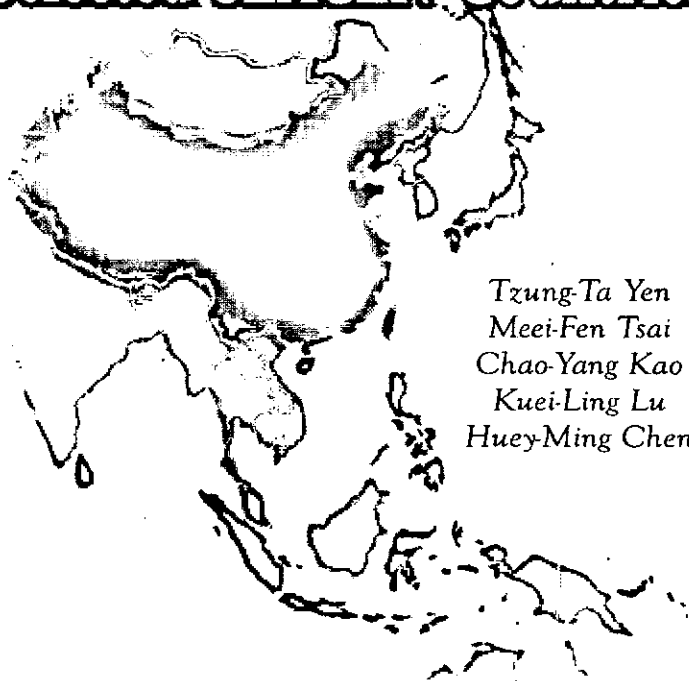


The PRC in The WTO: Impact on Trade and Investment in Selected SEACEN Countries



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Kuala Lumpur, Malaysia

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FOREWORD

At the end of 2001, the People's Republic of The PRC (PRC) obtained its membership with the World Trade Organization (WTO), signifying a new era in the PRC's economic liberalisation process. The PRC's accession to the WTO is a watershed event, for the global economy in general and for East Asia in particular. Following its WTO accession, the PRC will accelerate market opening and globalisation which presents trade and investment opportunities to its neighbouring countries. However, this has also caused increasing concern among its major trading partners and East Asian countries regarding foreign direct investment inflows and export competition. Thus, the PRC's accession to the WTO not only has far-reaching implications for its economy but also ramifications on the SEACEN countries, particularly on issues concerning competition for exports and foreign direct investment.

In light of the above concern, the SEACEN research project on *The PRC in the WTO: Impact on Trade and Investment in Selected SEACEN Countries* aims to analyse the impacts brought about by the PRC's WTO entry on the trade and investment relations between the SEACEN-7 (Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand) and the PRC.

This Paper first traces the changes in trade relations between the SEACEN-7 and the PRC by using the intra-industry trade index, the revealed comparative advantage index for exports, and the market shares of export product categories. It then applies the Concession Schedule of the PRC's WTO Accession to analyse how the PRC's tariff cuts and removal of non-tariff trade barriers could influence the SEACEN-7's exports to the PRC. In addition, focusing on the U.S. and Japanese markets, it also discusses the possible changes in export competitiveness of the SEACEN-7 following the PRC's entry to the WTO. Finally, this research assesses the PRC's rapid economic growth and industrialisation following the WTO accession and its influence on the SEACEN-7.

The SEACEN Centre wishes to thank The Central Bank of China, Taipei, for making available a research team from the Economic Research Department, comprising Dr. Tzung-Ta Yen, Ms. Meei-Fen Tsai, Dr. Chao-Yang Kao, Ms. Kuei-Ling Lu, and Ms. Huey-Ming Chen to implement the Project. The authors gratefully acknowledged the assistance from Bank of Indonesia, The Bank of Korea, Bank Negara Malaysia, Bangko Sentral ng Pilipinas, the Monetary Authority of Singapore and the Bank of Thailand for providing data and

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The views expressed in the Paper, however, are those of the authors and do not necessarily reflect those of the member central banks/monetary authorities, the WTO or the SEACEN Centre.

Dr. Subarjo Joyosumarto
Executive Director
The SEACEN Centre

Kuala Lumpur
June 2003

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EXECUTIVE SUMMARY

While the acceleration of market opening and globalisation following the People's Republic of China (PRC) accession to the WTO presents trade and investment opportunities to its neighbouring countries, there is also increasing concern among its major trading partners and East Asian countries regarding possible competition for foreign direct investment and exports. This paper aims to address part of this concern by analysing the impact of the PRC's WTO entry on trade and investment relations between the SEACEN-7 (Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand) and the PRC.

The paper first traces changes in trade relations between the SEACEN-7 and China by using the intra-industry trade index, the revealed comparative advantage index for exports, and the market shares of individual export product categories. It then applies the Concession Schedule of the PRC's WTO Accession to analyse how China's tariff cuts and removal of non-tariff trade barriers could influence the SEACEN-7's exports to the PRC. In addition, focusing on the U.S. and Japanese markets, it also discusses possible changes in export competitiveness of the SEACEN-7 following the PRC's entry to the WTO. Finally, the paper assesses the PRC's rapid economic growth and industrialisation following the WTO accession and possible impact on the SEACEN-7.

The findings could be summarised as follows:

1. Regarding the intra-industry trade between the SEACEN-7 and the PRC, the degree of intra-industry trade with the PRC is particularly high in Korea, Singapore and Taiwan, while Indonesia exhibits the lowest level of such relation. This may be attributed to the higher degree of horizontal division of labour between Korea, Singapore, Taiwan and the PRC, direct investment and transfer of production bases from these three countries to the PRC, and intra-firms trade between companies based in these three countries and their subsidiaries in the PRC or between product manufacturers and component providers.
2. The analysis on how the PRC's WTO tariff concession may affect the SEACEN-7's exports to the PRC shows that the largest tariff cut are made on agricultural goods, man-made fibres, fabrics, vehicles and auto parts. In addition, the significant cut on weighted average tariff on machinery and electrical products could be conducive to the SEACEN-7's exports to China. Those with minor or no tariff reduction are mainly primary products,

notably oil seeds, ores and ash, fuels and mineral oil, rubber, raw hides and skins, and copper.

3. We measure the rank correlation coefficients between the structure of the PRC's WTO tariff cuts during the transition period and the structure of the SEACEN-7's exports to the PRC. The results show that the coefficients are mostly negative and marginal, indicating that the magnitude of the PRC's tariff reduction is in minor association with the structure of the SEACEN-7's exports to the PRC. This implies that most of the SEACEN-7's exports to the PRC are not likely to gain great advantages from the PRC's tariff reduction.
4. We also measure the impact of the PRC's post-WTO removal of non-tariff barriers on the SEACEN-7's exports to the PRC, and calculate the value of the SEACEN-7's export product categories that could be affected by such measures. In terms of the overall impact on imports from the SEACEN-7, Korea benefits the most, followed by Thailand, Singapore, Malaysia, Taiwan, Indonesia and the Philippines in that order.
5. The study applies Revealed Comparative Advantage Index (RCA) to determine categories of export products that the ASEAN-7 has comparative advantage over the PRC. The findings suggest that the ASEAN-4 (Indonesia, Malaysia, Philippines and Thailand) enjoy comparative advantage in primary products such as processed animal plant products. Taiwan and Korea have comparative advantages mainly in textile. Fuels and oil are Singapore's major export product categories with strong but diminishing comparative advantages. As for machinery and electrical equipment, Taiwan and Korea enjoy relatively strong comparative advantages.
6. To analyse the possible competitive position of the SEACEN-7 in the PRC following its WTO entry, we use the rank correlation coefficient for the RCA index among the SEACEN-7 countries to measure the similarities in their export structures. The results show that Taiwan and Korea exhibit the highest degree of similarities in their export structures, and therefore are likely to engage in stiffer competition in the post-WTO China market.
7. To analyse the competitive position of the SEACEN-7 vis-à-vis the PRC in the U.S. market, we examined the SEACEN-7's competitive advantages vis-à-vis the PRC in specific export product categories by comparing their shares in the U.S. market with those of China. The results show that

Indonesia has comparative advantages no lesser than China in coco; Malaysia in animal and vegetable fats and oil, fuels and mineral oil, and organic chemicals; Thailand in aquatic animal products; Korea in fuels and mineral oil; Singapore in fuels and mineral oil, vehicles and auto parts, and aircraft parts; and Taiwan in steel, and vehicles and auto parts.

8. We further study changes in each country's RCAs in major export product categories to the U.S. market. The PRC experiences rising RCAs in many major products except fabrics and other clothing. Similarly, the RCAs of fabrics and other clothing drop in all countries except Indonesia and Thailand. Nonetheless, Korea still possesses a competitive edge in this category. Taiwan's RCAs in plastics, shoes, boots, furniture, toys, and sporting goods in the U.S. market decline significantly.
9. In terms of the rank correlation coefficient of similarities in export structure among the SEACEN-7 and the PRC in the U.S. market, a higher degree of similarities with the PRC is observed in Taiwan, Thailand and the Philippines, implying that these countries are likely to encounter strong competition from China's products in the U.S. market.
10. Assessment of the export competition in the Japanese market between the SEACEN-7 and China, shows that Korea enjoys no less competitive advantages than China in fuels and mineral oil, steel, and machinery equipment; Singapore in coco, and fuels and mineral oil; Taiwan in steel and machinery equipment; Indonesia in ores and slag, rubber, and paper products; the Philippines in fuels and oil; and Thailand in food and prepared animal fodder.
11. In terms of the RCAs of individual countries in the Japanese market, the PRC's RCAs generally rise as in the U.S. market, including fabrics, which declines in the U.S. market. Meanwhile, Korea's RCAs in fabrics, shoes and boots and Taiwan's RCAs in shoes, boots, furniture, toys and sporting goods have apparently declined. The RCAs of the SEACEN-7 and China in machinery and electrical equipment generally rise, with Singapore's RCAs in these two categories dropping but still relatively high among the countries.
12. An analysis of the similarities in the export structures of the SEACEN-7 and the PRC in the Japanese market reveals that Taiwan's export structure is the most similar to the PRC, followed by Korea's, implying that these two

countries may face stronger competition with the PRC's products in the Japanese market.

13. After the PRC joins the WTO, transnational corporations may expedite investment in and technology transfers to China, as well as establish procurement headquarters and R&D centres there in order to vie for market shares. This may have a negative impact on the investment of transnational corporations in the SEACEN countries. In addition, as transnational corporations gradually upgrade their production in the PRC from low technology to high value-added products, the PRC's export competitiveness would be greatly enhanced.
14. Due to the PRC's comparative advantages in labour-intensive products and large domestic market, the ASEAN-4 may face stronger competition with the PRC in attracting FDI after the PRC's WTO entry. On the other hand, Korea, Singapore, Taiwan and the PRC differ in their comparative advantages in production resources, technology levels, as well as their roles in the international division of labour. Consequently, as the PRC further opens its services market after joining the WTO, Korea, Singapore, and Taiwan are likely to increase their investment in the PRC.
15. Judging from an impressive record of rapid economic growth in the past, it is commonly agreed that the PRC's outlook for continued growth remains positive. The PRC's WTO accession will not only help to further accelerate its own economic growth but will also provide a huge export market for the SEACEN countries. In this respect, it may be beneficial for the SEACEN countries to shift their less competitive and labour-intensive industries to the PRC and focus on products that they have comparative advantage. Thus, in the medium to long term, the economic dependency of the SEACEN-7 on the PRC is likely to deepen.
16. The PRC has been transforming from a processing and assembly factory of labour-intensive products to a manufacturing base of a number of high-technology products. Following the PRC's WTO entry, transnational corporations around the world will raise the pace of production technology transfers, as well as introduce R&D and marketing strategies to China, thereby boosting the competitiveness of China's manufacturing sector. As a result, the SEACEN countries may face increasing competitive pressure from China in exports.

In sum, the PRC's accelerating economic growth, growing role as the world's supplier of manufactured goods, magnetic appeal to international technology and capital, and aggressive expansion of exports have caught the world's attention over the past decade. These factors have made it increasingly urgent for the SEACEN countries to make use of the business opportunities in China to build their own national niches. Only by raising their competitiveness and becoming an integral part of the global division of labour can the SEACEN countries avoid being left out of the global supply chain. Given that each SEACEN country has its own unique competitive advantage while closely related to and complementing each other in economy and trade, regional economic cooperation should be promoted to turn the challenges arising from the PRC's entry into the WTO into an opportunity for strong economic growth.

CHAPTER 1

INTRODUCTION

1.1 Research Purpose

With huge influx of foreign direct investment (FDI) and rapid expansion in exports, the People's Republic of China (PRC or China) has emerged as the fastest growing nation of the world. Along with China's economic development, relations between China and the SEACEN countries on trade and investment have grown rapidly in the 1990s. At the end of 2001, China obtained its membership with the World Trade Organization (WTO), signifying a new era in China's economic liberalisation process. China's WTO accession not only has far-reaching implications for its economy but also ramifications on the SEACEN countries regarding their external trade and foreign capital inflows. Issues such as export competition with China and FDI attractiveness have been of concern for the SEACEN countries after China's WTO accession. This report aims to address the aforementioned issues following China's entry into the WTO.

1.2 Analytical Framework

To focus our discussion on the trade and investment relations between the SEACEN countries and China; this report mainly covers seven selected SEACEN countries that have relatively closer economic ties with China, namely, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand and Taiwan (SEACEN-7).¹

The key areas of China's commitments to the WTO accession include trade liberalisation (tariff reductions and abolition of non-tariff barriers), opening market in services sector, trade-related investment liberalisation, protection of intellectual property rights, and institutional changes. However, in this report we will discuss mainly trade and investment liberalisation under WTO rules and its possible impact on the trade and investment relations between the SEACEN-7 and China. In this report, we focus on the Chinese, US and Japanese markets, leaving aside other market such as the EU and the markets of the SEACEN-7 themselves.

1. Due to the unavailability of sufficiently detailed data on trade and investment, the other four SEACEN countries are not considered in this report.

This report first traces the changes in trade relations and export competitiveness of the SEACEN-7 and China by measuring the intra-industry trade index, the revealed comparative advantage index for exports, and the market shares of various export product categories. We then apply the Concession Schedule of the PRC's WTO accession to study how China's tariff cuts and removal of non-tariff trade barriers influence the SEACEN-7's exports to China. In addition, focusing on the U.S. and Japanese markets, we also discuss the changes in export competitiveness of the countries concerned following China's entry to the WTO. Finally, this research covers China's rapid economic growth and industrialisation in the post-WTO era and its influence on the SEACEN-7.

This report proceeds as follows. Chapter 1 outlines the research purposes and basic framework of this report. Chapter 2 introduces trade relations between the SEACEN-7 and China. Chapter 3 analyses China's WTO accession and the SEACEN-7's exports to China. Chapter 4 takes a closer look at the export competition between the SEACEN-7 and China in the U.S. market and Japanese markets; while Chapter 5 discusses issues related to foreign direct investment in the SEACEN-7. Chapter 6 examines China's economic development after the PRC's WTO entry and its impact on the SEACEN-7. Finally, Chapter 7 concludes this report with a summary of our findings.

1.3 Research Methods

In this report, we provide an insightful analysis on the trade structure between China and the SEACEN-7 countries by using several analytical methods, such as the intra-industry trade index, the revealed comparative advantage index for exports, and the market shares of export categories. In Appendix II: Trade Measurement Indicators, we list those analytical methods in detail. However, limitations of our research methods are also briefly mentioned.

