpin*). The former were distributed among state enterprises, while commodities (*shangpin*) were distributed to non-state sectors and consumers.<sup>7</sup> Materials and equipment were thus the equivalent of producer goods, while commodities included consumer and some producer goods.<sup>8</sup> Prior to economic reform, both types of goods were included in the comprehensive planning system administered by the State Planning Commission but were distributed through different channels. Generally speaking, materials and equipment were distributed through wholesale stations operated by the State Bureau of Materials and Equipment and through the networks of the State Council's ministries of industry. Commodities were distributed to urban consumers through the wholesale stations of the Ministry of Commerce and to rural consumers through the National Supply and Marketing Cooperative and its networks. Since economic reform, some producer goods have been supplied to wholesale stations of the Ministry of Commerce by the State Bureau of Materials and Equipment. This leakage was due



to the emergence of non-state enterprises in rural and urban areas.<sup>9</sup> In the context of subsidy on the material inputs of state industry, only the items covered by the so-called materials and equipments (*wuzi*) are relevant.

There were three categories of *wuzi* according to their importance to the economy. Goods in category 1 (*tongyi fenpei wuzi*) were produced and distributed under unified central planning, supervised by the State Planning Commission. The State Bureau of Materials and Equipment prepared the balance charts and undertook distribution planning for goods in this category. These goods mainly comprised vital raw materials and machinery, such as energy, ferrous and non-ferrous metal products, major industrial chemicals, some construction materials, power machinery and metal working machinery. Goods in category 2 were known as materials and equipment distributed by the ministries of industry of the central government (*zhongyang gegongyebufenpei wuzi*). Included in this category were specialised production and capital goods, such as spinning equipment distributed by the Ministry of Textile Industry, coalmining machinery distributed by the Ministry of Coal Industry and ferrous alloys and coke distributed by the Ministry of Metallurgical Industry. Other goods fell into category 3—materials and equipment managed locally (*difang guanli wuzi*). These goods were managed and distributed by corporations and departments of provincial, prefectural and county governments. Prior to economic reform, there were 837 goods in categories 1 and 2, and over 1,000 items in category 3 (Ishihara 1987, pp. 290–3).<sup>10</sup> The entire process of the production, purchasing and supply of major *wuzi* items was centrally planned, and prices were centrally fixed. Production and distribution of materials and equipment in category 1, which were considered to be fundamental to the entire economy, took place under the auspices of the State Bureau of Materials and Equipment. Central control of these goods was the backbone of the planning system.

Although official statistics do not provide any systematic information about central planning, the information available in various publications suggests that a growing number of goods were being traded outside the planning system since the commencement of economic reform in the late 1970s. For example, by 1985 the proportion of coal and steel being distributed by the central government had fallen to less than 50 per cent, cement to less than 20 per cent and lumber to 40 per cent (Ishihara 1990, p. 292); in 1986, producer goods (*wuzi*) under central government control had fallen to 60 per cent of total output (*People's Daily*, 12 June 1987). The number of *wuzi* items covered by central planning fell from nearly 2,000 in the 1970s to 120 in 1986, and this had declined further to 60 by the end of 1986. Consequently, the share of gross industrial output (*wuzi* and *shangpin* combined) controlled by the state decreased from 40 to 20 per cent in 1986.



Reform of the centralised price-setting regime in the 1980s can be divided into three stages (Guo 1992, pp. 35–9). In the first stage (1979–82), price reform was achieved through the adjustment method. In 1979, after the third Plenary Session of the 11th Communist Party Congress, the government decided to raise average procurement prices for farm products by 24.8 per cent (*People's Daily*, 25 October 1979; Guo 1992, p. 36), as well as the retail prices of selected farm products and the prices of coal, mineral products, and iron and steel. The government also decided to allow the price of some electronic products to float within a predetermined price range (*Economic Daily*, 18 January 1983).

The second stage of price reform (1982–84) was characterised by a mixture of adjustment and liberalisation of goods in three categories.<sup>11</sup> The adjustment method was applied to the price of goods in category 1 and liberalisation to goods in categories 2 and 3. The reform enabled many enterprises to set prices for their goods while the state still played a primary role in price determination, allocating large blocks of goods at this time (Guo 1992, p. 37).

The third stage of price reform (1984–86) followed the announcement in 1984 of the Ten Regulations for Decentralisation of Autonomy to State Enterprises. These regulations officially delegated to enterprises the right to trade and set prices for output above the production quota. Initially, prices were allowed to float within 20 per cent of the official price. This limit was abolished in 1985. The price of many important goods in category 1 that were covered by the state plan, such as coal, steel and many construction materials, was adjusted with the price of the balance being determined by producers. As early as 1986, 70 per cent of material inputs used by state enterprises in Jiangsu province were traded through the market. This was as high as 80 per cent in Guangdong province. Up to the late 1980s, less than 20 per cent of materials and equipment (*wuzi*) were still covered by the state planning system, and consisted mainly of a few economically important items such as coal and steel.

The trends in marketisation during the years of economic reform are clearly reflected in a survey undertaken by Zhao (1994) of 196 large and medium-sized state enterprises. The market share of both output and material inputs of enterprises in the sample increased steadily after 1980, although the marginal increment in market share was less than 2 per cent annually.<sup>12</sup> The average and weighted (by enterprise output) average market shares of the 196 enterprises are shown in Table 2.<sup>13</sup> According to this table, the market share of both output and input increased steadily. The average and weighted average market shares of output increased from 46.9 per cent and 26 per cent respectively in 1980 to 57.4 per cent and 32.6 per cent in 1988.



**Table 2 Market share of 196 state enterprises, 1980 and 1984–88**

	Output		Input	
	Average share	Weighted average share	Average share	Weighted average share
1980	46.89	25.97	61.72	44.28
1984	49.67	26.75	66.22	50.90
1985	51.34	26.05	68.70	53.20
1986	53.74	29.77	70.60	54.57
1987	56.03	30.91	72.88	58.33
1988	57.43	32.55	75.14	62.30

Source: Zhao (1994).

The average and weighted average market shares of inputs increased from 61.7 per cent and 44.3 per cent respectively in 1980 to 75.1 per cent and 62.3 per cent in 1988.

The previous analysis suggests that market reform in the state enterprises had two effects. It not only resulted in a significant decline in the planned allocation of output of the state enterprises but also a decline in the allocation of material inputs into state enterprises at official prices. As far as this survey data is concerned, the reduction in the allocation of input materials was far steeper than the allocation of output. For example, in 1988 these enterprises only acquired 37.7 per cent of their material input from official sources.

This figure may in fact overstate the actual proportion of material inputs of the state sector as a whole, because the enterprises figuring in this survey data are large state enterprises, which are the major target of government subsidy. This proves that the subsidy to state enterprises fell significantly in the 1980s.

#### *Acceleration of the reform process in the early 1990s*

In order to estimate the current level of subsidy, however, we still have to ask the question of what happened in the early 1990s and what is the current level of subsidy under the category (S1)? Little information is available to assist with an answer here, though we can make a judgement based on the available information about the performance of the state enterprises in the reform period.

When we examine the performance of the state enterprises in 1978–92, we are immediately faced with a paradox: continued deterioration in profitability and improvement in efficiency. One striking characteristic of state enterprises since 1978 is that profits have continued to

**Table 3 Performance of state industrial enterprises, 1978-92**

	Gross output (100 million yuan)	Total profits (100 million yuan)	Labour employment (10,000 workers)	Netfixed assets (100 million yuan)	Labour productivity (yuan/man/year)	Capital productivity (yuan output per 100 yuan of fixed assets)	Profitrate (yuan of profits per 100 yuan of output)
	(a)	(b)	(c)	(d)	(a/c)	(a/d)	(b/a)
1978	3,289.18	508.80	3,139	2,225.70	11,131	147.78	15.47
1979	3,673.60	562.80	3,208	2,378.60	11,838	154.44	15.32
1980	3,915.60	585.40	3,334	2,528.00	12,081	154.89	14.95
1981	4,037.10	579.70	3,488	2,709.30	11,863	149.01	14.36
1982	4,326.00	597.70	3,582	2,914.00	12,133	148.46	13.82
1983	4,739.00	640.90	3,632	3,161.00	13,049	149.92	13.52
1984	5,262.70	706.20	3,669	3,395.50	14,070	154.99	13.42
1985	6,302.12	738.20	3,815	3,960.80	15,080	158.31	11.71
1986	6,971.12	689.90	3,955	4,543.80	15,451	153.42	9.90
1987	8,250.09	787.00	4,086	5,242.40	16,671	157.37	9.54
1988	10,351.28	891.00	4,229	6,040.40	18,056	171.37	8.61
1989	12,342.91	743.01	4,273	7,033.20	18,320	175.49	6.02
1990	13,063.75	388.11	4,364	8,088.31	18,639	161.51	2.97
1991	14,954.58	402.17	4,472	9,507.19	19,524	157.30	2.69
1992	17,824.15	535.10	4,521	10,982.65	21,803	162.29	3.00

Source: Statistical Yearbook of China, 1993.



dwindle in the ensuing one and a half decades. As Table 3 shows, the productivity of state industrial enterprises has improved significantly since 1978, and their growth has been impressive. Gross industrial output value increased by 542 per cent in 1978–92. This growth was accompanied by a moderate increase in the labour input and a rapid rise in the capital input. Labour employment only increased by 144 per cent over the period and the net value of fixed assets increased by 494 per cent. As a result, labour productivity almost doubled from 1978 to 1992, while the output per unit of net fixed assets was higher in 1992 than in 1978, though the improvement was not very marked.

The improvement in productivity echoes recent studies on the productivity of state enterprises. Zhao (1994) used a modified model of stochastic production frontier to estimate the technical efficiency of 109 large and medium-sized state enterprises in the light industrial sector and found that state enterprises were 7 per cent closer to the theoretical production frontier in 1989 than in 1980. Using a similar method, Drysdale, Kalirajan and Zhao (1994) found that improvements also took place in the heavy industrial sector. Lau and Brada (1990), Chen et al. (1988), Dollar (1991), Chen (1990) and Jefferson, Rawski and Zheng (1992) all found that the total factor productivity or efficiency of state enterprises was higher in the period after economic reform until the mid-1980s than in previous years. On the basis of change in total factor productivity between the pre-reform and post-reform periods, they unanimously concluded that the effect of economic reform on state enterprises was to improve efficiency. Kalirajan and Cao (1993) using iron and steel industry data, and Kalirajan and Zhao (1992), using provincially aggregated data, also found evidence to suggest that technical efficiency had improved significantly among state enterprises.

However, assessment on the basis of variation in profits provides a totally different picture. Table 3 shows that there was a steady improvement in total profits in 1978–85. These dropped significantly in 1986 before experiencing an improvement in the next two years. In 1989–91, profits dropped significantly to a level of only about 80 per cent of levels in 1978. In 1992 profits re-bounded slightly though total profits were still lower than in 1979. At the same time, variations in profit rate per unit of output suggest that the situation deteriorated very quickly.

The only possible explanation of this paradox is that the improvement in productivity was more than offset by the increase in production cost: cost of labour and/or cost of material inputs. However, the structure of production cost is such that about 75 per cent of the cost involves the purchase of raw materials and energy (Table 4), with the next important item being labour cost (10 per cent).





**Table 4 Production cost structure of state enterprises, 1980 and 1984–88**

	1980	1984	1985	1986	1987	1988
Interest payments	0.84	1.32	1.64	1.98	2.24	2.34
Raw materials	70.55	70.88	71.12	68.99	68.38	68.00
Energy	5.84	5.98	5.84	6.18	5.83	5.52
Wages and bonuses	10.75	10.27	9.87	10.43	10.18	10.59
Depreciation	6.61	6.70	6.25	6.52	6.57	6.12

Source: Zhao (1994).

During this period, the wage rate also increased substantially. However, given the fact that labour cost only accounted for 10 per cent of total production cost, its impact on the profitability of state enterprises should not be very significant. This implies that the most important reason for a significant rise in production cost was the increase in the price of material inputs.

This argument is confirmed by a survey by the Academy of Social Sciences (1994) of Sichuan province in which it was reported that in 1990–91 prices of coal, oil products, steel and many producer goods increased by a very large margin. In the 1990s the government prices of industrial goods on average rose far more quickly than market prices. What was interesting and new was that the strategy of planned allocation had also changed. For many industrial goods such as steel and energy, the government only guaranteed a quota but left prices to be determined through negotiation between suppliers and buyers.

*A proposed measurement*

In light of the fact that the government controlled no more than 20 per cent of materials and equipment (*wuzi*) in the second half of the 1980s and the dramatic changes that have taken place since then, it seems reasonable to argue that the subsidy on the price of material inputs must have been very small indeed and that by 1992 the impact of such subsidy on the price of final products was insignificant.

Though we have made a reasonable qualitative assessment of the current degree of subsidy, there is a way to approximately measure the existing level of subsidy. After one and a half decades of market reform, the remaining subsidy is only confined to producer goods in



**Table 5 The net losses of state industrial enterprises, 1986–92<sup>a</sup> (100 million yuan)**

Sector	1986	1987	1988	1989	1990	1991	1992
Total <sup>b</sup>	51.31	59.85	80.50	175.81	335.50	351.99	354.17
Coal mining and preparation	21.54	25.51	29.66	50.04	73.33	75.08	75.54
Oil and natural gas	0.18	1.99	11.42	43.19	47.40	46.60	46.89
Ferrous metal mining	0.10	0.19	0.25	0.33	0.42	0.41	0.41
Non-ferrous metal mining	0.97	0.92	1.03	1.22	2.34	3.43	3.45
Mining for construction and other non-metal materials	0.61	0.41	0.44	0.57	1.18	1.33	1.34
Wood logging and transportation	0.42	0.37	0.42	0.82	3.49	3.28	3.30
Water processing and supply	0.19	0.39	0.67	1.89	2.90	3.09	3.11
Food	3.64	4.45	4.15	8.00	22.84	19.90	20.02
Soft drinks	0.87	1.33	1.69	5.20	9.23	7.93	7.98
Tobacco	0.27	0.22	1.98	6.91	8.74	18.95	19.07
Animal feed	0.02	0.02	0.02	0.76	1.45	0.52	0.52
Textile	1.89	1.85	1.74	5.06	27.91	37.57	37.80
Wood processing	0.22	0.19	0.21	1.00	3.07	3.02	3.04
Furniture	0.04	0.03	0.03	0.18	0.48	0.60	0.60
Electric power and supply of hot water	1.95	2.26	6.80	13.24	16.92	16.29	16.39
Petroleum products	0.07	0.00	0.00	0.11	1.37	0.91	0.92
Coking, gas and related products	1.12	1.63	3.05	5.24	5.98	5.96	6.00
Chemicals	7.32	2.28	2.19	5.94	14.02	15.15	15.24
Chemical fibre	0.06	0.07	0.03	0.30	0.78	0.52	0.52
Rubber products	0.13	0.26	0.42	0.54	1.53	2.31	2.32
Plastic products	0.12	0.14	0.09	0.33	1.54	1.38	1.39
Processing of construction materials	1.64	2.80	2.66	4.65	13.61	11.62	11.69
Ferrous metal melting and forging	0.28	0.44	0.47	0.95	10.75	9.93	9.99
Non-ferrous metal melting and forging	0.39	0.54	0.62	0.97	3.57	4.90	4.93
Metal products	0.20	0.23	0.34	0.60	2.00	2.58	2.60
Machinery	5.50	6.68	6.07	9.89	37.77	35.54	35.76
Transport vehicles	1.33	2.03	1.49	4.08	8.79	8.22	8.27
Electrical machinery	0.24	0.52	0.83	0.88	4.06	5.80	5.84
Electronics and communication equipment	na	1.58	1.46	2.42	6.20	7.19	7.23
Apparatus and measurement instruments	na	0.52	0.27	0.50	1.83	1.98	1.99

Notes: a Data for losses by industry were not available for 1992. In this table the figures are obtained using information by industry in 1991 adjusted by the percentage increase in the loss over the 1991–92 period.

b There are discrepancies between the sum of all industries shown in this table and those in the *Statistical Yearbook of China*. The differences are not very significant, however, and probably derive from measurement errors.

Source: *Statistical Yearbook of China*, various issues, 1987–93.

category 1: coal, oil products and steel. However, in the economic system the subsidisation of prices of raw materials used in the manufacturing sector has to be financed by sectors which supply the raw materials, such as the coal, oil and ferrous-metallurgical industries. Therefore, the subsidy under S1 should be matched or included in the losses of these industries. By



measuring and including the compensation offered by the government for the losses of these industries, we will be able to gauge the remaining level of subsidy under S1. Furthermore, as most raw materials, including energy and steel, are determined in the market, this measurement has a very reasonable degree of accuracy.

*Impact of compensation for loss-making enterprises (S1, S4 and S5)*

The compensation for the loss-making state enterprises contributed significantly to the total subsidy of the government for the state sector. Table 5 shows the losses sustained by 30 industries over the period 1986–92.

According to this table, the losses of the state industrial sector increased by nearly 7 times from 5.1 billion yuan to 35.4 billion yuan over the period 1986–92. These losses must have been compensated by the government in one way or the other.

*An analysis of state subsidy under S1, S4 and S5*

The government subsidy was directed not only towards industrial enterprises but also commercial enterprise. The figures in Table 6 suggest subsidisation of the loss-making state enterprises in the industrial sector has been of major concern since 1990. The subsidy increased from only about 16 per cent in 1986 to more than 80 per cent in 1992. The significant drop for the non-

**Table 6 Government compensation of industrial and other enterprises (100 million yuan)**

	Total compensation (a)	State enterprises (b)	Other enterprises (c=a-b)	Ratio 1 (b/a)	Ratio 2 (c/a)
1986	324.78	51.31	273.47	0.16	0.84
1987	376.43	59.85	316.58	0.16	0.84
1988	446.46	80.50	365.96	0.18	0.82
1989	598.88	175.81	423.07	0.29	0.71
1990	578.88	335.50	243.38	0.58	0.42
1991	510.24	351.99	158.25	0.69	0.31
1992	444.96	354.17	90.79	0.80	0.20

*Note:* In calculating the subsidy to state enterprises in non-industrial sectors, it is assumed that all losses incurred in the industrial enterprises were compensated by the government. This may overstate the share of the industrial sector in total compensation but this is not an unreasonable assumption, since virtually no large-scale bankruptcies in the state industrial sector have thus far been declared.

*Source:* *Statistical Yearbook of China, 1993.*



industrial state enterprises confirms the previous proposition that the impact of the subsidy to commercial and other non-industrial enterprises (column C), including state-owned trading corporations, has become increasingly less significant. Again, the abrupt and massive losses sustained by the industrial enterprises in the early 1990s indicate that the significant drop in the provision of the planned material inputs and the considerable increase in the price of planned allocation have taken their toll on the state sector.

Assuming that all the economic losses of the state industrial sector were compensated by the government, the rate of subsidy by industry, defined as total compensation divided by the

**Table 7 The rate of subsidy of industrial enterprises under S1 and S4, 1986–92 (per cent)**

Sector	1986	1987	1988	1989	1990	1991	1992
Average	1.53	1.17	1.36	2.31	3.59	3.24	2.81
Coal mining and preparation	13.56	12.09	11.66	15.44	20.33	17.87	15.23
Oil and natural gas	0.11	0.69	3.78	11.89	11.25	9.04	7.67
Ferrous metal mining	0.94	1.20	1.39	1.58	1.72	1.31	1.13
Non-ferrous metal mining	3.26	2.06	1.89	1.73	2.97	3.95	3.68
Mining for construction and other non-metal materials	4.79	2.27	1.79	1.70	3.16	3.32	2.89
Wood logging and transportation	1.09	0.44	0.41	0.81	3.89	3.34	3.22
Water processing and supply	1.04	1.62	2.29	5.59	7.03	5.16	4.21
Food	0.71	0.66	0.49	0.82	2.27	1.73	1.61
Soft drinks	0.87	0.77	0.74	2.07	3.21	2.39	2.03
Tobacco	0.16	0.08	0.55	1.58	1.77	3.58	3.03
Animal feed	0.06	0.05	0.03	0.86	1.60	0.50	0.41
Textile	2.09	0.21	0.17	0.41	2.15	2.79	2.65
Wood processing	0.89	0.45	0.42	1.99	6.91	6.38	5.57
Furniture	0.58	0.36	0.31	1.72	4.78	5.33	4.56
Electric power and supply of hot water	0.69	0.64	1.62	2.47	2.60	2.10	1.78
Petroleum products	0.03	0.00	0.00	0.02	0.28	0.13	0.11
Coking, gas and related products	7.09	6.04	9.17	12.10	10.72	9.00	8.48
Chemicals	1.52	0.34	0.25	0.54	1.21	1.26	1.15
Chemical fibre	0.05	0.06	0.02	0.15	0.34	0.20	0.18
Rubber products	0.12	0.22	0.30	0.30	0.79	1.12	1.08
Plastic products	0.26	0.26	0.12	0.40	2.02	1.55	1.29
Processing of construction materials	0.82	0.89	0.69	1.01	2.99	2.17	1.70
Ferrous metal melting and forging	0.06	0.06	0.06	0.10	0.96	0.75	0.58
Non-ferrous metal melting and forging	0.23	0.23	0.22	0.26	0.88	1.09	0.94
Metal products	0.27	0.24	0.31	0.45	1.47	1.75	1.49
Machinery	0.83	0.77	0.57	0.84	3.35	2.71	2.16
Transport vehicles	0.56	0.64	0.36	0.84	1.73	1.23	0.81
Electrical machinery	0.12	0.21	0.26	0.20	1.05	1.40	1.11
Electronics and communication equipment	na	0.67	0.43	0.65	1.61	1.66	1.61
Apparatus and measurement instruments	na	0.99	0.42	0.69	2.72	2.44	1.97

Source: Table 5 and Table A.1.



output of the state enterprises in the industry, is shown in Table 7 and the output value of the state enterprises is shown in the Appendix tables.

Since Tables 5 and 7 already include the industries which supply raw materials such as coal, oil products and steel, the remaining subsidy under category S1 should have been included in the calculation of the two tables. Therefore, the subsidy shown in this table in fact contains all subsidies under S1 and S4. According to the table, only the coal industry made a considerable loss in 1992. This implies that the remaining subsidy under S1 still existed but was mainly directed towards the energy sector.

Since the government subsidy was not only directed towards industrial enterprises but also towards those that provide various services (including marketing and transportation for example) to the industrial enterprises (S5), this needs to be taken into account and calculated for all the possible rates of subsidy. The values of subsidy to the non-industrial enterprises in 1986–92 are shown in column c in Table 6. By taking these subsidies into account, it is possible to calculate the rate of aggregate subsidy of S1, S4 and S5 (Table 8).

According to Table 8, the aggregate subsidy of S1, S4 and S5 declined significantly from 7 per cent in 1986 to 2.78 per cent in 1992. This means that 0.07 yuan of output sold by the state enterprises in 1986 was covered by government subsidy (under S1, S4 and S5), falling to only 0.0278 yuan in 1992. This is consistent with the general trend of government subsidisation over this period.

**Table 8 The rate of subsidy for the state sector under S1, S4 and S5, 1986–92 (100 million yuan)**

	Output value	Subsidy for losses (industrial sector)	Subsidy for losses (non-industrial sector)	Compensation for all losses in state sector	Rate of subsidy for state industrial sector (%)	Rate of subsidy state sector (%)
	(a)	(b)	(c)	(d=b+c)	(b/a)	(d/a)
1986	4,639.62	51.31	273.47	324.78	1.11	7.00
1987	7,468.30	59.85	316.58	376.43	0.80	5.04
1988	9,257.55	80.50	365.96	446.46	0.87	4.82
1989	11,081.96	175.81	423.07	598.88	1.59	5.40
1990	11,735.84	335.50	243.38	578.88	2.86	4.93
1991	13,431.14	351.99	158.25	510.24	2.62	3.80
1992	16,015.89	354.17	90.79	444.96	2.21	2.78



### *Impact of subsidy on capital (S2)*

For decades before economic reform, the government was responsible for both working capital and investment in fixed assets. Working capital was channelled to state enterprises through the People's Bank of China and investment funds were allocated directly through government budgetary grants. Both allocations were centrally planned. Another important characteristic of the system was that both working capital and investment funds were essentially free to state enterprises. The recipients were under no obligation to repay the principle and interest. The free provision of capital is obviously equivalent to subsidy to state enterprises.

The situation changed in 1979 when the government decided to reform the banking system and partially commercialise the allocation of capital to state enterprises. According to Byrd (1988), the essence of bank reform was first to reassert the independent status and organisational integrity of the banking system. Specialised banks and other financial institutions operating under the auspices of the Bank of China—such as the Agricultural Bank of China, the People's Insurance Company of China and the Bank of China— were set up at different times and took over some of the business formerly conducted by the People's Bank of China. At the same time, the People's Construction Bank of China, managed by the Ministry of Finance on behalf of the State Council, began to take charge of the allocation of investment capital in the form of either budgetary grants or loans to state enterprises. Banks were also given more discretion to mobilise and allocate their financial resources.

Second, banking reform aimed to establish a new relationship between banks and enterprises, which were their main clients. Provision was made for economic levers, such as interest rates and terms of repayment, to guide money-lending activities away from reliance on administrative fiat. Banks were supposed to enter into a contractual relationship with clients; they were empowered to monitor the utilisation of loans and make independent judgements on the efficiency, managerial competence and creditworthiness of enterprises. They could then refuse a loan application if necessary. Interest rates on loans of various types were raised in an attempt to make users aware of the cost of capital.

A third goal was to decentralise the internal organisation of banks by granting conditional autonomy to local branches. Branches were given the authority to engage independently in short and medium-term lending, using a proportion of their savings above specified targets to fund purchases of equipment by enterprises.



In the early 1980s, the People's Construction Bank was responsible for the allocation of long-term investment funds, while the People's Bank of China continued to administer the working capital of state enterprises. In 1983 the Industrial and Commercial Bank was established to handle deposits of urban residents and to distribute working capital and medium-term loans for technical innovation to state enterprises. At the same time, the People's Bank of China was transformed into a kind of central bank dealing mainly with macro issues and supervising the operation of the special banks, while the People's Construction Bank and the Industrial and Commercial Bank emerged as the two major financial institutions in charge of supplying funds to state enterprises. This structure continued until 1993.<sup>14</sup>

With structural reform of the banking system, the way in which funds were allocated to state enterprises also underwent substantial change. Free state budgetary grants gave way to interest-bearing loans to finance enterprises' long-term and short-term needs. In late 1979, the State Council authorised the People's Construction Bank of China to allocate funds from the state budget to certain state enterprises for capital investment in the form of loans and to charge interest of 3 per cent per annum (*The China Economic Almanac*, 1981, pp. ii–138).<sup>15</sup> Moreover, the interest rate could be adjusted at the discretion of the bank. A reward in the form of lower interest rates could be given for prompt repayment, and a penalty rate as high as 6 per cent applied to overdue loans. Under the new system, state enterprises were required to apply to banks to gain interest-bearing loans for working capital rather than receiving interest-free funds from state grants. In 1984 China's 54,000 large and medium-sized state enterprises were able to acquire bank loans for working capital at an interest rate of 7.92 per cent per annum, and credit for investment projects at an interest rate of 8.4 per cent for a 1–3 year term and 10.05 per cent for a 5–10 year term. In June 1983 the State Council approved a People's Bank report on the unified management of working capital for state enterprises (*Guowuyuan Gongbao*, 1983, No. 15). State enterprises would no longer receive financial allocations for working capital from superior administrative authorities; instead, they would receive these in the form of loans from banks. As a result, fiscal appropriation as a proportion of total provision of funds for production, construction and working capital dropped from 76.6 per cent in 1978 to 31.6 per cent in 1986 while bank credit increased from 23.4 per cent to 68.4 per cent (Bowles and White 1989, p. 487).

Many studies have suggested that bank loans took on an increasingly important role in financing both working capital and investment. Table 9 shows that the average share of working capital financed by bank loans increased from 32.43 per cent in 1980 to 48.5 per cent in 1988, while credit as a share of total investment increased from 14.59 per cent in 1980 to 36.36 per

**Table 9 Sources of working capital and investment funds in 1980 and 1984–88 (per cent)**

	1980	1984	1985	1986	1987	1988
Working capital:						
Bank loans	32.4	41.2	41.6	47.7	49.4	48.5
State grants	49.0	37.2	30.7	25.1	22.4	18.3
Enterprise funds	1.0	0.5	1.3	1.6	2.2	2.6
Investment funds:						
Bank credit	14.6	24.6	32.5	35.1	38.4	36.4
Central budgetary grants	13.4	9.8	10.4	7.5	7.5	6.3
Local budgetary grants	14.7	11.4	9.0	8.2	6.1	5.8
Project-specific grants	52.2	50.4	44.0	44.4	43.3	46.5
Other	5.1	3.8	4.1	4.9	4.7	5.1

Source: Zhao (1994).

cent in 1988. This made bank loans the most important source of funds for working capital among large and medium-sized state enterprises. In the case of investment funds, bank credit became the second most important source of funds after 1984, and their importance in financing investment by enterprises increased steadily throughout the 1980s and early 1990s.

At the same time, the share of government allocation of both working capital and investment in fixed assets declined from 49.02 per cent in 1980 to 18.26 per cent in 1988 in the case of working capital. Investment in fixed assets consisted of central budgetary grants, local budgetary grants and project-specific grants. The share of general purpose budgetary grants from central and local governments declined throughout the 1980s, from 28.1 per cent in 1980 to 12 per cent in 1988. The share of project-specific grants also declined significantly, from 52.2 per cent to 46.5 per cent, while the share of other unspecified sources of investment funds remained constant. It is clear that bank loans increasingly replaced state grants as the primary source of funding for enterprises. Table 10 shows the state sector's total investment in capital construction and technical renovation as well as allocations from the government budget in 1978–92.

#### *Evidence of subsidy on interest rate*

The total subsidy arising from lower interest rates is equivalent to the total capital used by state enterprises multiplied by the difference between the market-determined interest rate and the actual interest rate at which enterprises paid for the use of capital. The difficulty in the estimation





**Table 10 Share of budgetary allocation in the investment in the state sector, 1978–92  
(100 million yuan)**

	Capital construction			Technical upgrading and others		
	Total (a)	Budgetary allocation (b)	Ratio (per cent) (a/b)	Total (c)	Budgetary allocation (d)	Ratio (per cent) (c/d)
1978	500.99	389.21	77.69	na	na	na
1979	523.48	396.92	75.82	na	na	na
1980	558.89	300.11	53.70	na	na	na
1981	442.91	222.62	50.26	224.60	34.88	15.53
1982	555.53	232.48	41.85	289.78	32.95	11.37
1983	594.13	295.97	49.82	357.83	40.83	11.41
1984	743.15	359.85	48.42	442.03	58.10	13.14
1985	1,074.37	381.18	35.48	606.14	21.82	3.60
1986	1,176.11	417.39	35.49	802.39	21.10	2.63
1987	1,343.10	438.52	32.65	954.84	33.63	3.52
1988	1,574.31	381.66	24.24	1,188.45	28.26	2.38
1989	1,551.74	323.33	20.84	983.75	15.37	1.56
1990	1,703.81	363.59	21.34	1,029.26	18.58	1.81
1991	2,115.80	348.45	16.47	1,261.86	20.10	1.59
1992	3,012.65	307.87	10.22	1,754.91	21.49	1.22

Note: na—not available.

Source: *Statistical Yearbook of China*, 1993, pp. 149 and 181.

lies in the fact that there is no accurate measure of the market interest rate in China. Therefore, we have to rely on estimates and other information provided in the available literature.

There are two major difficulties in working out the subsidy. First, as the financial market only started to develop in the early 1990s, there is as yet no reliable information about the equilibrium market interest rate in nominal terms for the Chinese economy in the 1980s. Due to this difficulty, we have to rely on international interest rates, with reference to anecdotal information in the literature. The nominal interest rates for long-term, medium-term and short-term loans in the United States, Japan, Australia, India and China are shown in Table 11. In nominal terms, interest rates in China are comparable with or even higher than in these countries.

According to Table 11, the nominal interest rates for long-term and medium-term loans in China have been substantially higher than in the United States and Japan and marginally higher than in Australia. If we compare the interest rates in China with those in India, a country more comparable with China in terms of stage of economic development, we are still unable to find systematic and substantial differences in long-term and medium-term interest rates combined.



**Table 11 International nominal interest rates, 1986–92**

	United States			Japan		Australia		
	Long-term	Medium-term	Short-term	Long-term	Short-term	Long-term	Medium-term	Short-term
1986	7.68	7.06	8.35	4.94	6.02	13.56	13.97	19.85
1987	8.38	7.67	8.21	4.21	5.21	13.47	13.17	18.83
1988	8.85	8.24	9.32	4.27	5.03	12.31	12.18	18.52
1989	8.50	8.56	10.92	5.05	5.29	13.41	15.14	21.71
1990	8.55	8.25	10.01	7.36	6.95	13.18	13.46	20.48
1991	7.86	6.81	8.46	6.53	7.53	10.69	9.94	16.38
1992	7.01	5.31	6.25	4.94	6.15	9.22	7.15	12.02

	India			China		
	Long-term	Medium-term	Short-term	Long-term	Medium-term	Short-term
1986	10.00	16.50	9.97	na	na	7.92
1987	10.00	16.50	9.83	na	na	7.92
1988	10.00	16.50	na	na	na	8.28
1989	10.00	16.50	na	16.83	12.06	11.15
1990	10.00	17.88	15.57	13.64	10.87	9.36
1991	12.00	18.92	19.35	9.63	8.73	8.37
1992	12.00	16.50	15.23	12.15	9.99	9.09

*Notes:* na—not available.  
 Long-term and medium-term rates refer to long-term and medium-term government bond yields; short-term rate refers to lending rate (prime rate), which the largest banks charge their most creditworthy business customers for short-term loans.  
 For China, the short-term interest rate refers to the interest rate charged by the People's Bank of China on loans to state and industrial enterprises for working capital. The long-term rate is the average interest rate charged by the Construction Bank of China on the 3–10 year capital investment loan and the medium-term rate is the average interest rate charged on the 1–3 year capital investment loan. However, subsidy is evident from short-term interest rates. Short-term interest rates in China are higher than in Japan, similar for those in the United States but substantially lower than in Australia and India.

*Sources:* *International Financial Statistics*, 1993; *Almanac of China's Finance and Banking*, 1990; *Statistical Yearbook of China*, 1993.

It is obvious that this exercise has serious limitations. First, since the financial systems and conditions are very different among the countries under consideration, we should be very cautious in interpreting the results. Second, the nominal interest rate can be misleading if the countries experienced different rate of inflation. To solve this problem, we produce in Table 12 the real interest rate by subtracting the rate of inflation (price index of industrial goods) from the nominal rate.



**Table 12 International real interest rates, 1986–92**

	United States			Japan		Australia		
	Long-term	Medium-term	Short-term	Long-term	Short-term	Long-term	Medium-term	Short-term
1986	5.67	5.05	6.34	3.15	4.23	9.42	9.83	15.71
1987	5.79	5.08	5.62	7.95	8.95	6.18	5.88	11.54
1988	5.21	4.60	5.68	5.30	6.06	3.22	3.09	9.43
1989	3.52	3.58	5.94	2.51	2.75	8.31	10.04	16.61
1990	4.83	4.53	6.29	5.33	4.92	7.25	7.53	14.55
1991	7.23	6.18	7.83	6.31	7.31	9.24	8.49	14.93
1992	6.21	4.51	5.45	6.37	7.58	7.64	5.57	10.44

	India			China		
	Long-term	Medium-term	Short-term	Long-term	Medium-term	Short-term
1986	4.93	11.43	4.90	na	na	4.12
1987	3.09	9.59	2.92	na	na	0.02
1988	1.32	7.82	na	na	na	-6.72
1989	3.15	9.65	na	-1.77	-6.54	-7.45
1990	1.00	8.88	6.57	9.54	6.77	5.26
1991	-1.51	5.41	5.84	3.43	2.53	2.17
1992	0.16	4.66	3.39	5.35	3.19	2.29

*Notes:* na—not available.  
The real interest rates are calculated by subtracting the inflation rates of industrial goods for all the economies listed. The inflation rates of industrial goods for China are sources from *Statistical Yearbook of China*, 1993, p. 268.

The real interest rates shown in Table 12 provide a strong indication that the price of capital is indeed too low to reflect its actual cost. Specifically, the average long-term and medium-term interest rate in 1986–92 was 5.14 per cent in the United States, 5.27 per cent in Japan and 7.26 per cent in Australia; the average short-term interest rate was 6.1 per cent in the United States, 5.97 per cent in Japan and 10.26 per cent in Australia. However, the average real interest rate for long-term and medium-term capital was 2.81 per cent and the average short-term rate was negative over the period. Interest rates in China were also significantly lower than in India, even though interest rates in India as shown in Tables 11 and 12 were regulated rates.<sup>16</sup> This implies that subsidy to the state industry through low interest rates might have been substantial.

The low interest rate was confirmed by information provided in the available literature. While the official nominal interest rate of working capital has been around 11 per cent in the



early 1990s (Table 7), the short-term lending rate prevailing in private transactions was about 20 per cent in the same period (Lin, Cai and Li 1994; Zhang 1994). According to the World Bank (1988), the shadow price of capital for long-term investment was 12 per cent in the 1980s.

*An estimation of the rate of subsidy*

Due to international incomparability and the absence of accurate information about market interest rates, it is enormously difficult to estimate the subsidy deriving from the low interest rates. Therefore, we propose a range of difference between the real interest rate and the shadow price of capital in China. Since we are not able to ascertain many important factors, the range has to be fairly wide. This can be narrowed down when we have more information about market interest rates. Moreover, as real interest rates are greatly influenced by volatile inflation in China, we calculate the average interest rate and use it as a long-term interest rate in the estimation of subsidy on capital in the period 1986–92.

We choose the interest rates in the United States as lower bound, the minimum possible interest rate determined by the market. Interest rates in the United States can serve this purpose because of the high degree of maturity of the US financial market and its relatively rich endowment of capital.

For our purposes, we have chosen a rate of 12 per cent, a shadow price of investment capital estimated by the World Bank as the high bound real interest rate for long-term and medium-term capital. For the high bound interest rate for working capital, we use 20 per cent adjusted by the inflation rate. This is the prevailing interest rate at which the township and village enterprises in Jiangsu and Zhejiang provinces got access to capital on the market in 1994 (Zhang 1994).

In so doing, however, we should note that 20 per cent is most likely overstating the real price of capital. The equilibrium interest rate in a full-fledged capital market should be lower than the current private market, because the supply is seriously constrained by government control over the majority of capital resources in the current capital market.

The result of our calculation is shown in Table 13. The rate of subsidy, defined as the difference between the actual interest rate and possible market interest rate, falls in the range of 2.01–8.87 per cent for long-term and medium-term loans and in the range of 5.9–15.63 per cent for short-term loans. In the author's view, the maximum market rate, particularly for short-term loans, must have overstated the opportunity cost of capital more than the minimum market rate understates it. Therefore, the most likely rate of subsidy should be closer to the low bound one.



**Table 13 Subsidy on interest rates (per cent)**

	Long-term and medium-term capital		Short-term capital	
	High bound	Low bound	High bound	Low bound
Market rate	12.00	5.14	15.89	6.16
Rate of subsidy	8.87	2.01	15.63	5.90

*Note:* The actual (average) interest rate for long-term and medium-term loans for China is 3.13 per cent, which is obtained by the average interest rates shown in Table 12 weighted by the net value of fixed assets of the entire state industry. The actual interest rate of the short-term loans is weighted by working capital.

The implicit subsidy due to lower interest rates is calculated by straightforward multiplication of the difference between actual interest rates and market determined interest rates. However, since the evidence provided in the previous section implies that the long-term and medium-term interest rates differ from the short-term interest rate in terms of degree of distortion, we need to estimate the subsidy on capital investment and short-term working capital separately.

The rate of subsidy under the category of S2 is calculated by dividing the sum of that on the net fixed assets and on the working capital by the gross output value in each industry. These rates are shown in Table 14. This indicates the contents of state subsidy (S2) of each yuan of output produced by state enterprises.

The actual rate of subsidy under this category depends on the position of the market interest rate in the range between the maximum and minimum possible rates suggested in Table 13. If the market interest rate was close to that in the United States, then the rate of subsidy under this category will have ranged from 2.78 per cent in 1988 and 4.78 per cent in 1992. If the market interest rate was close to the maximum rates suggested in Table 13, the rate may have ranged between 9.58 per cent in 1988 and 15 per cent in 1992.

The subsidy under this category exhibits a downward trend until 1989, stabilising in 1990–91. The surge in the subsidy in 1992 was largely due to the significant increase in working capital by state enterprises (see Table A.3), which was obviously related to overheating of the economy. In this sense, the extraordinarily high rate of subsidy in 1992 was unusual.

*An estimation of the overall impact of subsidy*

The overall impact of government subsidy can be estimated by adding up the subsidy on the interest rate under S2 (Table 14), compensation for losses in the industrial sector under S4

**Table 14 Rate of subsidy due to low interest rates, 1986–92 (per cent)**

Sector	1986		1987		1988		1989		1990		1991		1992	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Total	4.01	13.86	2.99	10.32	2.78	9.58	2.86	9.76	3.21	10.84	3.23	10.97	4.78	15.00
Coal mining and preparation	7.05	27.63	5.82	23.06	5.25	19.15	4.82	19.15	5.19	20.45	5.18	20.40	7.21	25.42
Oil and natural gas	4.19	16.13	3.01	11.79	3.54	14.08	3.88	15.51	4.17	16.67	4.07	16.44	4.92	18.83
Ferrous metal mining	6.24	22.95	4.51	16.72	4.25	15.76	3.84	14.16	4.04	14.91	3.74	13.59	6.19	19.77
Non-ferrous metal mining	6.20	22.60	4.71	17.23	4.20	15.34	3.86	13.92	4.07	14.39	4.48	15.77	6.87	22.42
Mining for construction and other non-metal materials	6.71	24.57	5.03	18.46	4.57	16.94	3.94	14.38	4.17	14.97	4.45	15.94	7.35	23.37
Wood logging and transportation	6.40	23.53	3.37	12.41	3.08	11.37	3.62	13.13	4.34	15.75	4.36	15.72	7.78	24.88
Water processing and supply	7.58	31.88	6.99	29.65	6.43	27.29	6.57	27.79	6.76	28.82	5.66	24.12	7.60	28.71
Food	1.70	5.75	1.51	5.13	1.46	4.91	1.69	5.55	1.90	6.21	1.88	6.18	3.47	10.43
Soft drinks	4.43	14.10	3.49	11.02	3.27	10.41	3.69	11.64	3.81	11.97	3.59	11.48	5.24	15.75
Tobacco	1.81	5.32	1.31	3.91	1.31	3.89	1.65	4.84	1.80	5.33	2.00	6.00	3.42	9.82
Animal feed	1.01	3.42	1.26	4.12	1.06	3.46	1.32	4.19	1.50	4.83	1.42	4.64	2.58	7.68
Textile	18.09	57.72	2.26	7.24	2.17	6.96	2.23	7.10	2.62	8.23	2.96	9.28	5.06	14.90
Wood processing	4.05	13.45	2.69	9.03	2.92	9.66	3.58	11.50	4.55	14.66	4.75	15.61	7.09	21.56
Furniture	3.42	10.83	3.30	10.48	3.26	10.19	3.73	11.62	4.29	13.35	4.56	14.40	6.18	18.24
Electric power and supply of hot water	5.34	22.61	4.81	20.44	4.60	19.60	4.38	18.55	4.28	18.07	4.08	17.24	6.43	23.70
Petroleum products	1.29	4.62	1.06	3.84	1.43	5.34	1.59	5.90	1.75	6.47	1.66	6.06	2.13	7.13
Coking, gas and related products	3.85	14.77	2.97	11.64	3.31	13.30	3.40	13.60	3.27	12.83	3.64	14.40	7.42	25.04
Chemicals	3.07	10.72	2.39	8.35	2.14	7.42	2.21	7.55	2.53	8.59	2.76	9.48	4.42	13.86
Chemical fibre	2.90	10.53	3.47	12.79	3.03	11.00	2.74	9.67	2.71	9.43	2.76	9.71	4.41	14.39
Rubber products	1.73	5.47	1.86	5.88	1.80	5.67	1.70	5.31	1.96	6.06	2.08	6.45	4.13	11.93
Plastic products	2.64	8.66	2.61	8.71	2.23	7.27	2.65	8.49	3.29	10.56	3.08	9.97	4.81	14.43
Processing of construction materials	4.33	15.31	3.20	11.32	2.98	10.56	2.96	10.35	3.55	12.24	3.48	12.04	4.80	15.15
Ferrous metal melting and forging	4.24	14.99	3.06	10.77	2.83	10.02	2.71	9.50	2.86	9.86	2.93	10.03	4.09	12.99
Non-ferrous metal melting and forging	3.22	10.88	2.70	9.08	2.55	8.65	2.38	7.97	2.71	8.90	2.75	9.02	3.82	11.76
Metal products	2.80	8.89	2.61	8.23	2.64	8.33	2.63	8.20	3.20	9.86	3.46	10.70	5.17	15.11
Machinery	4.80	15.24	4.14	13.08	3.75	11.77	3.95	12.22	4.76	14.58	4.57	14.00	6.06	17.66
Transport vehicles	5.53	17.39	4.50	14.24	3.68	11.67	3.81	11.88	4.28	13.16	3.67	11.32	4.30	12.67
Electrical machinery	3.26	9.84	3.12	9.50	2.79	8.56	2.93	9.22	3.44	10.31	3.56	10.73	5.27	15.11
Electronics and communication equipment	n.a.	n.a.	3.35	10.32	2.67	8.17	3.12	9.31	3.63	10.77	3.89	11.68	6.33	18.12
Apparatus and measurement instruments	n.a.	n.a.	5.36	16.62	4.76	14.74	4.98	15.25	6.06	18.42	5.73	17.39	7.33	21.34

(Table 7), which includes some subsidy on material inputs (S1), and the non-industrial state sector (column c in Table 8) and then dividing the sum by the value of industrial output. The result is reported in Table 15.

According to this table, the possible range of the impact of government subsidy on the prices of final products from state enterprises was between 7.56 and 17.78 per cent in 1992. The trend of the impact significantly declined in 1987 and stabilised in 1988–91. In 1992 the subsidy re-bounded not because the government altered the policy of direct subsidy but because the working capital used by state industrial enterprises more than doubled. Table 15 reveals that government subsidy to China's state enterprises amounted to no more than 18 per cent of the price of final products in the 1990s.

**Table 15 Estimates of the overall impact of total government subsidy on the price of products by state enterprises, 1981 and 1987–92 (100 million yuan)**

	Output value	Subsidy (S2) based on scenario 1	Subsidy (S2) based on scenario 2	Compensation for all losses in state sector	Rate of subsidy scenario 1 (%) ([b+d]/a)	Rate of subsidy (%) ([c+d]/a)	Preferred rate (%) ([c+d]/2/a)
	(a)	(b)	(c)	(d)	([b+d]/a)	([c+d]/a)	([c+d]/2/a)
1981	4,639.62	185.91	642.93	324.78	11.01	20.86	15.93
1987	7,468.30	223.54	770.54	376.43	8.03	15.36	11.70
1988	9,257.55	257.19	886.83	446.46	7.60	14.40	11.00
1989	11,081.96	317.18	1,081.86	598.88	8.27	15.17	11.72
1990	11,735.84	376.16	1,271.79	578.88	8.14	15.77	11.95
1991	13,431.14	434.10	1,473.18	510.24	7.03	14.77	10.90
1992	16,015.89	766.02	2,402.72	444.96	7.56	17.78	12.67

*Note:* Scenario 1 is based on a low market interest rate; scenario 2 is based on a high interest rate.

We should note that the scenario 1 most likely underestimates the rate of subsidy but that scenario 2 surely far overstates the importance of subsidy in the price of final products by the state sector. In view of the fact that many loss-making commercial enterprises were engaged in the trade of non-industrial goods and the highly possible overestimation of subsidy on the interest rates, it is reasonable to suggest that the actual impact of government subsidy on the price of industrial goods never reached the level suggested under scenario 2 in Table 15. The author's preferred rate of subsidy is given in the last column of Table 15. This is calculated based on the average value of the high and low bounds of the interest rates. Therefore, it is believed that the most likely rate of subsidy was about 12.67 per cent in 1992.



## Conclusions and implications

In this study, we have tried to estimate the overall impact of six government subsidies on the prices of industrial goods produced by state enterprises. The qualitative analysis suggests that we should concentrate our efforts on the subsidy on interest rates, compensation for the economic losses of industrial state enterprises, the calculation of which already includes the current subsidy on the prices of raw materials, and the subsidy provided for the non-industrial enterprises which offer various services for the industrial sector.

The result of the estimation suggests that most subsidy took an indirect form and arose from the low interest rate at which state enterprises obtained and used investment funds and working capital. This accounted for at least 4 per cent of prices sold from the state sector and may have been as high as 15 per cent in 1992 depending on the market interest rate. In the author's view, it was most likely around 9–10 per cent.

The most interesting result of this study concerns the direct subsidies, blame for which has been placed mainly on the Chinese government for distorting the prices of traded goods. According to this study, all other subsidies together (S1, S4 and S5) distorted the prices of final goods by only less than 3 per cent. This percentage of distortion does not seem to have created a serious problem or to have provided significant advantages in market competition for the goods produced by the state sector.

Furthermore, the problems arising from government subsidy are often discussed in the context of China's international trade as a whole. But the fact is that the state sector only accounted for less than half of international trade value. By taking this factor into account, the impact of government subsidy on China's traded goods as a whole becomes even more insignificant, possibly less than 5 per cent.

In this study we have suggested a measurement of government subsidy but we are only able to provide a range of subsidy—one that is wide indeed. The main difficulty in narrowing down the range lies in the absence of reliable information about the opportunity cost of capital in China. As financial reform continues, more information and data will become available to assist more accurate estimation.

Finally, this study implies that the key to removing subsidy for state enterprises lies in reform of financing for state enterprises. Distortions in the prices of goods produced by the state sector will persist so long as the interest rate remains lower than the opportunity cost of capital.





## Notes

- \* I am grateful to Mr Wang Xiaolu and Professor Peter Drysdale for their valuable suggestions and comments on a draft of this paper.
- 1 This calculation is based on Chinese currency. It has been argued that China's GDP has been systematically undervalued in US dollar terms (Garnaut and Ma 1993). These figures would, therefore, be significantly lower if based on the adjusted values of GDP. However, this does not affect the relative trend over the period.
- 2 This paper strictly confines discussion of subsidy to state enterprises, which are financed by the central government. It is possible that some large collective enterprises also enjoyed some degree of subsidy from the local government, but it is not possible to discuss this due to limited information. However, it is reasonable to argue that the latter subsidy is insignificant compared with those for state enterprises.
- 3 The average interest rate for industrial enterprises was 2.52 per cent in 1981, 3.6 per cent in 1982, 7.72 per cent in 1983–84, 7.79 per cent in 1985–87, 9 per cent in 1988 (*Almanac of China's Finance and Banking*, 1990, p. 166) and 9 per cent in 1991 (*Statistical Yearbook of China*, 1993, p. 671). However, according to the World Bank (1988), the shadow price of capital in China was an estimated 12 per cent.
- 4 A dispatch of *Agence France Presse English Wire* (8 June 1994) reported that, despite the new rules, local governments have continued since January 1994 to grant unauthorised breaks to enterprises in their area.
- 5 It should be noted that a significant amount of government subsidy has been directed to the state commercial enterprises which trade farm produce. This paper, however, only addresses subsidy for industrial goods.
- 6 According to the World Bank (1992, p. 45), 74 per cent of state-owned commercial and service companies had been sold or leased to private owners by 1985.
- 7 During the course of economic reform, the definition of commodity changed significantly. According to Stalinist theory, producer goods exchanged among state enterprises were not to be viewed as commodities as they belonged to one owner both before and after the exchange. This is in contrast to market exchange, which took place between two owners (Zhou 1982). Producer goods were therefore classified as materials and equipment. According to Stalinist theory, the market-based mechanism of price determination was incompatible with the exchange of producer goods among state enterprises. However, since the economic reform, enterprises of various kinds—such as township and village enterprises, private enterprises and joint ventures—have emerged, and trade between state and non-state enterprises has become increasingly important to the economy. The distinction between materials and equipment and commodities became blurred, then irrelevant. At the same time, economists advocated



abandoning the distinction between them (Sun, Chen and Zhang 1979), although the term *wuzi*, equivalent to producer goods, is still in use.

- 8 It should be noted that some goods were classified as both *wuzi* and *shangpin*. For example, coal used by enterprises and for production purposes was classified as *wuzi* whereas coal used by residents for such purposes as cooking and heating was classified as *shangpin*.
- 9 Refer to Ishihara (1987) for an explanation of the functions of distribution channels.
- 10 In the early years of the People's Republic, central government planning was limited in scope. For example, only eight items were centrally distributed in the early 1950s, namely steel, lumber, coal, cement, refined soda, copper, machine tools and hemp bags. This figure increased dramatically as centralisation took hold and as the economy became more complex. There is controversy, however, about the exact number of goods allocated under central planning. For example, Naughton (1990, pp. 745–6) argued that the central planner typically allocated about 200, and never as many as 600, goods before economic reform. The difference may stem from disagreement about the definition of central planning; only goods in category 1 are included in Naughton's calculation.
- 11 See Wei and Chao (1982, p. 317) and Ishihara (1987) for a more detailed listing of commodities in these three categories.
- 12 Here, market share is defined as 100 minus the percentage of total output value purchased by the government under the mandatory plan. Output value is evaluated at 1980 constant prices. Market share of inputs is defined as 100 minus the percentage of the value of material inputs allocated through government distributional channels. This is evaluated at the current price level.
- 13 We use two indicators to measure the degree of marketisation—average and weighted average market shares. Average market share is defined as the proportion of total output or material inputs traded on the market divided by the number of sample enterprises; weighted market share is defined as the proportion of total output traded on the market weighted by each enterprise's share in total output or material inputs.
- 14 In late 1993 the central government announced further major reform to the banking system though the form the new institutions are to take has not yet been established.
- 15 However, there were criteria which projects had to meet to qualify for loans from this bank: that the product be marketable; that resources such as energy and raw materials be guaranteed or readily available; that the return on the project be sufficiently high to ensure repayment of the loan; and that land, labour and equipment be properly arranged.
- 16 Interest rates in India are believed to be significantly less distorted than in China since India's financial sector has been significantly liberalised since 1985 (Shand and Kalirajan 1994).



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## Appendix

**Table A.1 The output value of state industrial enterprises, 1986–92 (100 million yuan)**

Sector	1986	1987	1988	1989	1990	1991	1992
Total	4,639.62	7,468.30	9,257.55	11,081.96	11,735.84	13,431.14	16,015.89
Coal mining and preparation	158.89	211.06	254.29	323.99	360.71	420.19	496.12
Oil and natural gas	170.17	290.45	302.28	363.16	421.43	515.51	610.99
Ferrous metal mining	10.62	15.82	18.03	20.85	24.40	31.18	36.39
Non-ferrous metal mining	29.77	44.56	54.61	70.45	78.79	86.73	93.67
Mining for construction and other non-metal materials	12.74	18.07	24.55	33.61	37.28	40.03	46.23
Wood logging and transportation	38.62	84.64	102.23	101.74	89.80	98.17	102.52
Water processing and supply	18.35	24.05	29.26	33.83	41.27	59.87	73.76
Food	514.66	669.99	849.27	975.71	1,006.09	1,149.14	1,241.34
Soft drinks	99.90	173.17	228.45	250.63	287.23	331.55	393.16
Tobacco	168.18	272.07	360.04	437.07	494.00	529.18	630.30
Animal feed	33.51	42.31	69.36	87.99	90.59	103.49	126.46
Textile	90.36	860.49	1,040.06	1,244.96	1,295.63	1,347.52	1,427.00
Wood processing	24.84	42.10	49.69	50.34	44.44	47.37	54.60
Furniture	6.89	8.27	9.69	10.48	10.05	11.25	13.24
Electric power and supply of hot water	284.24	353.51	419.12	535.85	650.24	776.54	922.33
Petroleum products	226.36	330.15	380.89	442.19	483.99	629.49	868.29
Coking, gas and related products	15.81	26.98	33.26	43.31	55.77	66.25	70.73
Chemicals	481.72	670.03	862.40	1,090.85	1,161.95	1,198.55	1,327.43
Chemical fibre	109.32	115.36	149.70	198.62	230.27	261.73	284.02
Rubber products	109.18	116.20	140.51	180.82	193.85	205.99	215.40
Plastic products	46.95	54.02	77.87	82.58	76.27	88.89	107.37
Processing of construction materials	200.23	314.06	383.04	459.64	455.69	534.72	689.31
Ferrous metal melting and forging	439.43	683.60	816.08	986.41	1,124.27	1,329.82	1,734.99
Non-ferrous metal melting and forging	172.43	232.47	282.61	379.33	406.65	448.54	525.69
Metal products	74.56	97.85	111.18	133.83	135.91	147.78	174.54
Machinery	659.70	866.86	1,068.82	1,182.78	1,129.14	1,310.34	1,654.34
Transport vehicles	239.54	316.81	416.81	483.77	508.72	668.82	1,021.82
Electrical machinery	202.69	244.80	317.76	429.90	388.18	414.73	524.17
Electronics and communication equipment	na	236.16	341.64	375.17	385.83	433.44	448.55
Apparatus and measurement instruments	na	52.38	64.06	72.11	67.38	81.31	101.11

Note: na—not available.



**Table A.2 Net value of fixed assets in state industry, 1986–92 (100 yuan)**

Sector	1986	1987	1988	1989	1990	1991	1992
Total	4,243.28	5,030.89	5,796.65	6,814.79	7,764.68	9,116.27	10,533.40
Coal mining and preparation	401.50	454.14	503.03	583.28	682.61	790.03	884.08
Oil and natural gas	241.96	312.76	400.42	536.56	668.46	820.78	997.95
Ferrous metal mining	19.21	21.32	22.84	23.42	29.05	32.48	34.53
Non-ferrous metal mining	51.90	59.91	65.00	73.35	79.81	95.44	111.46
Mining for construction and other non-metal materials	24.44	26.18	33.53	37.44	41.28	46.3	50.68
Wood logging and transportation	71.69	83.08	92.41	101.42	107.00	115.79	123.56
Water processing and supply	61.00	75.49	84.77	99.13	126.85	154.28	178.51
Food	181.12	214.80	246.97	291.92	333.64	390.0	433.09
Soft drinks	66.95	87.18	111.95	132.48	151.32	183.58	206.01
Tobacco	25.37	34.37	43.21	57.36	77.61	106.09	137.28
Animal feed	6.97	9.39	12.54	17.35	21.73	25.77	29.88
Textile	249.72	306.64	353.19	414.64	473.32	544.37	596.69
Wood processing	19.11	22.52	26.87	28.72	32.59	40.56	42.56
Furniture	3.44	4.04	4.24	5.12	5.64	7.37	7.04
Electric power and supply of hot water	679.70	767.56	877.05	1,051.64	1,237.54	1,407.73	1,736.98
Petroleum products	76.82	95.74	168.25	211.76	252.03	324.12	363.85
Coking, gas and related products	20.34	28.80	42.43	55.99	65.70	88.76	107.45
Chemicals	352.41	382.00	424.78	523.30	620.66	731.19	804.80
Chemical fibre	88.22	117.24	125.12	135.11	146.11	177.11	217.31
Rubber products	27.36	31.01	35.91	41.55	46.87	53.81	60.52
Plastic products	22.19	27.49	29.98	34.04	39.92	45.10	51.36
Processing of construction materials	216.38	252.50	288.73	324.83	365.27	427.64	470.88
Ferrous metal mining and forging	466.73	510.66	579.94	646.18	722.37	850.66	1,058.98
Non-ferrous metal mining and forging	114.23	126.80	151.65	179.12	196.44	218.77	242.48
Metal products	30.76	36.15	41.84	46.41	53.09	63.35	69.07
Machinery	469.86	517.51	557.64	589.31	625.60	700.12	749.62
Transport vehicles	184.90	206.69	224.74	242.52	260.37	302.94	369.74
Electrical machinery	69.00	85.86	103.54	177.55	129.46	152.20	170.71
Electronics and communication equipment	na	97.19	105.76	111.36	126.59	168.10	171.80
Apparatus and measurement instruments	na	35.87	38.32	41.93	44.79	50.71	54.53

Note: na—not available.