In this report, the Revealed Comparative Advantage (RCA) index of the SEACEN-7's specified product category in the US and Japanese market during the period from 1990 to 2001 is defined as the quotient of two ratios. The numerator is the share of the product category's export in the country's exports to the third market, while the denominator is the share of the third market's imports of the product category in the share of total imports of all products. However, since RCA is calculated from the actual export statistics, it may reflect the underlying real comparative advantages of the economy, while trade statistics reflect only post-trade situations. However, the availability of data at different levels of aggregation and the data bias caused by government policy

distortions (e.g. non-trade barriers and export subsidies) might cause immeasurable damage to the “true” pattern of comparative advantage.

Intra-industry trade (IIT) occurs when a country exports and imports goods in the same industry. Intra-industry trade represents international trade within industries rather than between industries. Such trade is more beneficial than inter-industry trade because it stimulates innovation and exploits economies of scale. In this report, Aquino’s (1978) correction method of measuring the index of intra-industry trade is applied to measure the development of intra-industry trade between the SEACEN-7 and China. However, Aquino’s method has been criticised for its assumption that a specific recorded trade imbalance is consistent with disequilibrium and that equilibrating forces would be spread equi-proportionally across all industries. In addition, several empirical studies show that the level of aggregation, transport costs etc. might be able to affect observed levels of intra-industry trade.

In this report, we also employ the market share indicator to measure the SEACEN-7’s export competitiveness in China. The market share uses a country’s exports of a specific product category to China divided by China’s total imports of this product category to measure the absolute level of the country’s market dominance of this product category in the China market during the period from 1993 to 2001. The market share is also applied to measure the SEACEN-7’s and China’s export competitiveness in the US and Japanese markets during the period from 1990 to 2001. The analysis starts by ranking the market share in third markets for specific products exported from the SEACEN-7 and China in order to compare their absolute advantages. Then, by further comparing each country’s changes in a specific product’s market share, we may compare changes in the competitiveness among different countries between two periods. Market share is a simple indicator to reveal product competitiveness, and scales and changes of market shares usually are influenced by products’ economies of scale.

1.4 Areas for Further Research

As this report is intended to be an in-depth analysis on the impact of China’s accession to the WTO on trade and investment relation between the SEACEN-7 and China, it is unavoidable that many gaps have to be left unfilled. Several areas for further research are suggested as follows:

First, intra-industry trade between the SEACEN-7 and China can be further divided into horizontal IIT and vertical IIT to study the main determinants of IIT. We need to work more empirically to capture the close relations between IIT and offshore production by multinational enterprises.

Second, this report only assesses the effect of China's tariff reduction, removal of non-tariff barriers, and openness in services sectors on the SEACEN-7. However, other areas of China's commitments, such as trade-related aspects of intellectual property rights, rules and procedures governing the settlement of disputes, and government procurement, also need to be further studied to show how those commitments impact the SEACEN-7.

Third, for a more comprehensive coverage, a constant market share analysis could be employed in future to compare the export performances of the SEACEN-7 countries in the third export markets. With this technique, the growth or change in the size of export markets could be further decomposed to measure the industry mix, competitive and interaction effects.

Fourth, although this report focuses on trade structure of final products between the SEACEN-7 countries and China, we did not analyse exports of intermediate goods. However, future research on the export processing industry in China will increase the understanding of trade dependency and global supply chains between China and the SEACEN-7.

Finally, this report only qualitatively asserts that China's WTO entry would see increased FDI flows to China and pose a serious threat to the SEACEN-7 countries. Quantitative assessment can be made in future on whether FDI in China will grow at the expense of the SEACEN-7 region. In this regard, it would be helpful to include an evaluation of whether the threats posed by China have been overstated, or if the FDI flows to China are merely keeping up with China's high economic growth, whether these flows have spillover effects to the SEACEN-7 countries.

CHAPTER 2

TRADE RELATIONS BETWEEN THE SEACEN-7 AND CHINA

2.1 China's External Trade

This section discusses China's importance in the global economy as well as the SEACEN-7's role in China's external trade development from the perspective of China's trade volume.²

2.1.1 Sustained Expansion in External Trade

Since the 1990s, China's external trade has continued to grow rapidly (Chart 2.1.1) at an average annual rate of 13.8%, not only outpacing the 6.3% growth for the world, but also 4.4 percentage points higher than her average GDP growth rates.³ China's ranking in terms of trade volume has also improved from the ninth in the world in 1990 to the sixth in 2001. During the same period, the share of China's aggregate exports to world exports has increased from 1.8% to 4.3%, and the share of the imports from 1.5% to 3.8%.

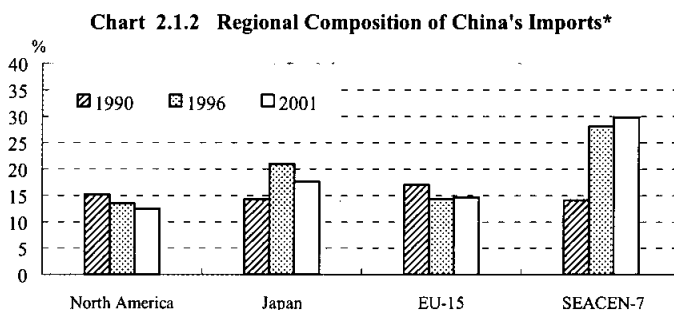
According to the WTO (2002), measured by the total merchandise and services trade volume, China became the 4th largest trading nation in the world in 2001, next to the European Union, the U.S. and Japan. Trade dependency, measured by the external trade to GDP ratio, has increased from 29.8% in 1990 to 44% in 2001 (Appendix Table 2.1.1). According to the UNCTAD (2002a), with its impressive export growth, China ranked sixth in export competitiveness among the world's exporting nations. If measured by the increase in competitiveness, China was ranked first among all the other countries of the world.⁴

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2. In this paper, the data on China do not include those for Hong Kong, China and Macao, China.
 3. Between 1990 and 2001, China's trade volume has grown by 340%, and average annual growth rates for export and import averaged 13.2% and 14.9%, respectively.
 4. Traditionally, exports competitiveness are measured by shares in world exports, but the UNCTAD (2002a) measured it according to the growth rates of export market shares in world trade.



2.1.2 China's Major Trading Partners

Traditionally, the U.S., Japan, the European Union, the SEACEN-7 are China's main trading partners. China's trade with these countries usually accounts for 80% of China's international trade. The share of China's imports from the SEACEN-7 started to accelerate during the 1990s and approached 30% after 1996. The SEACEN-7 gradually replaced the U.S., Japan and the European Union as China's largest source of imports (Chart 2.1.2).



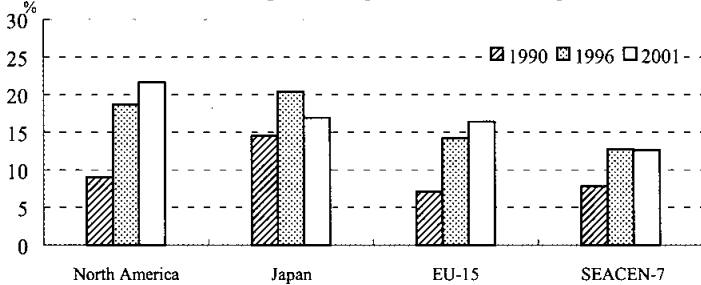
*:The share is expressed as the ratio of merchandise imports of China from major areas to total merchandise imports of China.

Source: China Customs.

As for China's exports, the share of exports to the SEACEN-7 to total exports continued to rise during the first half of the 1990s. From 1996 onwards, China's exports to the SEACEN-7 remained stable, while China's exports to North America continued to expand. Starting from 1998, North America has become the largest export market for China (Chart 2.1.3), as China's export markets gradually shifted from Asia to North America and European Union. In

short, China's import dependency on the SEACEN-7 is higher than its export dependency.

Chart 2.1.3 Regional Composition of China's Exports*

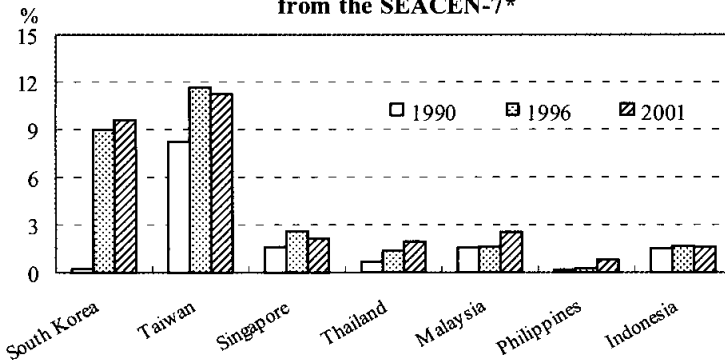


*:The share is expressed as the ratio of merchandise exports of China to major areas to total merchandise exports of China.

Source: Same as Chart 2.1.2.

Korea, Singapore and Taiwan remain the key sources of imports for China. Yet their combined share to China's total imports has been slowly trending downwards since 1996. In 2001, for instance, imports from Taiwan accounted for 11.2% of China's total imports, followed by Korea's 9.6% and Singapore's 2.1% (Chart 2.1.4). By contrast, China's exports rely less on Korea, Singapore and Taiwan markets. In 2001, exports to Korea accounted for 4.7% of China's total exports, the highest among those three economies, followed by 2.2% for Singapore and 1.9% for Taiwan (Chart 2.1.5).

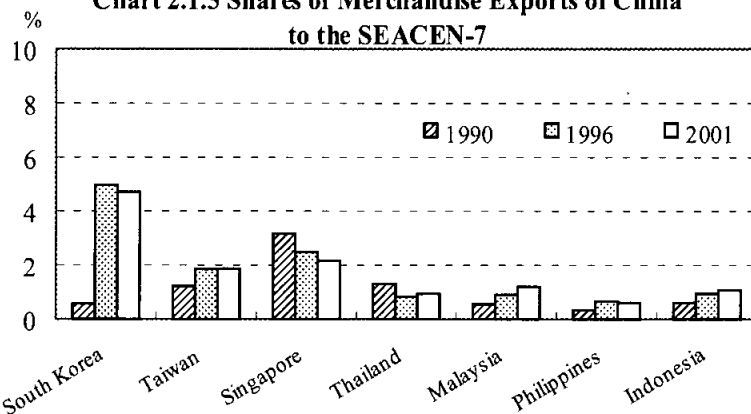
Chart 2.1.4 Shares of Merchandise Imports of China from the SEACEN-7*



*:The share is expressed as the ratio of merchandise imports of China from individual SEACEN-7 countries to total merchandise imports of China.

Source: Same as Chart 2.1.2.

Chart 2.1.5 Shares of Merchandise Exports of China to the SEACEN-7



*:The share is expressed as the ratio of merchandise exports of China to individual SEACEN-7 countries to total merchandise exports of China.

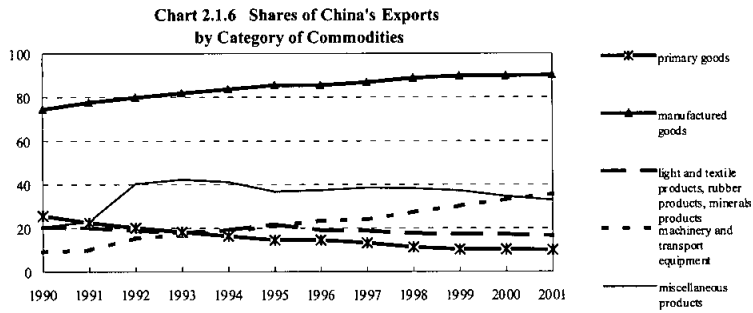
Source: Same as Chart 2.1.2.

The share of China's imports from Malaysia, Thailand, the Philippines and Indonesia to total imports increased from 3.9% in 1990 to 6.9% in 2001. In 2001, 2.5% of China's total imports were from Malaysia, followed by 1.9% from Thailand, 1.6% from Indonesia, and 0.8% from the Philippines (Chart 2.1.4). The share of China's exports to those four countries to total exports had been below 4% on average in the 1990s. In 2001, Malaysia was China's biggest export destination among those economies, with a share of 1.2%, followed by Indonesia with a share of 1.1%, and Thailand and the Philippines with shares of below 1% (Chart 2.1.5).

2.1.3 The Composition of China's Export and Import Commodities

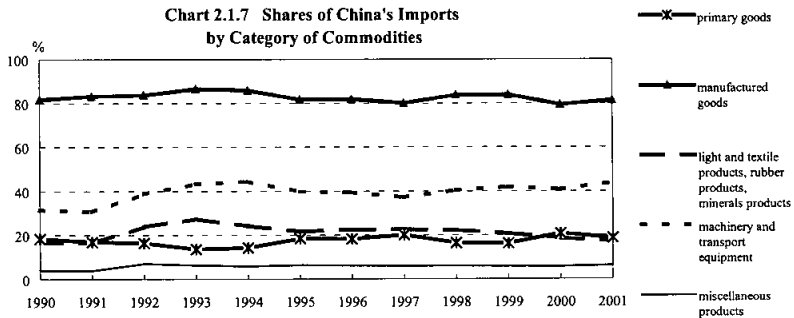
China's export structure has undergone significant changes in line with the rapid expansion of China's exports. Exports of primary goods as a proportion of total exports has gradually dropped from 25.6% in 1990 to 9.9% in 2001. During the same period, the ratio of manufacturing exports to total exports rose from 74.4% to 90.1%. Among manufacturing exports, the share of machinery and transportation equipment registered the largest gain, rising from 9% in 1990 to 35.7% in 2001. Miscellaneous products also rose from 20.4% to 32.7% (Chart 2.1.6).⁵

5. As UNCTAD (2002b) indicates, China's export structure has undergone dramatic changes during the period from 1985 to 2000, especially the improving competitiveness in middle and higher-level technology products.



Source: Same as Chart 2.1.1.

As for the imports structure, the share of China's primary goods remains stable relative to its exports (Chart 2.1.7). The share of manufactured goods gradually rose to 86.3% in 1993 from 1990's 81.5%, and then regressed to 81.2% in 2001, mainly because of declines in the shares of light and textile products, rubber products and mineral products since 1993. The shares of chemicals, machinery, transport equipment, and miscellaneous products in imports were roughly the same.



Source: Same as Chart 2.1.1.

2.1.4 Rapid Development in Processing Trade

During the 1980s, many foreign-invested enterprises or transnational corporations started to move labour-intensive industries to China and imported mechanical equipment and raw material to develop the export processing industry in China. The share of processing trade to China's total trade has gradually increased from 1992 onwards and reached 55.8% in 2001 (Table 2.1.1), which indicates that processing trade has become the main mode for China's international

trade.⁶ With this mode, China's export growth usually leads to an increase in imports.

Table 2.1.1 China's External Trade Modes

Unit: %

Year	Exports and Imports		Exports		Imports	
	Processing Trade	General Trade	Processing Trade	General Trade	Processing Trade	General Trade
1980	5.7	94.3	5.1	94.9	6.2	93.8
1988	34.0	66.0	31.4	68.6	36.3	63.7
1996	64.8	35.2	58.4	41.6	71.6	28.4
1997	64.0	36.0	57.3	42.7	72.6	27.4
1998	63.6	36.4	59.6	40.4	68.9	31.1
1999	59.5	40.5	59.4	40.6	59.5	40.5
2000	56.7	43.3	57.8	42.2	55.5	44.5
2001	55.8	44.2	58.0	42.0	54.5	46.5

Source: China General Customs Statistical Yearbook, 1988-2002.