Source: *Statistical Yearbook of China*, various issues, 1987–93.

**Table A.3 Working capital in state industry, 1986–92 (100 yuan)**

Sector	1986	1987	1988	1989	1990	1991	1992
Total	1,705.40	2,074.87	2,384.31	3,054.32	3,730.40	4,251.84	9,394.82
Coal mining and preparation	53.01	53.61	54.75	65.96	84.57	99.97	305.05
Oil and natural gas	38.33	41.65	45.15	55.80	70.21	76.32	169.87
Ferrous metal mining	4.70	4.83	5.21	5.59	6.79	8.69	26.42
Non-ferrous metal mining	13.58	15.13	16.71	21.10	27.22	33.36	71.09
Mining for construction and other non-metal materials	6.15	6.49	7.58	9.68	12.28	14.30	40.36
Wood logging and transportation	17.45	20.08	21.95	27.88	29.23	33.02	93.04
Water processing and supply	2.80	2.78	2.99	3.91	4.11	4.85	34.18
Food	86.61	98.12	126.62	180.72	210.31	232.55	582.49
Soft drinks	52.12	72.60	88.65	111.53	134.04	139.29	279.25
Tobacco	42.87	48.64	65.01	102.83	124.47	142.81	318.18
Animal feed	3.37	5.82	8.24	13.73	15.64	16.08	45.20
Textile	192.01	224.79	262.92	329.98	413.89	490.96	1,021.66
Wood processing	10.53	11.53	15.46	20.74	23.20	24.29	51.15
Furniture	2.82	3.25	3.91	4.89	5.38	6.18	11.46
Electric power and supply of hot water	25.51	26.74	27.80	39.20	49.56	57.87	412.73
Petroleum products	23.32	26.69	34.77	46.84	57.46	84.56	189.73
Coking, gas and related products	3.39	3.75	4.23	5.91	8.49	10.67	52.33
Chemicals	130.53	141.30	168.45	230.08	286.58	312.06	720.63
Chemical fibre	23.59	27.88	34.38	46.23	55.97	62.06	138.08
Rubber products	22.65	26.12	30.59	37.84	48.50	54.46	130.03
Plastic products	13.42	14.51	19.23	25.53	28.90	31.08	69.96
Processing of construction materials	73.30	84.18	94.91	119.92	149.43	169.38	400.90
Ferrous metal melting and forging	156.51	181.13	194.25	232.60	299.23	370.30	841.26
Non-ferrous metal melting and forging	55.18	63.15	70.33	91.72	120.11	134.71	257.96
Metal products	24.94	30.99	35.53	43.91	55.57	65.20	129.55
Machinery	376.67	431.52	488.60	590.29	698.21	775.97	1,444.22
Transport vehicles	161.64	171.34	183.58	230.15	280.57	312.30	618.44
Electrical machinery	88.40	100.08	115.22	152.85	182.48	198.35	409.96
Electronics and communication equipment	na	100.82	118.62	160.34	194.02	228.52	422.52
Apparatus and measurement instruments	na	35.35	38.67	46.57	53.98	61.68	107.12

Notes: na—not available.

The working capital refers to rated working capital usually guaranteed by government. There is evidence to suggest that state enterprises get access to other working capital at market rates.

Source: *Statistical Yearbook of China*, various issues, 1987–93.



# The Uruguay Round and China's Agricultural Policy Choices



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## Introduction

Important changes in recent years have provided China with an opportunity to reassess its current agricultural policy and to make choices in relation to its future options. The Chinese economy has developed to a stage similar to that of many rich economies — especially Japan, Korea and Taiwan — when they turned from taxing to subsidising their agricultural sectors. China's domestic agricultural distortion has reached a historical low level in recent years and domestic prices for some agricultural products are currently converging to those of their international counterparts. In the membership negotiations between China and the GATT contracting parties, agricultural policy has been one of the key problems. Moreover, the recently concluded Uruguay Round of trade negotiations will not only start a new trend of agricultural trade reform within the international community, it will also result in important changes to international markets for agricultural products.

It is clear that China's policy of discriminating against agriculture, which has lasted for four decades, is coming to an end. Less clear, however, is the direction it needs to take with respect to implementing new policy. China can introduce protectionist policy, following the lead of other East Asian economies, or it can internationalise its agricultural sector, together with the rest of the economy. China is likely to move towards a free trade system in general, and the central question is whether or not the agricultural sector should be treated as an exception.

While all economists and policy analysts recognise that China is facing an important choice, policy recommendations have been put forward along the lines of further liberalisation or protection. This is a crucial time, for China's decisions will not only affect its own welfare, but, to a lesser extent, the rest of the world's, especially the agricultural-exporting countries.

The main objective of this paper is to examine the effects of various agricultural policy options available to the Chinese government in a computable general equilibrium framework. There are some important gaps in the existing literature that this paper attempts to fill. First, most of the earlier studies that examine the impact of the Uruguay Round settlement focus on changes in the international agricultural markets and national welfare in a global and regional context (Goldin and Knudsen 1990; Brandão and Martin 1993; Krissoff et al. 1990; Tyers and Anderson 1992). The Chinese economy is often incorporated into these models but the structure for China is usually too abstract to draw more detailed implications for national policy discussion. Moreover, a country study on China, as a complementary analysis to those global studies, is also critical for understanding future changes in the international markets, given



China's current and potential roles. Second, a large body of literature has recently been produced that focuses specifically on the impact on China's agricultural sector of GATT/WTO membership and the conclusion of the Uruguay Round (Gu and Gu 1993; Chen and Deng 1993; Ma 1993; Wang, Yu and Zhang 1993; Huang, Yanxin 1993; Chao and Zhu 1993; Zhong 1994). These studies are qualitative analyses. Introducing some quantitative framework, as this paper attempts to do, is important as a starting point in improving the policy discussion. Third, in an overall review of analytical issues in the Uruguay Round negotiation on agriculture, Anderson (1992) recommends that economists need to examine the impact of alternative scenarios apart from the proposed agreement of the Uruguay Round. The same can be applied to policy discussion in China. Quantitative assessments of different scenarios or options provide comparable results, which are important references when the government makes choices.

The paper is organised as follows. The next section briefly discusses the agricultural agreement of the Uruguay Round and reviews the literature on its impact on international agricultural markets and developing economies. The third section discusses opportunities and challenges for China's agricultural sector brought about by recent changes and options for its future agricultural policy. In the fourth section, a computable general equilibrium model of the Chinese economy is applied so as to assess four policy options. The last section summarises the study and draws some policy implications.

### **The Uruguay Round and Chinese agriculture: a review**

Although the Uruguay Round settlement failed to phase out agricultural distortion in the world economy, it managed to produce an agreement between member countries on reduction of agricultural protection, which may serve as a starting point and allow for more ambitious agricultural trade reforms in the next round.

The agricultural agreement has two major dimensions—market access and domestic support. Under the agreement, non-tariff import measures have to be replaced by tariffs providing approximately the same level of protection. Existing tariffs, and those resulting from the 'tariffication' process, will be reduced by an average of 36 per cent by developed countries over six years starting from 1995-96. Developing countries will fulfil these requirements over ten years. Minimum access opportunities must represent 4 per cent of domestic consumption of the 'designated products', such as rice in the case of Japan and Korea, in the first year of the negotiation period, and rise annually to reach 8 per cent in the sixth year.



The total aggregate measurement of support (AMS) covering all support provided on either a product-specific or a non-product-specific basis and not qualifying for exemption is to be reduced during the implementation period by 20 per cent for developed countries and 13.3 per cent for developing countries, with no reduction requirements for least developed countries. Over the six-year implementation period, members are required to reduce the value of mainly direct export subsidies to a level of 36 per cent below the 1986–90 base, and the volume of subsidised exports by 21 per cent. Developing countries have to fulfil two-thirds of those by developed countries.<sup>1</sup>

What is the impact of agricultural liberalisation on world markets and especially on developing economies including China? This is an important question and one that many have tackled in their studies (for example, Anderson 1992; Tyers and Anderson 1992; Brandão and Martin 1993).<sup>2</sup> Removal of agricultural protection in developed countries would result in higher world prices for agricultural products. Tyers and Anderson (1992), for instance, predict that a phased 50 per cent reduction in agricultural protection in industrial countries between 1991 and 2000 will lead to a price increase of 19 per cent for wheat in 1995, 6 per cent for rice, 8 per cent for meat and 11 per cent for weighted average of food products (Table 1). Most other studies project similar patterns of price change (Goldin and Knudsen 1990; Brandão and Martin 1993). The wheat price would rise substantially, reflecting the removal of the high average rates of protection in the developed countries, as would the rice price, but to a less extent because of the less importance of developed economies in the world rice market (Brandão and Martin 1993). Price increases in livestock products and sugar are generally greater than grain products (Table 1).

Changes in international prices for agricultural prices resulting from global trade reform (both in developed and developing economies) are generally smaller in magnitude. Some studies predict reversal of the impact on the rice price. These variations from the scenario of liberalisation by developed countries alone are mainly derived from trade reforms in developing countries. Most developing countries currently have negative protection on agricultural production. Removal of this negative protection would encourage supply but reduce demand. On the other hand, if only developed countries liberalise their agricultural trade, benefits from the reform will also be confined mainly to the developed economies. Gains by developing economies are limited. In fact, Krissoff et al. (1990) suggest there will be welfare losses for most developing countries, and US\$4,985 million for developing countries as a group (Table 2). With global liberalisation, most of the economies of Asia and Latin America are projected to

**Table 1 Effects of agricultural trade liberalisation on international prices (percentage change from base scenario)**

	Percentage changes in international prices				
	Wheat	Rice	Coarse grain	Meat	Sugar
Liberalisation in developed countries					
Tyers and Anderson (1992)	19	6	-5	5	6
Zeitz and Valdés	3	2	—	10	15
Cramer and Wailes and Shui (1993)	-	15	—	—	—
OECD/MTMD	-5	-	—	5	9
USDA/SWOPSIM	27	18	—	16	29
IISA	18	21	—	17	—
RUNS (Brandão and Martin 1993)	4	2	3	5	6
Walras	17	—	—	10	—
Global liberalisation					
Tyers and Anderson (1992)	1	-6	—	8	-12
Zeitz and Valdés	-12	-21	—	13	1
Cramer, Wailes and Shui (1993)	—	25	—	—	—
OECD/MTMD	-7	-5	—	-4	7
USDA/SWOPSIM	23	—	—	7	7
IISA	23	—	—	11	—
RUNS (Brandão and Martin 1993)	6	-3	4	5	12
Dunkel proposal					
RUNS (Brandão and Martin 1993)	6	4	4	6	10

*Sources:* Goldin and Knudsen (1990); Tyers and Anderson (1992); Cramer, Wailes and Shui (1993); Brandão and Martin (1993).

experience gains. China experiences losses (US\$76 million) because of an increase in prices of imported food (wheat), as does the former Soviet Union (Krissoff et al. 1990). Anderson and Tyers (1992) incorporate endogenous productivity growth in a partial equilibrium framework which projects gains for most developing countries even if developed countries alone liberalise. China would gain US\$2,900 million in the scenario of liberalisation by industrialised countries alone and US\$12,900 million in the scenario of global liberalisation.

Welfare gains from agricultural trade liberalisation projected by Brandão and Martin (1993) using the RUNS model are, in general, greater than those by Krissoff et al. (1990) and Anderson and Tyers (1992). China may lose if only industrial economies liberalise, but may gain (as much as 2 per cent of total GDP) if global liberalisation is introduced (Table 2). If the Dunkel proposal is implemented, which is closer to the final agricultural settlement of the

**Table 2 Welfare impacts of agricultural trade liberalisation (million US dollars)**

	China	Developing	OECD	World
Krissoff et al. (1990)				
Industrial reform	-69	-4,985	33,128	28,133
Global reform				
Industrial reform	-76	2,060	33,065	35,125
Anderson and Tyers (1992)				
Industrial reform				
Industrial reform	2,900	16,600	46,500	62,200
Global reform	12,900	33,400	73,300	106,400
Brandão and Martin (1993)				
(1) Conventional				
Industrial reform	-81	629	72,666	78,355
Global reform				
Industrial reform	24,132	59,152	73,425	139,061
Dunkel proposal				
Industrial reform	893	19,791	63,304	88,854
Developing				
Industrial reform	23,334	56,464	-18,158	36,789
(2) Productivity response				
Industrial reform				
Industrial reform	4,304	29,299	71,055	107,779
Global reform				
Industrial reform	81,457	130,961	64,972	202,941
Dunkel proposal				
Industrial reform	7,393	44,264	61,636	113,202
Developing	74,900	98,282	-22,208	74,196

Sources: Krissoff et al. (1990); Anderson and Tyers (1992); Brandão and Martin (1993).

Uruguay Round, China may gain US\$893 million or 0.1 per cent of its GDP. Incorporation of the Anderson–Tyers style endogenous productivity response mechanism into the RUNS model produces even greater welfare gains for China (7 per cent of its GDP under the scenario of global liberalisation and 0.6 per cent under the scenario of the Dunkel proposal) (Brandão and Martin 1993).

Three conclusions on the impact of the Uruguay Round agreement arising from the above literature which are important for empirical work in this study and policy discussion in China are as follows. First, international prices for agricultural products, especially wheat, maize, meats and sugar, would rise. Second, the welfare effects on developing countries are indefinite if only developed countries liberalise agricultural trade. Third, the welfare gains by China and



other developing countries can be greater if they also participate in trade liberalisation or if productivity responds positively to price changes in international markets.

### **Agricultural policy debate and future options for China**

The question of how China should shape its future agricultural policy is a vital and timely one for policy-makers and continues to be hotly debated among economists. Agricultural policy discussions are closely associated with China's rising income, reductions in domestic agricultural distortion and China's GATT/WTO accession as well as conclusion of the Uruguay Round.

Often, agricultural production is subsidised in rich countries and taxed in poor countries. Rationales behind this observation are given in the literature in the context of optimisation of political leadership, the political power of vested interest groups or social preferences (Tyers and Anderson 1992). This international pattern of agricultural distortion suggests a turning point in the process of economic development.

Rapid growth in China induced by economic reform in the past fifteen years has lifted its level of per capita income to around US\$1,200, which defines China as a middle-income economy. This level of adjusted income is similar to that of Japan at the beginning of the 1960s and Korea and Taiwan at the beginning of the 1970s when they switched policies from taxing to subsidising agricultural production. One inference is that, in order to follow the successful growth paths pursued by Japan, Korea and Taiwan, it is time for the Chinese government to introduce agricultural protection policies (Cheng 1993). There are counter-arguments that even some rich countries—including net exporting countries such as Australia and New Zealand and net importing countries such as Hong Kong and Singapore—do not protect domestic agricultural markets significantly, particularly the latter two East Asian economies, which also experienced successful growth like Japan, Korea and Taiwan. Moreover, it has been found that agricultural protection in Northeast Asian economies has adverse affects on national income and welfare, although the relative size may be small (Anderson and Hayami 1986). The adjustment costs would be much higher now if they had liberalised agricultural policy than if they had done so twenty or thirty years ago (Garnaut, Cai and Huang, forthcoming 1996).

In fact, China's domestic distortion to agricultural production has been reduced to very low levels after fifteen years of reform efforts. In the pre-reform period, the Chinese government introduced a heavy-industry-oriented development strategy in the early 1950s, which through





direct and indirect (low purchase prices) taxes discriminated against agriculture (Huang 1993). Farmers and agricultural production were therefore seriously disadvantaged (Cheng 1993).

Many agricultural commodities had very high negative nominal protection rates in the 1980s (Guo et al. 1993; Ke 1993; Garnaut and Huang 1994; Huang, Yiping 1995). Guo Shutian et al. (1993) suggest, for instance, that the nominal protection rate in 1988 was -4 per cent for wheat, -48 per cent for rice, -26 per cent for maize, -16 per cent for soybean and between -30 and -50 per cent for pork, beef and lamb. Agricultural distortions decreased dramatically during the reform period (Garnaut and Huang 1994). Negative nominal protection rates fell significantly in 1989 and 1990 and turned positive for some commodities (Guo et al. 1993). Garnaut, Cai and Huang (forthcoming 1996) find that, in nominal terms, China's domestic prices for wheat, rice and maize converged and exceeded their international counterparts in 1993. This was mainly due to the introduction of free market mechanisms for agricultural products, rapidly rising income and limited supply responses. Domestic prices may move to levels well above international prices if domestic agricultural markets are insulated from international markets.

Garnaut, Cai and Huang (forthcoming 1996) further calculate the producer subsidy equivalent (PSE) for agricultural production (Table 3). In the mid-1980s the PSEs were still between -40 and -60 per cent of production value, reflecting the actual taxes (through tax and other policy measures) that farmers incurred. The PSEs rose significantly after that, to around -15 per cent in the early 1990s. In 1994 the PSE was estimated at -2 per cent.

These are all signs that forty years of agriculture-discriminating policy in China are coming to an end. It is argued that, because the past policies disadvantaged farmers and made the agricultural sector a bottleneck for overall economic growth, the government should now protect agriculture and farmers to show that it has learnt from its own experience (Chen and Deng 1993). Others favour a free trade and free market system. Past agricultural discrimination policies distorted the incentive structure and impacted adversely on national income and welfare, as would agricultural protection policies (Anderson and Hayami 1986; Cai 1993; Garnaut and Huang 1994).

Recent negotiations on China's GATT accession also highlight the agricultural policy issue. China's entry to the GATT is expected to bring about both opportunities and challenges to the Chinese economy and its agricultural sector.

It is recognised that entry to the GATT will benefit Chinese agriculture in a number of ways, the main one being access to more foreign agricultural markets (Huang, Yanxin 1993; Ma 1993; Chen and Deng 1993; Huang, Shihong 1993). It has been suggested that GATT



**Table 3 Calculation of producer subsidy equivalent (PSE) for China's agriculture, 1978–93 (billion yuan, per cent)**

	1986	1988	1990	1992	1993	1994
Producer value	401	587	766	909	1,030	1,280
Income transfer due to border policy (exchange rate)	-190.6 (5.0)	-414.6 (6.3)	-245.2 (5.8)	-209.9 (6.5)	-251.4 (8.6)	-96.5 (8.7)
Agricultural taxes	4.5	7.4	8.8	9.0	9.6	9.6
Budget on agriculture	18.4	21.4	30.8	37.9	44.1	44.1
Disaster subsidy	1.1	1.1	1.3	1.6	1.6	1.6
Welfare subsidy	0.3	0.3	0.3	0.3	0.4	0.4
Input subsidy	1.0	1.2	1.4	1.4	1.5	1.5
Interest difference (Agricultural loans)	7.9 (-28.3)	11.3 (-40.4)	14.9 (-53.1)	20.8 (-74.0)	24.7 (-87.8)	24.7 (-87.8)
PSE value	-162	-379	-197	-148	-179	-24
Share (%)	-40	-65	-26	-16	-17	-2

*Notes:* International food price is an aggregate of international prices weighted by value shares in total world trade. The commodities included in the calculation are beef, lamb, pork, eggs, wheat, rice, maize, orange, apples and tea. The domestic price is the rural market food price. The numbers for 1994 are estimates according to available information.

*Source:* Garnaut, Cai and Huang (forthcoming 1996).

membership may also prove beneficial to China's (grain) imports, especially when a high export subsidy exists in the industrialised countries (Ma 1993; Huang, Shihong 1993). In addition, positive effects may also come from greater exchange of information, better resolution of international trade disputes and fewer restrictions on the import of new technologies and management skills (Huang, Yanxin 1993; Huang, Shihong 1993; Ma 1993).

Most economists, however, emphasise the adverse effects (see, especially, Zheng 1993; Gu and Gu 1993; Wang, Yu and Zhang, 1993). Their major concerns include less stable domestic agricultural prices, lower farmer income (Chen and Deng 1993; Zheng 1993) and higher demand for agricultural imports, particularly imports of edible oil, sugar, tobacco, soybean, fruits, quality rice, poultry, rubber and wood (Wang, Yu and Zhang 1993; Huang, Shihong 1993). Challenges to China's current policy regime, especially its trade system and agricultural policy, are frequently observed. Protective measures are recommended, almost without exception, as responses to these challenges. These include direct producer subsidy and



the use of some exemption articles of the GATT for agricultural policies in developing countries (Chen and Deng 1993; Huang, Shihong 1993; Zheng 1993), apart from calls for further reforms to the economic system.

The important question is, as China is expected to join the GATT soon, whether or not its agricultural sector should be treated as an exception in the general reform trend of the whole economy. Argument has been put forward that the above challenges do not provide a fundamental rationale for China not to liberalise its agricultural sector (Garnaut, Cai and Huang, forthcoming 1996). First, internationalisation of the agricultural sector would not necessarily destabilise domestic market prices. Price fluctuations in larger international markets would only be smaller than those in small domestic markets (Garnaut and Huang 1994). Second, if appropriately handled, adverse effects on farmers' income can be minimised through encouragement and promotion of structural adjustments. Farmers' income derived from particular sources may decrease, but farmers' total income may increase if resources are relocated efficiently to high-return sectors and production activities. Third, increases in demand for some agricultural imports may be inevitable, and national welfare can be improved through deeper participation in international trade. Expansion of imports as well as exports based on better exercising of the economy's comparative advantages will help to realise gains from trade, in the precise spirit of the multilateral GATT system.

The recently concluded Uruguay Round, however, further complicates the issue of China's agricultural policy. Since developing countries are likely to participate less actively in agricultural liberalisation according to the Uruguay Round settlement, the probability is high that international prices for grain, livestock products and sugar will rise.

From a static and partial equilibrium point of view, higher international prices may benefit exporters and cost importers. As China is a net importer of grain in most years and total grain imports are expected to grow rapidly in the future (Carter and Zhong 1991; Garnaut and Ma 1992; Huang 1995), the cost of importing may rise dramatically. There is an argument that the impact on China's agricultural sector may be smaller if it enters the GATT before the conclusion of the Uruguay Round, since it can protect its agricultural production by invoking some special articles. The adverse effects will be especially large if China can only join the GATT after the conclusion of the Uruguay Round (Ma 1993). It follows, therefore, that agricultural protection will be particularly necessary if the agricultural agreement is implemented. On the other hand, it is also argued that, as the terms of trade become increasingly favourable to farmers as a result of the Uruguay Round and agricultural internationalisation, there may be more incentives for



agricultural and grain production. This may allow China to expand its agricultural exports in the short run (Zhong 1994). This is, in fact, consistent with the case projected for China in the broader model of world food markets outlined by Anderson and Tyers (1992). In addition, even if it is inevitable that China imports a large amount of grain and other agricultural products in the future, the rising trend in world prices in the next ten years provides an excellent opportunity for China to internationalise its agricultural sector because of lower adjustment costs (Garnaut, Cai and Huang, forthcoming 1996).

These recent changes or events, as outlined above, have led to widespread policy recommendations. Generally speaking, there are two broad directions for China's future agricultural policy. China may follow other East Asian economies such as Japan, Korea and Taiwan to protect its agricultural sector, and it may also continue the general reform trend of marketisation and internationalisation. There are four policy options available for China, as follows.

The first option is that, if China fails to join the GATT this year or the WTO soon after its establishment next year, the prospects for agricultural liberalisation will be gloomy. It is likely that self-sufficiency policy will be restored, at least for grain, which means a reversal of China's agricultural reform. Relying on domestic food demand on the international market is particularly dangerous, from the point of view of the Chinese government, if it is excluded from the international trading system. China would have no influence on foreign supplies, especially those related to political issues. Policy changes in many Western countries towards China after the events of June 4 are a good example. On the fringe of the international community, China will be unable to resolve economic disputes such as those over China's labour-intensive manufactured exports. It may not have the confidence to raise sufficient foreign exchange to import food in the required amount.

But what if China is able to join the WTO in the near future, as seems likely? Furthermore, the question remains of whether or not a self-sufficiency policy is the best choice even given the expectation that it will take a while before China enters the WTO. There are a set of other policy options that need to be looked at.

The second option is that, if China is able to join the GATT as a developing economy, it may still be able to seek application of some special articles of the GATT rules exempting it from further agricultural internationalisation. China, like other East Asian economies, may pursue free trade in manufactured goods while retaining some protective measures on the agricultural sector. The latter has been indicated in China's insistence on maintaining some quantitative



restriction on wool imports in the process of the membership negotiation. It is also argued that China's agricultural policy is not subject to the agricultural agreement of the Uruguay Round because it is a low-income country.

The third option is that China may also follow the general trend of agricultural reform set by the international community and thus pursue a gradual reform approach towards free trade in agricultural products. This approach may be supported by the argument of acceptable adjustment costs in the transition. As only partial reforms have been introduced in most of the other economies, world agricultural markets will expand only gradually. A gradual reform approach may reduce adjustment costs for the world as well as for China.

The fourth option is for China to internationalise its agricultural sector completely using the current unique opportunity for policy reform. In fact, China has pursued unilateral trade reforms in the past fifteen years. The conditions are right in China for implementing further unilateral reform in agricultural trade, especially if it joins the international trading system, and its exports and GDP continue to grow rapidly. More importantly, unilateral trade reform by China (and a group of other countries) may provide conditions for and pressures on other countries to further reform, which may, in turn, produce a more favourable market environment for China's rising demand for agricultural imports and increasing supply of labour-intensive manufactured goods.

### **Policy evaluation using a computable general equilibrium model**

The agricultural policy debate is entering a difficult stage. Economists recommending different policy choices hardly agree with each other and often do not have a common baseline, because the effects discussed are not quantified. This is exacerbated when policy contains both positive and negative effects, as is the case with respect to GATT membership and the Uruguay Round settlement. In the absence of clear measurement of the net impact of agricultural trade liberalisation, discussions emphasising the negative effects lean to more protective policy decisions while those stressing the positive effects prefer a free trade regime. Careful analysis using a quantitative framework is therefore essential, enabling not only economists to obtain an unbiased understanding of the impact of various policy options but also the government to make the right decision. A computable general equilibrium (CGE) framework is applied in this study to examine the effects of different options. One distinctive advantage of CGE models is that they are able to examine the consequences of agricultural policies for the economy as a whole as well



as the agricultural sector because both direct and indirect effects can be captured in a general equilibrium framework.

The model applied in this study is a revised version of a CGE model of the Chinese economy developed in Huang (1993), which follows Martin (1990) in its basic theoretical structure.

The model is fundamentally non-linear and is linearised in percentage changes. Like most other economy-wide models of this type, this China model assumes profit maximisation (or cost minimisation) for producers and utility maximisation for consumers. Industrial sectors are all separated into rural and urban sub-sectors. Capital and land are not mobile across sectors due to the short-run feature of the model. There are two labour markets, one rural and another urban. Labour cannot flow across the border between rural and urban areas but is mobile within these two areas among different sectors.

The model include eighteen commodities, seven of which are agricultural products (paddy rice, wheat, other grain, cotton, other crops, wool and livestock products), and twenty-two sectors covering nine urban and nine rural industries apart from cropping, livestock, forestry and fishing sectors. Following Armington (1968), the model treats domestically produced and imported goods as differentiated products.

Government revenue and expenditure is not specified explicitly in the model. Implicitly, it is assumed that the authorities make whatever adjustments to fiscal policies are needed to keep real absorption at an exogenously determined level. A skeletal monetary sector is incorporated to allow determination of the aggregate price level as a numeraire (Martin 1990).

Following the recent developments of the Martin model (World Bank 1993), this China model also incorporates quantitative restrictions to trade and the Hicksian compensating variation. This added feature is particularly important in examining different policy reform options.

The basic closure applied in this study is similar, in spirit, to that by Martin (1990). As discussed above, real absorption is set exogenously by the government, which determines changes in government demand and demands for investment in fixed capital and stocks. While demand for labour, capital and land by individual sectors is endogenous, total supply of rural and urban labour, and of capital and land for individual sectors is exogenous. Prices for these factors are determined through market clearing conditions. Money supply is exogenously determined by the monetary authorities; trade restrictions, including import tariffs, export taxes and quantitative restrictions, are exogenously chosen by the government.



In one simulation below (the first experiment approximating option 1) we vary the closure by setting import quantities exogenous for grain and wool, leaving tariff-equivalent restrictions on imports of these products endogenous.

### *Simulation results*

Four scenarios are examined using this CGE model corresponding to the four options discussed above:

- 1 price increases in the international markets for grain and livestock products (6 per cent for wheat and non-wool livestock products and 4 per cent for rice and maize) following the implementation of the Uruguay Round settlement plus the adoption of self-sufficiency policy for grain and wool in China;
- 2 increases in international prices and no domestic policy change;
- 3 increases in international prices, a 50 per cent uniform tariff reduction for non-agricultural products and a 24 per cent reduction in tariff and non-tariff trade barriers; and
- 4 increases in international prices, a 50 per cent uniform tariff reduction for non-agricultural products and removal of all agricultural distortions.

The first experiment approximates a scenario where some international prices are raised because of the implementation of the Uruguay Round settlements and China adopts a protective strategy for its agricultural policies. As discussed above, this may happen if China is, again, excluded from the international community. To implement this simulation, the closure is revised by making quantities of imports exogenous and tariff-equivalent non-tariff barriers endogenous for rice, wheat, other grain and wool. A 100 per cent reduction of imports of these products from their base levels (zero imports), together with increases in international prices for grains and livestock products, are introduced as a shock. The simulation results are reported in column 1 of Table 4. Prices of most agricultural products rise dramatically because of self-sufficiency policy. In particular, the wheat price increases by 6 per cent and the wool price by 54 per cent due to large domestic excess demand.

The domestic cotton price and output fall by 1 and 7 per cent, respectively, while its export decreases by 3 per cent. Wool output, on the hand, increases by 118 per cent due to extremely

high incentives to production. The self-sufficiency policy for grain and wool generates adverse effects on the textile industry, and its outputs and exports fall by 12 and 37 per cent, respectively.

Ironically, the wage rate increases by 2.7 per cent in the urban area and by 0.1 per cent in the rural area. This suggest that urban workers gain more than rural farmers. This constitutes a failure for the government if the policy is aimed at protecting farmers' income.

**Table 4 Policy choices and economic effects: simulation results**

	Option 1 price rise and grain/wool self-sufficiency (1)	Option 2 price rise in grain and livestocks (2)	Option 3 price rise and GATT and Uruguay (3)	Option 4 price rise and GATT and liberalisation (4)
<b>Macroeconomic variables</b>				
real GDP growth	-0.5	0.1	1.2	1.3
trade ratio	-0.3	0.2	0.3	0.2
export	-3.9	0.5	9.4	9.8
import	-3.6	0.3	15.3	15.4
compensating variation (cv)	-1.0	0.9	1.0	0.4
<b>Agricultural output</b>				
paddy rice	-3.5	1.7	3.7	4.7
wheat	7.4	-1.1	0.9	0.7
other grain	0.3	1.1	3.9	3.0
cotton	-7.2	-3.4	6.6	8.1
other crop	-2.0	-1.0	2.4	0.8
wool	118.4	-7.9	6.3	7.5
livestock	0.5	-1.8	8.1	10.0
<b>Domestic agricultural price</b>				
paddy rice	0.6	1.6	3.5	1.3
wheat	6.2	0.4	-1.0	1.3
other grain	2.4	1.2	-0.3	2.7
cotton	-1.1	-0.8	1.8	5.1
other crop	1.6	0.5	-0.3	2.0
wool	54.3	1.6	7.8	8.3
livestock	-5.5	4.1	9.3	11.0
<b>Tariff-equivalent NTB</b>				
paddy rice	220.3	na	na	na
wheat	839.2	na	na	na
other grain	505.1	na	na	na
wool	994.5	na	na	na

*Note:* na — not applicable.





The self-sufficiency policy also has adverse effects on the macroeconomy. Both export and import volumes drop significantly. Real GDP reduces by 0.5 per cent. The welfare loss is also significant, at about 1 per cent of GDP.

Finally, to maintain self-sufficiency in grain and wool, the tariff equivalent non-tariff barriers will have to rise by 220 per cent for rice, 839 per cent for wheat, 505 per cent for other grain and 994 per cent for wool. These changes raise the non-tariff barriers to levels between 60 and 200 per cent.

The second experiment includes only increases in international agricultural prices. This simulation corresponds to the second policy option in which the Chinese government does not change its current policy settings for the agricultural sector.

The simulation results are reported in the second column of Table 4. Consistent with findings by Anderson and Tyers (1992) using a partial equilibrium model of the world food market, the outcome of this experiment suggests that China may gain from trade liberalisation in other countries even if it does not participate, resulting in an increase in real GDP by 0.1 per cent. There are significant rises in exports of rice, other grain, livestock products and processed food, and, to a less extent, in exports of cotton. Imports of wheat, cotton and wool decrease. Indeed, China becomes a net exporter of grain because of rises in international prices. This is, of course, an effect only valid over the very short run. Overall, total export and import volumes increase by 0.5 and 0.3 per cent, respectively. This improves China's balance of trade.

There are also some important changes to the domestic production and price structure for agricultural products. Outputs of rice and other grain rise while outputs of other agricultural products all decrease. Transmitting from changes in international markets, all agricultural prices increase, except the price for cotton, and especially in the case of rice, other grain, wool and livestock products.

The welfare measure compensating variation as a share of GDP rises by 0.9 per cent, which more clearly indicates the possible welfare gain for China of agricultural trade liberalisation in foreign countries even in the short run. The model, of course, is comparative static in nature in the sense that it cannot capture the effects over the longer term. The improvement in the agricultural balance of trade arising purely from a switch between net importer and net exporter induced by price changes may diminish in China because of the rapidly rising domestic demand for grain products (Garnaut and Ma 1992; Carter and Zhong 1991; Huang 1995). On the other hand, this diminishing effect may also be offset by the Anderson–Tyers style endogenous productivity response.



The static result, however, is interesting because it rejects the proposition by many economists about losses in income or welfare from such liberalisation and rises in international agricultural prices (Ma 1993).

The third experiment, including an increase in international prices, a 50 per cent uniform tariff reduction for non-agricultural products and a 24 per cent reduction in domestic agricultural supports, approximate the scenario that China joins GATT. In an effort to join GATT, China made a commitment to reduce the tariffs by 50 per cent over a period of 3–5 years (Huang, Yanxin 1993). A 24 per cent reduction in domestic agricultural distortion is designed to capture a possible gradual reform approach, which is also consistent with the Uruguay Round settlement for developing countries. The simulation results are reported in column 3 of Table 4.

Agricultural output increases, 4 per cent for rice and other grain, 1 per cent for wheat and cotton, and 6 and 8 per cent for wool and livestock products, respectively. Changes in agricultural prices are not in the same direction — prices fall for wheat, other grain and other crops but rise for rice, cotton, wool and livestock products.

There are significant decreases in exports of rice (-20 per cent) and other grain (-32 per cent). Exports of other sectors, especially the textile industry, increase dramatically. As a result, total export volume rises by 10 per cent, but the increase in import volume is even greater (16 per cent) because of a reduction in trade barriers. There is a negative effect on the balance of trade.

Overall, real GDP grows by 1.3 per cent and the welfare gain is also significant (about 1.4 per cent of GDP).

It is particularly interesting to compare this scenario with the second scenario where no policy reform in China is assumed. Obviously, when China participates more actively in trade liberalisation, its gains both in terms of an increase in real GDP and the improvement in welfare become much greater.

The last simulation is similar to the third except that China phases out all the restrictions to agricultural trade (import tariffs, non-tariff import restrictions, export taxes and tax-equivalent export restrictions).

The results are also very similar to the third experiment (column 4). The only surprising outcome is that, while the income gain in terms of real GDP increment is larger in the scenario of complete internationalisation of the agricultural sector, the welfare improvement tends to be greater in the scenario of partial reform of agricultural trade policy. The welfare measure used in this study, the Hicksian Compensating Variation, takes into account the effects of shocks on



consumer and producer welfare, and on revenue from tariffs, export taxes and the trade taxes imposed by licensing and exchange rate overvaluation. A lower welfare gain in the internationalisation scenario may simply indicate higher adjustment costs in the short run.

### **Summary and implications**

This study has analysed the effects of the Uruguay Round settlement on developing countries in relation to China's agricultural trade liberalisation. The discussion of the agricultural policy debate in China indicates that the domestic pressure for agricultural protection has been high recently, especially from the group of agricultural economists and agricultural bureaucrats.

One important reason for economists not being able to achieve agreement on future agricultural policy is lack of quantification of various policy effects, apart from various other reasons presented in the theory of political economy. This study examined four policy options using a computable general equilibrium model of the Chinese economy.

The study has tried to contribute to the large literature on the effects of the Uruguay Round settlements and international trade liberalisation, with a specific focus on the Chinese economy, and also attempted to provide a starting point for improving the quality of agricultural policy discussion in China by introducing a more quantitative analytical framework.

The findings of this study are dependent on many assumptions made in the model and should therefore be interpreted with caution, but several important findings should be noted.

China's agricultural distortion is at a historically low level. In 1994 domestic market prices for many agricultural products have converged or exceeded international prices. The estimated PSE for agricultural products fell from around -20 per cent of production value in the 1980s to -7 per cent in 1993. It is expected that it will fall further in 1994. China is calling a halt to forty years' discrimination against agriculture.

Simulation results suggest that, if China chooses to restore its self-sufficiency policy for grain and wool, not only is its income loss large (0.5 per cent reduction in real GDP), but domestic agricultural prices also rise significantly (in general, the rise is greater for grain, and wool is greater than that transmitted from a 20 per cent increase in international prices). The fact that urban workers gain more than rural farmers suggests that a self-sufficiency policy or trade restriction is not an efficient measure for protecting a particular group's income, even if losses in total income and overall welfare are not taken into account. In addition, a restriction on wool imports has a significant negative impact on textile output and export.



On the other hand, China may gain from implementation of the agricultural agreement of the Uruguay Round by GATT member countries even if it stays out of the organisation and maintains all of its current policy regimes. Given the rises in international agricultural prices, China may turn from a net importer of grain (1987 base year) to a net exporter.

But China's gains can be enlarged if it participates actively in trade reform (through delivering the 50 per cent tariff reduction in line with efforts to join the GATT and reducing 24 per cent of agricultural support as required by the Uruguay Round settlement). When China extends its partial agricultural trade reform into complete internationalisation of its agricultural sector, real GDP growth becomes higher (1.28 per cent compared with 1.23 per cent), but the Hicksian Compensating Variation falls dramatically (0.4 per cent of GDP compared to 1.4 per cent) primarily because higher adjustment costs may be involved in the short run.

The policy implications from these findings are clear. China should participate actively in agricultural trade reforms for its own benefit. The small gap between domestic and international prices for many agricultural products and the low level of agricultural distortion do not suggest that China should switch from taxing to subsidising agriculture. Policies discriminating against agriculture, as in China over the past forty years, produced adverse effects on the development of the whole economy. The experiences of other East Asian economies have proved that policies favouring the agricultural sector by distorting the incentive structure did not help overall economic growth either. Considering the adjustment costs involved in the process of trade liberalisation, a gradual reform approach is preferable. China can, for instance, first liberalise those products with less economy-wide importance and smaller domestic distortions and then gradually extend the reform to other products and sectors.

Many economists try to refute such conclusions by basing their argument on the structure of domestic political economy, the stability of foreign agricultural supply and adjustment costs.

First, it may be argued that free trade is the first best choice, but it is often not feasible considering the domestic political economy. It is true that there are circumstances where protection policies have to be introduced, such as pressure from interest groups (Tyers and Anderson 1992), as further suggested by the experiences of other East Asian economies (Anderson and Hayami 1986). This is precisely why China should employ the current opportunity provided by the GATT membership negotiations and the conclusion of the Uruguay Round settlements to internationalise its agricultural sector if free trade is accepted as the first best choice. International pressure for trade liberalisation can be extended to overcome domestic resistance from interest groups. It will become extremely difficult in the latter stage



when political resistance has built up, as illustrated by the cases of Japan, Korea and Taiwan. China should not step into the same trap.

Second, foreign agricultural supply of agricultural products may not be necessarily more unstable than domestic supply, except for changes caused by political issues. It has already been argued that an integrated larger international market is usually more stable than an insulated domestic market (Garnaut and Huang 1994). China's consistent involvement, rather than casual exports and imports of domestic residuals, can further increase the stability of the international market. On the other hand, a protective policy in its agricultural sector may create difficulties in accessing foreign markets for labour-intensive manufactured exports and may become a source of continuous trade conflict between China and the rest of the world, especially with agricultural exporting and labour-intensive manufacturing importing countries.

Third, trade liberalisation in China will involve some adjustment costs. But it is important to realise that adjustment costs are now at their lowest, given the existing very low level of domestic distortion. The adjustment will rise significantly after a period of implementation of protection policy, as indicated by developments in other East Asian economies. The other difficulty among economists is in drawing a clear line between acceptable and unacceptable adjustment costs. After liberalisation, reduction of some outputs and decreases in income of some farmers before they are efficiently restructured are absolutely normal. Of course, in order to minimise the adverse effects of these adjustment costs, the government may also need to introduce some non-distorting policy measures. For the sake of smooth transition and maximum welfare gains, this study advocates a gradual reform approach. On the other hand, tremendous efforts will be required before internationalisation to build an effective market stabilisation scheme, to raise the efficiency of the trade and transportation system, and to improve the capacity of macroeconomic management.

Finally, some economists may argue that the cost of agricultural protection on the whole economy might be small. The experiences of Japan, Taiwan and Korea have also proved that heavy agricultural protection did not have significant impact on overall economic growth. Agricultural protection, however, may affect future economic expansion in many other ways such as providing a constant source of trade conflict (Cai 1993; Garnaut, Cai and Huang, 1996). It may, in turn, have an adverse effect on China's expansion of labour-intensive manufactured exports. One good example is the disagreement over agricultural policy in negotiations on China's membership of the WTO.



## Notes

- 1 The agreement on export subsidies was later revised between the EU and the United States at the initiative of France. While the end objectives remain the same, the EU and the United States will be allowed to subsidise another 15 million tonnes of wheat exports during the implementation period (Garnaut and Huang 1994).
- 2 Anderson (1992), Scandizzo (1992) and Brandão and Martin (1993) provide literature reviews on this topic. Goldin and Knudsen (1990) present a collection of studies of agricultural trade liberalisation.

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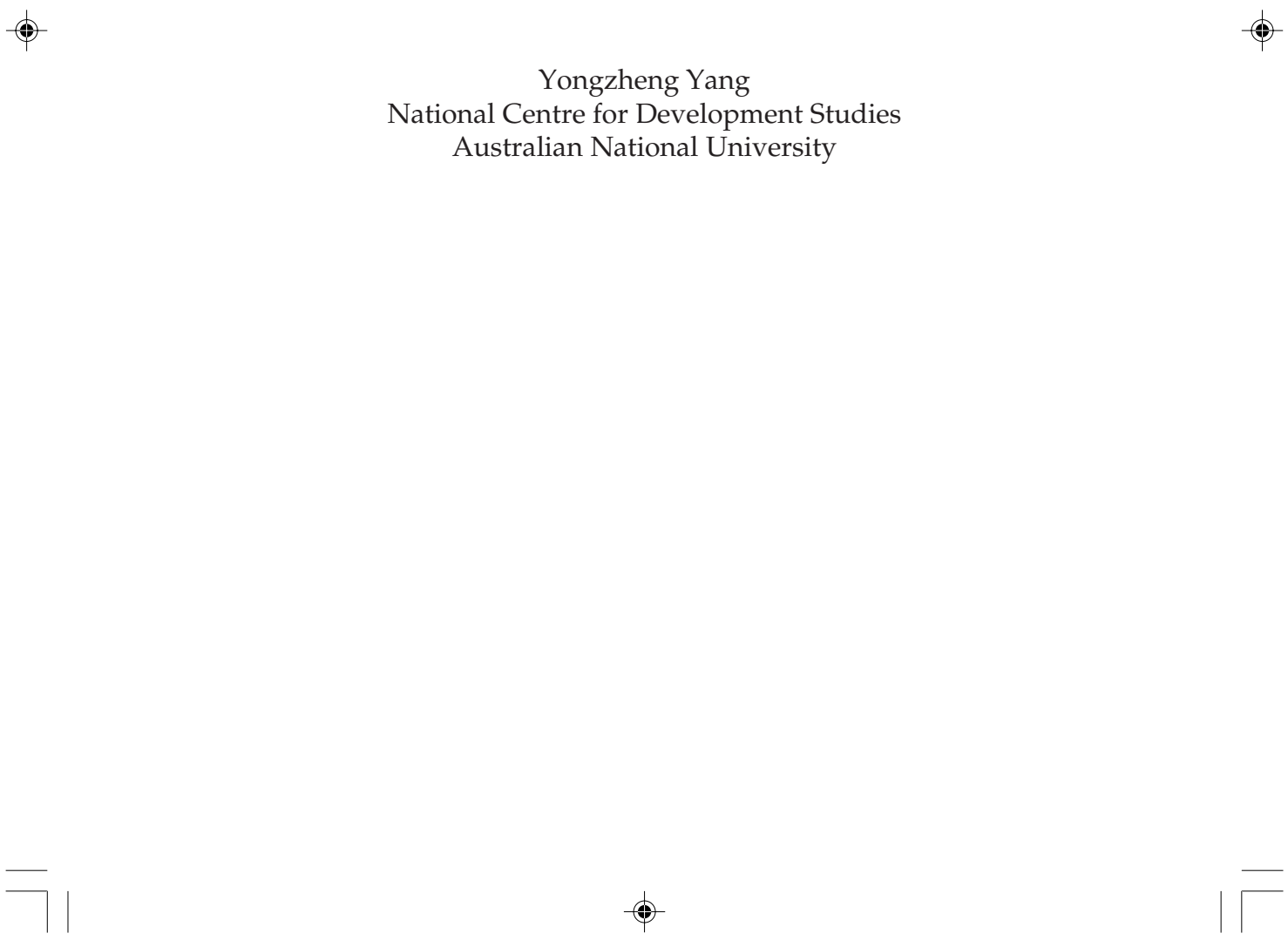






# China's Textile and Clothing Exports: Challenges in the Post-MFA Period

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## Introduction

China's textile and clothing industries are facing great difficulties despite their spectacular export performance. Demand is sluggish and surplus production capacity is increasing (State Statistical Bureau 1993, p. 86). It has been reported that 27 per cent of textile enterprises and 22 per cent of clothing enterprises made financial losses in 1992 (State Statistical Bureau 1993, pp. 96–7). In 1993 the textile industry had the greatest loss of any Chinese industry, amounting to three billion yuan, or 8 per cent of its total value added (State Statistical Bureau, *Statistical Yearbook of China*, 1994, p. 391).

It would seem that the difficulties reported by the Chinese media are largely confined to the state textile and clothing enterprises and that the non-state sector has been flourishing. Such a contrast in the performances of the state and non-state sectors is, of course, not unique to the textile and clothing industries. State enterprises economy-wide have been in deep crisis in the face of the rapidly expanding non-state sectors and foreign competition.

It is commonly acknowledged that state enterprises have been taxed more heavily than their non-state counterparts and they also have to bear costs not directly related to production, such as social security, medicare, housing, childcare, and the like (Lu 1995). These undoubtedly increase costs for state enterprises. However, there are also substantial subsidies, direct or indirect, to state enterprises in the form of underpriced inputs — such as subsidised interest rates, power supplies, and infrastructure investment (Perkins and Martin 1995). On balance, it is not known whether state enterprises are disadvantaged compared to their non-state counterparts. But one thing is certain: state enterprises are substantially overstaffed, less responsive to changes in market conditions, less efficient in the use of capital and, above all, unable to provide incentives to work hard (Perkins 1995).

There is little doubt that China has comparative advantage and is generally competitive in textiles and clothing, especially in clothing. However, if state enterprises fail to increase their efficiency to match their non-state counterparts in the near future, the phasing out of the Multifibre Arrangement (MFA) will have a different impact on the state and non-state sectors. How China will perform in the face of the challenges of the new world trade system in the post-Uruguay Round period needs consideration not only in terms of industrial structure but also of ownership structure.

With this in mind, the following section provides an overview of the current status of China's textile and clothing industries. Particular attention will be given to the differences in



performance between the state and non-state sectors. The third section outlines China's MFA quota allocation regime and examines its efficiency implications. The fourth section sheds some light on how the MFA has affected China's textile and clothing exports by analysing changes in its export destinations and the penetration of its major export markets. Various policy reforms are analysed using the GTAP model in the fifth section, and policy implications are drawn out in the concluding section.

### Textiles and clothing in the Chinese economy

Textiles were the largest of China's manufacturing sectors in the early 1950s, accounting for nearly 27 per cent of total industrial output (Table 1). Since then the rapid growth of heavy industry has led to a steady decline in the share of textiles, though the sector still contributed more than 10 per cent of total urban industrial output in 1992. The clothing industry was traditionally a less important sector, but it too experienced a decline in its share of total industrial output until the late 1970s. Since then, its share has increased slightly.

Textiles and clothing have both played an important part in formal and informal employment. In 1952 the textile industry alone employed about 19 per cent of the total industrial labour force (Table 1). During the 1950s employment in textiles and clothing grew steadily.

**Table 1 Textiles and clothing: share of output and employment in industrial enterprises,<sup>a</sup> 1952–92 (per cent)**

	1952	1965	1978	1984	1988	1992
Output	32.1	19.4	14.0	17.9	13.9	13.0
Textiles	26.9	15.5	11.6	15.4	11.9	10.5
Clothing	5.2	3.9	2.4	2.5	2.0	2.5
Employment	18.7	8.9	7.3	12.3	12.3	13.8
Textiles	18.7	8.9	7.3	11.9	11.8	11.2
Clothing	-	-	-	0.4	0.5	2.6

*Note:* a Independent accounting enterprises only. These enterprises are defined to include essentially those which have independent administrations and are accountable for their own financial profits and losses (State Statistical Bureau, *Statistical Yearbook of China*, 1994, p. 470).

*Sources:* State Statistical Bureau, *Statistical Yearbook of China*, various years; Editing Board of LICC (1985); Editing Board of ACTI (various years).



However, the slow growth of the textile and clothing industries in the 1960s and 1970s led to a substantial decline in the importance of these sectors in providing employment, as additions to the labour force moved to heavy industry.

Since the late 1970s, textiles and clothing have regained some of their importance in industrial employment. By 1992 urban textile and clothing industries employed 9.2 million people, including 5.3 million in state enterprises and 3.9 million in non-state urban enterprises (State Statistical Bureau 1993, p. 410). Rural township and village enterprises employed an additional 5.6 million in 1992. This does not take into account employment in the so-called individual and private enterprises, which accounted for about 32 per cent of total rural industrial employment in 1992 (Ministry of Agriculture 1993, p. 157). If the share of textile and clothing employment in the individual and private sector was the same as in other sectors of rural industry, another 3 million would be added to total employment in the textile and clothing industries throughout China in 1992. In addition, there is considerable self-employment in textiles and clothing in urban areas. Self-employed tailors working in the streets of Chinese cities and towns are a common sight. Overall, total employment in the textiles and clothing industries might have exceeded 17.8 million in 1992 — that is, 12 per cent of the non-agricultural labour force, or 3 per cent of total labour force. By any standards, China's textile and clothing industries are a large employer.

It is important to note that the statistics in Table 1 cover only the so-called independent accounting enterprises above (and including) the level of the township. As a result, these statistics may not be representative of the whole textile and clothing sector. Independent accounting enterprises made up 75 per cent of total industrial output in 1992. On cross-checking in the *Statistical Yearbook of China*, 1993 (see State Statistical Bureau, various years), it seems that non-independent accounting enterprises are largely non-state enterprises.<sup>1</sup> Given that non-state enterprises are more concentrated in labour-intensive manufacturing than state enterprises, the share of the textile and clothing industries in national industrial output would be greater had non-independent accounting enterprises been included in the statistics. This is verified by the statistics presented in Table 2. Clearly, rural industry has on average a significantly higher share of textile and clothing output than independent accounting enterprises. Urban collectives also have a higher proportion of non-independent accounting enterprises. Statistics are not available to verify whether these enterprises are more concentrated in textile and clothing industries than state enterprises, but it is very likely that they are because the technology they use is relatively labour-intensive.



**Table 2 Textile and clothing industries: share of rural industrial output and employment, 1984–92 (per cent)**

	1984	1986	1988	1990	1992
Output					
Textiles and clothing	15.1	16.0	16.2	17.6	17.5
Textiles	11.0	12.7	12.8	13.4	12.8
Clothing	4.1	3.3	3.3	4.2	4.7
Employment					
Textiles and clothing	11.5	12.2	12.9	13.5	14.9
Textiles	7.0	8.0	9.0	9.0	10.1
Clothing	4.5	4.2	4.0	4.5	4.8

Source: State Statistical Bureau, *Statistical Yearbook of China* (various years).

The strong growth of the textile and clothing industries in the non-state sector is the key to understanding the current problems facing state enterprises. After a period of brisk demand for textiles and clothing in both the domestic and world markets in the 1980s, the state textile and clothing sector has been facing sluggish demand. Apart from constraints imposed by the MFA, this has to do with the strong competition from the non-state sector. Table 3 presents the output growth rates of the urban and rural sectors and employment in the state and non-state sectors. During the period 1986–92, the output of the urban sector, to which the state sector belongs, grew at a real annual average rate of 2.9 per cent for textiles and 7.8 per cent for clothing, while the rural sector grew at a rate of 19.0 and 25.9 per cent for the textile and clothing industries, respectively. Data on the output growth of the urban collective sector are not available, but it is almost certain that it is higher than that of the state sector, at least for clothing. Given this, the output growth of the state sector would be even lower than the statistics in Table 3 suggest.

The non-state sectors have outperformed the state sector in virtually all industries, but the contrast between the state and non-state sectors in the textile and clothing industries is probably greater than in most other industries because textiles and clothing are, in general, more labour-intensive. Their greater flexibility and lower labour costs give non-state enterprises a competitive edge over state enterprises in labour-intensive industries.



**Table 3 Economic performance of various sectors, 1986–92**

	1986	1988	1990	1992	Growth rate 1986–92 (per cent)
Real output (million yuan, 1986 prices)					
<i>Urban</i>					
Total industries	846.0	1,024.7	1,054.6	1,326.1	7.8
Textiles	101.5	107.8	107.0	120.7	2.9
Clothing	15.5	17.1	18.1	24.2	7.8
<i>Rural</i>					
Total industries	181.5	288.1	321.7	530.3	19.6
Textiles	23.1	34.7	38.0	65.6	19.0
Clothing	6.0	9.4	12.5	23.8	25.9
Employment (million)					
<i>State</i>					
Total industries	39.55	42.29	43.64	45.21	2.3
Textiles	4.50	5.01	5.06	5.06	2.0
Clothing	0.17	0.19	0.21	0.22	4.9
<i>Urban collectives</i>					
Total industries	11.52	18.50	20.14	21.00	10.5
Textiles	1.51	2.15	2.39	2.37	7.9
Clothing	0.99	1.25	1.44	1.52	7.4
<i>Township and village</i>					
Total industries	28.96	33.37	32.40	37.75	4.5
Textiles	2.31	2.99	2.91	3.81	8.6
Clothing	1.22	1.33	1.45	1.83	7.0

Source: State Statistical Bureau, *Statistical Yearbook of China* (various years).

As the result of the strong growth of the non-state sectors (Table 4), the rural sector's share in national textile and clothing output has increased tremendously. Consistent statistics on the non-state sectors are not available due to the lack of data on urban collectives, but the growing share of rural industry illustrates the situation. In 1986 rural township and village enterprises accounted for less than 20 per cent of total textile output and 30 per cent of clothing output. By 1992, the respective shares had climbed to 35 and 50 per cent. It should be noted that these percentages do not take into account output by other rural enterprises (for example, private ones). In terms of incremental output, the contribution of the rural sector is even greater (Table 4). Between 1986 and 1992, township and village enterprises accounted for about two-thirds of the total incremental output.





**Table 4 The share of township and village enterprises in total and incremental output, 1986–92 (per cent)**

	1986	1988	1990	1992
Total output				
Total industries	17.7	21.9	23.4	28.6
Textiles	18.6	24.3	26.2	35.2
Clothing	27.9	35.4	40.8	49.6
Incremental output		1988–86	1988–90	1992–90
Total industries		37.4	52.9	43.4
Textiles		64.7	130.2	66.9
Clothing		67.3	75.3	65.2

Source: State Statistical Bureau, *Statistical Yearbook of China* (various years).

Textiles and clothing have been among the most important export commodities for China. Since the mid-1970s, the growth of textile and clothing exports has accelerated. Between 1975 and 1992 textile and clothing exports grew at 23 per cent per year in nominal terms (valued in US dollars). The total value of textile and clothing exports reached US\$25 billion in 1992 and accounted for 38 per cent of China's total exports of manufactured goods, or nearly 30 per cent of total exports (Table 5). Clothing exports have grown much more rapidly than textile exports. While textile exports grew at an annual rate of less than 14 per cent over the period 1965–92, clothing exports grew at 26 per cent. Clothing exports exceeded textile exports for the first time in 1985. By 1992 clothing exports were 2.7 times larger than textile exports.

The non-state sector has outperformed the state sector in exports (Table 6). While the state sector may have been the dominant force in textile and clothing exports until the mid-1980s, it was the non-state sectors, especially the rural industrial sector, that was the most dynamic. In 1988 the township and village enterprises alone accounted for about half of China's total clothing exports, and 16 per cent of textile exports. By 1991 clothing exports had climbed to 78 per cent and textile exports to 25 per cent. Clothing exports further increased to 90 per cent in 1992. Clearly the non-state sectors have become the most important exporters for most light manufactured products in recent years.

**Table 5 China's textiles and clothing exports, 1987–92**

	1987	1988	1989	1990	1991	1992
Export value (US\$ billion)						
Textiles (SITC 65)	5.9	6.6	7.2	7.2	8.0	8.5
Clothing (SITC 84)	5.3	6.6	8.1	9.6	12.2	16.8
Textiles and clothing	11.3	13.2	15.3	16.8	20.2	25.3
Share of manufactures (per cent)						
Textiles	23.2	20.4	19.4	15.8	14.5	12.6
Clothing	20.8	20.5	22.0	21.1	22.1	24.9
Textiles and clothing	44.0	40.9	41.4	36.9	36.6	37.6
Share of total exports (per cent)						
Textiles	15.1	13.9	13.7	11.6	11.1	10.0
Clothing	13.5	13.9	15.5	15.5	16.9	19.8
Textiles and clothing	28.6	27.8	29.2	27.1	28.1	29.8

Source: Chinese Customs Statistics, extracted from the International Economic Databank, Australian National University.

The rapid growth of China's textile and clothing exports has increased China's share of the world textile and clothing markets (Table 7). In the early 1960s China was a significant exporter of textiles. Subsequently, inward-looking trade policies led to a decline in China's market share. Since the mid-1970s, however, China has regained a substantial market share. By 1988 China accounted for 23 per cent of total textile exports originating in developing countries, or 7 per cent of world textile exports. Since then China's market share has been declining. As regards clothing exports, however, China's share of total developing country exports has continued to increase. By 1992 China accounted for 24 per cent of clothing exports originating in developing countries, or 17 per cent of world clothing exports. Among developing countries, China's market share is the second largest, exceeded only by the combined total of Asia's newly industrialising economies (NIEs) — Hong Kong, the Republic of Korea and Taiwan.