6. General trade refers to the import or export of goods that are not related to export-processing trade by enterprises in China with import-export rights. In China's customs statistics, the scope of general trade covers: imports and exports using loans or aids; the import of materials by foreign-invested enterprises (FIEs) for processing and sale in the domestic market; the export of goods purchased by FIEs or processed by FIEs using domestically-produced materials; the import of food and beverages by restaurants and hotels; the supply of domestically-produced fuel, materials, parts and components to foreign vessels or aircraft; the import of goods as payment in kind in lieu of wages in labour service cooperation projects with foreign countries; and the export of equipment and materials by enterprises in China as investment in kind for their investment abroad.

Table 2.1.2 indicates that most foreign-invested enterprises are involved in processing trade while China's state-owned enterprises mostly conduct general trade. In 2001, for instance, state-owned enterprises accounted for 65.4% and 65.8% of imports and exports in general trade while foreign-invested enterprises accounted for 26.7% and 21.5% of imports and exports, respectively. In processing trade, foreign-invested enterprises accounted for 73.4% and 70.8%, respectively, in imports and exports while state-owned enterprises accounted for less shares in this industry (Table 2.1.2).

Table 2.1.2 General Trade and Processing Trade in China

Unit: %

Year	General Trade				Processing Trade			
	Imports		Exports		Imports		Exports	
	State-Owned Enterprises	Foreign-Invested Enterprises	State-Owned Enterprises	Foreign-Invested Enterprises	State-Owned Enterprises	Foreign-Invested Enterprises	State-Owned Enterprises	Foreign-Invested Enterprises
1995	67.5	25.7	92.2	6.1	37.7	65.2	43.5	55.2
1996	80.9	17.9	85.4	12.0	28.6	70.0	36.9	61.5
1997	76.7	21.8	84.2	12.6	30.6	67.8	35.6	62.4
1998	76.0	22.0	81.5	13.9	28.0	70.2	33.3	64.7
1999	70.7	25.1	78.2	15.6	27.5	70.9	31.8	66.1
2000	68.8	26.4	72.4	18.9	24.4	73.6	28.1	69.5
2001	65.4	26.7	65.8	21.5	22.5	73.4	25.7	70.8

Source: Same as Table 2.1.1.

2.2 Bilateral Trade between the SEACEN-7 and China

The SEACEN-7 and China have important and rapidly growing trade and investment relations. This section discusses the trend in China's

bilateral trade with the SEACEN-7 since the 1990s from the SEACEN-7's perspectives.

2.2.1 External Trade of the SEACEN-7

The SEACEN-7 has become the most important region in world trade. In terms of trade volume in 2001, Korea, Taiwan and Singapore respectively ranked 13th, 14th and 15th in the global market, followed by Malaysia (18th), and Thailand, Indonesia and the Philippines (all ranked below 20th).⁷ The SEACEN-7's key trading partners have long been the U.S., Japan, the ASEAN and the E.U. However, trade relations between the SEACEN-7 and China have strengthened in recent years and China has appeared on the list of the SEACEN-7's top eight trading partners in 2001.

2.2.2 The Trade Dependency between the SEACEN-7 and China

Judging from the shares of both exports to China and imports from China to each SEACEN-7 country's total trade volume, the degree of interdependency between the SEACEN-7 and China has risen since the 1990s.

Since 1990, Korea, Taiwan and Singapore have all experienced growing shares of exports to China and imports from China. In 2001, 19.6% of Taiwan's exports went to the China market, followed by 12.1% of Korea, and 4.4% of Singapore (Chart 2.2.1). Imports from China accounted for 9.4% of total imports in Korea, 6.2% in Singapore, and 5.5% in Taiwan (Chart 2.2.2). In 2001, China became the second largest export market for Taiwan. China was the third largest trading partner for Korea. As for Singapore, China ranked fifth and sixth largest trading partner for its exports and imports, respectively. In short, those three economy's dependency on China has deepened further (Appendix Table 2.1.2).

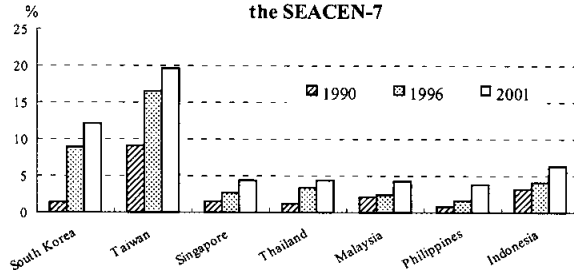
Thailand, Malaysia, the Philippines and Indonesia have also experienced growing shares of exports to and imports from China during the 1990s. Two major reasons for the rapid trade growth between those countries and China in this period were the dynamism of the economies of those economies and China as well as the decreasing MFN tariff rate among those economies.⁸ In 2001,

7. The ranking is based on the International Finance Statistics data.

8. For more details, please refer to the report of Forging Closer ASEAN-China Economic Relations in the Twenty-First Century (2001).

exports to China accounted for a large share of 6.3% of total exports in Indonesia, followed by 4.4% in Thailand, 4.3% in Malaysia, and 3.8% in the Philippines (Chart 2.2.1). The shares of imports from China to total imports was 10.1% for Indonesia, 6.0% for Thailand, 5.1% for Malaysia, and 3.0% for the Philippines (Chart 2.2.2). In spite of increasing trade dependency of those four economies on China, it is not yet a prominent export market for them.

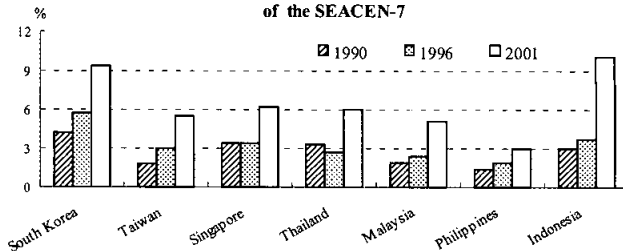
Chart 2.2.1 Shares of Exports to China of the SEACEN-7



*:The share is expressed as the ratio of merchandise exports to China to total merchandise exports of individual SEACEN countries.

Source: *Direction of Trade Statistics Yearbook 2002*.

Chart 2.2.2 Shares of Imports from China of the SEACEN-7



*:The share is expressed as the ratio of merchandise imports from China to total merchandise imports of individual SEACEN-7 countries.

Source: Same as Chart 2.2.1.

2.2.3 Product Composition of the Trade between the SEACEN-7 and China

This section analyses changes in product composition of the trade between the SEACEN-7 and China during the 1993-1995 and 1999-2001 period. First, we compare the exports structure to China of each SEACEN-7 country by looking at the top 15 export product categories by the Harmonised System (hereafter referred to as HS) 2-digit code system (Table 2.2.1). Then, we also analyse the structure of each SEACEN-7 country's imports from China by breaking down the top 15 imported categories (Table 2.2.2).

Table 2.2.1 Rank of the Top 15 Expt Product Categories of the SEACEN-7 to China*

HS	Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001
03					14		9							
07	13							15						
08					4	4		12						
10							3	8						
12							15							
15	4	8	1	4	7	9					6			
17							2							
18			9											
19			15											
20														
26		15			3	10								
27	1	1	4	5	1	5		5	9	4	1	3		
28								13						
29	12	5	12	7		14	13	10	8	3	9	5		7
31	7				8									
32											8	8		15
38		13		8		11					7	7		14
39	11	9	7	6	10	8	4	3	1	2	5	4	2	3
40	5	11	5	9		12	1	4			15			
41							12		6	8			5	10
44	2	2	2	3	9		14	9						
47	6	3						14						
48	3	4	14			6	15	6	10	9		10	8	12
52	15	10							15					
54	10	12	8				11		7	7		13	4	5
55	9	14	10	13	15		6	13	5	10			6	8
59									11	13			7	11
60									13	12			10	13
64													13	
70				15	13									
71							8							
72	8		11	14	12			7	2	6	13		11	4
73							10		12		11	12	12	
74			13	10	2	3				11	12	11	9	6
76				12						15				
84	14	7	6	2	5	2	5	1	4	5	3	2	1	2
85		6	3	1	6	1	7	2	3	1	2	1	3	1
87									14		14	15	14	
89											4			
90				11		7		11		14	10	6	15	9
91												14		
98												9		
Total share**	93.6	93.4	93.6	95.1	92.1	98.1	86.9	88.7	87.4	88.9	93.6	95.0	84.3	87.7

* The ranks are based on the shares of the top 15 exports to total exports to China from individual SEACEN-7 countries.

** Total share is the sum of the shares for the top 15 merchandises.

Source: China Customs.

Table 2.2.2 Rank of the Top 15 Impo Product Categories from China for the SEACEN-7 *

HS	Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
	1993~ 1995	1999~ 2001	1990~ 1992	1999~ 2001	1990~ 1992	1999~ 2001	1990~ 1992	1999~ 2001	1990~ 1992	1999~ 2001	1990~ 1992	1999~ 2001	1990~ 1992	1999~ 2001
03										6				
05													9	
07	8													
08				14		14								
10	9	5	3	3		9			5	8				
12	3		7		8	15			14		9		11	
16			14											
17	13													
20			15											
23			9		12		11	14	13					
24	11	11			1						4			
25	14		12											
26					5									
27	6	3			6	3	8	8	1	2	2	3	6	4
28	7	6	6	4		4	5	4	10	13				12
29	10	8					6	6	7	12		13	12	7
31		13												
32		14						12						
38								10						
39	15			15		8		13				11	14	11
40					10	12								
42							9		12					
44										15			7	14
48			11											
52	5	7	10	12	7	5	12	9	8	11	6			
54														
55		12		10	11	6	7	5	3	9	10	14		
61				9		13			9	7	15	4	10	9
62			5	6			10		6	3	8	5	4	6
63					14						11	12		
64				11		10			11	14			5	
69					15									
71											5			
72	4	9	4	8	4		1	3	2	5	14		2	3
73	12	10	8	7	9	7	14	15			7	9	15	8
76												10		
79											12	8		13
82			13				15							
84	1	2	2	2	3	2	2	1	15	4	3	2	3	2
85	2	1	1	1	2	1	3	2	4	1	1	1	1	1
86										10				5
87		4		13	13	11	13							15
88								7						
89							4				13	6		
90				5				11				7		10
94												15	13	
96		15											8	
Total share**	78.0	74.4	67.5	74.8	72.9	69.0	74.6	78.1	69.8	73.0	67.0	81.8	70.0	74.9

*: The ranks are based on the shares of the top 15 imports to total imports from China of individual SEACEN-7 countries.

** : Total share is the sum of the shares for the top 15 merchandises.

Source: Same as Table 2.2.1.

The trading structure between the SEACEN-7 and China can be summarised as follows:

1. In terms of the commodity structure in the SEACEN-7's trade with China, it can be seen from Table 2.2.1 and Table 2.2.2 that both exports and imports have changed over times. HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment) were the most important export product categories to China for most SEACEN-7 countries in the late 1990s (Table 2.2.1), followed by HS27 (fuels and mineral oil), HS39 (plastics) and HS74 (copper).
2. HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment) were also the SEACEN-7's most important import product categories from China during the late 1990s (Table 2.2.2), while HS72 (iron and steel) and HS27 (fuels and mineral oil) were also among the top 15 imported product categories during the 1990s for most of the SEACEN-7 countries.
3. For the 1990s, half of the SEACEN-7's top 15 exported product categories to China overlapped with the top 15 imported product categories. The commodity structure therefore indicates the SEACEN-7's exports to and imports from China have converged toward similar products groups. This result indicates the intra-industry trade and intra-firm trade increasing in importance.
4. The most significant overlapping product categories were in HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment). This is probably due to the global production networks that have evolved within this product group under transnational corporations production.
5. However, product categories in HS27 (fuels and mineral oil), HS29 (organic chemicals), HS39 (plastics) and HS55 (man-made fibres) overlapped in exports and imports in the 1993-1995 period, and exhibited an even higher degree of overlap, in terms of the ranking order, in the 1999-2001 period.
6. Imports and exports of HS90 (optical, photographic, and measuring parts) were not on the top 15 lists for the 1993-1995 period. But during the 1999-2001 period, HS90 (optical, photographic, and measuring parts) was not only listed among the top 15 but also had a high degree of overlap in both imports and exports. Besides, the degree of overlap in HS72 (iron and steel)

became lower in the 1999-2001 period compared to the 1993-1995 period.

7. The structure of the SEACEN-7's bilateral trade with China significantly changed in the 1990s, major trading products between the SEACEN-7 and China included machinery and electrical machinery products, minerals, chemicals, plastics, iron and steel, and optical instruments, but the importance of iron and steel gradually diminished.

2.2.4 Intra-industry Trade between the SEACEN-7 and China

Among the East Asian economies, intra-industry trade, as measured by Aquino's generalised index of intra-industry trade, is highest in the newly industrialised economies (NIEs), followed by the ASEAN economies and China. According to Isogai, Morishita, and Ruffer's study (2002), they found that in line with the increased trade and production integration the degree of intra-industry trade has increased throughout the 1990s, especially in the SITC 1-digit sub-category "Machinery and Transport Equipment", with the Philippines and China experiencing particularly large increases in intra-industry trade.

Since the 1980s, transnational corporations based in the U.S., Japan, Europe, Taiwan, Singapore, and Korea have made large-scale direct investments in East Asia, which further promotes industrial and trade integration and the development of inter-industry and intra-industry trade in this region.⁹ The high degree of intra-industry trade among the East Asian economies are related to the transfers of production by multinational companies in this region, the increasing participation of those countries in the global production process, and the increasing importance of the intra-industry division of labour.¹⁰

Such shifts in production modes have significant implications for inter-industry and intra-firm trade flows in China. To review the development of intra-industry trade between the SEACEN-7 and China, this section uses HS 2-digit trade

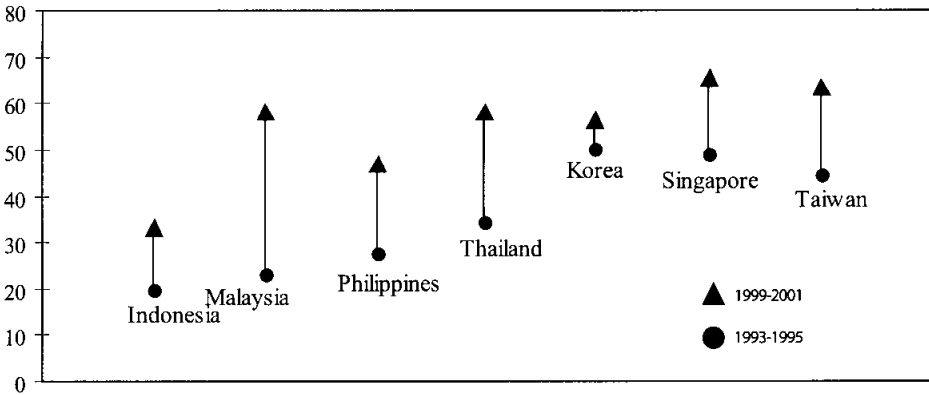
9. Particularly, intra-industry trade activities tend to grow faster between countries with higher average income, greater similarity in the endowments of natural resources, larger markets, more active international trade activities, and lower trade barriers and transportation cost.