### **Quota allocation and its implications for efficiency<sup>2</sup>**

Textile and clothing quotas are managed by the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), prior to 1994 the Ministry of Foreign Economic Relations and Trade



**Table 6 Rural industry exports, 1988–92 (percentage of total exports)**

Commodity	1988	1989	1990	1991	1992
Clothing	49.6	65.2	72.0	77.5	89.7
Handcrafts	39.0	43.1	45.0	52.0	63.7
Chemicals	23.6	36.3	27.3	31.5	53.2
Silk	21.4	25.1	24.3	33.7	54.0
Other light manufactures	19.3	22.8	28.5	38.7	53.9
Textiles	16.4	19.2	21.9	25.0	-
Machinery	16.2	19.6	21.8	23.8	-
Minerals	13.6	15.9	15.8	-	-
Food	27.1	19.3	15.5	-	-
Other farm products	16.3	9.2	10.4	-	-
Others	32.7	61.1	24.5	-	-
Total manufactures	-	-	-	-	53.0
Total	-	-	-	29.7	42.4

*Source:* Editorial Board of ACTE (various years).

(MOFERT). A special section within the Ministry manages quota allocation. Only those enterprises which are designated exporters are eligible. Foreign enterprises and joint ventures are not eligible for quotas. Township enterprises are allocated quotas only if they are included in state export plans. Despite the abolition of the export plan at the beginning of 1994, quotas continue to be allocated to the formerly designated exporters.

In contrast to most other countries, quotas are normally not allocated directly to export enterprises, as most enterprises do not have the right to export their products. Instead, quotas are allocated to the China Textile Import and Export Corporation and its provincial counterparts via regional commissions of economic and trade affairs. Foreign trade corporations (FTCs) purchase export products from these enterprises according to the export task assigned to them.

When China first entered into textile agreements with importing countries in the late 1970s, quotas were allocated to FTCs according to their pre-agreement performance. This performance-based regime has continued. Each year, exporters that fulfil 90 per cent or more of their previous year's quotas are allocated quotas equal to their previous year's allotment — the so-called base quotas which are allocated before April each year; those that fulfil less than 90 per cent may or may not retain the full quantity of their previous year's quotas depending on when they surrender their unused quotas. Those that surrender their quotas by 15 July retain their full allotments of the previous year; those that surrender between August and September

**Table 7 Textile and clothing exports by developing countries, 1965–92 (percentage of developing country total)**

	1965	1970	1975	1980	1985	1988	1990	1992
<b>Textiles</b>								
China	18.6	13.7	15.8	17.1	21.8	22.6	19.9	19.4
NIEs <sup>a</sup>	13.5	22.5	31.9	34.7	36.0	39.0	39.6	38.8
ASEAN <sup>b</sup>	3.5	3.4	5.0	7.0	7.3	8.3	9.7	12.7
South Asia <sup>c</sup>	46.2	35.8	20.9	17.5	14.4	12.8	13.8	15.4
Bangladesh	0.0	0.0	2.9	2.9	2.2	1.0	0.8	0.7
India	36.5	21.0	11.0	8.1	6.2	5.3	5.5	6.1
Sri Lanka	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2
Pakistan	9.4	14.6	7.0	6.2	5.8	6.2	7.2	7.9
Latin America	4.7	8.2	10.8	9.7	7.9	6.2	5.3	5.0
Developing countries (US\$ billion)	1.6	2.2	5.4	14.1	16.7	29.2	36.3	43.9
World (US\$ billion)	8.2	12.1	26.1	54.0	52.3	83.9	103.1	113.3
<b>Clothing</b>								
China	10.3	4.8	5.0	10.1	15.0	14.7	17.4	24.1
NIEs <sup>a</sup>	70.0	75.8	70.8	60.9	54.9	49.3	38.4	29.9
ASEAN <sup>b</sup>	3.8	2.5	4.4	7.4	8.2	11.7	14.7	15.8
South Asia <sup>c</sup>	3.0	2.9	4.0	4.9	6.6	7.1	9.2	10.4
Bangladesh	0.0	0.0	0.0	0.0	0.7	0.9	1.1	1.5
India	2.6	2.5	3.4	3.6	3.7	3.7	4.9	4.8
Sri Lanka	0.0	0.1	0.1	0.7	1.1	1.0	1.2	1.7
Pakistan	0.4	0.4	0.5	0.6	1.0	1.4	2.0	2.2
Latin America	4.3	4.8	5.1	6.5	4.0	4.3	4.5	4.9
Developing countries (US\$ billion)	0.5	1.5	5.7	16.4	24.9	44.9	55.1	69.8
World (US\$ billion)	2.6	5.7	15.7	38.6	46.6	81.3	102.7	125.8

*Notes:* Data before 1988 are not strictly comparable with those from 1988 onward. This is because pre-1988 export data for China are calculated as the sum of imports from its trade partners, whereas from 1988 onward the data are based on official Chinese statistics. Because of China's large re-exports via Hong Kong, the pre-1988 data presented in the table involve double counting of China's re-exports and include value added to re-exports in Hong Kong.

- a Includes Hong Kong, the Republic of Korea and Taiwan.
- b Includes Indonesia, Malaysia, Thailand, Singapore and the Philippines.
- c Includes Bangladesh, India, Nepal, Sri Lanka and Pakistan.

*Source:* United Nations COMTRADE and Chinese Customs statistics, International Economic Databank, Australian National University.

have their previous year's quotas reduced by 25 per cent of the unused portion of their quotas; those that surrender between October and November have their quotas reduced by 50 per cent of the unused portion; and those that surrender in December have their quotas reduced by the full quantity of those unused quotas.



Annual increases or reductions in quota volumes according to existing textile agreements or resulting from subsequent agreements with importing countries are allocated among provinces proportionate to their share of national exports. A portion of the quotas carried over from the previous year and those transferred from other quota categories are allocated according to export performance. It is not specified how this performance is defined. Presumably, the same criterion for annual incremental quotas is used. For the remaining portion of the quotas, exporting enterprises which make losses have a priority in quota allocation. It is not clear how this subsidy to loss-making enterprises is justified.

Base quotas can be transferred between enterprises within the region or across regions, but approval has to be sought from the local commission of economic and trade affairs, which must in turn notify MOFTEC. Quota transfers of up to 20 per cent of base quotas are not subject to any penalty, but any transfers exceeding the limit are subject to a penalty equal to the excess quantity, which is deducted from the following year's quotas. If transfers occur in the same category for two consecutive years, quotas will be deducted in the forthcoming year. Quotas cannot be re-transferred, and all transfers are supposedly free of charge.

Local commissions of economic and trade affairs can arrange transfers of quotas within regions, but they must notify MOFTEC. Approval has to be sought from MOFTEC if enterprises which have been allocated quotas transfer them to those which do not have quotas. MOFTEC may in the second half of each year also arrange nationwide transfers of non-base quotas (largely surrendered quotas and those carried over from the previous year as well as transfers from other quota categories).

Quota transfers follow the following principles. Enterprises which develop high quality products and achieve high export prices will be rewarded with an unspecified quantity of quotas, provided they fulfil 95 per cent of their allocated quotas. Unspecified penalties are imposed on enterprises which achieve low export prices. Enterprises which contribute to exports of unrestricted products and those that use more domestic fabrics as inputs are rewarded.

It is clear from the above description that China's quota allocation is essentially based on past performance, with some incentives for product upgrading and diversification and the use of domestic inputs. The question arises whether the quota allocation regime promotes export efficiency. Clearly, administrative discretion plays an important role in quota allocation. It is likely in this process that quota allocation favours large and state enterprises which have traditionally been assigned the task of exporting. It is not clear how other enterprises, especially joint ventures and township enterprises, obtain access to quotas if they are not assigned the task



of exporting. Presumably, with increased autonomy, FTCs with quotas could purchase export supplies from these enterprises as long as they are competitive. Another way of accessing quotas would be subcontracting to enterprises with quotas. Although trading in quotas is illegal, interviews in Chinese factories revealed that it was not uncommon (Lu 1995).

It is conceivable that the administrative allocation of quotas may result in a less than optimum utilisation of quotas even if full utilisation is achieved. 'Picking winners' based on past export performance does not guarantee that the most efficient exporters get sufficient quotas, as large volumes of exports may not mean high value added. Also, high export prices may not be the result of high value added in the process of production. They may be the result of inefficiency so that the producing enterprises have to charge high prices. A better method of allocation would be to auction quotas. If auctions are properly conducted, the most efficient enterprises would obtain sufficient quotas, whether they are state or township enterprises. If auctions are competitive, marginal returns to a unit quota will be equalised across exporters. MOFTEC has been conducting quota auctions on a trial basis since the mid-1980s, but only a tiny fraction of quotas have been auctioned.

Free trade in auctioned quotas will further increase export efficiency and quota utilisation. Conditions facing individual enterprises will change over time. In some circumstances, profits will be maximised by selling the quotas instead of using them. This will increase both export efficiency and quota utilisation because there are greater incentives to quota holders to sell their quotas if the value of the quota to them is lower than the market price.

With free trade in quotas, export efficiency can be increased even if quotas are allocated administratively in the first place. To achieve this, the quota market must be competitive so that quota premiums are reflected in the marginal prices of quotas. As a result, inefficient enterprises will sell their quota rights to efficient ones. As mentioned earlier, trade in quotas does exist although it is illegal. The legalisation of this trade will increase competition by facilitating transactions and reducing market fragmentation. The government could, in fact, establish a nationwide market for quotas.

China's current quota allocation method also means that quota premiums are captured by quota holders, namely FTCs. Even if quotas can be traded so that export efficiency is increased, quota rents represent windfall gains to quota holders. The administrative discretion involved in quota allocation can also lead to corruption. In addition, FTCs may have to share quota rents with overseas importers. Typically, importers will bargain for lower import prices if they know that the exporters have not paid for their quotas (Krishna, Erzan and Tan 1994).



As far as product upgrading is concerned, empirical analyses show that China has succeeded in upgrading its exports to the US market (Yang 1992; Cline 1987; Pelzman 1986). It is difficult, however, to assess to what extent this was due to the quality criterion in quota allocation. Generally, it would be most efficient to auction the quotas and let the enterprises themselves decide on the quality of products they export. If high quality products are indeed more profitable than low quality products, enterprises will move up-market; and if they cannot because of technical constraints they will have an incentive to sell their quotas to enterprises which can produce higher quality products efficiently. China's own experiments have shown that auctioning of quotas tends to accelerate product upgrading. A more than 20 per cent increase in export prices was achieved when quotas were auctioned during the Guangzhou Trade Fair in 1987. It was reported that the price increases occurred because exporting enterprises had greater incentives to upgrade their products when they had to pay for quotas instead of having them free of charge (Wang 1987). Forced upgrading through quota allocation will likely result in low efficiency and a reduction in national welfare.

The only justification for promoting upgrading and the use of domestically produced fabrics is that there are sufficient externalities in doing so. The regional contribution to the volume of national exports and market diversification to non-restricted products as criteria for rewarding quotas *may* only be justified if the large exporters are more efficient and there are externalities arising from diversification, such as reduced market risks and long-term expansion of unrestricted and accumulated market knowledge. If externalities do exist, the more efficient way to promote product upgrading and diversification is not through quota allocation, but through more direct economic incentives, such as government assistance with market information in order to reduce private sector costs. It is self-defeating to reward market diversification with quotas as increases in quotas will reduce the incentive to export to unrestricted markets.

Thus, the key to improving China's quota allocation system is to auction all quotas and to allow free trade in them. This will ensure the government obtains quota premiums and the export trade is efficient. In addition, rent-seeking and corruption are likely to be reduced. The government should ensure that the quota market is competitive by providing information and coordinating trading activities. Moreover, greater efficiency in production and export would be attained if domestic distortions were reduced. At present, different enterprises and regions face different levels of incentives in terms of price controls, subsidies and access to raw materials. They are therefore not on an equal footing in bidding for the right to supply exports.



### The MFA and textile and clothing exports

China did not join the MFA until 1983, but it began to sign textile agreements with a number of industrial countries in the late 1970s. The latest agreement with the United States was signed in early 1994, and the latest with the European Union (EU) in early 1995. At present, China has bilateral textile agreements with the United States, the EU, Canada, Finland, Norway and Austria. The initial agreements with these countries covered mostly cotton and synthetic fibre textile and clothing products. Gradually, the agreements have been extended to cover woollen, silk and ramie products. At the same time, however, the growth rate of quota volumes has declined (Yang 1992).

Table 8 presents the export market shares of China's major trading partners over the period 1978–92. These data were obtained by aggregating partner country imports. This leads to an overstatement of China's export values by the transport and insurance costs (the c.i.f./f.o.b. margin). However, since our main interest is in the export market share, this overstatement will not create serious distortions as long as the c.i.f./f.o.b. margins are similar across export markets — a rather bold assumption. A greater source of distortion of China's export statistics is the double counting of China's re-exports via Hong Kong. Essentially, problems arise because China's re-exports are included in the imports of Hong Kong from China as well as the imports of final destination countries. Ideally, the re-exports should only be included in the imports from China to their final destination countries and only the value added to them should be included in Hong Kong's exports. As a result of the double counting, Hong Kong's market share is substantially overstated while for others it is understated. The latter occurs because China's total exports are also overstated as the result of re-export double accounting. Nevertheless, the data are useful in showing the relative size of various export markets other than Hong Kong as long as the share of Hong Kong value added is small<sup>3</sup> or the re-exports do not favour the United States, the EU or Japan.<sup>4</sup> The data are also useful in indicating the importance of Hong Kong both as an export market and an entrepôt for marketing Chinese products.

An alternative data source is official Chinese trade statistics, although they only became available in recent years. However, there is also a problem with this data set. China's official trade statistics give the correct magnitude of total exports, but the distribution is distorted as China treats Hong Kong as the final destination for its re-exports via Hong Kong. As a result, exports to other destinations are understated. Theoretically, official Chinese data can be adjusted to obtain correct market distribution, but this exercise is complicated by the value





**Table 8 Chinese textile and clothing exports, by major destinations, 1978–92 (per cent)**

	Textiles					Clothing				
	EU	HK	Japan	US	Others	EU	HK	Japan	US	Others
1978	13.6	30.8	14.9	4.5	36.1	13.6	21.5	14.2	11.4	39.3
1979	15.5	31.2	15.8	3.5	34.1	14.1	21.8	17.5	16.7	29.9
1980	17.4	34.6	12.3	6.2	29.5	17.2	27.5	14.4	16.8	24.1
1981	14.1	36.6	10.6	9.0	29.7	16.2	30.9	11.8	21.5	19.7
1982	15.8	37.7	11.7	9.6	25.2	11.7	31.8	11.3	28.1	17.2
1983	13.6	42.2	11.8	8.7	23.6	11.7	31.8	10.1	30.4	16.0
1984	11.0	45.0	13.9	10.5	19.6	10.3	34.9	10.9	29.5	14.4
1985	12.6	44.8	13.7	10.9	18.1	10.8	36.3	12.3	28.2	12.4
1986	12.0	47.3	11.9	10.5	18.3	10.5	35.8	9.4	31.6	12.7
1987	11.6	51.6	12.3	8.7	15.8	13.8	36.0	10.6	27.8	11.8
1988	11.3	49.0	14.5	8.6	16.6	14.1	35.6	15.0	22.8	12.5
1989	11.4	50.8	13.9	8.0	15.9	11.6	37.0	16.8	23.7	10.9
1990	13.1	50.8	10.9	8.6	16.5	15.3	36.9	14.7	22.8	10.3
1991	11.3	49.3	11.1	8.0	20.3	19.3	36.8	15.5	19.6	8.9
1992	10.7	48.6	11.0	9.4	20.2	16.4	35.1	18.4	20.7	9.4

Source: United Nations COMTRADE, International Economic Databank, Australian National University.

added in Hong Kong to China's re-exports. The margin of value added at the disaggregated level is largely unknown.

The United States and the EU are the two largest MFA markets for China. Import restrictions in these two markets therefore have a significant impact on China's overall textile and clothing exports. Prior to 1970, there was virtually no textile and clothing trade between China and the United States. Since the improvement in diplomatic relations in 1972, China's textile and clothing exports to the United States have grown rapidly. Although Hong Kong ranks as China's largest market in Table 8, the United States is in fact the largest market once the Hong Kong re-exports are taken into account.<sup>5</sup> Even according to the understated data, the United States accounted for 9 per cent of China's textile exports and 21 per cent of clothing exports. The true shares are likely to be between 9 and 11 per cent for textiles and 21 and 32 per cent for clothing exports.<sup>6</sup> It should be noted, however, that the market share of the United States had reached its peak in the mid-1980 and has declined since then.

China's clothing exports to the EU are considerably smaller than those to the United States, but its textile exports to the EU are larger. Both textile and clothing exports to the EU have, however, expanded less rapidly than to the United States or Japan.



China's clothing exports to Japan have grown most rapidly in recent years. In the mid-1970s, Japan was the second largest clothing market for China, next only to Hong Kong. As the US market began to expand in the late 1970s, the Japanese market started to decline. This trend was not reversed until 1988 when China's exports to Japan expanded rapidly. By 1992 Japan's clothing imports from China were only marginally smaller than those of the United States. This contrasts sharply with the situation in the mid-1980s, when Japan's imports were less than one-third those of the United States.

The changes in the market shares of the United States, the EU and Japan suggest that the MFA may have diverted China's clothing exports from the United States and EU to Japan. However, due to the differences in the overall growth rates of these markets, this observation does not lead to a firm conclusion. In particular, the appreciation of the yen may have helped China's exports to Japan. Similarly, the depreciation of the US dollar against the yen might explain at least part of the slowing down of export growth to the United States.

Another approach to examining the export diversion effect of the MFA is to look at China's market penetration (defined as China's share of the total imports of the importing countries) in Japan *vis-à-vis* that in the United States and the EU (Table 9). Despite the rapid growth of exports since the late 1970s, China still accounted for only a moderate fraction of total US imports in 1992. Its share of the EU market was even smaller. This, however, does not exclude the possibility that China's market shares in some specific products are much higher. In contrast, China's share of the Japanese market was much higher than its share of the US or the EU markets. China traditionally had a large share of the Japanese market. Its share of the Japanese textile market reached its peak in the mid-1980s. After substantial declines in the period 1988–90, China's market share bounced back strongly in 1991 and 1992. The strong growth of clothing exports in the period 1988–92 enabled China to capture 43 per cent of the Japanese market, 2.6 times its share of the US market and 6.5 times its share of the EU market. The high and increasing market penetration of the Japanese market in recent years is an indication that the MFA is binding in the United States and the EU and that China is diverting its exports to Japan. It also suggests that China has become more competitive, especially in non-MFA markets, where no significant quantitative restrictions are in place.

With relatively simple production technology in textiles and clothing, exporting countries should be able to diversify their exports into unrestricted products after the imposition of MFA quotas. Thus, if MFA restrictions are effective, the exports of unrestricted categories will grow more rapidly than those of restricted categories, assuming that there is a sufficiently large unrestricted market to absorb growing imports.



**Table 9 Imports of Chinese textiles and clothing into the United States, the EU and Japan, 1978–92 (percentage of total imports)**

	Textiles			Clothing		
	EU	Japan	US	EU	Japan	US
1978	1.2	14.8	2.9	0.6	7.1	1.1
1979	1.4	15.4	3.0	0.8	9.7	2.7
1980	1.8	17.9	5.9	1.4	15.6	4.0
1981	2.0	18.5	8.4	1.9	13.9	5.6
1982	2.1	18.7	8.6	1.7	14.9	7.8
1983	2.1	23.1	7.8	2.0	18.6	8.1
1984	2.2	26.9	8.5	2.1	19.1	6.8
1985	2.3	26.3	8.0	2.3	23.1	6.5
1986	2.2	26.6	8.7	2.4	19.5	10.0
1987	2.3	26.3	8.5	3.1	17.9	9.9
1988	2.2	25.3	9.7	3.7	21.6	9.6
1989	2.4	24.3	9.7	4.0	24.7	12.0
1990	2.2	20.1	9.9	4.9	27.5	13.7
1991	2.3	23.5	10.3	6.9	34.6	14.7
1992	2.3	25.5	11.5	6.7	43.4	16.4

*Source:* United Nations COMTRADE, International Economic Databank, Australian National University, February 1995.

Changes in market conditions may occur in respect of demand or supply, or both. Income elasticities and changes in taste may favour demand for unrestricted products when products made from new fibres are available. Production technology may advance more rapidly in unrestricted products because of easier access to export markets. However, the development of new products and progress in production technology for unrestricted products are likely to be related to MFA restrictions as well as to a ‘neutral’ process. There is no reason to believe that changes in demand and supply conditions would favour unrestricted products in the absence of the MFA. Thus, a higher rate of growth of unrestricted exports than of restricted exports almost certainly reflects the binding effect of MFA quotas, particularly when the upgrading effect of the MFA is eliminated by calculating the growth rates in quantity terms.

Since the first textile agreement, China has not only made full use of quotas, but has also shifted to unrestricted products (Whalley 1992; GATT 1984, 1987). China has also attempted to raise product quality to offset the slow growth of quota volumes. Yang (1992) showed that the growth of unrestricted exports was much more rapid than that of restricted products. In the United States, for the five years of 1984–88, the rate of growth of unrestricted exports was 5.6



times that of restricted products in quantity terms and 2.5 times in value terms. Imports into the EU of products in restricted categories grew at a rate less than one-third that of products in unrestricted categories.

The smaller discrepancy in value terms indicates a more rapid growth of unit values of restricted exports than of unrestricted exports — the upgrading effect of the MFA. However, the more rapid growth of the unit values of restricted products may also have partly resulted from increases in the stringency of MFA quotas (Yang 1992).

### **Implications of the phasing out of the MFA**

#### *Modelling the world textile and clothing market*

Facing MFA quotas, an exporting country can expand its exports through diversification into non-MFA markets. If the country were sufficiently flexible in diversifying its export markets and if export prices in the unrestricted markets were maintained at their pre-restriction levels, it would benefit from the MFA because it could both maintain its total export volume and capture part or all of the quota rent in the restricted market. Similarly, the country could switch to exporting products that were not restricted in the MFA markets. Again, if prices for the unrestricted products remained unchanged, the country would benefit from the MFA.

The reality, however, is that most industrial countries impose quotas on developing countries' exports, which considerably suppresses world demand for textile and clothing imports and depresses prices in non-MFA markets. Thus, in order to evaluate an exporter's position in a world market distorted by the MFA, the rent gain that the exporter obtains in the restricted market has to be set against the losses incurred in the restricted market as a result of the reduction in restricted exports and the likely loss incurred in the non-MFA market as a result of depressed prices — notwithstanding the increase in the export volume there. Thus, the proportion of a country's total exports that goes to non-MFA markets has important implications for its position in the world textile and clothing market (Martin and Suphachalasai 1990; Yang, Martin and Yanagishima, forthcoming 1996). Table 10 shows the percentages for the major regions and China.

Because of the global general equilibrium effects of the MFA, it is necessary that a global model be used in evaluating the effect of MFA reform. As our interest is also in the significance of the MFA reform relative to the Uruguay Round trade liberalisation as a whole, the use of a global general equilibrium model is further warranted because the MFA is to be phased out in



**Table 10 Textile and clothing exports to MFA-importing countries as a percentage of total exports, selected regions and China, 1992**

	Textiles	Clothing
NIEs	11	71
ASEAN	23	55
China	16	26
South Asia	39	78
Latin America	48	87
ROW	66	86

Source: GTAP database, version 2.

a period in which agricultural reform and tariff reductions are also being implemented. The GTAP global general equilibrium model developed by Hertel (forthcoming 1996) has been used here for this purpose.

The standard closure of the GTAP model is used, which means that all prices and quantities are endogenous except the price of savings (the numeraire) and supplies of factors of production (land, labour and capital). The exogenous variables include all technical change variables and all or some policy variables, depending on the issues to be addressed (to be discussed under the relevant experiments). The rate of return on investment is allowed to be equalised across countries, so that savings demand in any country can be met by investment in other countries, as well as by the country's own investment. The elasticity of the expected rate of return on investment with respect to end-of-period capital stocks is set at 10, making the supply of new capital goods quite insensitive to the expected rate of return.

### *The significance of the MFA reform*

The process of abolishing the MFA as agreed in the Uruguay Round is the gradual phasing out of quantitative quotas. Ideally, such a process should be incorporated in simulations when evaluating the MFA reform. To model such a process, however, commodity disaggregation in line with MFA quotas has to be used. In addition, under the Uruguay Round agreement, importing countries are allowed to choose from broad commodity categories which quotas are to be phased out first. Thus, it is impossible to implement the gradual liberalisation without prior knowledge of its sequence. As our main interest is in the ultimate outcome of a counterfactual



removal of the MFA in the base year (1992), the implementation of the reform in the model has been approximated by reducing the export tax equivalents of MFA quotas to zero. The results of this experiment are reported in the first column of Table 11. To put the MFA reform in perspective, the results for the complete Uruguay Round trade liberalisation have also been reported in the table (column 2).

The results confirm the conclusions of several earlier studies (Whalley 1992; Yang 1994; Yang, Martin and Yanagishima, forthcoming 1996). As one of the largest textile and clothing exporters, China gains substantially from abolition of the MFA. In fact, a dominant part of China's gain from the Uruguay Round reform comes from removal of the MFA. China's real income increases by over one per cent. Real wages increase by a similar magnitude. For a sectoral reform, static welfare gains rarely amount to such a high proportion of national income, especially when a perfect competition model is used. This is, of course, largely because of the great importance of textiles and clothing to the Chinese economy and, in particular, in China's exports. The large distortions created by the MFA also explain the large welfare gains.

It should be noted that the gains occur despite a considerable decline in China's terms of trade, which results from the loss of MFA quota rents when the MFA is abolished. As can be seen, export prices (f.o.b.) for clothing exports decline substantially. Non-MFA reforms reinforce the terms of trade effect because of the induced increases in the prices of imports of non-MFA goods.

The expansion of the clothing industry is much greater than that of the textile industry, reflecting the greater openness of the clothing sector and higher restrictions of the MFA on clothing. Non-MFA reforms lead to further expansion of textile and clothing trade. While this further trade expansion is associated with an increase in clothing output, textile production actually contracts because of non-MFA reforms.

One consequence of MFA removal is the large increase in China's textile imports. One would expect that China's trade surplus in the textile sector increases when the MFA is removed. The large intermediate demand for textiles generated by the clothing sector means, however, that textile imports have to expand to such an extent that net exports (exports minus imports) in fact decline. Thus, China will become increasingly specialised in clothing as a result of the MFA reform. This will further strengthen the ongoing trend of rapid growth in textile imports, especially from the NIEs.

The importance of the MFA reform to China is further highlighted by the results of the third experiment presented in Table 11 (column 3). In this experiment, it is assumed that China is excluded from the MFA reform and therefore faces discrimination in the MFA markets. Such

**Table 11 The impact of the Uruguay Round trade liberalisation (percentage change)**

	The removal of the MFA alone	Complete Uruguay Round	Facing MFA discrimination
Macroeconomic effect:			
Welfare <sup>a</sup> (US\$ billion)	5.2	6.2	-2.1
Real income	1.2	1.4	-0.5
Real wages	1.2	2.5	-0.0
Exports	9.8	15.6	-0.7
Imports	6.6	13.7	-0.3
Terms of trade	-1.4	-2.1	-0.9
Effects on textiles:			
Output	15.8	13.4	1.3
Exports	7.9	10.2	6.5
Imports	26.6	41.8	0.1
Export price (f.o.b.)	-1.3	-1.8	-1.3
Effects on clothing:			
Output	74.0	82.1	-0.6
Exports	130.0	144.3	-0.6
Imports	13.8	45.9	-0.7
Export price (f.o.b.)	-11.3	-12.0	-6.8

Note: a Equivalent variation.

a scenario could be the result of a backlash against China's failure to enter the World Trade Organisation (WTO) and of increasing trade tensions with industrial countries. Should this occur, China would lose over US\$2 billion. While production and exports of textile increases, both clothing output and exports decline. The difference in welfare between being included in the MFA reform and being excluded is about US\$8 billion.

### *The welfare implications of quota allocation regimes*

In recent years, there has been increasing evidence that quota rents are probably shared by exporters and importers due to market imperfections (Kumar and Khanna 1990; Krishna and Tan 1995). As discussed earlier, under China's quota allocation system, part of the quota rents which are initially captured by FTCs may be shared with importers. In the GTAP model, it is assumed that exporting countries capture all quota rents as MFA quotas are modelled as export taxes and export markets are perfectly competitive. As a result, it is impossible to model rent sharing endogenously using GTAP.



As noted earlier, rent-sharing can have important welfare implications because of its terms of trade effect. If rents are indeed shared, then the welfare gain to exporting countries is likely to be larger than has been reported above. While we cannot model rent-sharing endogenously with the existing database and model, it is possible to evaluate the welfare implications of export expansion under two extreme rent distribution scenarios. The first scenario simulates the effect of a 5 per cent increase in the productivity of textile and clothing production assuming that MFA quotas act as export quotas. The second scenario applies the same shock but with the assumption that any additional restrictions on top of the MFA take the form of import quotas. In the first experiment, the export tax equivalents are allowed to vary while in the second the import tariff equivalents are determined endogenously. For the purpose of comparison, a third experiment is carried out assuming that there are no quantitative restrictions. This last experiment uses a hypothetical database in which the MFA has been removed, leaving tariffs as the only trade barrier (see Table 12).

The results of the first experiment show that overall exports rise as a result of substantial increases in textile and clothing exports. Export expansion leads to the decline of export prices and a deterioration of the overall terms of trade. It should be noted, however, that in this experiment, prices (f.o.b.) for textile and clothing exports to MFA markets do not change because of the export quotas; the decline in the terms of trade results from the expansion of exports to non-MFA markets. Despite the terms of trade effect China gains. Thus, if China is able to capture MFA quota rents, any productivity increases in the textile and clothing sector will be welfare-improving. As discussed earlier, China can obtain maximum quota rents by auctioning quota rights, instead of giving quotas free of charge to exporters, which creates the possibility of rent-sharing.

The second experiment shows that even if for some reason importing countries obtain the incremental quota rents resulting from China's productivity improvement, China is likely to gain as well, but by nearly US\$1 billion less compared with the scenario where the restriction of trade takes the form of export quotas. The major difference in the results between the two experiments is that China's overall terms of trade declines much more in the case of import quotas than in that of export quotas. That the decline in the terms of trade is greater in the first experiment results from the greater decline in the export prices of textiles and clothing due to the failure to capture incremental quota rents, in addition to price declines in unrestricted markets.

If a 5 per cent productivity improvement occurs in a quota-free world market, China benefits substantially more (by US\$2.8–3.6 billion) than if it occurs in the quota-restricted



**Table 12 Welfare implications of a 5 per cent productivity increase in China's textile and clothing industries under different types of trade restrictions (percentage change)**

	Export quotas	Import quotas	No quotas
Global welfare (US\$ billion)	4.0	4.0	6.6
China's welfare (US\$ billion)	4.0	3.2	6.8
Real income	0.9	0.7	1.5
Real wages	1.0	1.0	1.4
Exports	1.7	1.9	3.9
Imports	0.5	0.4	2.4
Terms of trade	-0.04	-0.42	0.10
Textile exports	15.9	16.1	14.7
Clothing exports	19.7	20.1	29.0
Price of textile exports	-4.7	-5.9	-4.6
Price of clothing exports	-4.0	-6.4	-5.1

market, despite a similar decline in the export price of textiles and clothing. In the absence of quotas, exports expand more given a similar decline in export prices.

### *Increasing competition in the world market*

There is little doubt that the removal of the MFA will increase competition in the world market. Competition has been increasing in recent years, however, even before the phasing out of the MFA as more developing countries have shifted to outward-oriented growth. For low-income developing countries, this policy re-orientation means that their labour-intensive exports, such as textiles and clothing, will probably become more competitive. In this context, it is important to note that India, Pakistan and other South Asian countries have emerged as significant textile and clothing exporters in recent years. Their share of world textile and clothing markets is increasing rapidly (see Table 7). With reforms continuing in these countries, it is likely that their textile and clothing sectors will become increasingly competitive.

South Asia is, of course, not China's only competitor. Other countries, such as Vietnam and Burma, are also emerging as significant exporters. Some economists have been concerned that if all developing countries follow the outward-oriented growth strategy the world market may not be able to accommodate the increases in exports from developing countries (Cline 1982; Streeten 1982). Industrial countries may resort to additional protection policies (for



example, by invoking the GATT safeguard measures) to protect their labour-intensive sectors in the post-MFA era. With an increasing number of large developing countries now increasing their labour-intensive exports, the concern about these policies cannot easily be dispelled. What will be the impact on China of the expansion of exports from South Asia? Will the world market be able to accommodate the increase in textile and clothing exports from developing countries even without sharp pressures for additional protection?

To answer the first question, a simulation is carried out to examine the effect of a 5 per cent increase in the productivity of the textile and clothing sectors in South Asia (column 1 of Table 13). Increases in productivity in South Asia do seem to have a large negative impact on China's exports, which contract considerably, leading to considerable welfare losses. Other textile and clothing exporters also lose, but China loses by far the most. This is simply because China has a large market share and is in direct competition with South Asia in the markets of the major industrial countries, especially the United States. It is noted that the welfare gain from the 5 per cent productivity improvement is larger for South Asia than for China despite the fact that the two have a similar output level. This is largely because South Asia is a smaller textile and clothing exporter, and the negative effect on the terms of trade of increased textile and clothing exports is smaller. In fact, the overall terms of trade for South Asia improves despite declines in the terms of trade for textiles and clothing.

Under the Armington (1969) assumption, the elasticity of substitution among various sources of supply is the same across countries. One would expect that exports from China and South Asia would be closer substitutes than those of China and the NIEs, say. Thus the results presented in Table 13 probably underestimate the impact on China of South Asia's expansion.

The second experiment attempts to answer the second question by examining the impact of a simultaneous improvement in the productivity in all developing countries.<sup>7</sup> The purpose of this experiment is essentially to test the 'immiserising' growth proposition, leaving aside the possibility of import restrictions arising from such simultaneous export surges. This experiment is particularly interesting because the textile and clothing markets of the industrial countries have been more deeply penetrated by exports from developing countries than most other markets. Deep penetration means that the demand for imports of textiles and clothing from developing countries is less elastic than for other imports. As a result, the benefits from export expansion in developing countries are expected to be smaller.

The simulation suggests that despite a high level of market penetration, all developing countries benefit substantially from their improved productivity, confirming a more general conclusion that simultaneous export expansion by developing countries will not lead to

**Table 13 The impact of a 5 per cent improvement on the productivity of textile and clothing industries in South Asia and developing countries**

	a		b		c	
	Equivalent variation (\$million)	Terms of trade (% of change)	Equivalent variation (\$million)	Terms of trade (% of change)	Equivalent variation (\$million)	Terms of trade (% of change)
China	-743	-0.26	3,041	-1.23	1,893	-1.60
Australasia	31	0.03	229	0.19	168	0.12
North America	615	0.05	4,808	0.36	5,318	0.53
European Union	433	0.02	2,403	0.13	3,605	0.28
Japan	-337	-0.03	-454	-0.06	-63	-0.02
Asian NIEs	-234	-0.04	3,430	-0.20	2,796	-0.29
ASEAN	-528	-0.12	2,823	-0.35	947	-0.74
South Asia	4,691	0.88	2,225	-1.61	1,329	-2.50
Latin America	-47	-0.01	4,924	0.09	4,689	0.03
Rest of the world	-26	0.00	7,812	0.16	7,278	0.11
World	3,856	-	31,241	-	27,961	-

Notes: a—expansion in South Asia.  
b—expansion in developing countries without quantitative trade restrictions.  
c—expansion in developing countries with quantitative import restrictions.

immiserising growth (Martin 1993). Export expansion does result in considerable declines in the terms of trade of all Asian developing countries, but this is insufficient to offset the gains from improved productivity. Industrial countries are also large beneficiaries, but it is the developing countries that benefit by far the most. Of the global welfare gain of US\$31 billion, well over three-quarters accrues to developing countries.

If industrial countries introduce quantitative import restrictions, will developing countries still be able to benefit from their improvements in productivity? To answer this question, a third experiment is carried out to evaluate the consequences of improvements in productivity in developing countries in the face of protection. The results show that the benefits from improvements in productivity are reduced for developing countries because of greater declines in their terms of trade. However, none of them suffers from 'immiserising' growth. Nevertheless, the reduction in welfare benefits is substantial for some developing countries. Not surprisingly, countries that have a large share of the markets of industrial countries have their benefits reduced more than those that have a smaller market share. For example, the benefits



to China are reduced by more than US\$1 billion, and those to ASEAN countries by nearly US\$2 billion.

## Conclusion

Strategies aimed at the development of heavy industry in the pre-reform era led to a steady decline in the importance of textiles and clothing in the Chinese economy. Subsequently, economic reforms and strong domestic and export demand led to a sustained boom in the textile and clothing sector until the late 1980s. Statistics show that the non-state sectors, especially township and village enterprises, have played an increasingly important role in China's textile and clothing exports, while the state sector has lost its dominance. The prospects for China's textile and clothing exports therefore lie in maintaining the growth momentum of the non-state sector.

If the recent performance of the state sector is any indication, the phasing out of the MFA may put increasing pressure for adjustments on state enterprises. This is because China's MFA quota allocation regime has favoured state enterprises at the expense of non-state enterprises. Thus the phasing out of the MFA will make the state sector even less competitive.

China is expected to benefit substantially from the complete phasing out of the MFA. In fact, the MFA reform accounts for a dominant proportion of China's overall welfare gain from the Uruguay Round trade liberalisation. The importance of the MFA reform is even greater if the alternative to complete reform is the exclusion of China from global trade liberalisation and hence discrimination against China. Early entry to the WTO will perhaps be the most effective way to secure the benefits of the phasing out of the MFA and to avoid potential discrimination.

In the meantime, China can improve the efficiency of its textile and clothing sector by introducing the auctioning of quotas and free trade in quotas. The current system of quota allocation leaves too much room for bureaucratic discretion and is prone to rent-seeking and corruption. Without quotas being directly sold to producing enterprises, there are limited incentives to upgrade product quality, even if it is desirable. In fact, it would be more efficient to let enterprises which have paid for quotas decide if upgrading is beneficial. The auctioning of quotas also leaves less room for importers to extract rents from Chinese exporters.

Simulations show that whether or not China is able to obtain quotas makes a significant difference to its welfare. With the MFA being phased out in ten years' time, this means that substantial welfare gains can be obtained by extracting the quota rents through the auctioning



of quotas. If such a policy is put in place, any benefits from future export expansion will largely remain in China. Nevertheless, China will still be able to benefit from its productivity improvements even if resulting incremental quota rents accrue to importing countries.

World textile and clothing markets have become increasingly competitive in recent years, with the emergence of some populous, low labour cost countries, such as the South Asian economies. Competition is likely to increase further with the removal of the MFA. Despite high market penetration, export expansion through improvements in productivity will benefit exporters even if all developing countries expand their textile and clothing exports at the same time. For China, and perhaps all other countries also, failure to keep up with improvements in productivity in other parts of the developing world will have a much more negative impact on its export performance and welfare than if there were a simultaneous surge in exports from all developing countries. In the event that MFA quotas are replaced by some form of quantitative import restrictions in the post-Uruguay Round era, productivity improvements will still lead to increases in welfare, though they may be much less than they would otherwise be without restrictions.

## Notes

- \* I wish to thank Professor Ron Duncan for helpful comments on a draft of this paper.
- 1 This is inferred from the statistics in the yearbook (pp. 409, 417) given the fact that the total output of state enterprises and that of independent accounting state enterprises were similar in 1992.
- 2 This section draws considerably on Yang (1992) and has been updated from a survey conducted by the author in Beijing and Tianjin in early 1995.
- 3 It is estimated that the value added margin in Hong Kong is around 15 per cent for aggregate re-exports (Sung and Lee 1991).
- 4 This also assumes that the margin of value added in Hong Kong is the same for exports to different destinations.
- 5 In 1992 Hong Kong's imports from China (including those for re-export) were US\$7.7 billion greater than US imports from China. In the same year, total Hong Kong re-exports of Chinese textiles and clothing amounted to US\$14.1 billion. Thus, if the value added margin for the re-exports is less than 83 per cent, which is very likely, then the United States is the largest export market for China.
- 6 The upper limits are obtained by dividing US imports by China's official export data. This will certainly overstate the market share of the United States since the value of US



imports includes both transport and insurance costs and value added to re-exports in Hong Kong.

- 8 The rest of the world is also included as a developing country group, although it includes a small number of industrial countries.

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**The Impact of China's Resuming GATT  
Contracting Party Status on  
its Import and Export Trade**

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## **Import and export opportunities upon re-entering GATT**

China's resumption of GATT membership and its implementation of the agreements reached in the Uruguay Round will have a strong impact on its foreign trade. The main benefits will include favourable MFN tariff treatment, fewer non-tariff barriers, the elimination of trade protectionism and enhanced import and export trade.

Since 1948 the tariff ratio of industrial products among the developed countries has fallen from 40 to 4.7 per cent over seven rounds of GATT negotiations. This reduced tariff ratio among the developed countries will impact favourably on China's import and export trade.

On the export side, the reduced tariff ratio will allow China to increase its export of industrial products and lead to greater price competitiveness for export commodities. Furthermore, equal tariff treatment among the GATT contracting parties will allow China to seek out markets and trade partners for its export commodities and help it reap the maximum economic returns. At present, China has bilateral trade agreements involving MFN treatment with more than 110 countries and regions. These agreements generally have time limits, however, unlike the GATT multilateral agreements. After China's re-entry into GATT, it will be party to the favourable tariff concessions agreed upon during the first five rounds of negotiations, which will further promote its export trade.

The agreements that have been reached in the Tokyo and Uruguay Rounds to reduce non-tariff measures so as to contain trade protectionism will lead to more opportunities for China's export trade. For instance, in the Uruguay Round, the Textile and Garments Agreement stipulates that agreement be reached on the rate of export growth in the process of gradually eliminating textile quotas. These kinds of free trade measures will promote the development of international trade and help China to enlarge its textile exports. The Textile and Garments Agreement stipulates that textile and garments export quota limitations are to be completely cancelled within ten years, in conformity with GATT free trade principles, which will help expand the world textile and garments market. As a result, China will have a larger portion of



the export market and enjoy the advantages of export growth. Experts estimate that if the quota limits on textiles within the Multi-fibre Agreement (MFA) are cancelled, China's textile exports will possibly increase 322 per cent over present levels.

With respect to imports, in the process of further opening up to the outside world and increasing its exports, China's import volume and demand will continue to increase. Owing to the gradual elimination of tariff and non-tariff barriers, China will increase its imports of raw materials and other primary products in order to lower production costs and cover the shortage of raw materials in the domestic market. On the other hand, China will, through the import of advanced foreign technologies and equipment, optimise its production elements so as to increase its competitiveness. Generally speaking, the world market price for primary products is cheap and, with the gradual elimination of tariff and non-tariff barriers, import prices for some primary products will be even cheaper. For example, foreign agricultural products receive export subsidies and China is able to import wheat at low prices and export other grains that are higher in price. In this way, China is able to earn foreign exchange for its imports and reap economic returns. Also, because of reduced import tariffs and the elimination of the import examination and approval system, China is able to import key technologies and essential parts to promote technological upgrading of its auto and steel industry. This will help in solving such problems as poor quality, irrational product mix, high energy consumption and low efficiency, and thus increase the international competitiveness of its export commodities.

China's resumption of GATT membership will also allow it to take advantage of anti-subsidy and anti-dumping measures in its fight against unfair anti-subsidy and anti-dumping lawsuits, thus paving the way for it to increase its export share in the international market.

In 1993 China's export volume reached US\$91.8 billion, giving it a world ranking of 11th. China's exports account for more than 20 per cent of its total GNP and boasts of a stable increase in the international market. Yet, with the emergence of trade protectionism in Western developed countries in recent years, these countries are looking to impose discriminative anti-



subsidy and anti-dumping duties on some of China's traditional export commodities so as to restrict the export of Chinese products.

According to incomplete statistics, between August 1979, when the first anti-dumping investigation was undertaken (of EC watch manufacturers), and the end of 1991, 39 anti-dumping lawsuits were taken out against China, with 7 of those in 1991 alone. Between 1980 and the end of 1990, 94 of China's export commodities to the United States were subject to anti-dumping lawsuits. The EC also imposed restrictions on exports of more than 200 Chinese products.

When China re-enters the GATT, no longer will the petitioner be able to rule unilaterally according to discriminative domestic anti-dumping and anti-subsidy duties laws. Instead, the petitioner will have to adhere to the procedures outlined in the Subsidy and Anti-Subsidy Agreement and Anti-Dumping Agreement. For example, if a contracting party accuses China of product dumping, it will have to submit a written application to the Anti-Dumping Executive Committee to carry out the investigation in line with official procedures. Only when the investigation is able to prove that the importing country has suffered substantial losses because of product dumping will it be able to levy anti-dumping duties. In the same way, China will be able to refer to GATT so as to levy anti-subsidy and anti-dumping duties on foreign government-subsidised exportation and low price dumping and thus increase its own export volume.

Membership of GATT will also give China access to the GATT multilateral trade system to solve international trade disputes and help it acquire US MFN status that does not rely on certain preconditions and Generalised System of Preference (GSP) treatment.

It is commonly acknowledged that Sino-US trade friction originates from discriminative US trade policies against China. The US government annually examines China's MFN status and decides whether to extend or suspend MFN treatment. The fact that the US government connects China's MFN status with other non-economic problems shows that this treatment is conditional and unstable. At present, trade friction between China and the United States cannot



be solved through the GATT multilateral disputes settlement system but through bilateral trade negotiations instead. The unfair discriminative treatment imposed on China arises from the status of Sino–US trade and investment. In 1992 Sino–US trade reached US\$17.5 billion, making America China’s third largest trade partner (after Hong Kong and Japan). In terms of investment, the United States had invested in 3,899 projects in China as of the end of September 1992, with agreed investment totalling US\$6.34 billion and actual input reaching US\$2.8 billion. The United States currently ranks second among countries investing in China (after Hong Kong). In recent years, especially since 1992, many American transnational corporations have showed great enthusiasm for investing in China. Du Pont established a Du Pont Agro-chemical Corporation in Shanghai; General Motors established the Gold Cup Auto Corporation in Shenyang; Motorola set up a solely-invested enterprise in Tianjin; and Ford signed an agreement with Shanghai partners to manufacture auto parts. Meanwhile, many people in America’s political, industrial and commercial circles made great efforts to attain unconditional MFN status for China. After rejoining GATT, China will attempt to improve Sino–US relations, hopefully acquiring US MFN status and allowing for increased Chinese exports to the United States.

China cannot rule out the possibility, however, that after its re-entry the US government may resort to Article 35 of GATT — Non-application of the Agreement between Particular Contracting Parties — and continue to undertake its annual examinations by Congress of China’s MFN status.

As a developing country, resumption of GATT contracting party status will not only allow China to enjoy non-reciprocal treatment for developing countries as stipulated by GATT, it will also attract GSP treatment by the US government and result in an increase in China’s exports to the United States. The 8th clause of Article 36 of GATT stipulates that developed country contracting parties are not to expect reciprocity for commitments made by them in trade



negotiations to reduce or remove tariffs and other barriers to the trade of less-developed contracting parties. This clause acts as the legal basis for GSP treatment in international trade.<sup>1</sup>

Since 1978 China has received GSP treatment from 21 countries such as New Zealand, Australia, Norway, Switzerland, the EC, Austria, Finland, Canada, Sweden and Japan (but not from the United States). If China resumes GATT contracting party status, it will make efforts to attract US MFN status and GSP treatment by the US government. Great potential also exists for the development of Sino–US trade and technical cooperation.

One other advantage to be gained from acquiring GATT membership will be the opportunity for China to upgrade its foreign trade system to international standards and to strengthen its import and export trade.

### **Challenges facing China's import and export trade after re-entry into GATT**

One of the major challenges confronting China after rejoining GATT will be the stiff competition its export of industrial products will face in the international market.

After fourteen years of reform and opening up to the outside world, the quality of China's export commodities has been greatly improved and international competitiveness has been strengthened. Yet, on the whole, there remains a big gap between the quality of China's export commodities and those of developed countries. Some of China's technology-intensive, capital-intensive and knowledge-intensive industries and products — such as cars, electronics, chemicals and textiles — are lacking competitiveness in the international market. Even the traditional labour-intensive textile and garments sector faces sharp challenges from other rising industrialised countries and developing countries following on from the gradual freeing up of exports. Progress in science and technology and the application of microelectronic technology have seen great changes take place in the textile and garment industry. Textile and garment production is no longer solely labour intensive but also technology intensive. China's exports



of textiles and garments are facing stern competition from textile exporting countries in Southeast Asia in particular.

Investigation of large and medium-sized enterprises in China shows that, in the international market, products with a ready market account for 51 per cent of total exports, but competitively-challenged products account for only 25 per cent. China develops over 80,000 new products annually, only 3.5 per cent of which meet international standards. At present, medium and low-grade products account for most of China's export commodities, while high-grade commodities with high value added account for just a small percentage. According to statistics released by the International Textile Manufacturers Federation on exchange earnings per ton of fibre product (including yarn cloth, knitwear and garments), Italy rates highest at US\$17,247, followed by West Germany at US\$15,825, Japan US\$13,711, France US\$12,598, South Korea US\$9,483, Taiwan US\$8,724, and China at US\$5,484.

For a long time, China's technology-intensive, capital-intensive and knowledge-intensive products have been subject to import-substitution strategies, with their protection of high import duties, neglect of foreign technology and emphasis on domestically-produced goods. As a result, these products are lacking competitiveness in the international market. With tariff concessions fewer administrative limitations and the opening up of its domestic market, accession to GATT will lead to the China market being challenged by an inflow of imported commodities. According to statistics, the output value of the affected industries will account for one-third of the value of total industrial output. If one takes into consideration the ties between different industries, the impact will be comprehensive. For instance, the price of automobiles produced in China (tax not included) is 40 to 100 per cent higher than for the same foreign product. Under circumstances of market allowance and tariff concessions, China's chemical and raw materials sector will be challenged by an inflow of imported materials that are lower in price, greater in variety and higher in quality. At present, the price of two-thirds of China's main imported chemical products is lower than the ex-factory price of the same domestic product, and the same for the price of half of China's imported plastic products.



Pharmaceuticals and agro-chemicals represent China's main import and export commodities. The Intellectual Property Agreement of the Uruguay Round provides patent protection for the production of pharmaceuticals, agro-chemicals and foodstuffs, thereby imposing great burdens on China's import and export of these products. Since the founding of the People's Republic in 1949, about 3,009 kinds of medicine have been in constant use and production, 99 per cent of which are imitations. As of 1990, 783 kinds of Western medicine were in production, of which 97.4 per cent were imitations, and only 20 of which were developed by Chinese experts. Since the implementation of the Intellectual Property Agreement, China's medical industry has been unable to practise shareholding. Production licences for newly-patented medicines can be of the order of US\$5–7 million, which greatly increases the costs of production. For newly-developed foreign medicines, production licences are not available for purchase until investment in creating the medicines has realised sufficient economic returns on the international market. This imposes a real challenge on the export of Chinese medicine, as illustrated by the following example. China now has 146 kinds of agro-chemicals, 95 per cent of which are imitations, and 3,600 kinds of fine chemicals, 97 per cent of which are imitations or low-grade products. According to the spirit of the Memorandum of Understanding of the Sino-US Intellectual Property Negotiation, products patented before 1985 are to be excluded from the list of protected products. On the other hand, the production of newly-patented medicine since 1986 involves great expense because of administrative and patent protection. China is thus obliged to pay large amounts of foreign exchange to import agro-chemicals.

The time is not ripe, however, for China to explore and develop the above products and introduce import substitution, due to the present low level of technology, lack of qualified personnel, financial weakness and so on, all of which will take time to rectify.

The rapid growth of regional economic conglomeration and slow economic development among developed countries also presents China's traditional export market with considerable problems. The Canada-US Free Trade Agreement, which came into force on 1 January 1989,





and the mutual tariff exemption between the two countries greatly threatens the competitiveness of China's export commodities to Canada and the United States. The US government gave special GSP treatment to the Caribbean nations, but not to China, resulting in reduced export competitiveness. Further, EC countries in the European Free Trade Zone introduced tariff exemptions on industrial products, the exclusiveness of which resulted in reduced Chinese access to the European market. Under the Lome Agreement, the EC bestowed preferential treatment on many developing countries, China excepted. It is estimated that the free trade agreements already signed between different nations cover as much as 80 per cent of world trade in finished products.

China's foreign trade management system stands in great need of reform in such areas as export planning management, management of quotas and licences, and categorisation and quantification of commodities under control. Many problems remain unsolved within the foreign trade enterprise management and operating setup. These include broken linkages between industry and trade, technology and trade, domestic trade and foreign trade as well as imports and exports, shortage of information, purchase at higher prices and sale at lower prices. In regard to contract management in foreign trade, the problem remains of 'contracting for profits not losses', and in order to become fully competitive, China needs to ensure that its management of foreign trade helps to speed up reform and optimises its industrial structure and export commodities.

### **Addressing the opportunities and challenges**

The opportunities and challenges outlined in the preceding discussion can be dealt with as described below.

A crucial step is to first raise the international competitiveness of China's export commodities by quickening the transformation of the management mechanism over foreign trade enterprises and large and medium-sized industrial enterprises.



Under the planned economy, foreign trade companies and large and medium-sized industrial enterprises were to implement state plans. Their monopolised operations and limited marketability of production greatly hampered the development of China's foreign trade. Of late, the purchase prices of foreign trade commodities have increased, while sales prices in the international market have hardly risen and the prices of some primary products have even decreased. Much like the difficulties facing foreign trade operations, many large and medium-sized industrial enterprises are still suffering losses. In light of this situation, if China implements tariff concessions and cancels import and export licences, large quantities of foreign commodities will pour into the Chinese market and domestic commodities will face severe challenges. This anxiety is widespread among China's foreign trade enterprises and its large and medium-sized enterprises, assuming China's re-entry into GATT. But how is China to meet the challenge?

China's socialist market economy needs to merge into the world market. Foreign trade enterprises and industrial enterprises need to change the old concepts of monopolised operation, and increase the marketability of their products. They also need to introduce competition to their management and awareness of economic returns, and develop an understanding of the international market. China will need to take advantage of the transitional period given to the developing countries under GATT rules so as to utilise its foreign capital, its resources and intellectual power and introduce foreign technology and equipment into Chinese enterprises. It will then be possible to attract multinational corporations to invest in China, to import raw materials and hi-tech products that are lacking, to introduce advanced foreign management and organisation methods into Chinese enterprises, to readjust the export industrial structure and export product mix according to both international standards and those required by the importing countries, and to optimise production and marketing in accordance with changing demand in the international market.



China needs also to ensure that its foreign trade operations conform to international trade requirements. To achieve this, large-sized shareholding enterprise groups need to play a leading role in combining trade and industry, trade and agriculture and trade and technology, employing a pattern similar to the foreign trade operation system shown by the Japanese *sogoshosha*[conglomerates]. These enterprise groups could then extend their business scope, centring on one industry, and diversify their operations to achieve conglomeration and internationalisation. Only in this way can these enterprises improve their competitiveness and become responsible for their profits and losses. The experience of large Korean conglomerates is worth drawing from, and so is that in Chinese Taipei, where small enterprises have formed enterprise groups. Unlike Korea and Chinese Taipei, China is a vast country, so conglomerates should be formed mainly by large enterprises, with a combination of medium and small-sized enterprises. Medium-sized enterprise groups could be established in the provinces, and collective enterprises and private enterprises could form small-sized enterprise groups.

Transnational shareholding corporations with foreign trade also need to be created to carry out diversified operations, on a pattern similar to that of industrial groups in America and Europe, with one industry as the core. Apart from industrial production, the corporations would also develop primary and tertiary industries. The two patterns referred to in this and the preceding paragraph should coexist and develop together without any restrictions.

What is also needed is for China to readjust the functions of government, to increase its openness in formulating foreign trade policy and to improve foreign trade management in accordance with international laws and regulations.

The first clause of Article 10 of GATT stipulates that

Laws, regulations, judicial decisions and administrative rulings of general application, made effective by any contracting party on foreign trade shall be published promptly in such a manner as to enable governments and traders to become acquainted with them. Agreements affecting international trade policy which are in force between the government or a governmental agency of any contracting party



and the government or governmental agency of any other contracting party shall be published.

In order to resume GATT contracting party status, China submitted a Memorandum on China's Foreign Trade to the existing contracting parties in February 1987 and explained in response to later questioning that the Ministry of Foreign Trade and Economic Cooperation had made public 31 internal management documents and published new policies on foreign trade in Chinese newspapers. These actions were meant to display China's readiness to conform to the spirit of GATT.

The second clause of Article 6 of GATT stipulates that 'In order to offset or prevent dumping, a contracting party may levy on any dumped product an anti-dumping duty not greater in amount than the margin of dumping in respect of such product'. China, however, has not promulgated anti-dumping, anti-subsidy or foreign trade laws, but is attempting to do so in order to ensure that the operation of import and export trade and solutions to international trade disputes have a basis in law.

Another challenge facing China is to perfect its import system of foreign trade in conformity with the international market. To do so, it will need to protect its infant industries while lowering its tariff ratio to that required by GATT for developing countries. One important principle of GATT is the holding of trade negotiations to produce tariff concessions and to gradually cancel import tariffs so as to promote free trade. Since the commencement of reform and opening up China has readjusted its tariff rate, substantially so in 1985. Since 1992 China has unilaterally lowered tariffs for 225 commodities. In March 1992 it cancelled the regulation tax on 14 import commodities. Despite that, however, the present tariff is still higher than the weighted average tariff at 18 per cent. In order to conform to GATT requirements concerning tariff concessions, China needs to lower its tariffs further to the rate required by GATT for developing countries and to fulfil the commitment to tariff concessions. This needs to be done in accordance with its overall economic development plans and the aims of its eighth Five-Year



Plan, and in line with its industrial policy for the next ten years. China needs to lower tariffs to promote the import of commodities that involve high energy consumption, high material consumption and high cost when produced domestically, such as minerals, timber, fertilisers and agro-chemicals lacking in China.

At the same time, so as not to violate the principles of GATT, China needs to protect infant enterprises such as machinery and electronic products, and autos and auto parts, which are likely to be disadvantaged by the pouring in of foreign products. For instance, a few years ago, Malaysia and Indonesia took advantage of the protection clauses of GATT and argued, successfully, that their domestic auto parts production constituted an infant industry in need of protection. It needs to be noted that re-entry into GATT does not mean that China no longer needs protection. As a developing country, China will be looking to protect itself using the GATT anti-dumping articles. To this end, industrial associations, as intermediate organisations, will be established to coordinate and represent the interests of large and medium-sized enterprises, and report back to the government. The government will then be able to present facts and suggestions to GATT.

China also needs to make full use of GATT's exceptional and supplemental clauses, while gradually cancelling quantitative limitations on imports, to attain more trade profitability.

The first clause of Article 11 of GATT stipulates that

No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import and export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party.

According to this regulation, quantitative restrictions have to be eliminated in order to implement free trade. The Chinese government has already eliminated 18 of its 53 commodity importation licences and hopes to reduce by two-thirds the scale of commodities controlled by



import licences over the next two to three years, to limit import licences to just a few commodities and to implement an auction system for general licences. All these measures conform with GATT principles.

The first and second clauses of Article 12 and Article 18 allow developing countries — so as to ensure the international balance of payments, safeguard these countries' external financial positions and their balance of payments and achieve reasonable rates of increase on their reserves—to prevent importation from increasing substantially and to promote economic measures imposed for the protection of national treasures of artistic, historic or archaeological value as well as restrictions on the export of domestic materials necessary to ensure essential quantities of such materials for domestic processing during periods when the domestic price of such materials is held below the world price as part of a government stabilisation plan.