10 For more detail, see Takashi, Hirofumi, and Ruffer (2002).

commodity data and applies the adjustment method developed by Aquino's (1978) generalised index of intra-industry trade to calculate the index of intra-industry trade between the SEACEN-7 and China in the mid 1990s (the average between 1993 and 1995) and late 1990s (the average between 1999 and 2001).¹¹

In terms of all merchandise, the indices of China's intra-industry trade with Singapore and Taiwan registered the highest figures of 67.6 and 65.7, respectively, while the lowest figure was recorded by Indonesia with 35.3 (Chart 2.2.3). From the mid 1990s to late 1990s, the increase in intra-industry trade between the SEACEN-7 and China was most prominent in Malaysia, Thailand, Taiwan and the Philippines.

Chart 2.2.3 IIT between the SEACEN-7 and China (all merchandise items)



In regard to individual product categories, intra-industry trade in HS87 (vehicles other than railway) between Korea and China grew most notably (Chart 2.2.4). In addition, as discussed in the previous section, HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment) registered the highest degree of overlap between the SEACEN-7's exports to and imports from China. The intra-industry trade with China in HS84 grew significantly in Taiwan, Indonesia, and Korea. In the late 1990s, countries whose intra-industry trade index with China for HS84 was above 90 included Malaysia, Thailand, Taiwan, and Singapore (Chart 2.2.5). As for HS85, the intra-industry trade with China rose significantly in Indonesia. In the late 1990s, Singapore, Taiwan, Malaysia, Thailand and Korea registered an intra-industry trade index with China of above 90 (Chart 2.2.6).

11. Aquino's correction method of measuring the Index of Intra-Industry Trade is illustrated in Appendix I.

Chart 2.2.4 IIT between the SEACEN-7 and China HS87

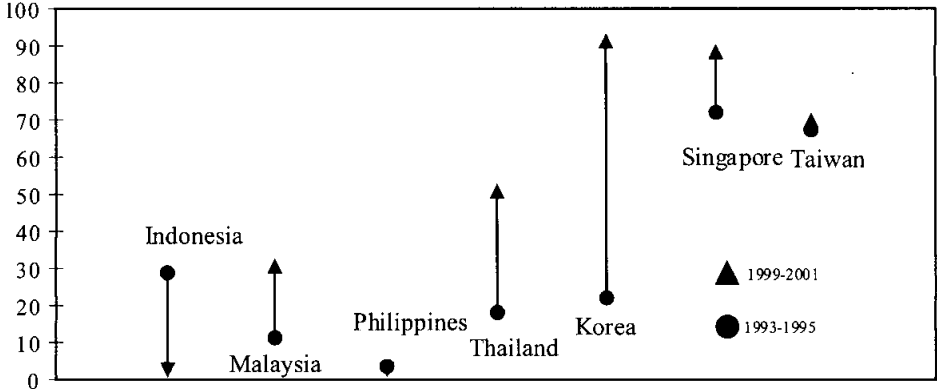


Chart 2.2.5 IIT between the SEACEN-7 and China HS84

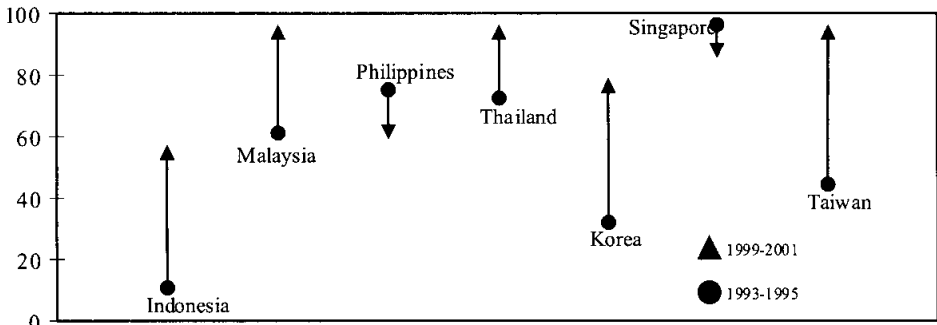
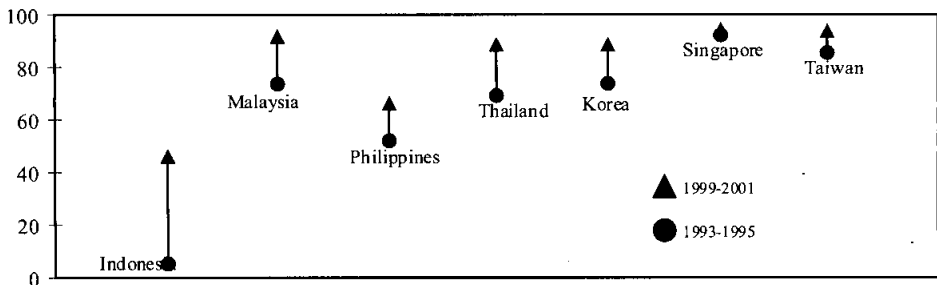


Chart 2.2.6 IIT between the SEACEN-7 and China HS85



As to the number of trade product categories with high degrees of intra-industry trade with China during the late 1990s, Taiwan, Singapore, and Korea had more trade product categories with high intra-industry trade indices than the rest of the SEACEN-7 countries. Taiwan, Singapore and Korea had 17, 14 and

11 product categories, respectively, with an index of intra-industry trade with China of above 80 (Table 2.2.3).

**Table 2.2.3 IIT Between the SEACEN-7 and China,
1999-2001 Average
(All HS 2-digit product categories)**

Unit: items

	Indonesia	Malaysia	Philip- pines	Thailand	Korea	Singapore	Taiwan
IIT≤20	55	53	61	44	42	44	34
20<IIT≤40	17	21	16	17	17	16	22
40<IIT≤60	12	7	10	14	13	17	13
60<IIT≤80	7	8	6	13	15	7	12
80<IIT	7	9	5	10	11	14	17

Source: Calculations based on China Customs data.

Korea, Singapore and Taiwan had relatively high levels of intra-industry trade with China. It was possibly attributable to higher degrees of labour division with China or high internal trade of products and components between parent companies or transnational corporations based in Korea, Singapore, Taiwan and with their affiliates in China or between affiliates in both countries.¹² Further growth of trade between China and those economies will be more dependent on intra-industry trade that capitalised on the comparative advantage and complementarities within categories of products.

12. According, the production process is separated into different segments with the production of each segment located at different host economies based on the locational advantages offered there.

As for Indonesia, Malaysia, the Philippines, and Thailand, due to relatively low levels of direct investment in China, their intra-industry trade with China may be mainly a result of transnational corporations establishing operations in both regions or procuring components and intermediate products from both regions.¹³

2.3 Major Export Markets of the SEACEN-7 and China

Both the U.S. and Japan are major export destinations of the SEACEN-7 and China. There is also considerable overlap in the composition of their major export items, particularly in textiles and light industry products. This section provides an analysis of export structures of the SEACEN-7 and China in the U.S. and Japanese markets.

2.3.1 The U.S. Market

We select the top 15 exported product categories from the SEACEN-7 and China to the U.S. market during the early (1990-1992) and late (1999-2001) 1990s, based on the U.S. Customs data, and then discuss the changes in export structures (Table 2.3.1).

Our findings suggest that:

The top 15 export product categories accounted for more than 80% of total exports to the U.S. for all selected SEACEN countries and China. These 15 product categories were of the key product groups for each economy, and may induce intense competition if SEACEN countries and China share the same export product categories. Here, according to Appendix I, we group products at more general digit definition of commodity HS-2 classification. These export product categories for different SEACEN countries are listed as follows:

Indonesia: light industry products (HS42, HS64, and HS94), textiles (HS61 and HS62), general and precision machinery (HS84 and HS90), and electrical machinery (HS85);

13. In this report, we did not intend to study main determinants of intra-industry trade between the SEACEN-7 and China. However, Fukao, Ishido, Ito and Yoshiike (2002) found that in the East Asian region FDI played a significant role in the rapid increase of vertical IIT in recent years.

Table 2.3.1 Rank of the Top-15 Export Product Categories to the U.S. from the SEACEN-7 and China*

HS	China		Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001
03	12		9	11			10	13	5	4			11	12		
09			8	13												
15					8	13	4	7								
16								14	4	7						
17							9									
18			11	14	12											
20			15				8	8	11							
27	8		1	5	7	5			14			8	8	6		
29						15							3	5		
38					15	14										
39	9	8			14					14	11	10	12	14	8	7
40			3	8	3	3			12	8	12	11		15		
42	6	7	12	10			7	5	13	9	5					12
44			5	9	9	9				15						15
46							13									
48				12								15				
49													9	8		
52			13													
54											14	13				
61	5	10	6	6	5	6	3	4	7	3	7	5	4	7	7	6
62	3	6	2	2	4	7	2	3	8	6	4	4	6	10	5	10
63	11	13														
64	4	4	4	4			15		6	11	2				6	
67	13	14														
69									15							
71									3	5	15	14				
72											9	6				15
73	14	11									8	7			10	3
82		15													13	12
83															14	13
84	7	2		3	2	2	6	2	2	2	3	2	1	1	1	1
85	2	1	7	1	1	1	1	1	1	1	1	1	2	2	2	2
87		12									6	3	15	13	9	4
88															11	
90	15	9		15	10	8	14	9		10	13	12	7	4	11	9
91							12	10								
94	10	5	10	7	11	4	5	6	10	12			13		3	5
95	1	3	14		6	12	11	15	9	13	10		10		4	8
98					13	10		12				9	5	3		11
99						11		11					14	9		14
Total share*																
*	83.5	84.2	88.9	83.2	94.7	96.7	88.3	94.3	83.5	85.0	88.1	90.1	97.4	98.4	87.1	90.3

*: The ranks are based on the shares of the top 15 exports to total exports to the U.S. from individual SEACEN-7 countries.

** : Total share is the sum of the shares for the top 15 merchandises.

Source: Calculations based on the U.S. Customs data.

Malaysia: light industry products (HS94 and HS95), textiles (HS61 and HS62), general and precision machinery (HS84 and HS90), and electrical machinery (HS85);

Philippines: light industry products (HS42, HS94, and HS95), textiles (HS61), general and precision machinery (HS84 and HS90), and electrical machinery (HS85);

Thailand: chemicals (HS39), light industry products (HS42, HS645, HS94, and HS95), textiles (HS61 and HS62), general and precision machinery (HS84 and HS90), and electrical machinery (HS85);

Korea: chemicals (HS39), textiles (HS61 and HS62), basic metals (HS73), general and precision machinery (HS84 and HS90), electrical machinery (HS85), and transportation machinery (HS87);

Singapore: chemicals (HS39), textiles (HS61 and HS62), general and precision machinery (HS84 and HS90), electrical machinery (HS85), and transportation machinery (HS87); and

Taiwan: chemicals (HS39), textiles (HS61 and HS62), basic metals (HS73 and HS82)), general and precision machinery (HS84 and HS90), electrical machinery (HS85), light industry products (HS94 and HS95), and transportation machinery (HS87).

The following table provides a summary of above findings.

Countries	Indonesia	Malaysia	Philippines	Thailand	Korea	Singapore	Taiwan
Same Export Product Categories With China	HS42, HS61 HS62, HS64 HS84, HS85 HS90, HS94	HS61, HS62 HS84, HS85 HS90, HS94 HS95	HS42, HS61 HS84, HS85 HS90, HS94 HS95	HS39, HS42 HS61, HS62 HS64, HS84 HS85, HS90 HS94, HS95	HS39, HS61 HS62, HS73 HS84, HS85 HS87, HS90	HS39, HS61 HS62, HS84 HS85, HS87 HS90	HS39, HS61 HS62, HS73 HS82, HS84 HS85, HS87 HS90, HS94 HS95
Total Product Categories	8	7	7	10	8	7	11

1. According to Table 2.3.1, HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment) were the fastest growing exports categories to the U.S. market for both the SEACEN-7 and China in the 1990s and became the primary exports to the U.S. market in the late 1990s. HS84 and HS85 together accounted for 50% of exports originating from the SEACEN-7 and China. The share exceeded 50% for Malaysia (80.2%), Singapore (78.5%), the Philippines (66.0%), Taiwan (61.4%) and Korea (56.8%).
2. HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted) were also the common product categories in the list of top 15 export product categories to the U.S. in the 1990s for the SEACEN and China. In 2000, the U.S. government extended NAFTA-equivalent preferential treatment to Caribbean Basin economies, which caused the SEACEN-7's and China's market shares of products such as HS61 and HS62 declined by more than 10 percentage points in the U.S.

2.3.2 The Japanese Market

In regard to the top 15 exported product categories originating from the SEACEN-7 and China in the Japanese market, based on the Japanese Customs data, and the changes in export structures in the 1990s, our findings are as follows (Table 2.3.2):¹⁴

1. In the late 1990s, the top 15 exported product categories from the SEACEN-7 (excluding Thailand and China) accounted for more than 80% of total exports to Japan. These 15 product categories were of the key product groups for each economy, and may induce intense competition if SEACEN countries and China share the same export product categories. Due to the difference in the industrial structures, historical and geographical factors, these countries' export product categories to Japan were more diversified than those to the U.S. Here, we group products at more general definition of HS-2 digit commodity classification. These export product categories for different SEACEN countries are listed as follows:

14. Japan's import structure has been similar to that of the U.S. during the 1990s. During this period, Japan's imports of HS84 and HS 85 increased at a more rapid pace than the U.S. because Japan is the engine for Asian industries while Asia is the investment and production hub for hi-tech industries. On the other hand, the largest increase of Japan's imports from China and the SEACEN-7 were recorded by HS84 and HS 95.

Table 2.3.2 Rank of the Top-15 Export Product Categories of the SEACEN-7 and China Japan*

HS	China		Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001	1990-1 992	1999-2 001
02									6	10					2	
03	4	13	3	4	10	13	3	6	1	3	4	5		9	3	3
07	8	14							15						12	
08							2	3								
09			9													
10	13															
12	11															
15					6	9	11									
16		8		14					9	4	14	12			6	
17							15		7	15						
18													11	11		
19													15	10		
20							13									
21														15		
23									12	13						
25	12								13							
26			4	5	8		1	5								
27	1	6	1	1	1	2	7	10			7	2	1	3		
29					13	12					15	10	5	6		13
38					12	11							7	7		11
39				11		8		12		9	12	7	9	8	9	4
40			10	12	7	10			4	5						
42	10	9									6	13				
44	14	15	2	2	2	4	9	8						13		11
48				9												
49														13		
51					14											
52	6			13												
61	3	3	13			15			11	14	3	6			13	
62	2	2	8	15			10	11	10		5					
63		12														
64	9	5	12								9	14			10	
68											11					
70																15
71			15				12		5	12			12	12		
72	7		11								2	4			8	9
73											10	9				12
74						14	6	14					8	14		
75			5	7												
76			6	10					14				15			14
80			14		11											
84		4		6	4	3	5	2	2	2	8	3	3	1	4	1
85	5	1		3	3	1	4	1	3	1	1	1	2	2	1	2
87								9		11					14	8
90		10			9	6		7		8		8	6	5		7
91													14			
94		11	7	8	15	7		13	8	7			10		7	6
95	15	7						15			13				5	10
96							14									
00					5	5	8	4		6			11	4	4	15
Total share**	72.1	76.9	96.1	90.3	95.5	95.1	87.8	93.6	78.9	78.9	78.0	83.0	89.9	95.7	71.8	88.4

*: The ranks are based on the shares of the top 15 exports to total exports to Japan from individual SEACEN-7 countries.