China will also need to eliminate export subsidies, open up a foreign exchange swap market and execute a single floating exchange rate and refund system. In January 1991 the Chinese authorities sought to adjust the exchange rate and instituted independent management and responsibility for profits or losses in foreign trade on most products including industrial finished products and primary products. This reform has been a big success, with optimisation of the export product mix. Before 1978 most exports were of agricultural products and raw materials, with industrial finished products accounting for only 47 per cent of the mix. But by 1992, 80 per cent of exports comprised industrial finished products. China was originally dependent on importation for many of the commodities it now exports. China has now even begun to export its own technologies. The economic returns of exportation include significantly reduced export costs and rapid capital rotation.

Following elimination of export subsidies, and in conformity with GATT principles, China will implement a number of measures to rectify the losses suffered by some export commodities. These measures include the opening of a foreign exchange swap market and the introduction of a single floating exchange rate and refund system.



## Notes

- \* Our sincere thanks go to Professor Chen Jiaqing for the useful material incorporated into our discussion.
- 1 The GSP is a common, non-discriminative and non-reciprocal tariff preference system that came into force on 25 June 1971 and which developed countries carry out for developing countries in regard to the export of products and semi-products (including some primary products).



# Policy Options for China in the Uruguay Round Trade Liberalisation

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## Introduction

China's foreign trade has increased rapidly since the late 1970s. Exports grew at a nominal annual rate of 17.7 percent in 1980–94, and imports at a rate of 15.1 per cent. As a result of this tremendous growth, China became the 11th largest trading nation in the world in 1992, up from the 32nd in 1978. By 1994 China's trade turnover had reached US\$236.7 billion, amounting to 45 per cent of official GDP.<sup>1</sup>

As China achieves deeper economic integration into the world economy, it has been obliged to give greater priority to economic issues in its foreign policy. This shift in policy focus is manifest in the recent establishment of diplomatic relations with several countries which have enjoyed rapid growth of trade and investment flows with China. China has also become increasingly active in international institutions. After regaining its membership of the World Bank and the International Monetary Fund in 1980, China formally lodged an application in July 1986 for re-admission to GATT. A series of economic reforms have been introduced in recent years to speed up the process of re-admission. Sino-US disputes over trade and human rights have also given China a sense of urgency in accelerating trade reforms in order to join the WTO as soon as possible.

China actively participated in trade negotiations during the Uruguay Round, and offered to reduce its trade barriers during negotiation of its WTO membership. Although the details of these offers will not be available until China is admitted to the WTO, China is expected to reduce its trade barriers in line with other developing countries.

Trade liberalisation forms part of China's ongoing reforms to transform itself into a fully fledged market economy. Some of these reforms have already been carried out. These include the overhaul of the taxation system and the unification of multiple exchange rates.

Notwithstanding these reforms, China still has a long way to go in establishing a liberal and transparent trade regime. Fearful of surges of imports from China and concerned about difficulties in penetrating the Chinese market, industrial countries led by the United States stalled China's effort to join the WTO at the end of 1994. One sticking point in the failed negotiations was the demand that China be admitted to the WTO as a developed country rather than as a developing one. This condition means, among other things, that China has to reduce its trade protection in line with the commitments of industrial countries in the Uruguay Round.

The question arises as to what difference it would make for China to be admitted to the WTO as a developed rather than a developing country. What are the policy options for China



if it fails to enter the WTO by its desired date? What are the economic consequences for China if it abandons its trade liberalisation commitments or takes unilateral actions in trade reform? If China does succeed in gaining entry to the WTO, what additional reforms can it carry out to maximise its benefits from the Uruguay Round trade liberalisation? This paper explores the implications of various policy options and attempt to shed some light on the debate concerning China's WTO membership and its trade reform in general.

The paper is organised as follows. The following section examines the openness of the Chinese economy. The broad pattern of China's trade barriers is analysed in the third section in a comparison with its major trading partners. The fourth section provides a brief introduction to the Global Trade Analysis Project (GTAP) model used in this study, followed by discussion of the modelling of trade reforms. In the two subsequent sections, various options for trade reform are analysed.

### **Opening the Chinese market**

At the aggregate level, the degree of openness of the Chinese market is reflected in the share of imports in its domestic output. Starting from a very low base in the late 1970s, imports reached 22 per cent of official GDP in 1994. This share overstates the importance of trade to the Chinese economy because of the underestimation of the true GDP by official Chinese statistics (Summers and Heston 1991; Garnaut and Ma 1992). The substantial devaluations of Chinese yuan in recent years has also led to exceptionally rapid increases in the share of imports in GDP. Nevertheless, there is no doubt that import penetration is on the rise.

The share of imports in GDP, however, also fails to show regional differences in the importance of trade. Trade plays a much more important role in coastal regions than in inland regions. For example, trade accounted for 75 per cent of GDP in coastal Guangdong province in 1992, whereas it accounted for only 8 per cent in inland Gansu province. Variations in openness across regions mean that trade liberalisation will have different impacts across the country. It is also important to note that market openness also varies among different types of enterprises. Export-oriented rural enterprises are generally much more open to trade than heavy-industry-oriented state enterprises.

The aggregate picture also conceals the vast differences in openness across the sectors of the Chinese economy. The openness of individual sectors can be measured by market penetration ratios (Table 1). The percentage of imports in gross output shows the potential



**Table 1 China's market openness, by sector**

Commodity	Gross output (US\$ million)	Imports as % of gross output	Imports as % of consumption	Exports as % of gross output	Net exports (US\$ million)
1 Paddy rice	29,106	0.0	0.0	0.0	4
2 Wheat	9,986	19.2	16.1	0.0	-1,910
3 Other grain	33,140	0.4	0.5	4.2	1,252
4 Non-grain crops	57,924	1.9	1.9	5.1	1,869
5 Wool	178	328.6	77.9	6.9	-572
6 Other livestock	48,369	0.5	0.5	3.8	1,595
7 Forestry	11,445	4.7	4.5	0.5	-472
8 Fisheries	9,803	2.3	2.7	15.5	1,293
9 Coal	12,348	0.5	0.5	7.1	810
10 Oil	9,234	17.4	21.0	34.5	1,577
11 Gas	564	15.5	13.5	1.1	-81
12 Other minerals	5,696	24.2	22.5	16.5	-440
13 Processed rice	15,180	0.4	0.4	1.4	161
14 Meat products	10,024	0.7	0.7	9.3	869
15 Milk products	819	9.2	8.6	2.4	-55
16 Other food products	27,434	6.0	6.4	12.1	1,664
17 Beverages and tobacco	24,688	1.1	1.1	2.9	454
18 Textiles	58,519	15.1	15.5	17.6	1,465
19 Clothing	29,426	1.8	9.8	83.2	23,960
20 Leather	19,268	8.4	27.1	77.5	13,317
21 Lumber	9,084	11.2	12.4	21.2	911
22 Pulp and paper	19,568	11.6	10.7	4.0	-1,490
23 Petroleum and coal	14,647	9.2	9.0	7.0	-316
24 Chemicals, rubber and plastics	64,712	19.4	17.8	10.7	-5,622
25 Non-metallic minerals	28,954	1.6	1.7	7.3	1,642
26 Primary ferrous metals	26,207	17.3	15.6	6.5	-2,823
27 Non-ferrous metals	7,734	26.5	22.9	10.7	-1,219
28 Fabricated metal products	17,681	6.9	7.8	17.4	1,844
29 Transport equipment	11,460	84.1	62.7	49.9	-3,923
30 Machinery and equipment	88,013	30.5	29.0	25.5	-4,363
31 Other manufactures	20,341	9.7	37.2	83.6	15,016
32 Services	298,628	1.2	1.2	3.5	6,908

Source: GTAP database, version 2.

impact of trade liberalisation (such as tariff reduction) on the sectors concerned. This index is more pertinent to sectors which produce intermediate products. The second index, the percentage share of imports in consumption, is more relevant for final goods sectors. Other things being equal, a sector is affected by trade liberalisation to a greater extent if it has a higher penetration ratio. Thus, wool, minerals (except coal), textiles, and most capital-intensive commodities



(chemicals, rubber and plastics, primary metals, transport equipment, and machinery and equipment) are likely to bear the greatest impact of trade liberalisation. Due to the high initial tariff levels, even a moderate ad valorem tariff cut will result in a significant impact on domestic prices.

The impact of trade liberalisation on textiles and clothing is more complex than that on other sectors. China has a comparative advantage in clothing, and to a lesser extent in some textiles. China is a large textile exporter as well as a large textile importer. Quite unlike reforms in other manufactures where the Uruguay Round trade liberalisation will largely take the form of tariff cuts, the phase-out of the Multi-fibre Arrangement (MFA) will result in the abolition of voluntary export restraint (VER) quotas, and boost exports of textiles and clothing from China. At the same time, however, the reduction of high tariffs on textiles and clothing will increase imports, which will place domestic industries under pressure. The net outcome will depend heavily on the depth of tariff cuts. As for clothing, trade liberalisation will likely boost domestic industries as clothing imports are small

Sectoral trade balances indicate the likely direction of the impact of trade reform. As will be discussed shortly, sectors which enjoy a trade surplus are normally the less protected sectors, and those having a trade deficit are often the more protected sectors. Among agricultural commodities (broadly defined to include processed agricultural products), wheat, wool, forestry products, and milk products have trade deficits. Overall, China still has a considerable agricultural trade surplus. Among manufacturing sectors, trade surpluses mostly occur in labour-intensive manufacturing sectors, and trade deficits are largely observed in capital-intensive manufacturing sectors. The clothing sector has the largest trade surplus and is among the most export-oriented sectors, with some 83 per cent of its total output being exported in 1992. Other export-oriented sectors include other manufactures, leather products and textiles. Somewhat surprisingly, the other manufactures sector is the most export-oriented sector. This is probably because commodities produced in this sector include labour-intensive manufactures ranging from toys to footwear.

### **Current pattern of protection**

Understanding of the broad pattern of China's trade protection in comparison with its trading partners will help the interpretation of the simulation results in the fifth and sixth sections of this paper. China maintains a complex protection regime with little transparency despite substantial reforms in the last fifteen years. In this section, the focus is on four sets of policies for which

data are available in the GTAP database: production subsidies, tariffs, agricultural export subsidies and MFA quotas. The lack of information about other forms of protection policies does not permit their analysis. Thus, our trade liberalisation experiments largely deal with reforms in agriculture, textiles and clothing, and conventional tariff cuts in industrial sectors.

**Table 2 Production taxes and subsidies as percentage of market prices, China and selected countries<sup>a</sup> (per cent)**

Commodity	China	North America	EU	Japan	Other Asia	Rest of the world
1 Paddy rice	-0.9	56.9	7.2	10.1	17.3	-18.7
2 Wheat	-1.0	29.0	6.3	14.8	-0.5	1.1
3 Other grain	-2.5	28.7	2.5	16.4	5.6	1.9
4 Non-grain crops	-4.1	5.8	71.0	48.9	8.7	12.9
5 Wool	-0.8	62.2	0.4	0.0	-0.1	1.8
6 Other livestock	-0.9	3.7	9.2	0.5	3.0	3.8
7 Forestry	-9.4	-1.9	0.4	-2.3	-0.7	-3.2
8 Fisheries	-4.5	-1.7	0.4	-2.6	-0.9	-2.2
9 Coal	-1.5	-6.3	5.8	-1.7	0.4	-1.3
10 Oil	-11.5	-7.0	-2.3	-3.2	-0.7	-3.5
11 Gas	-6.3	-6.9	-2.3	-3.2	-1.3	-3.9
12 Other minerals	-14.2	-4.0	-0.9	-2.5	-1.7	-3.9
13 Processed rice	-4.6	-0.4	0.0	0.0	-0.7	-2.1
14 Meat products	-2.5	2.3	0.2	-1.3	-1.6	-0.6
15 Milk products	-7.4	4.3	-0.4	7.2	8.3	1.6
16 Other food products	-3.6	-0.5	0.0	-0.8	-2.7	-0.6
17 Beverages and tobacco	-23.6	-17.4	-2.5	-46.4	-38.3	-21.9
18 Textiles	-7.8	-0.9	-0.8	-2.0	-0.9	-3.0
19 Clothing	-7.7	-0.5	-0.8	-1.8	-1.4	-2.9
20 Leather	-7.1	-0.6	-0.5	-1.6	-0.8	-1.7
21 Lumber	-8.0	-0.9	-1.1	-2.0	-1.2	-1.8
22 Pulp and paper	-10.2	-1.3	-0.9	-1.6	-1.3	-2.3
23 Petroleum and coal	-20.9	-3.4	-1.4	-7.9	-4.4	-4.9
24 Chemicals, rubber and plastics	-11.3	-3.3	-0.9	-7.9	-0.5	-4.2
25 Non-metallic minerals	-10.5	-1.9	-1.3	-2.3	-1.6	-3.6
26 Primary ferrous metals	-13.0	-2.9	-1.1	-3.6	-0.5	-2.9
27 Non-ferrous metals	-8.8	-2.2	-1.5	-2.3	-0.7	-2.2
28 Fabricated metal products	-9.6	-1.1	-1.5	-1.6	-1.2	-2.5
29 Transport equipment	-9.1	-1.3	-0.9	-5.6	-2.8	-2.4
30 Machinery and equipment	-10.2	-1.1	-1.2	-2.6	-1.4	-3.1
31 Other manufactures	-8.7	-1.1	-1.0	-4.0	-1.2	-2.1
32 Services	-7.6	-5.6	-1.2	-3.2	-2.6	-3.3

Note: a Positive entries are production subsidies.

Source: GTAP database, version 2.



As can be seen in Table 2, China taxes all sectors of its economy in net terms. Agricultural commodities are in general subject to mild taxes. However, taxes on several sectors — namely, forestry, non-grain crops, fisheries, other grains and processed food — are significant. Industrial products generally are taxed more heavily than agricultural products. The highest taxes are imposed on beverages and tobacco, followed by petroleum, coal and their products.

China's pattern of production taxes contrasts sharply with that of industrial countries and the group of other Asian countries, and even with that of the rest of world as an aggregate. Industrial countries and the other Asian countries tend to provide production subsidies to their agricultural sectors, especially for temperate crops and livestock products. While production subsidies are the highest for rice, wheat and other grains in North America, the highest subsidy is provided to non-grain crops in the EU. Japan provides considerable production subsidies to all crops and milk products. In the other Asia region, the highest production subsidies are accorded to rice, other grains, non-grain crops and milk products. The rest of the world region provides a considerable subsidy to non-grain crops.

China's tariff structure is typical of that of developing countries — as represented by the rest of the world — and has a different pattern from that of industrial countries and the other Asia region (Table 3). While industrial countries and the other Asia region provide higher protection for their agricultural sectors, China provides higher protection for the manufacturing sector. Japan has the highest protection for most agricultural products. Its protection for rice, wheat, other grains, processed rice and milk products is extremely high. The other Asia region has the second highest protection for other grains and non-grain crops, but protection for other agricultural commodities is lower than in industrial countries. The EU provides substantial protection for all crops and livestock products, while North America provides lower protection for virtually all agricultural products, though protection on milk products is also very high. Industrial countries tend to provide higher protection for textiles, clothing and leather products than for most other manufactured goods. Protection for clothing in North America is particularly high. Also subject to relatively high tariffs are chemicals, rubber and plastics, non-metallic minerals, primary ferrous metals and machinery and equipment in North America and the EU, fabricated metal products in North America, and transport equipment in the EU.

One prominent feature of China's tariff regime is the large variation in the tariff rate across sectors (Table 3). Among agricultural products, while rice (including processed rice) and wheat are subject to insignificant tariffs, all other agricultural sectors have a tariff rate higher than 10 per cent. Tariffs on non-grain crops, other livestock, fisheries and processed food products





**Table 3 Industry tariff structure, China and selected countries (per cent)**

Commodity	China	North America	EU	Japan	Other Asia	Rest of the world
1 Paddy rice	0.0	0.7	128.7	352.5	3.8	8.9
2 Wheat	0.0	10.4	51.2	490.8	26.9	6.4
3 Other grain	10.1	6.4	67.6	463.4	279.5	12.8
4 Non-grain crops	24.2	13.6	58.5	95.8	104.6	9.8
5 Wool	15.0	5.0	0.7	0.0	5.7	6.9
6 Other livestock	34.7	18.6	56.1	57.7	20.7	8.5
7 Forestry	10.1	0.0	0.0	0.1	6.2	3.6
8 Fisheries	36.0	1.2	8.5	5.0	21.5	8.5
9 Coal	15.0	0.0	4.3	0.0	3.4	5.7
10 Oil	3.0	0.5	0.0	0.0	5.9	2.1
11 Gas	16.8	0.1	1.5	3.5	5.1	2.2
12 Other minerals	17.1	0.9	0.1	0.7	4.0	6.9
13 Processed rice	0.0	3.4	128.7	350.9	4.2	12.3
14 Meat products	45.4	19.0	56.1	57.7	18.4	11.9
15 Milk products	35.5	107.0	132.9	343.8	22.7	14.8
16 Other food products	29.4	7.1	12.6	9.1	11.8	13.8
17 Beverages and tobacco	96.8	6.6	18.2	11.7	15.2	7.4
18 Textiles	64.2	12.0	11.7	7.2	9.5	14.2
19 Clothing	94.7	21.0	13.2	14.0	2.3	14.0
20 Leather	42.1	8.1	5.1	15.1	4.9	15.1
21 Lumber	26.9	4.5	3.5	4.7	12.7	14.4
22 Pulp and paper	26.6	2.1	5.7	2.5	5.1	10.6
23 Petroleum and coal	12.7	1.7	5.1	0.3	6.2	7.5
24 Chemicals, rubber and plastics	18.3	10.7	13.6	5.5	9.4	11.2
25 Non-metallic minerals	43.5	10.0	7.1	3.5	12.8	13.6
26 Primary ferrous metals	13.7	10.3	7.2	4.0	5.9	9.8
27 Non-ferrous metals	11.6	4.3	2.0	1.3	5.9	11.0
28 Fabricated metal products	40.5	8.0	5.1	4.2	12.4	13.8
29 Transport equipment	37.5	4.8	8.1	3.0	13.4	13.9
30 Machinery and equipment	29.9	15.2	9.6	3.4	9.6	12.7
31 Other manufactures	83.8	7.5	5.9	4.9	5.0	15.8
32 Services	2.2	0.0	0.0	0.0	0.0	0.0

Source: GTAP database, version 2.

(except for processed rice) are quite high. Among industrial products, tariffs range from 3 per cent for oil to 97 per cent for beverages and tobacco. Somewhat surprisingly, clothing, textiles and other manufactures are among the most protected. Given China's competitiveness in these products, the high tariffs are probably redundant for the bulk of imports.

Export subsidies are found exclusively in the EU and North America (Table 4). The EU has the highest export subsidies for crops. Subsidies for meat and milk products are also



**Table 4 Export subsidies as a percentage of border (f.o.b.) prices, China and selected countries**

Commodity	China	North America	EU	Japan	Other Asia	Rest of the world
1 Paddy rice	0.0	6.2	324.7	0.0	0.0	0.0
2 Wheat	0.0	14.0	208.3	0.0	0.0	-1.1
3 Other grain	0.0	2.8	240.8	0.0	-0.1	-3.4
4 Non-grain crops	0.0	0.5	30.4	0.0	-2.7	-0.1
5 Wool	0.0	0.0	0.0	0.0	0.0	-1.4
6 Other livestock	0.0	0.0	0.7	0.0	-0.7	-0.4
7 Forestry	0.0	0.0	0.1	0.0	-9.1	-0.3
8 Fisheries	0.0	0.0	0.1	0.0	0.0	0.0
9 Coal	0.0	0.0	0.0	0.0	-0.1	-1.8
10 Oil	0.0	0.0	-3.5	0.0	-4.0	0.0
11 Gas	0.0	0.0	-12.3	0.0	-2.2	-0.1
12 Other minerals	-0.8	0.0	-0.7	0.0	-0.7	-0.8
13 Processed rice	0.0	0.0	-1.4	0.0	0.0	-0.1
14 Meat products	0.0	1.3	81.1	0.0	-0.1	-0.4
15 Milk products	0.0	59.2	91.4	0.0	-2.4	4.3
16 Other food products	0.0	0.1	1.0	0.0	-3.1	-4.0
17 Beverages and tobacco	0.0	0.0	-24.7	0.0	-0.2	-2.6
18 Textiles	-4.5	0.0	-0.2	0.0	-1.7	-6.5
19 Clothing	-14.1	0.0	-0.1	0.0	-18.0	-14.8
20 Leather	0.0	0.0	-0.1	0.0	0.0	-0.3
21 Lumber	0.0	0.0	-0.1	-0.1	-1.6	-0.2
22 Pulp and paper	-0.2	0.0	-0.1	0.0	-0.2	0.0
23 Petroleum and coal	0.0	0.0	-75.9	0.0	-0.5	-2.0
24 Chemicals, rubber and plastics	-1.4	0.0	-0.3	-1.1	-1.6	-2.4
25 Non-metallic minerals	0.0	0.0	-0.3	0.0	-0.3	-0.1
26 Primary ferrous metals	0.0	0.0	0.0	0.0	-1.0	-0.5
27 Non-ferrous metals	0.0	0.0	-0.2	0.0	-0.8	-0.1
28 Fabricated metal products	0.0	0.0	-0.2	0.0	-0.7	-0.6
29 Transport equipment	0.0	0.0	-3.1	-0.3	-0.1	-0.4
30 Machinery and equipment	0.0	0.0	-0.1	-2.0	-0.4	0.0
31 Other manufactures	0.0	0.0	0.0	0.0	-0.1	0.0
32 Services	0.0	0.0	0.5	0.0	-0.5	-0.1

Source: GTAP database, version 2.

substantial. Subsidies in North America are lower but significant nevertheless. The highest subsidy in North America is provided to milk products. All other regions either have no subsidies or impose no taxes on their agricultural exports. It should be noted that the coverage of export taxes in China is incomplete. China taxes a number of agricultural exports (such as vegetables and fruits) in an attempt to take advantage of its market power. The incomplete coverage of export taxes does not, however, affect our experiments on the Uruguay Round trade liberalisa-



tion, as the reduction of export taxes is not required under the agreement and hence such policy is not analysed.

The last set of trade barriers incorporated in GTAP are the export tax equivalents of MFA quotas (Table 5). These VER quotas are modelled as bilateral export taxes because under perfect competition, exporting countries are expected to obtain the quota premiums. The export tax equivalents for clothing are much higher than those for textiles across all exporting and importing regions. Among exporting regions China faces the most stringent restrictions. It should be noted that this is partly due to data aggregation. In the disaggregated database, Southeast Asian and South Asian countries face similar levels of restriction. Once all other Asian economies are aggregated, their average level of restrictions is lower than China's because the Asian newly industrialising economies (NIEs), the largest textile and clothing exporters, face less stringent restrictions. This will probably magnify the results of MFA liberalisation for China since Chinese exports will probably substitute for exports from other Asian economies more than they would had a more disaggregated database been used.

**Table 5 Export tax equivalents of MFA quotas (per cent)**

	United States		EU	
	Textiles	Clothing	Textiles	Clothing
Other Asia	9.5	24.5	13.0	24.8
China	18.9	40.4	27.4	36.1
Rest of world	11.5	23.5	2.6	11.3

*Source:* GTAP database, version 2.

### Implementing trade reform in GTAP

Before the simulation results are presented, a brief introduction to the GTAP model may be helpful.<sup>2</sup> GTAP is a conventional comparative static, global general equilibrium model. It incorporates the spirit of neoclassical economics, like most other global trade models (Whalley 1985; Burniaux et al. 1990; Deardorff and Stern 1986; Zeitsch et al. 1991). Consumer behaviour is characterised by utility maximisation and producers are assumed to maximise profits. Production exhibits constant returns to scale and markets are assumed to be perfectly



competitive. Products are differentiated according to place of production (Armington 1969). A six-region, 32-commodity version of the GTAP model has been used.

In the simulations to be presented in the following two sections, we model the Uruguay Round trade liberalisation (with China being treated as a developing country in terms of trade liberalisation) as the central (reference) scenario. Later in the section, other policy options are explored. Implementation of the Uruguay Round agricultural agreement is carried out as follows, following Brandão and Martin (1993). For industrial countries, support to agricultural production is reduced by 20 per cent, while subsidies on agricultural exports are cut by 36 per cent. MFA restrictions are eliminated completely by reducing its export tax equivalents to zero. Tariff reductions are implemented as outlined in Table 6. Note that tariff reductions on agriculture include both existing tariffs and tariffied non-tariff restrictions. There are two exceptions in applying these reduced rates. For North America, the more recent GATT (1994) estimates of tariff reductions of 15 and 10 per cent for textiles and clothing and transport equipment, respectively, are used instead of the developed country averages. For developing economies, price support is reduced by 15 per cent. For other trade barriers, it is assumed that they will undertake to reduce their distortions by two-thirds of the developed country reductions.

In setting the economic environment for the simulations, the standard GTAP closure is used. All prices and quantities are endogenous except the price for savings (the numeraire) and

**Table 6 Tariff reductions in industrial economies agreed to in the Uruguay Round (per cent)**

	Rate of tariff reductions imported from:		
	All	Developing	Developed
Agricultural products	36.0	-	-
Mining products	34.4	35.0	33.7
Processed food	21.3	22.4	19.5
Textiles and clothing	20.0	21.2	18.9
Iron and steel	62.2	66.7	60.6
Machinery and equipment	48.8	48.6	48.8
Transport equipment	21.6	18.4	21.8
Other manufactures	41.9	39.7	42.5

*Source:* Adopted from Yang, Martin and Yanagishima (forthcoming 1996). Original table is based on GATT (1993, Table 11).



supplies of factors of production (land, labour and capital). Exogenous variables include all technical change and policy variables. The rate of return to investment is allowed to equalise across countries so that savings demand in any country can be met by investment in other countries, as well as by the country's own investment. The elasticity of the expected rate of return to investment with respect to end-of-period capital stocks is set at 10, making the supply of new capital goods quite insensitive to the expected rate of return.

One limitation of this closure is its treatment of factor markets, especially with respect to capital and labour. Since labour supply is fixed, wages are allowed to change. An alternative closure is to assume that wages, either nominal or real, are constant while labour supply is infinitely elastic. The fixed labour supply closure tends to lead to the underestimation of the effect of trade liberalisation, as labour supply does not respond to economic incentives which may arise from trade liberalisation. The alternative seems to be unrealistic for the long run if there is no large pool of unemployment or the labour market is not competitive. The implications of this alternative closure are explored later in this paper.

### **China as a developing rather than a developed country**

Two simulations are run to examine the impact of the Uruguay Round trade liberalisation on China. In the first simulation, China is assumed to be a developing country, and in the second it is regarded as a 'developed' country so that it liberalises its trade to the same extent as industrial countries. In this simplified distinction between a developing and developed country, the extent of trade liberalisation is the only difference. Other differences (such as the right of developing countries to impose quantitative restrictions for balance of payments purposes) are not examined.

#### *Production and trade*

One of China's greatest concerns during the Uruguay Round and its WTO membership negotiations was the potentially adverse impact of trade liberalisation on some of its highly protected and inefficient industries, such as transport equipment and chemicals. China wants to enter the WTO as a developing country so that it has the option of imposing high tariffs and/or quantitative restrictions on competing imports. For the agricultural sector, China has a long-standing policy of self-sufficiency, a legacy from the Cold War era. For this reason, it wants to reserve the right to impose high tariffs on agricultural imports. Moreover, as the gap between



rural and urban incomes widens, the government is attracted to the idea of using trade protection to address this politically explosive issue.

Simulation results show that the sectoral impact of trade liberalisation on agricultural production is similar whether China undertakes to liberalise its trade as a developing or a developed country (Table 7). This result is not surprising given that the extent of trade liberalisation in the two scenarios differs by only one-third. In a general equilibrium model where there are economy-wide constraints on total resource availability, it is the relative extent of trade liberalisation across sectors that is likely to be the most important factor, rather than the average depth of liberalisation.

While the production of wheat, other grain, wool, forestry and fisheries falls, and only marginally in most sectors, the production of rice (the single most important crop in China), non-grain crops (including such important crops as cotton), and other livestock products increases. Total agricultural output increases by 0.4 per cent both in the developing and the developed country cases. As discussed earlier, agricultural protection is relatively low compared with industrial protection. The general equilibrium effect of tariff reductions is therefore in favour of agriculture. The effect on agriculture of the removal of the MFA works through two channels. In the factor markets, the expansion of the textile and clothing sectors following the abolition of the MFA pulls capital and labour away from agriculture (land is not affected because it is agriculture-specific). In the commodity markets, the expansion of these sectors generates increased demand for agricultural inputs. However, the increased demand largely concentrates in the natural fibre sector. This leads to a 1 per cent increase in the output of non-grain crops, which include natural fibres such as cotton and ramie. The expansion of the non-grain crops sector also pulls land resources away from other agricultural sectors.

It must be made clear that the results outlined above refer to the counterfactual effect in the base year of the model (1992). At present, the effective rate of protection for agriculture is below that for the industrial sector (Zhang 1993). If the recent trend of price increases in the domestic market is any indication, however, effective protection for agriculture may exceed that for many industrial sectors by the time the Uruguay Round agricultural reforms are fully implemented. If agricultural protection indeed increases substantially in the near future and tariff cuts are based on the increased tariff rates, then agricultural liberalisation in the future may well result in contraction of the agricultural sector. Thus, adjustment of the agricultural sector arising from trade liberalisation is likely to be smallest at present.



**Table 7 Uruguay Round trade liberalisation: China as a developing and developed country**

Commodity	Real output (percentage change)		Export volume (percentage change)		Import volume volume change)		Net exports (change in US\$ million, current prices)	
	As a LDC <sup>a</sup>	As a DC <sup>b</sup>	As a LDC	As a DC	As a LDC	As a DC	As a LDC	As a DC
1 Paddy rice	0.1	0.1	-11.7	-11.1	13.3	12.9	0	0
2 Wheat	-0.2	-0.3	-14.7	-14.0	-2.8	-3.3	-77	-69
3 Other grain	-0.6	-0.7	3.6	4.2	4.7	6.7	123	127
4 Non-grain crops	1.1	1.0	-2.7	-2.3	25.2	31.8	-176	-237
5 Wool	-10.0	-11.6	-21.0	-20.0	7.7	8.6	-50	-56
6 Other livestock	2.6	2.8	-12.8	-12.4	53.5	68.7	-247	-275
7 Forestry	-3.1	-3.4	-19.5	-19.1	20.0	22.9	-117	-133
8 Fisheries	-5.4	-5.8	-25.4	-25.1	38.4	51.2	-407	-431
9 Coal	-4.6	-4.8	-16.0	-14.7	17.9	21.3	-117	-110
10 Oil	-11.1	-10.8	-19.9	-18.6	5.1	4.8	-618	-578
11 Gas	-8.2	-9.2	-16.7	-15.2	8.3	11.1	-10	-12
12 Other minerals	-13.3	-14.3	-14.4	-12.7	7.0	9.4	-196	-215
13 Processed rice	-0.4	-0.4	-11.7	-10.8	5.4	4.6	-20	-18
14 Meat products	-2.9	-2.7	-5.1	-4.5	22.7	34.2	-10	-14
15 Milk products	-1.3	-2.2	-9.3	-8.6	6.6	13.2	-13	-18
16 Other food products	-4.1	-4.5	-17.5	-16.6	25.9	32.8	-842	-932
17 Beverages and tobacco	-2.2	-2.9	-28.5	-27.4	69.1	105.8	-364	-456
18 Textiles	18.7	19.6	13.4	14.7	49.4	51.5	-3,408	-3,511
19 Clothing	105.8	109.5	212.9	219.5	48.1	51.0	29,242	30,148
20 Leather	-22.8	-21.6	-23.7	-22.2	11.2	12.8	-3,261	-3,091
21 Lumber	-8.8	-9.2	-17.0	-14.7	19.1	25.3	-474	-501
22 Pulp and paper	-3.9	-4.5	-12.6	-11.2	13.8	17.6	-390	-469
23 Petroleum and coal	-4.2	-4.4	-12.2	-11.2	9.5	11.5	-221	-242
24 Chemicals, rubber and plastics	-4.8	-5.2	-7.4	-5.9	11.5	14.2	-1,681	-1,942
25 Non-metallic minerals	-3.6	-3.9	-12.6	-10.6	35.2	50.9	-366	-404
26 Primary ferrous metals	-10.9	-12.0	-5.6	-2.2	9.9	14.8	-518	-695
27 Non-ferrous metals	-15.4	-16.1	-15.3	-12.6	-0.6	0.2	-90	-87
28 Fabricated metal products	-7.5	-8.0	-11.3	-8.0	27.2	38.2	-603	-655
29 Transport equipment	-20.9	-16.6	-19.6	-16.7	2.6	1.4	-1,288	-1,023
30 Machinery and equipment	-15.1	-16.4	-19.3	-15.1	14.4	20.4	-7,739	-8,563
31 Other manufactures	-8.3	-5.9	-6.6	-2.3	26.4	36.6	-1,350	-973
32 Services	-0.1	-0.1	-10.7	-9.7	7.4	7.1	-948	-861
33 All commodities	0.5	0.5	17.8	20.8	15.9	19.6	3,763	3,706

Notes: a Developing country.  
b Developed country.

Source: Simulations of the GTAP model.



The output of processed food declines after trade liberalisation. Again, there are only slight differences in the results for the two scenarios. Increases in export prices provide a boost to production, but because these sectors are largely domestic market-oriented such stimulation is of limited significance compared with other effects. The decline of the processed food sectors largely results from the substitutional effects of imports. Although world prices increase considerably, tariff reduction means that relative prices of imports fall in the domestic market. Consumers thus shift their demand away from domestically-produced products to imports. This effect outweighs the income effect and the boost given by export expansion to domestic production.

The output of the mineral sectors declines considerably in both scenarios. This result may seem surprising given the relatively low tariffs on these products, but this is again due to the general equilibrium effect of trade liberalisation. Following trade liberalisation, the rental price of capital increases more than wages. As mining industries are the most capital intensive of all industries, they contract. In addition, most other countries have little border protection on mineral products. As trade liberalisation occurs, the price of competing imports declines, depressing the price for domestically-produced goods.

The textile and clothing sectors are the only two manufacturing sectors which expand following trade liberalisation. Since the MFA reform is identical in the two scenarios, the results differ only marginally whether China is treated as a developing or a developed country. Because of the great importance of the textile and clothing sectors in the economy, output expansion in the textile and clothing industries creates a substantial general equilibrium effect on the rest of the economy. Due to the closure used in this simulation, this effect works largely through the prices of primary factors. The wage rate, for example, rises by nearly 3 per cent and capital rental rises by over 5 per cent, pushing up production costs for every sector of the economy.

The impact of trade liberalisation on capital-intensive manufactures is not surprising. High protection has enabled these sectors to maintain their output at higher levels than they would otherwise have been able to. In both scenarios, the contracting effect of trade liberalisation is particularly large for primary metals, non-ferrous metals, transport equipment and machinery and equipment. The decline of these sectors may not be consistent with the government policy of promoting 'hi-tech' industries but it is consistent with China's underlying comparative advantage, and consequently improves China's economic welfare, as will be discussed later.





Nevertheless, policies may be needed to assist the adjustment in these industries. The most important adjustment will be the relocation of labour from contracting to expanding sectors. Capital-intensive sectors mainly consist of large state enterprises. These enterprises have already been subject to intense pressure to adjust because of the strong competition from the non-state sector and imports. The adjustment resulting from trade liberalisation in the state sector is a delicate political issue, as well as a difficult economic process. Fearful of labour unrest, the government has taken a gradual approach to reforming the state enterprises.

The impact of the Uruguay Round trade liberalisation on trade is clear-cut. Most exports decline and most imports increase (Table 7). For most industries, whether China liberalises as a developing or a developed country makes only a moderate difference. In general, declines in exports and increases in imports are greater if China is treated as a developed country. These effects are most significant for capital-intensive industries.

In both scenarios, only wheat and other grain experience an increase in net exports among agricultural commodities (narrowly defined to include only primary commodities). Total net agricultural exports decline by US\$1.1 billion. Despite increases in world prices following agricultural reforms in the EU and North America, China's imports of agricultural products increase considerably, except for wheat, and its exports decline, except for other grains. Domestic demand driven by income growth and tariff cuts probably explains the decline in net exports.

The largest decline in net exports occurs in machinery and equipment as their production and exports fall. The fall in net exports is also substantial in the transport equipment sector. The machinery and equipment sector is the single largest sector of the Chinese economy and has high import dependency. The transport equipment sector has the second highest import dependency ratio after wool. As tariffs fall, imports increase and exports decline. These changes are exacerbated by the high elasticity of substitution between domestically produced and imported products.

Sharp declines in net exports are also seen in textiles and leather products. In the case of textiles, this occurs despite a substantial increase in output. The huge export expansion of clothing leads to large excess demand for textiles as intermediate inputs. As for leather products, large declines in exports translate into similar declines in output as the leather product sector is highly dependent on exports. The likely cause of the decline in exports is that consumers in MFA markets substitute textiles and clothing for leather products as the former become cheaper.



It is hardly surprising that net exports of clothing increase substantially. As mentioned earlier, China has a strong comparative advantage and is a large net exporter of clothing. In addition, MFA quotas on China are among the most stringent. As MFA quotas are removed, export prices (quota premium exclusive) increase, and exports expand. China's exports not only replace output in industrial countries but substitute for exports from other less competitive developing countries. Clothing imports also increase but they start from a very small base.

### *Macroeconomic effects*

The macroeconomic effects of the Uruguay Round trade liberalisation are considerable (Table 8). In the reference scenario, in which China is treated as a developing country, real GDP increases by 2.6 per cent. Strong demand pushes up GDP prices and the price for private consumption. The greater increase in the price of private consumption than the GDP price is largely the result of increases in the domestic prices for textiles and clothing. Nevertheless, real wages increase significantly. The increase in real GDP results in an increase of US\$7.7 billion in economic welfare. This amounts to 1.7 per cent of 1992 national income. Government revenues increase only marginally.

**Table 8 Macroeconomic effects of the Uruguay Round trade liberalisation (percentage change/change)**

Macroeconomic variables	As a developing country	As a developed country
Real GDP	2.6	2.7
Price of GDP	2.0	1.3
Price of private consumption	4.3	3.8
Real wages	2.7	3.3
Equivalent variation (EV) (US\$ billion)	7.7	7.1
EV as percentage of 1992 income	1.7	1.6
Government revenues <sup>a</sup>	-2.4 (1.1)	-4.7 (-1.2)
Exports	26.8	30.0
Imports	16.0	19.7
Terms of trade	-2.2	-2.8
Trade balance (US\$ billion)	3.8	3.7

*Note:* a Numbers in parentheses exclude MFA quota premiums from government revenues.

*Source:* Simulations of the GTAP model.



The results are similar if China is treated as a developed country. Real GDP increases only marginally compared with the developing country case but welfare declines slightly because of the greater deterioration of the terms of trade.<sup>3</sup> Government revenues decline slightly. However, deeper reforms result in a larger increase in real wages, greater export expansion, and lower increases in the consumer price index.

Depending on whether MFA quota premiums are included, government revenues can either decline or increase in the reference scenario. If the premiums are treated as government revenues, total government revenues would decline by 2.4 per cent. Since most of China's MFA quotas are distributed free of charge instead of being auctioned (Yang 1992), it is unlikely that the government receives the premiums. When quota premiums are excluded from government revenues, total government revenues increase by 1 per cent. In the developed country scenario, however, government revenues decline whether the quota premiums are included or not.

#### **Other policy options**

Participation in the Uruguay Round trade liberalisation clearly brings economic benefits to China. However, as noted earlier, there may be considerable adverse effects on individual sectors, especially the capital-intensive sectors, which have been given priority by the government under its import-substitution policies. There appears to be an obsession among Chinese policy-makers about protecting these 'strategic' industries if long-term prosperity is to be achieved. Indeed, many believe that China should move further in this direction and reduce its dependence on labour-intensive manufacturing. Economic theory suggests that such a strategy is likely to reduce economic efficiency and retard rather than enhance China's long-term growth prospects. China itself has paid a high price for such a strategy in the past, particularly during the Great Leap Forward period (1958–62).

The desire to protect heavy industries is strengthened by the concern over the potential dislocation of labour from heavy industry. The concern is legitimate given that China is yet to establish a workable social security system to accommodate the potential unemployment arising from trade liberalisation. However, the danger is that this concern could be used as an excuse to prolong the protection. If China fails to enter the WTO at its desired date, the balance of domestic politics could further tilt towards protectionism. While a complete halt to the reform process is unlikely, even if China fails in its efforts to join the WTO, China may miss the opportunity to participate in the Uruguay Round trade liberalisation.



The economic consequences of this potential outcome are examined in the first experiment in this section (E1). It is assumed in the simulation undertaken that China maintains its current level of protection and continues to be subject to MFA quotas, while other countries implement their Uruguay Round commitments.

Under this scenario, China would indeed face little adjustment pressure except in leather products, non-ferrous metals, transport equipment, and machinery and equipment (Table 9). Most sectors in fact experience marginal expansion, although overall output declines slightly. China benefits most from agricultural reforms in other countries, which pushes up world prices and hence stimulates China's exports and reduces its imports. The exports of most other products also increase, but the exports of beverages and tobacco, leather products, non-ferrous metals, transport equipment, and machinery and equipment fall significantly (Table 10). It is interesting to note that even the exports of textiles and clothing increase. One would expect that Chinese textiles and clothing would become less competitive once MFA quotas are abolished for all other exporting countries but not China. The reason for this is that China's textile and clothing exports become less competitive in the restricted markets but they become more so in the unrestricted markets as other exporting countries divert their exports to the restricted markets following the removal of the MFA. With China continuing to be able to fully utilise its quotas in the restricted markets, increases in exports to the unrestricted markets means overall increases in textile and clothing exports. As for transport equipment, and machinery and equipment, the declines in output result largely from falls in world market prices. Total exports increase marginally, and total imports fall slightly (Table 11). Despite a decline in terms of trade, this results in an improvement in the trade balance (Table 12).

At the macroeconomic level, non-participation leads to a significant welfare loss to China, especially measured by equivalent variation (Table 12). The loss accounts for 0.2 per cent of 1992 income. Government revenues also decline. The welfare loss results largely from a decline in GDP and deterioration of the terms of trade. It is somewhat surprising that China suffers from an adverse terms trade effect even though it does not participate in trade liberalisation. Increases in import prices for agricultural products and declines in the prices of textile and clothing exports are the main factors contributing to the adverse terms of trade effect.

The second experiment (E2) simulates unilateral trade liberalisation. China has indicated that it will continue to reform its trade regime at its desired pace even if it fails to join the WTO in the near future. It is not known, however, to what extent China will liberalise its trade. For simplicity, it is assumed in this experiment that China implements its Uruguay Round



**Table 9 Effects on output of selected reform options, by sector (percentage change)**

	E1	E2	E3	E4	E5
1 Paddy rice	-0.1	0.0	-0.2	1.9	0.5
2 Wheat	2.1	-0.1	-1.4	2.3	0.2
3 Other grain	0.8	-0.1	-1.6	1.1	-0.5
4 Non-grain crops	1.4	-0.4	-1.3	3.0	1.2
5 Wool	-0.3	-3.7	-11.6	-5.9	-8.9
6 Other livestock	0.5	0.3	3.9	5.3	3.6
7 Forestry	-0.1	-0.5	-4.0	-0.6	-2.9
8 Fisheries	-0.9	-0.4	-8.1	-0.3	-3.5
9 Coal	-0.4	-0.2	-5.3	-1.6	-4.4
10 Oil	0.1	0.5	-12.9	-10.8	-11.9
11 Gas	0.4	-2.0	-10.4	-5.7	-8.5
12 Other minerals	-0.7	-1.8	-16.7	-10.2	-14.0
13 Processed rice	-0.1	0.0	-0.7	2.0	0.6
14 Meat products	0.6	0.4	-2.3	0.1	-1.5
15 Milk products	1.9	-1.5	-6.0	1.6	0.3
16 Other food products	-0.7	-0.6	-6.6	-1.0	-2.6
17 Beverages and tobacco	-0.8	-0.7	-10.6	0.7	0.2
18 Textiles	3.2	-0.2	10.2	23.4	20.2
19 Clothing	5.1	4.7	158.6	114.3	110.4
20 Leather	-4.8	3.0	-17.7	-18.8	-20.9
21 Lumber	-0.7	-0.5	-10.2	-5.5	-7.7
22 Pulp and paper	-0.5	-1.1	-5.8	-0.9	-3.1
23 Petroleum and coal	-0.3	-0.5	-5.0	-1.9	-3.9
24 Chemicals, rubber and plastics	-0.1	-1.0	-5.8	-1.8	-4.4
25 Non-metallic minerals	-0.2	-0.3	-5.4	-0.9	-3.2
26 Primary ferrous metals	-0.6	-1.9	-11.4	-8.2	-10.9
27 Non-ferrous metals	-2.9	-1.3	-17.1	-12.6	-15.2
28 Fabricated metal products	-0.4	-0.6	-11.5	-4.6	-6.6
29 Transport equipment	-6.7	6.9	-13.8	-17.8	-18.8
30 Machinery and equipment	-4.2	-2.0	-18.9	-12.6	-13.8
31 Other manufactures	1.0	5.7	5.3	-5.2	-6.3
32 Services	-0.2	0.2	-0.1	2.4	1.4
33 Total output	-0.2	0.0	0.9	3.3	1.6

Source: Simulations of the GTAP model.

commitments in a unilateral context. The main purpose of this experiment is to examine the advantages and disadvantages of unilateral trade liberalisation in comparison with a multilateral approach.

The impact of unilateral trade liberalisation is generally limited. This is largely because, as a developing country, China's commitments to tariff cuts are limited. As it is also assumed that MFA quotas will remain because these are beyond China's control, the impact of trade liberalisation on the textile and clothing sectors is much smaller than if the full Uruguay Round



**Table 10 Effects on exports of selected reform options, by sector (percentage change)**

	E1	E2	E3	E4	E5
1 Paddy rice	9.2	0.5	-15.2	-7.7	-13.0
2 Wheat	4.2	0.8	-16.7	-11.1	-15.9
3 Other grain	19.6	0.6	1.7	7.1	2.1
4 Non-grain crops	19.3	0.3	-4.3	1.4	-4.3
5 Wool	-1.7	1.8	-24.8	-18.1	-21.0
6 Other livestock	13.3	0.1	-16.9	-8.5	-15.3
7 Forestry	1.6	0.2	-23.9	-11.8	-22.4
8 Fisheries	-2.3	0.4	-29.2	-16.2	-26.4
9 Coal	0.6	2.5	-17.3	-11.5	-17.7
10 Oil	-0.1	2.5	-23.1	-22.6	-21.2
11 Gas	2.1	3.1	-18.3	-18.6	-16.4
12 Other minerals	1.7	3.5	-13.7	-11.2	-16.1
13 Processed rice	6.6	1.5	-13.0	-8.1	-11.3
14 Meat products	15.9	0.4	-9.0	-1.6	-5.6
15 Milk products	12.7	1.0	-12.2	-5.8	-8.5
16 Other food products	-1.1	1.3	-18.6	-14.1	-16.8
17 Beverages and tobacco	-7.6	1.9	-29.5	-26.7	-27.8
18 Textiles	12.8	3.9	31.3	13.9	12.8
19 Clothing	6.5	7.9	285.4	195.3	189.5
20 Leather	-5.4	4.7	-9.6	-19.8	-21.7
21 Lumber	-2.2	5.3	-11.3	-13.0	-15.7
22 Pulp and paper	-2.5	3.2	-7.8	-10.4	-12.1
23 Petroleum and coal	0.0	1.6	-13.9	-13.1	-12.1
24 Chemicals, rubber and plastics	3.0	3.0	-5.2	-5.8	-7.3
25 Non-metallic minerals	3.0	4.2	-10.4	-9.0	-12.1
26 Primary ferrous metals	7.8	6.3	-3.2	-3.4	-6.4
27 Non-ferrous metals	-4.7	5.9	-12.9	-13.2	-14.6
28 Fabricated metal products	1.9	6.9	-6.2	-8.1	-10.0
29 Transport equipment	-11.2	20.4	34.7	-16.1	-16.9
30 Machinery and equipment	-11.7	9.8	-11.9	-16.8	-17.8
31 Other manufactures	1.0	9.6	16.3	-3.7	-4.3
32 Services	1.0	2.1	-10.4	-7.5	-9.7
33 Total exports	0.4	6.5	41.9	22.1	19.7

Source: Simulations of the GTAP model.

agreements are implemented. Nevertheless, clothing, leather, transport equipment and other manufactures experience significant output expansion (Table 9). Sectors which are subject to significant contraction in output include wool, gas, primary ferrous metals and machinery equipment. Overall, the output level remains unchanged.

One clear-cut result of unilateral trade liberalisation is export expansion in all sectors and import expansion in most sectors (Table 11). This result is an indication of the strong general equilibrium effects of trade liberalisation across the economy. Tariff reductions would put



**Table 11 Effects on imports of selected reform options, by sector (percentage change)**

	E1	E2	E3	E4	E5
1 Paddy rice	-0.5	-0.3	15.1	12.5	14.4
2 Wheat	-10.9	-0.4	-2.8	-3.0	-1.5
3 Other grain	-10.7	4.4	4.1	2.8	4.5
4 Non-grain crops	-1.0	10.1	49.1	24.3	26.6
5 Wool	-0.1	1.8	10.9	10.5	9.4
6 Other livestock	0.5	19.7	151.6	53.3	58.0
7 Forestry	0.5	5.4	29.7	16.2	22.0
8 Fisheries	0.4	18.8	113.4	35.3	43.3
9 Coal	1.4	6.3	23.0	17.3	18.7
10 Oil	-2.1	-0.2	5.5	9.2	4.3
11 Gas	-4.1	5.6	14.1	12.6	6.9
12 Other minerals	-0.4	4.4	15.2	8.5	6.6
13 Processed rice	-4.9	-1.0	4.9	5.5	6.0
14 Meat products	-6.8	19.0	97.4	23.1	25.1
15 Milk products	-15.9	13.0	40.1	6.4	7.5
16 Other food products	2.5	11.0	58.7	27.1	27.5
17 Beverages and tobacco	1.2	42.8	663.3	71.6	73.8
18 Textiles	4.1	8.6	157.2	53.1	51.0
19 Clothing	0.8	24.0	537.2	48.7	52.1
20 Leather	-2.8	11.5	84.4	13.3	12.8
21 Lumber	-2.4	12.5	39.3	19.9	18.7
22 Pulp and paper	-0.2	7.4	29.1	15.7	14.1
23 Petroleum and coal	-0.6	4.6	11.9	13.1	10.1
24 Chemicals, rubber and plastics	0.6	5.1	15.9	14.0	11.7
25 Non-metallic minerals	-1.8	24.0	115.3	35.5	35.3
26 Primary ferrous metals	-1.9	8.9	7.5	11.9	9.9
27 Non-ferrous metals	-1.7	2.7	-1.5	1.5	-1.1
28 Fabricated metal products	-0.9	19.1	84.4	28.7	27.5
29 Transport equipment	0.2	2.6	19.3	3.6	3.2
30 Machinery and equipment	-0.3	10.9	28.6	15.7	15.4
31 Other manufactures	0.1	18.6	90.0	29.4	27.2
32 Services	0.6	-0.3	6.7	8.3	7.7
33 Total imports	-0.1	7.9	44.3	17.7	16.7

Source: Simulations of the GTAP model.

downward pressure on production in all sectors if the cost-reduction effects are not taken into account. Cost-reduction effects outweigh the direct effects of tariff reduction on output prices, making Chinese products more competitive in the world markets. The general equilibrium effects are particularly significant for transport equipment, machinery and equipment, other manufactures and clothing. Despite considerable increases in the imports of a number of commodities, the overall trade balance improves by US\$0.4 billion (Table 12). As for welfare,



**Table 12 Macroeconomic effects of selected reform options (percentage change/change)**

	E1	E2	E3	E4	E5
Real GDP	-0.1	0.6	4.2	5.3	5.0
Price of GDP	0.3	-1.2	-0.9	0.9	2.7
Price of private consumption	0.7	-0.8	2.5	3.3	5.3
Real wages	0.0	1.2	6.8	0.0	5.4
Equivalent variation (US\$ billion)	-1.1	0.1	7.0	18.7	19.5
EV as % of 1992 income	-0.2	0.0	1.6	4.2	4.4
Employment	0.0	0.0	0.0	5.0	0.0
Government revenues <sup>a</sup>	-1.3 (0.0)	-4.0 (-4.4)	-15.6 (-12.6)	-0.4 (3.2)	-0.6 (3.1)
Exports	0.4	6.5	41.9	22.1	19.7
Imports	-0.1	7.9	44.3	17.7	16.7
Terms of trade	-0.4	-1.3	-5.6	-3.0	-2.1
Trade balance (US\$ billion)	-0.4	0.4	3.9	6.7	5.8

*Note:* a Numbers in parentheses exclude MFA quota premiums from government revenues.

*Source:* Simulations of the GTAP model.

unilateral trade liberalisation benefits China to the extent of about US\$109 million, a much smaller amount than that from complete Uruguay Round trade liberalisation.

The third experiment (E3) explores the consequences of trade liberalisation beyond what the Uruguay Round requires. In this experiment, while all other countries liberalise their trade as required by the Uruguay Round, China reduces its tariff on all products to a maximum of 10 per cent if the post-Uruguay Round tariff rate is still above that level. This represents an optimistic scenario which could eventuate as a result of China's early entry to the WTO and its greater confidence in managing structural adjustment.

Despite the dramatic nature of this policy change, the impacts on sectoral output, exports and imports are quite similar to the Uruguay Round liberalisation scenario. The most significant differences occur in the macroeconomic variables. Real GDP increases by as much as 4.2 per cent, but welfare measured by equivalent variation increases less than in the Uruguay Round liberalisation scenario due to an adverse terms of trade effect (Table 12). Both exports and imports increase much more strongly, and the overall trade balance improves upon the Uruguay Round scenario.

The fourth experiment (E4) examines the potential impact of Uruguay Round trade liberalisation under a different labour market policy. In all the previous experiments, total labour supply is assumed to be fixed, so that any output expansion leads to real wage increases.





As economic reform deepens in China, unemployment increases, primarily as a result of labour shedding of overstaffed state enterprises and surplus rural labour. Given this background, it is unlikely that any demand for labour generated by trade reform will be fully translated into wage increases. In this experiment, we explore the consequences of trade reform with a labour market policy which keeps real wages unchanged. Although this represents a somewhat extreme labour market scenario, it enables us to explore the impact of trade liberalisation under a different domestic policy setting.

In the reference scenario of the Uruguay Round trade liberalisation, real wages increased by about 2.7 per cent. This increase in labour costs dampened output expansion. When real wages remain constant, production is stimulated to a greater extent. In comparison with the reference scenario, sectoral production either expands more or contracts less. As a result, overall production increases by 3.3 per cent. Both exports and imports increase substantially but exports expand much more than imports, leading to a US\$6.7 billion improvement in the trade balance. The strong production and trade performance increases national welfare by as much as US\$19 billion, US\$11 billion more than the gain in the reference scenario. This occurs despite a significantly adverse terms of trade effect. In addition, government revenues increase compared with the reference scenario.

The final experiment (E5) attempts to illustrate the potential impact on the Chinese economy of trade liberalisation with induced improvements in productivity. There is a growing body of literature which suggests that trade liberalisation and hence trade expansion promotes technological change or productivity (Edwards 1992; Perkins 1995). Although the exact mechanisms through which trade liberalisation leads to productivity increases is difficult to pin down, it is widely believed that, among other things, increased competition, exploitation of economies of scale, importing of embodied technology and faster dissemination of knowledge are some of the important factors driving technological change. It is difficult to estimate the magnitude of such technological change. In addition, its impact may be of a dynamic nature, generating a growth effect. In the creation of the European Single Market, for example, the induced improvement in productivity has been projected to be 3–6 per cent (Baldwin 1989).

Given the lack of empirical estimates of induced productivity improvements, a moderate 1 per cent increase in productivity (Hicks neutral, output-augmenting) in the world economy is assumed to occur as a result of the Uruguay Round trade liberalisation. Obviously, technological change is unlikely to be uniform and neutral. This assumption merely serves the purpose of demonstrating the potential benefits that trade liberalisation can bring to national and global economies. The results, therefore, should not be interpreted as realistic projections.



The experiment shows that even a modest technological improvement can indeed be very important. The Uruguay Round trade liberalisation combined with a 1 per cent across-the-board productivity improvement would boost production in China by as much as 1.6 per cent, exports by 20 per cent and imports by 17 per cent. As a result, the trade balance improves by US\$5.8 billion. Because the technological change is assumed to be neutral and equal across sectors and countries, the impact of the Uruguay Round trade liberalisation retains the structural pattern of the reference scenario, and the magnitude of change in production is similar, although its impact on trade is much larger.

Despite a deterioration in the terms of trade, China benefits to the tune of a US\$19.5 billion increase in national welfare. This gain is equivalent to about 4.4 per cent of 1992 income. Real wages also increase and government revenues improve upon the reference scenario. Thus, with induced technological progress, much greater benefits accrue to the Chinese economy without significant increases in the requirement for greater structural adjustment. However, under the more realistic assumption of non-uniform, non-neutral technological change, greater structural adjustment is probably required.

## Conclusion

The Uruguay Round reforms are expected to have major impacts on the Chinese economy as it has become increasingly integrated into the world economy since launching economic reforms in the late 1970s. This paper has explored the Uruguay Round reform package and several other reform options for China. The simulation results point to substantial benefits to the Chinese economy if the package is fully implemented. Whether China participates in the trade liberalisation as a developing or a developed country does not alter this conclusion.

China may stand to lose if it does not participate in the Uruguay Round trade liberalisation. This is particularly true if its trading partners discriminate against China as a result of its non-participation. The textile and clothing markets are of special importance in this context. If China is indeed discriminated against, its textile and clothing export will lose markets in industrial countries. It is therefore in China's interest to participate in the Uruguay Round trade reform even if there are major setbacks to its efforts to enter the WTO.

Although unilateral trade liberalisation would improve welfare, China is in a much better position to reap the benefits of its own trade reform if it participates in the Uruguay Round trade reform. The simultaneous liberalisation in the world economy provides greater opportunities for Chinese products and hence reduces the risk of adverse terms of trade effects. Given the great



dispersion of China's tariffs, trade liberalisation aimed at creating a more even tariff structure will bring enhanced benefits. Such reform may again be implemented during the Uruguay Round trade liberalisation to take the advantage of world market expansion.

The extent to which China — and for that matter, any other country — can benefit from the Uruguay Round trade reforms depends on the flexibility of its economy. In particular, a labour market which keeps labour costs competitive will assist economic growth by creating more jobs and higher incomes. Given China's enormous unemployment problem, a long-term labour policy which creates such a competitive market is of considerable importance. China should also take the opportunity of the Uruguay Round trade liberalisation to promote technological change. Trade liberalisation-induced technological change may be the most important source of gains arising from trade liberalisation.

While large benefits are attainable from the Uruguay Round trade liberalisation, substantial structural adjustment is required to realise them. Resources will have to be shifted away from highly protected, inefficient industries, especially the capital-intensive manufacturing industries. This has been occurring in recent years as import penetration has increased in a number of sectors. Such structural adjustment is made more difficult by the already daunting task of reforming inefficient state enterprises. However, these reforms must be pushed forward if China is to fully integrate with the world economy and to benefit from such integration.

## Notes

- \* I wish to thank Professor Ron Duncan for his helpful comments on this paper.
- 1 This percentage tends to overstates the openness of the Chinese economy relative to other countries as the official GDP underestimates China's GDP in terms of purchasing power. See the following section for more detail.
- 2 The GTAP model was developed as part of the Global Trade Analysis Project led by Thomas Hertel of Purdue University. Interested readers are referred to Hertel (forthcoming 1996) for more details of the model.
- 3 This result reflects the magnitude of the elasticities of substitution between imports and domestic products and among imports from different sources. Given China's relatively small shares in world markets for most products, the result suggests that the terms of trade effect under the standard GTAP elasticities is very strong. Experiments with the elasticities twice the standard magnitude show that China benefits US\$135 million more under the developed country scenario than under the developing country scenario.



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