** : Total share is the sum of the shares for the top-15 merchandises.

Source: Same as Table 2.3.1.

Indonesia: agricultural products (HS03), food and beverages (HS16), mining products (HS27), light industry products (HS94), wood and paper (HS44), textiles (HS62), general and precision machinery (HS84), and electrical machinery (HS85).

Malaysia: agricultural products (HS03), mining products (HS27), wood and paper (HS44), light industry products (HS94), textiles (HS61), general and precision machinery (HS84 and HS90), and electrical machinery (HS85).

Philippines: agricultural products (HS03), mining products (HS27), wood and paper (HS44), light industry products (HS94 and HS95), textiles (HS62), general and precision machinery (HS84 and HS90), and electrical machinery (HS85).

Thailand: agricultural products (HS03), food and beverages (HS16), light industry products (HS94), textiles (HS61), general and precision machinery (HS84 and HS90), and electrical machinery (HS85).

Korea: agricultural products (HS03), food and beverages (HS16), mining products (HS27), light industry products (HS42 and HS64), textiles (HS61), general and precision machinery (HS84 and HS90), and electrical machinery (HS85).

Singapore: agricultural products (HS03), mining products (HS27), general and precision machinery (HS84 and HS90), and electrical machinery (HS85).

Taiwan: agricultural products (HS03), general and precision machinery (HS84 and HS90), electrical machinery (HS85), and light industry products (HS94 and HS95).

The following table provides a summary of above findings.

Countries	Indonesia	Malaysia	Philippines	Thailand	Korea	Singapore	Taiwan
Same Export Product Categories With China	HS03,HS16 HS27,HS44 HS62,HS84 HS85,HS94	HS03,HS27 HS44,HS61 HS84,HS85 HS90,HS94	HS03,HS27 HS44,HS62 HS84,HS85 HS90,HS94, HS95	HS03,HS16 HS61,HS84 HS85,HS90 HS94	HS03,HS16 HS27,HS42 HS61,HS64 HS84,HS85 HS90	HS03,HS27, HS84,HS85, HS90	HS03,HS84 HS85,HS90 HS94,HS95
Total Product Categories	8	8	9	7	9	5	6

2. In the late 1990s, machinery and electrical machinery products accounted for 35% of the SEACEN-7's and China's total exports to Japan. The ratio was as high as 65.9% for Singapore, 65.0% for the Philippines, and 59.0% for Taiwan.

3. HS39 (plastics) was the new entry on the top-15 export list for Indonesia, Malaysia, the Philippines and Thailand, and brought in new competition with China as well as Korea, Taiwan and Singapore. HS90 (optical, photographic, measuring parts and accessories) was newly added to the top 15 export lists of China, Korea, the Philippines, Taiwan and Thailand and became another new competition item in the Japanese market.

CHAPTER 3

CHINA'S WTO ACCESSION AND THE SEACEN-7'S EXPORTS TO CHINA

Upon her accession to the WTO, the PRC is committed to liberalising its trade and investment environment. In so doing she will introduce tariff concessions, remove non-tariff barriers, and open the local services market. The PRC also sets out to revise the domestic laws and regulations not in conformity with the WTO agreement.¹⁵ This chapter discusses how the PRC's post-WTO tariff concessions and removal of non-tariff barriers may possibly affect the SEACEN-7's exports to China.

3.1 Tariff Concessions and China's Imports

This section analyses how the PRC's tariff concessions in line with her WTO commitments affect its import trade to provide a reference for discussing the impact on the SEACEN-7's exports to China.

3.1.1 *Limited Impact on China's Imports*

The PRC had already lowered its tariffs significantly since the 1990s. The declining trend of tariffs can be shown by the fact that the average tariff level was reduced from 40.6% to 14.8% from 1992 to 2001. However, during this period, the PRC's imports did not expand significantly. The PRC entered the WTO in December 2001. According to China's WTO commitments, the PRC is committed to lowering the average tariff to 10.17%, a level close to international standards, when the transition period ends by 2008. China's major tariff cuts will be completed by 2005. In other words, the prospective tariff concessions undertaken after the PRC entered the WTO are of a smaller magnitude and are implemented at a slower pace compared to those in the 1990s. They, therefore, are expected to have only a limited impact on the PRC's imports.

15. For a detailed discussion of the reforms and their impacts of China's accession to the WTO, see Ho, Wang, Wan, and Lu (2002).

Table 3.1.1 Reduction in China's Tariff Rates

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Agricultural Products	21.30%	19.90%	18.50%	17.40%	15.80%	15.50%	15.50%	15.50%	15.10%
Industrial Products	14.70%	13.00%	11.70%	10.60%	9.80%	9.30%	9.30%	9.30%	9.20%
Overall Products	16.40%	14.77%	12.70%	11.00%	10.33%	10.20%	10.19%	10.18%	10.17%

Source: China's Concession Schedules, People's Daily News on January 14, 2002.

3.1.2 Limited Impact on China's Processing Trade

Since China embarked on the road to economic reform and the open-door policy, it has been granting tariff reductions or exemptions to foreign-invested enterprises for the importation of investment equipment, raw material and components, and intermediate goods. The purpose of such measures is to lower foreign-invested enterprises' cost of investing in China's manufacturing sector and raise the competitiveness of made-in-China products in international markets. By giving preferential customs duties to foreign-invested enterprises' import of intermediate input for production and export purposes, the PRC aims to encourage FDI to expand China's export, thereby helping to boost China's processing sector.¹⁶ As discussed in the first section of chapter two, processing trade accounted for 58% of China's exports and 54.5% of its imports in 2001.

According to Ianchovichina, Martin and Fukase (2001), about 75% of China's imports were granted tax exemptions or reductions. These imports include: (1) processing trade products (accounting for 50% of imports, with tax exemption); (2) initial investment input products of joint ventures (10%, tax exemption); (3) imports from tax protection areas (5%, tax exemption); (4) other products with tax exemptions or reductions (10%, tax exemptions or reductions).¹⁷ In other

16. Please see China's Detailed Rules for the Implementation of the Foreign Investment Enterprise published by the Ministry of Foreign Trade and Economic Cooperation of the PRC.

17. The parenthesised ratio is the share of importing such products as a percentage of total import in 1998. See Ianchovichina, Martin and Fukase (2001).

words, only 25% of China's imports were required to pay tariffs prior to the WTO entry. Therefore, the PRC's post-WTO tariff concessions, while having limited impact on the processing trade, mainly affect the imports of other sectors.

3.2 China's Tariff Concessions and the SEACEN-7's Exports to China

The PRC reformed her economic and trade regimes as part of her WTO commitments, including reduction of tariffs and removal of non-tariff measures such as import licensing, import quota and import tendering. These measures directly affect the SEACEN-7's exports to China. Tariff reduction lowers the production and operation costs of businesses and removal of non-tariff measures affect the entry of the SEACEN-7 products to the China market. This section analyses how the PRC's tariff and non-tariff measures after the WTO entry might affect the SEACEN-7's exports to China.

3.2.1 Lower Tariffs

Studies on the PRC's WTO accession are mostly based on Computable General Equilibrium Models, which provide a simulation of probable impact on China and other economies with different tariff reduction scenarios.¹⁸ This approach does not appropriately capture what is essentially a complex and multi-faceted regime change related to the PRC's WTO accession into the models' parameters. In addition, in this approach individual countries are not differentiated from one another but are lumped together in different groups based on a simple classification of different products into labour-intensive and capital-intensive goods. These studies usually conclude that the PRC will gain significant market shares at the expense of other developing countries following its WTO entry, and exaggerate the PRC's export capacity, especially in labour-intensive products.¹⁹

In this section, we analyse the possible impact of the PRC's tariff reduction on the SEACEN-7's exports to China with considerations related to China's WTO tariff concessions. First, our research calculates the simple average nominal tariff rates and the weighted average tariff rates on different product categories classified by the 2-digit HS level. Tariff rates are calculated for both the year of the accession (2002) and the end of the transition period (2008), based on China's Concessions Schedule. The post-accession reduction in China's tariff

18. See Gilbert and Wahl (2000), Noland (1998), Hufbauer and Rosen (2000), USITC (1999), Naughton (1998), Ianchovichina, Martina and Fukase (2001).

19. The UNCTAD (2002b), Shafaeddin (2002) and Ho, Wong, Wan and Lu (2002) point out some problems existent in the above approach.

structure for the top 15 export product categories from the SEACEN-7 to China is shown in Table 3.2.1. We derive the following findings from the table:²⁰

1. China's tariff rates on HS08 (edible fruit and nuts), HS10 (cereals), HS15 (animal or vegetable fats and oil), HS55 (man-made fibers), HS60 (knitted or crocheted fabrics) and HS87 (vehicles other than railway) were relatively high before joining the WTO and will be largely reduced during the transition period.
2. China maintained low initial tariffs upon its WTO accession on HS26 (ores, slag and ash) and HS47 (pulp of wood). Tariff rates on these two categories approached zero following the WTO entry. Those with low weighted average tariff rates after the WTO entry are HS27 (fuels and mineral oil), HS32 (tanning or dyeing extracts), HS38 (miscellaneous chemical products) and HS44 (wood).
3. Although the average nominal tariff rates on HS84 (machinery and mechanical Appliances) and HS85 (electrical machinery equipment), the most important Import product categories from the SEACEN-7 to China, were not reduced noticeably, the weighted average tariff rates on these product categories declined significantly. This will benefit the SEACEN-7's exports to China.
4. Other major import product categories from the SEACEN-7 to China, such as HS12 (oil seeds and oleaginous fruits), HS26 (ores, slag and ash), HS27 (fuels and mineral oil), HS40 (rubber), HS41 (raw hides and leather), HS47 (pulp of wood) and HS74 (copper), will be subjected to limited or no changes in tariff rates between the initial WTO entry and the end of the transition period. Therefore, these import product categories are not affected by tariff concessions.

To further analyse the impact of China's tariff reduction on the top 15 imported product categories from the SEACEN-7 to China, we then measure the rank correlation coefficient of the structure of tariff cuts with the share of the corresponding export product categories to each country's total exports to

20. Because HS98 is not listed on the Concession Schedule of the PRC's WTO accession, we omit this item from table 3.2.1.

Table 3.2.1 Changes in Tariff Rates on Major Imports from the SEACEN-7 to China following the WTO Entry

HS 2 digit categories	Average nominal rates		Weighted average rates	
	Accession year	Final (bound)	Accession year	Final (bound)
HS 07	10.90	10.53	7.97	5.70
HS 08	25.22	18.76	24.28	14.65
HS 10	28.65	24.87	29.28	25.95
HS 12	10.26	8.47	3.95	3.85
HS 15	24.02	13.09	22.78	12.78
HS 26	1.89	1.89	0.02	0.02
HS 27	6.04	5.92	1.99	1.96
HS 28	5.68	5.51	8.73	6.36
HS 29	6.52	5.62	8.24	5.58
HS 32	8.38	7.45	9.86	7.89
HS 38	7.93	7.36	6.98	5.98
HS 39	12.91	8.03	13.86	6.96
HS 40	11.92	11.00	12.37	12.06
HS 41	9.77	9.69	6.79	6.68
HS 44	7.60	4.25	2.87	1.88
HS 47	0.15	0.15	0.15	0.15
HS 48	13.91	6.79	11.71	5.71
HS 52	13.74	9.06	13.28	8.89
HS 54	18.63	7.10	23.18	8.48
HS 55	21.56	9.04	17.61	6.84
HS 59	15.70	9.85	18.37	9.87
HS 60	21.07	10.57	20.73	10.06
HS 70	15.37	13.68	12.65	11.66
HS 72	6.25	4.99	5.83	4.71
HS 73	10.82	9.96	9.02	7.41
HS 74	7.12	7.12	3.21	3.21
HS 76	11.16	9.36	8.05	6.02
HS 84	10.91	7.98	8.34	4.59
HS 85	12.41	8.63	6.51	3.40
HS 87	26.63	15.02	33.87	14.94
HS 90	10.20	8.18	8.03	5.08
HS 91	17.20	15.85	16.06	14.86

Note: Weighted by China's imports of relevant product categories in 2001.

Source: China's Concession Schedule and China Customs data.

China in 2001.²¹ For a specific product category classified by the 2-digit HS, if China's tariff reduction on the product categories within this category is negatively correlated with their corresponding shares in exports to China, then the higher absolute value of the correlation coefficient of this product category indicates more possible or potential benefit the country may gain from China's tariff reduction on this specific product category. However, this simple method is only to measure the potential of a country from improved market access provided by China's tariff reduction. Whether the country will benefit or not will also depend on supply response in the China market.

Table 3.2.2 lists rank correlation coefficients for each product category of each SEACEN country.²² Our main findings from this table are as follows:

1. For several export product categories, no changes occur in tariff rates between the initial WTO entry and the end of the transition period. China's tariff reductions do not affect China's imports of these products from the SEACEN-7 at all. Among these export product categories are HS74 (copper) from Taiwan, Malaysia and the Philippines, HS47 (pulp of wood) from Indonesia, and HS26 (ores, slag and ash) from the Philippines.
2. Most correlation coefficients are negative and marginal. This indicates that the tariff reduction on those specific categories will not substantially benefit the SEACEN-7's corresponding exports to China.
3. The Philippines' exports HS08 (edible fruit and nuts) and HS38 (miscellaneous chemical products),²³ Korea and Taiwan's exports HS32 (tanning or dyeing

21. The rank correlation coefficients between the structure of China's WTO tariff cuts and the share of the SEACEN-7's major export product categories to China are measured to reveal the possible impacts on SEACEN-7's corresponding export product categories to China. The rank correlation coefficients are measured in the following way: for each specific product category classified by the 2-digit HS, we measure correlation coefficient between the tariff cuts on the product categories (based on 8-digit HS product classification) within this specific product category and their corresponding shares to the total exports of the country concerned.

22. For those product categories not granted any tariff reduction in the PRC's WTO commitments, their correlation coefficients are infinite, because the standard deviation for the variable "tariff" of this item was zero. Table 3.2.2 does not list products product categories whose coefficient estimates are infinite.

23. According to the report of the ASEAN-China Expert Group on Economic Cooperation (2001), the Philippines have relative comparative advantage in several product categories vis-à-vis China. These potential export products include shrimp and prawn, mussels, octopus, sea-cucumbers, roasted coffee, chocolates and cocoa products, beer and gin, jewelry, furniture, TV and refrigerators, toys, video games, wood products, tubes, piper and hoses, paper products, and plastics manufactures.

Table 3.2.2 Corrdation Coefficients between China's Tariff Reduction and the Ratios to the SEACEN-7's Exports

HS 2-digit category	Taiwan		Singapore		Korea		Malaysia		Thailand		Indonesia		Philippines	
	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff	Average weighted tariff	Average nominal tariff
HS 07	-	-	-	-	-	-	-	-	0.074	0.096	-	-	-	-
HS 08	-	-	-	-	-	-	-	-	-0.205	-0.165	-	-	-0.943**	-0.919**
HS 12	-	-	-	-	-	-	-	-	-	-	-	-	-1.000	-1.000
HS 15	-	-	-	-	-	-	0.066	0.095	-	-	-0.192	0.046	0.606	0.677
HS 27	-	-	-0.094	-0.094	-0.030	-0.030	0.202	0.202	0.258	0.258	0.300	0.300	0.174	0.174
HS 29	-0.024	-0.041	-0.079	-0.084	-0.192**	-0.202**	-0.164	-0.164	-0.298*	-0.301*	-0.208*	-0.205*	0.382*	0.382*
HS 32	-0.461**	-0.467**	-0.407**	-0.398**	-	-	-	-	-	-	-	-	-	-
HS 38	0.047	0.048	-0.036	-0.033	-	-	-0.232	-0.228	-	-	0.226	0.229	-0.491*	-0.491*
HS 39	-0.482**	-0.474**	-0.410**	-0.373**	-0.419**	-0.412**	-0.253**	-0.355**	-0.400**	-0.378**	-0.441**	-0.387**	-0.299**	-0.219**
HS 40	-	-	-	-	-	-	-0.112	-0.058	-0.007	0.009	-	-	-0.227	-0.227
HS 41	0.025	0.025	-	-	0.019	0.019	-	-	-	-	0.103	0.103	-	-
HS 44	-	-	-	-	-	-	0.103	0.107	-0.080	-0.077	0.124	0.129	-	-
HS 48	-0.006	-0.061	0.036	0.062	-0.038	-0.032	-	-	-0.255*	-0.227*	0.213*	0.231*	-0.228	-0.225
HS 52	-	-	-	-	-	-	-	-	-	-	0.010	-0.018	-	-
HS 54	-0.308**	-0.290**	-0.106	-0.155	-0.477**	-0.482**	-	-	-	-	-0.103	-0.069	-	-
HS 55	-0.316**	-0.306**	-	-	-0.231**	-0.205*	-0.166	-0.157	-0.012	-0.037	-0.264*	-0.265*	-	-
HS 59	-0.227	-0.189	-	-	-0.256	-0.199	-	-	-	-	-	-	-	-
HS 60	-0.527**	-0.426*	-	-	-0.440**	-0.356	-	-	-	-	-	-	-	-
HS 70	-	-	-	-	-	-	-0.058	-0.058	-	-	-	-	-	-
HS 72	-0.141*	-0.140*	-	-	-0.043	-0.043	-0.008	-0.004	-0.056	-0.055	-	-	-	-
HS 73	-	-	-0.127	-0.125	-	-	-	-	-	-	-	-	-	-
HS 76	-	-	-	-	-0.520**	-0.508**	-0.339*	-0.360*	-	-	-	-	-	-
HS 84	-0.031	-0.033	-0.203**	-0.205**	-0.049	-0.050	-0.246**	-0.240**	-0.118*	-0.118*	-0.214**	-0.215**	-0.239**	-0.238**
HS 85	-0.239**	-0.245**	-0.221**]	-0.222**	-0.248**	-0.253**	-0.182**	-0.186**	0.007	0.021	-0.153*	-0.153*	-0.291**	-0.291**
HS 87	-	-	0.063	0.101	-	-	-	-	-	-	-	-	-	-
HS 90	-0.068	-0.075	-0.134*	-0.137*	-0.204**	-0.203**	-0.021	-0.022	-0.087	-0.086	-	-	-0.009	0.001
HS 91	-	-	0.513**	0.513**	-	-	-	-	-	-	-	-	-	-

Note: This table shows the top 15 imports to China from individual SEACEN-7 countries; therefore, there may be blanks in some countries' columns.

** Reject null hypothesis at 1% significance level.

* Reject null hypothesis at 5% significance level.

extracts), Singapore's exports HS91 (clocks and watches), Korea's HS54 (man-made filaments) and HS76 (aluminium), and major SEACEN-7's exports HS39 (plastics) are the few exceptions. Their rank correlation coefficients are negative and statistically significant. China's tariff reduction will benefit these countries on these categories.

4. In cases where China imports the same product categories from different SEACEN-7 countries, the correlation coefficients for individual countries vary substantially, for example, HS39 (plastics), HS84 (machinery and mechanical appliances) and HS85 (electrical machinery equipment). This shows that the PRC's tariff reduction, to some extent, has different impacts on the exports from different SEACEN countries.

3.2.2 Elimination of Non-Tariff Measures

Among the PRC's WTO commitments, the elimination of non-tariff measures, in addition to tariff reduction, also directly affects the SEACEN-7's exports to China. Most existing studies that deal with the PRC's WTO membership focus on the impact of tariff reduction, while discussions on the possible impact of the elimination of non-tariff measures are relatively lacking. Upon her WTO entry, the PRC is committed to phase out non-tariff measures, including import licensing, quota, and import tendering. This section attempts to evaluate the possible or potential impacts of removal of non-tariff measures on the SEACEN-7's exports to China. Again, our simple evaluation here is only to measure the potential of a country from improved market access provided by China's removal of non-tariff measures. Whether the country will benefit or not will also depend on supply response in China.

1. Elimination of Import Licensing

Following her WTO accession, China is committed to the cancellation of import licensing on 47 product categories in terms of the 8-digit HS classification belonging to the categories of HS10 (cereals, 9 items), HS15 (animal or vegetable fats and oil, 14 items), HS22 (beverages, 9 items) and HS37 (photographic and cinematographic goods, 15 items).

2. Eliminating Import Quota Licensing

The elimination of import quota licensing on 258 items from the following 15 categories is scheduled to be completed by 2005 at the latest: HS17 (sugars, 4 items), HS24 (tobacco, 7 items), HS27 (fuels and mineral oil; 8 items), HS28 (inorganic chemicals, 1 item), HS31 (fertilizers, 25 items), HS39 (plastics, 2

items), HS40 (rubber, 11 items), HS51 (animal hair, 9 items), HS54 (made-man filaments, 13 items), HS55 (man-made fibers, 18 items), HS84 (machinery and mechanical appliances, 34 items), HS85 (electrical machinery equipment, 36 items), HS87 (vehicles other than railway, 77 items), HS90 (optical, photographic, and measuring parts, 7 items) and HS91 (clocks and watches, 6 items).

3. Removing Import Tendering

The PRC is committed to gradually phasing out import tendering on 120 items from the following six categories: HS84 (machinery and mechanical appliances, 57 items), HS85 (electrical machinery equipment, 21 items), HS86 (railway equipment, 1 item), HS87 (vehicles other than railway, 2 items), HS89 (ships and floating structures, 14 items) and HS90 (optical, photographic, and measuring parts, 15 items).

The PRC eliminated most of the non-tariff measures upon her WTO accession, and the few remaining ones will be totally removed by 2005. For simplicity, we presume that all the PRC's non-tariff measures were eliminated upon her WTO entry. We then use the data of imports from the SEACEN-7 to China in 2001, based on the 8-digit HS of product classification and China's imports data, to evaluate the possible impact of removal of non-tariff measures on the SEACEN-7's exports to China.

Table 3.2.3 The Impact of Elimination of Non-Tariff Measures on the SEACEN 7's Exports to China

	Malaysia	Indonesia	Thailand	Philippines	Korea	Singapore	Taiwan
Lifting import license	0.05%	0.03%	2.14%	0.00%	0.00%	0.00%	0.01%
Eliminating import quota licensing	6.26%	5.25%	14.46%	3.43%	15.12%	12.34%	2.81%
Removing import tendering	1.13%	0.09%	0.66%	0.06%	2.19%	0.95%	4.23%
Total	7.44%	5.37%	17.20%	3.49%	17.31%	13.29%	7.05%

Note: By the 8-digit categories of import, the ratios in the table are the shares of import product categories from the SEACEN-7 to China, on which China abolished non-tariff measures after her WTO entry.

Source: China Customs, Reduction in tariff rates for China's accession to WTO.

Table 3.2.3 illustrates the impact of the PRC's elimination of non-tariff measures on imports from the SEACEN-7. The figures in this table indicate the import value possibly covered in the removal of non-tariff measures as a proportion to total imports from each SEACEN country.²⁴ The indicator used here, although crude and simple, provides a measure of potential benefits that arise from China's non-tariff removal. We derive the following findings from this table:

1. In terms of eliminating import licensing, Thailand may benefit the most. Taiwan, Indonesia and Malaysia may benefit only slightly. The Philippines, Korea and Singapore are not affected.
2. With respect to the elimination of import quota licensing, Korea, Thailand and Singapore may gain most. Imports from Korea, Thailand and Singapore covered by import quota licensing account for between 12% and 15% of their total exports to China, indicating large benefits received by these three countries from the removal of this type of trade barrier.
3. Regarding the removal of import tendering, Taiwan and Korea are the major beneficiaries among the SEACEN-7. Benefits gained by Malaysia, Singapore and Thailand are roughly equal, and relatively low for Indonesia and the Philippines.
4. In terms of the overall impact of the PRC's elimination of non-tariff measures on imports from the SEACEN-7, Korea benefits most, followed by Thailand, Singapore, Malaysia, Taiwan, Indonesia and the Philippines in that order.

3.3 The SEACEN-7's Export Competitiveness in China

Tariff concessions directly reduce the cost of the SEACEN-7's exports entering the China market. For the SEACEN-7's exports that currently have competitive advantages in the China market, the PRC's WTO commitments of reducing tariffs and eliminating non-tariff measures will provide greater business opportunities for them. However, with the scope of China's imports expanding, these products are also likely to encounter intensified competition from local Chinese products and other countries.

24. However, this method does not show that there is an actual relationship between the removal of China's non-tariff measures and the change in the amount of SEACEN-7's exports to China and does not demonstrate that the removal of China's non-tariff measures actually contributes to the change in SEACEN-7's exports to China.

In this section, we employ two indicators, namely Market Share (MS) and the Revealed Comparative Advantage Index (RCA), to measure the SEACEN-7's export competitiveness in China. The first indicator, MS, uses a country's exports of a specific product category to China divided by China's total imports of this product category to measure the absolute level of market dominance by a country's exports in the China market. In other words, MS measures the performance of a country in terms of gaining the market shares in the China market, and is calculated for each product category.

The second indicator, RCA, is defined as the share of a country's exports of a specific product category to China in this country's total export to China divided by the share of China's import of this product category in China's total imports (see Appendix I). RCA measures a country's trade specialisation in a product category. A higher RCA index implies that the country has competitive advantages in exporting this product category.²⁵

3.3.1 The MS and RCA Performance of the SEACEN-7's Exports

By using the PRC's customs data during the period of mid 1990s (1993-1995) and late 1990s (1999-2001), we calculate MS and RCA for each product category of individual SEACEN countries. Then, we identify each SEACEN-7 country's competitive product categories in the China market by observing the MS and RCA performance.

For all product categories as a whole, with the exception of Taiwan and Singapore, the rest of the SEACEN-7's market shares in China all increased from mid 1990s to late 1990s. Among the SEACEN-7, Korea recorded the largest expansion in market shares during this period, increasing from 6.6% in the mid 1990s (1993 to 1995) to 10.1% in the late 1990s (1999-2001). However, Taiwan still had the highest market share in the late 1990s, followed by Korea (Table 3.3.1). In terms of number of individual export categories from Taiwan or Korea to China having a market share exceeding 5%, Taiwan and Korea had 53 and 45 categories, respectively, were highly competitive in the China market. Indonesia, Malaysia, the Philippines and Thailand have comparative advantages in China mostly in primary products, such as animals and plants and their related processed products; Taiwan and Korea in textiles products; Singapore in fuels and mineral oil but its competitive position has fallen in the China market.

25. According to JETRO (1978)'s RCA criterion, $RCA_i \geq 2.5$ indicates strong export competitiveness.

Table 3.3.1 Performances of the SEACEN-7's Exports in China (HS 2-digit category)

		Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
		1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001	1993~1995	1999~2001
MS of all categories (%)		1.5	1.8	1.4	2.4	0.2	0.7	0.9	1.9	6.6	10.1	2.4	2.2	11.9	11.4
MS ≥ 5%	Number of categories	10	10	7	5	2	1	10	9	36	45	5	4	60	53
	Total Export Share (%)	76.8	43.9	69.2	21.2	6.2	4.1	56.9	16.7	81.8	96.5	58.8	17.4	94.8	98.3
RCA ≥ 2.5	Number of categories	12	11	8	4	12	6	15	9	6	6	5	3	12	6
	Total Export Share (%)	77.0	64.2	69.3	19.3	74.0	12.8	57.8	16.7	28.0	12.8	55.4	0.4	22.2	8.6
RCA ≥ 2.5 AND MS ≥ 5%	Number of categories	10	10	7	4	2	1	10	9	6	6	5	3	12	6
	Total Export Share (%)	76.8	43.9	69.2	19.3	6.2	4.1	56.9	16.7	28.0	12.8	55.4	0.4	22.2	8.6

Source: Calculations based on China Customs data.

In the late 1990s, individual SEACEN countries' top 15 exports to China with market shares over 5% and value of RCA over 2.5 are viewed as highly competitive in their respective product category classified by 2-digit HS.²⁶ These highly competitive product categories are listed for each country in Table 3.3.2. However, no exports from Singapore fit this measurement standard.

26. No exports from Singapore fit this measurement standard.

Table 3.3.2 The SEACEN-7's Highly Competitive Products in China

Countries	Indonesia	Malaysia	Philippines	Thailand	Korea	Taiwan
Highly Competitive Product Categories	HS15, HS44 HS47, HS48	HS15, HS44	HS08	HS07, HS08 HS10, HS40	HS41, HS54 HS59, HS60	HS54, HS59 HS60
Total product categories	4	2	1	4	4	3

Source: Based on author's calculation.

According to Table 3.3.2, we group products at more general definition of HS-2 digit commodity classification of the SEACEN-7's highly competitive products in the China market are listed as follows:

Indonesia: agricultural products (HS15) and wood and paper (HS44, HS47, and HS48);

Malaysia: agricultural products (HS15) and wood and paper (HS44);

Philippines: agricultural products (HS08);

Thailand: agricultural products (HS07, HS08, and HS10) and chemicals (HS40);

Korea: light industry products (HS41) and textiles (HS54, HS59, and HS60) and

Taiwan: textiles (HS54, HS59, and HS60).

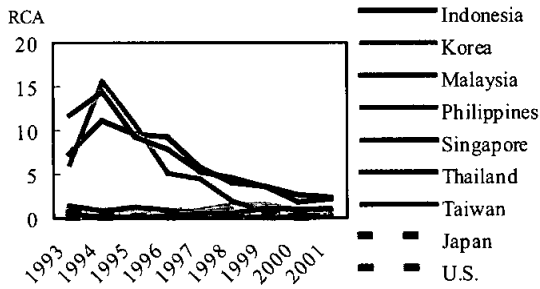
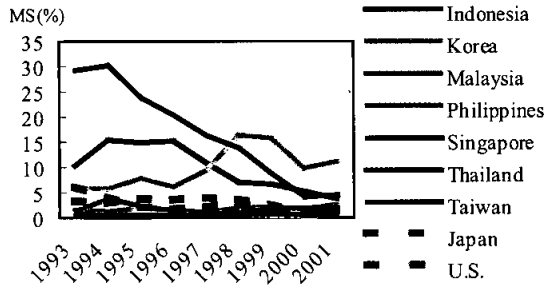
3.3.2 The RCA Performance of the SEACEN-7's Major Exports

In this section, we further compare the export performance of the SEACEN-7's major products with significant changes in MS and RCA with that of the U.S. and Japan in the China market.²⁷ Our findings are as follows:

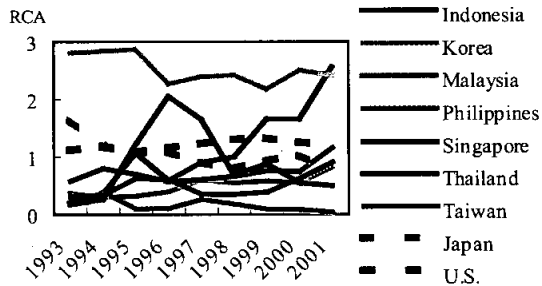
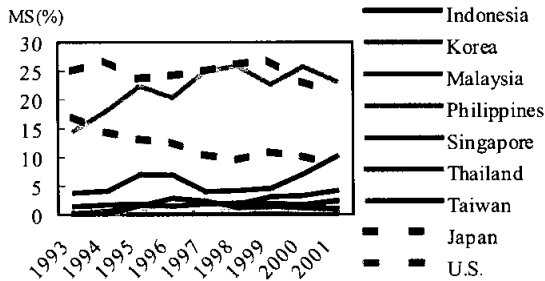
- (1) As countries worldwide seek to explore the China market, the U.S. and Japan, which control key technologies and components, show stable MSs and RCAs in exports to China relative to the SEACEN-7, for instance in HS84 (machinery and mechanical appliances), HS85 (electrical machinery equipment), and HS90 (optical, photographic, and measuring parts). For these three product categories, the U.S. and Japan are the major sources of imports for China, possessing superior competitive advantages over the SEACEN-7. However, in terms of MS, Korea and Taiwan are the leading exporters of these three product categories among the SEACEN-7.
- (2) The Philippines and Singapore both recorded a steep decline in MSs and RCAs for HS27 (fuels and mineral oil), while Korea's MS in this category began increasing. In 1998, Korea displaced the Philippines and Singapore to become the country with the strongest competitive advantage in this category in the region.
- (3) Korea performs most favourably in HS29 (organic chemicals), with its MS exceeding Japan from 2000 onwards to become the top performer in the region.
- (4) Taiwan and Korea perform well in HS39 (plastics) and HS54 (man-made filaments), both surpassing the U.S. and Japan.

27. These products include HS27 (fuels and mineral oil), HS29 (organic chemicals), HS39 (plastics), HS54 (made-man filaments), HS72 (iron and steel), HS84 (machinery and mechanical appliances), HS85 (electrical machinery equipment) and HS90 (optical, photographic, and measuring parts).

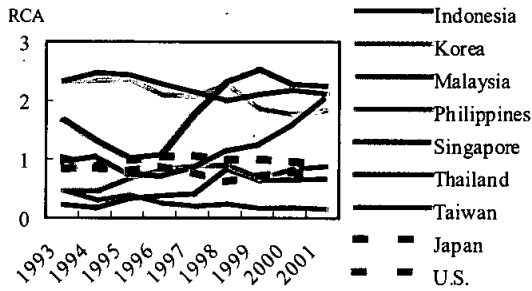
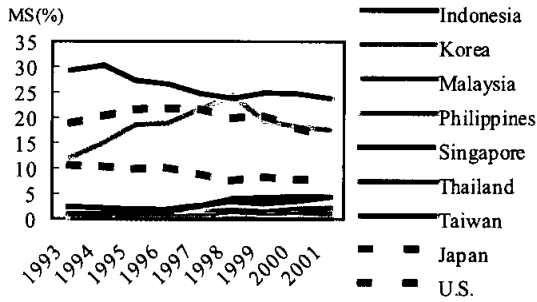
HS27



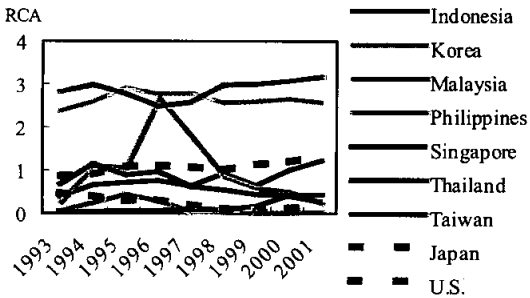
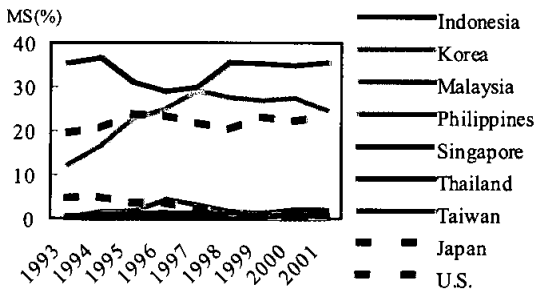
HS29



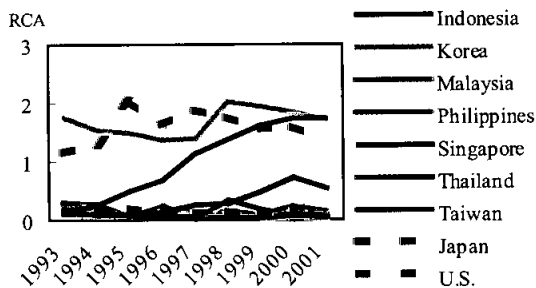
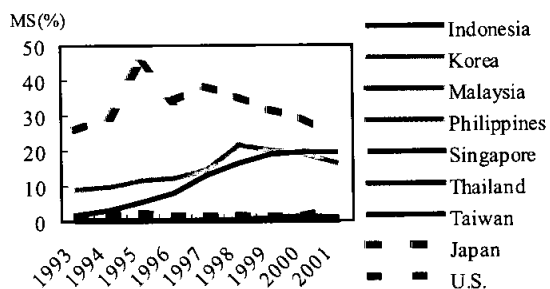
HS39



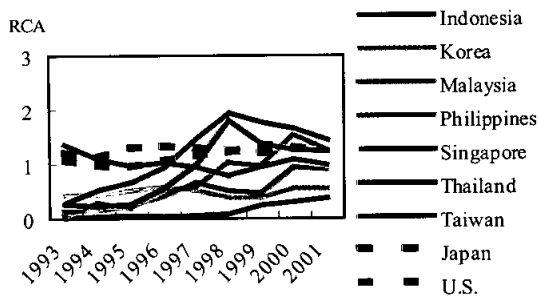
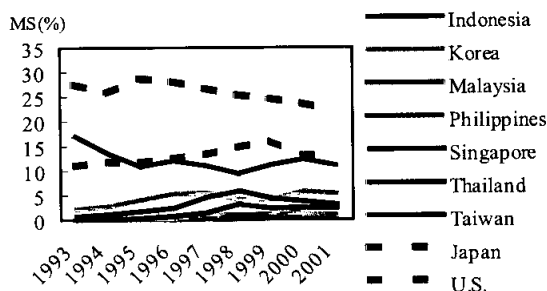
HS54



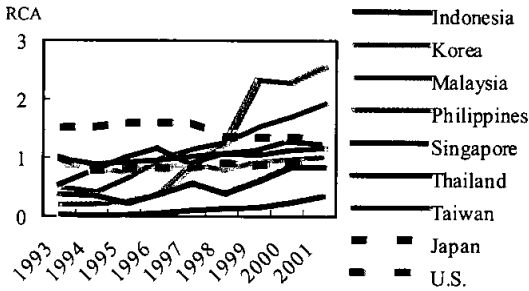
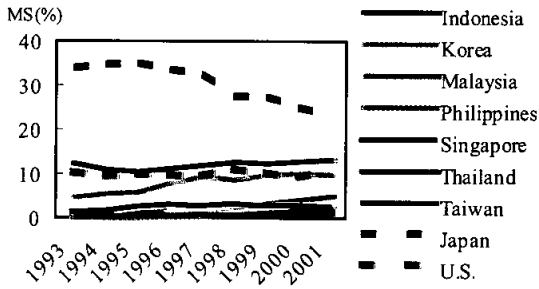
HS72



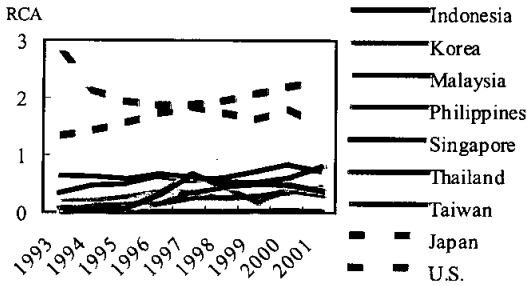
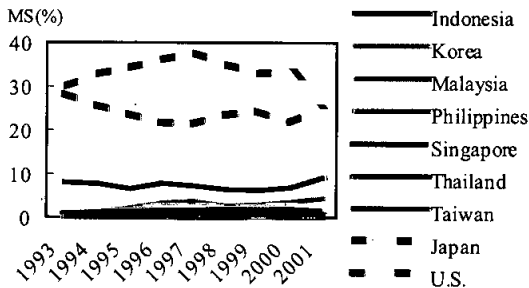
HS84



HS85



HS90



3.3.3 Similarities among the SEACEN-7's Export Structures in China

To analyse the competition of the SEACEN-7 in the post-WTO China, we access similarities among their export structures in China. As a means of assessing similarity in export structure, following Shafaeddin (2002) we compare the revealed comparative advantage indices for the export of the SECAEN-7 in the China market. By using the RCAs of each SEACEN-7 country's exports to China in terms of all 2-digit HS product categories, we apply the Spearman rank correlation to observe the similarities in export structures shared by the SEACEN-7 in the China market.²⁸ A higher correlation coefficient implies a stronger competition between two countries in the China market.

As shown in Table 3.3.3, during the late 1990s (1999 to 2001), the structure of Taiwan's exports to China was most similar with that of Korea. Moreover, the correlation coefficient between the two countries rose from 0.639 in the mid 1990s (1993 to 1995) to 0.738 in the late 1990s. This high degree of similarity in export structures could intensify the competition between Taiwan and Korea in post-WTO China. Table 3.3.3 also shows that although Indonesia, Malaysia, the Philippines and Thailand share certain degrees of similarity in their export structures in China, Malaysia has become increasingly different from Indonesia, the Philippines, Singapore and Thailand and increasingly similar to Taiwan and Korea in export structures. In addition, Thailand shows a rising similarity in export structures with Indonesia and falling similarity with Malaysia and the Philippines.

3.4 Benefits to the SEACEN-7's Exports to China

As China enters the WTO, the expansion of her exports may lead to an increase in its imports of capital goods and intermediate products. Besides, the increase in FDI to China seeking these opportunities will further stimulate the development of China's labour-intensive processing sector, which in turn will cause the demand for imported raw material, intermediate components and machinery equipment to increase in China.

28. There is a different approach, an overlapping index can be applied to measure similarity in export structure. See Weiss and Shanwen (2002).

Table 3.3.3 Correlation Coefficients of the SEACEN-7's Export Structures in China (by HS 2-digit)

		Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand
Indonesia	1999-2001	1.000						
	1993-1995	1.000						
Korea	1999-2001	0.138	1.000					
	1993-1995	0.009	1.000					
Malaysia	1999-2001	0.514 **	0.203 *	1.000				
	1993-1995	0.623 **	0.023	1.000				
Philippines	1999-2001	0.380 **	0.173	0.480 **	1.000			
	1993-1995	0.540 **	0.045	0.531 **	1.000			
Singapore	1999-2001	0.162	0.133	0.476 **	0.183	1.000		
	1993-1995	0.272 *	-0.128	0.511 **	0.225 *	1.000		
Taiwan	1999-2001	0.161	0.738 **	0.285 *	0.172	0.240 *	1.000	
	1993-1995	0.007	0.639 **	0.083	-0.065	0.048	1.000	
Thailand	1999-2001	0.469 **	0.103	0.462 **	0.317 *	0.109	0.030	1.000
	1993-1995	0.397 **	-0.097	0.516 **	0.444 **	0.262 *	-0.043	1.000

* Reject null hypothesis at 5% significance level, ** Reject null hypothesis at 1% significance level.

As discussed earlier in this chapter, Taiwan and Korea have comparative advantages in China mostly in textiles; Singapore in fuels and mineral oil; Malaysia, Thailand, Philippines, and Indonesia mostly in agricultural products, wood and paper, chemicals. Based on the previous discussion in chapter two regarding the rank of the top 15 exports categories of the SEACEN-7 in the China market, we also find that several SEACEN-7 countries have favourable export capacity in capital-intensive and technology-intensive products such as machinery appliances, electronic components, electrical machinery equipment, and optical instruments. Therefore, it is very likely that China's WTO accession will further promote the SEACEN-7's exports to China. Therefore, the SEACEN-7 may benefit from the China's WTO accession in terms of increasing their imports. Especially, for Korea, Singapore and Taiwan exhibit a rapid development in intra-industry trade with China. These SEACEN countries that conduct active intra-industry trade with China are expected to be the main beneficiaries after the PRC's accession to the WTO.

CHAPTER 4

EXPORT COMPETITION BETWEEN THE SEACEN-7 AND CHINA

The issue of China's competitive threat to the SEACEN-7 has received considerable attention following China's WTO entry. This chapter considers the issue of competition by comparing their trends in imports to two major markets of the world economy-the US and Japan.

According to the UNCTAD (2002a), in terms of a country's market share of exports in the global market, China ranked fourth and the SEACEN-7 countries, such as Korea, Malaysia, Singapore, Thailand, and Taiwan, also ranked on the top 20 list. When measured by gains in global market shares between 1985 to 2000, the top 20 economies were mainly developing countries and economies in transition, with China being the world number one, and Korea and Malaysia third and fifth, respectively. Other SEACEN-7 countries that were on the list of top 20 winners were Thailand, Taiwan, Singapore and the Philippines. In other words, China is in a more competitive position than the SEACEN-7 in terms of rankings in world competitiveness.

After entering the WTO, the Chinese economy will be much more integrated with the global economy. On the one hand, the opening of the Chinese market will bring in competition between China-made products and imports in the local market. On the other hand, China's industrial structure will move toward where it has comparative advantages, which will promote efficiency in allocating resources and enhance China's export competitiveness.²⁹

To some extent, the potential expansion of China's exports upon its accession to the WTO is also determined by the degree by which she can utilise her comparative advantages in the export sector. Unlike the global market perspective regarding the impact of China's accession adopted in Shafaceddin's study (2002), this section discusses the export competition between the SEACEN-7 and China in two major markets, the U.S. market and the Japanese market. This chapter analyses the possible competitive position of the SEACEN-7 vis-à-vis China's export products in those two markets.

29. The establishment of the WTO reflects trade liberalisation policies pursued by many countries around the world, and the essential core of this multilateral trading system is the principle of comparative advantages.

4.1 Export Competition in the U.S. Market

In this section, we employ the MS and RCA to measure the SEACEN-7's and China's export competitiveness in the U.S. market during the period from 1990 to 2001, based on the US customs data.

4.1.1 The SEACEN-7's and China's Export Competitiveness

A. The MS and RCA Performances of the SEACEN-7's and China's Exports

We observe the MS and RCA performances of the SEACEN-7's and China's exports in the U.S. and identify export products with competitive advantages for each country in this market. As shown in Table 4.1.1 below, since the 1990s, market shares of Indonesia's, Malaysia's, the Philippines', and Thailand's exports in the U.S. continued to grow while those of Korea, Singapore, and Taiwan posted declines. However, China's export shares in the U.S. market expanded substantially over the same period. In addition, Taiwan used to account for the lion's share in the U.S. market among the SEACEN-7 countries in early 1990s, and now its dominant position, in terms of market shares, has been overtaken by Korea.

Table 4.1.1 Performances of the SEACEN-7's and China's Exports in the U.S. (HS 2-digit category)

		China		Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
		1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001	1990~1992	1999~2001
MS of all categories (%)		40	84	0.8	0.9	13	21	0.7	1.1	13	13	3.5	3.2	2.1	1.6	4.7	3.2
MS ≥ 5%	Number of categories	17	33	5	8	5	3	4	3	7	7	18	12	3	1	26	17
	Total Export Share (%)	58.4	71.3	27.8	7.0	65.2	49.4	12.1	2.9	18.6	19.7	67.5	42.3	51.6	57.6	86.3	77.1
RCA ≥ 2.5	Number of categories	17	16	14	19	5	3	13	10	16	13	11	7	2	1	16	9
	Total Export Share (%)	58.4	38.6	64.8	46.3	65.2	49.4	49.7	62.4	36.7	27.4	23.0	2.8	50.8	57.6	38.4	9.2
RCA ≥ 2.5 and MS ≥ 5%	Number of categories	17	16	5	8	5	3	4	3	7	7	11	7	2	1	16	9
	Total Export Share (%)	58.4	38.6	27.8	7.0	65.2	49.4	12.1	2.9	18.6	19.7	23.0	2.8	50.8	57.6	38.4	9.2

Source: Calculations based on the U.S. Customs data.

A county's individual products having a market share exceeding 5% and index value of RCA over 2.5 may be regarded as the country's most important and competitive products in the market. Under this definition, the most important and competitive product categories in individual SEACEN-7 countries' and China's top 15 exports to the U.S. in the late 1990, are listed in Table 4.1.2.

Table 4.1.2 China's and the SEACEN-7's Highly Competitive Products in the U.S.

Countries	China	Indonesia	Malaysia	Philippines	Thailand	Korea	Singapore	Taiwan
Product Categories	HS42 HS63 HS64 HS67 HS94 HS95	HS09 HS18	HS15 HS40 HS85	HS15 HS20	HS03 HS16 HS40 HS42	HS54	HS84	HS73 HS82
Total Categories	6	2	3	2	4	1	1	2

Source: Based on author's research findings.

According to Table 4.1.2, we group products at more general definition of HS-2 digit commodity classification of China's and the SEACEN-7's highly competitive products in the US market are listed as follows:

China: light industry products (HS42, HS64, HS67, HS94, and HS95), Textiles (HS63);

Indonesia: agricultural products (HS09) and food and beverages (HS18);

Malaysia: agricultural products (HS15), chemicals (HS40), and electrical machinery (HS85);

Philippines: agricultural products (HS15) and food and beverages (HS20);

Thailand: agricultural products (HS03), food and beverages (HS16), chemicals (HS40), and light industry products (HS42); Korea in textiles (HS54);

Singapore: general and precision machinery (HS84); and

Taiwan: basic metals (HS73 and HS82).

B. Product Competitiveness of the SEACEN-7 vis-à-vis China

This section analyses the competitive position of the SEACEN-7 vis-à-vis China in the top 15 export products to the U.S. The analysis starts by ranking the market share in the U.S. for specific products exported from the SEACEN-7 and China in order to compare their absolute advantages. Then, by further comparing each country's gains and losses in a specific product's market share, we may understand changes in the competitiveness among different countries between the early (1990-92) and late 1990s (1999-2001). If the increment in the percentage points of MS for a SEACEN-7 country's export products is higher, or the decline in percentage points of MS lower, than China, it suggests that said country's products are more relatively competitive than China's products, and vice versa.

In the Table 4.1.3 below, which lists different criteria for comparing product markets, a plus "+" sign is given to a particular competitor country's products with better performance or more competitiveness, in terms of their MS levels or changes in percentage points in MS, than China's products, a minus "-" to those inferior to, or less competitive than China's products, and a circle "o" to those with no significant changes in competitive positions from China's products.³⁰

A country's product can be in a relatively competitive position compared with another country's product, even though it may not have absolute competitive advantages. Due to their different stages of the economic development, the SEACEN-7 are classified into the NIE-3 (Korea, Singapore and Taiwan) and the ASEAN-4 (Indonesia, Malaysia, the Philippines and Thailand) groups to compare the absolute and the relative competitiveness of their products with China's products in the U.S. market (Tables 4.1.4 and 4.1.5).

30. Absolute and comparative competitive advantages measure market shares and their changes. There is no definite rule on choosing the critical value. Usually, scales and changes of market shares are influenced by economies of scale and length of time.

Table 4.1.3 Criteria for Comparing Products' Competitiveness in Third Market

Absolute Competitiveness Compared with China		China				
		MS 5%	5% MS 10%	10% MS 20%	20% MS 30%	MS 30%
Competitor country	MS 5%	0	-	-	-	-
	5% MS 10%	-	0	-	-	-
	10% MS 20%	-	-	0	-	-
	20% MS 30%	-	-	-	0	-
	MS 30%	-	-	-	-	0

Unit: percentage points

Relative Competitiveness Compared with China		China				
		MS -3	-3 < MS -1	-1 < MS 1	1 < MS 3	3 < MS
Competitor country	3	0	-	-	-	-
	-3 < MS -1	-	0	-	-	-
	-1 < MS 1	-	-	0	-	-
	1 < MS 3	-	-	-	0	-
	3 < MS	-	-	-	-	0

According to Table 4.1.4, we observe the following phenomena for the NIE-3's products:

Korea: for HS27 (fuels and mineral oil) and HS98 (miscellaneous products), both absolute and relative competitiveness were close to those of China; for HS87 (vehicles other than railway), absolute competitiveness was close to China, but relative competitiveness was better than China; for HS54 (man-made filaments), HS72 (iron and steel), HS40 (rubber), HS48 (paper and paperboard) and HS71 (pearls, precious stones and metals), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Singapore: for HS27 (fuels and mineral oil), HS87 (vehicles other than railway), HS88 (aircraft) and HS98 (miscellaneous products), both absolute and relative competitiveness were close to China; for HS03 (fish and crustaceans), absolute competitiveness was inferior to China, but relative competitiveness was

better than China; for HS29 (organic chemicals), HS40 (rubber), HS72 (iron and steel) and HS84 (machinery and mechanical appliances), absolute competitiveness was close to China, but relative competitiveness was inferior to China.

Taiwan: for HS72 (iron and steel), HS87 (vehicles other than railway) and HS98 (miscellaneous products), both absolute and relative competitiveness were close to China; for HS83 (miscellaneous products of base metal) and HS84 (machinery and mechanical appliances), absolute competitiveness was close to China, but relative competitiveness was inferior to China.

Table 4.1.4 Comparison of the Competitiveness of the NIE-3's and China's Top 15 Exports to the U.S.

Absolute competitiveness comparison	Relative competitiveness comparison	Categories (HS code)		
		Korea	Singapore	Taiwan
+	+			
	o			
	-	54, 72		
o	+	87		
	o	27, 98	27, 87, 88, 98	72, 87, 98
	-	40, 48, 71	29, 40, 72, 84	83, 84
-	+		03	
	o	61	61, 62	61
	-	39, 62, 73, 84, 85, 90	39, 49, 73, 85, 90, 99	39, 62, 73, 82, 85, 90, 94, 95, 99

Source: Calculations based on the U.S. Customs data.

Based on Table 4.1.5, we can reach the following conclusions:

Indonesia: for HS18 (cocoa), both absolute and relative competitiveness were better than China; for HS09 (coffee, tea) and HS27 (fuels and mineral oil),

relative competitiveness was close to China; for HS03 (fish and crustaceans), HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted), market shares were smaller than China's products but relative competitiveness performances were better; for HS40 (rubber), HS44 (wood), and HS48 (paper and paperboard), absolute competitiveness was close to China but relative competitiveness was inferior to China.

Malaysia: for HS15 (animal or vegetable fats and oil), HS27 (fuels and mineral oil), HS29 (organic chemicals) and HS98 (miscellaneous products), relative competitiveness was close to China; for HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted), absolute competitiveness was inferior to China but relative competitiveness was better; for HS40 (rubber), HS38 (miscellaneous chemical products), and HS44 (wood), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

The Philippines: for HS98, both absolute and relative competitiveness were close to China; for HS03 (fish and crustaceans), HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted), absolute market shares of these products were inferior to China's products but their relative competitiveness were better; for HS15 (animal or vegetable fats and oil), HS16 (preparations of meat and fish) and HS20 (preparations of vegetables and fruit), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Thailand: for HS03 (fish and crustaceans), both absolute and relative competitiveness were better than China; for HS16 (preparations of meat and fish), relative competitiveness was close to China; for HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted), absolute market shares of these products were inferior to China's products, but their relative competitiveness was better than China; for HS40 (rubber), HS44 (wood) and HS71 (pearls, precious stones and metals), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Table 4.1.5 Comparison of Competitiveness of the ASEAN-4's and China's Top 15 Exports to the U.S.

Absolute comparison of competitiveness	Relative comparison of competitiveness	Categories (HS code)			
		Indonesia	Malaysia	Philippines	Thailand
+	+	18			03
	0	09	15		16
	-		40	15	40
0	+				
	0	27	27, 29, 98	98	
	-	40, 44, 48	38, 44	16, 20	44, 71
-	+	03, 61, 62	61, 62	03, 61, 62	61, 62
	0		84		
	-	42, 64, 84, 85, 90, 9	85, 90, 94, 95, 99	42, 84, 85, 90, 91, 94, 95, 99	39, 42, 64, 84, 85, 90, 94, 95

Source: Calculations based on the U.S. Customs data.

4.1.2 The RCA Performance of the SEACEN-7's and China's Products

In this section, we analyse the RCA performance of the SEACEN-7's and China's major export products with significant changes in market shares to the U.S. during 1990-2001. These products include HS39 (plastics), HS61 (apparel and clothing, knitted or crocheted), HS62 (apparel and clothing, not knitted or crocheted), HS64 (footwear, gaiters), HS73 (products of iron or steel), HS84 (machinery and mechanical appliances), HS85 (electrical machinery and equipment), HS94 (furniture) and HS95 (toys, games). Our findings are stated below:

1. The RCA of China's export products mainly exhibited an upward trend except for HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted). In particular, most significant increases in RCA were seen in HS64 (footwear, gaiters) and HS94 (furniture). It is worth noting that the RCA level of China's HS95 (toys, games) was extremely higher than that of other countries.
2. Except for Indonesia and Thailand, RCA of HS61 (apparel and clothing, knitted or crocheted) and HS62 (apparel and clothing, not knitted or crocheted)

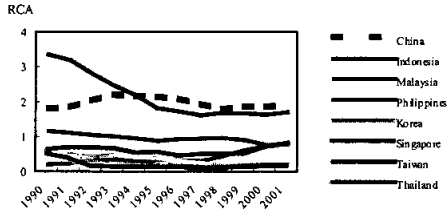
for the other six countries posted declines in the U.S. But Korea maintained its strong competitiveness position in both categories.

3. The RCA of Taiwan's HS39 (plastics), HS64 (footwear, gaiters), HS94 (furniture) and HS95 (toys, games) showed significant declines while the MS and RCA for China in these products significantly rose, indicating that Taiwan's market shares of these labour-intensive products have been displaced by China and other countries.
4. The RCA of HS85 (electrical machinery and equipment) for the eight countries have moved closer in the U.S., in contrast to the flying geese paradigm usually observed in labour-intensive industries. For capital- and technology-intensive industries, both the SEACEN-7 and China have already developed this product sector. The MS of HS85 (electrical machinery and equipment) of the SEACEN-7 did not change much in the U.S. market. As for China, the rapid developments of information technology and improved position in the regional division chain have made China as attractive as the SEACEN-7 to which large amounts of FDI have flowed in the 1970s.³¹ China's market share of HS85 (electrical machinery and equipment) was below 5% in the early 1990s, but gradually rose to nearly 15% in the late 1990s.

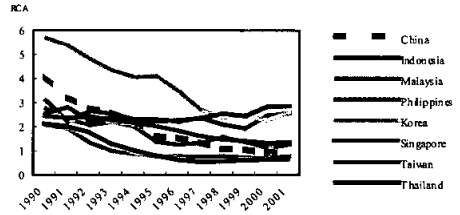
To sum up, in the late 1990s, China's exports with greater competitiveness in the U.S. were mainly labour-intensive products. But due to the great competition posted by emerging economies in Central America such as Mexico, China began to lose grounds in textiles, a sector in which China enjoyed great comparative advantages in the early 1990s. For Indonesia, the Philippines, and Thailand, primary goods such as animal and plant made products enjoyed greater competitiveness. Malaysia's comparative advantages were mainly in electronic machinery products, while Korea's were mainly in textiles. Taiwan's products with greater competitiveness were mainly articles of iron or steel, base metals, and textiles. For Singapore, mechanical appliances possessed strong comparative advantages. In addition, the ASEAN-4's exports were largely resources unique in the Asian region and hence less substitutable. On the contrary, for Korea, Taiwan, and Singapore, countries that had been known for their lack of natural resources, the market shares of their products were significantly influenced by competition from China.

31. See Huang (2000, 2002).

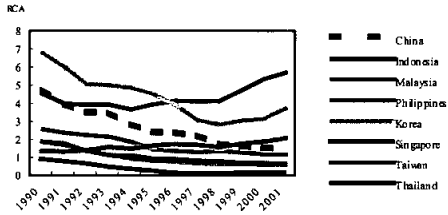
HS39



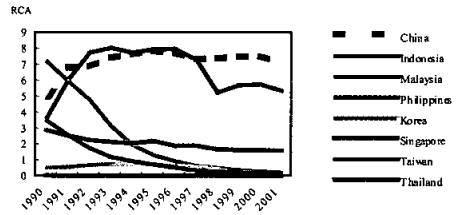
HS61



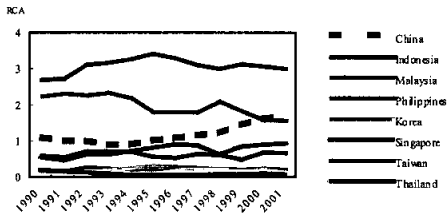
HS62



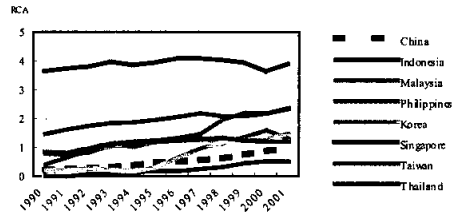
HS64



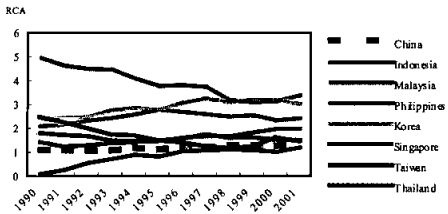
HS73



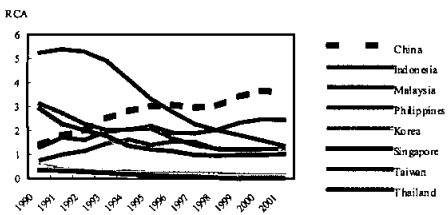
HS84 (The largest import item of the U.S.)



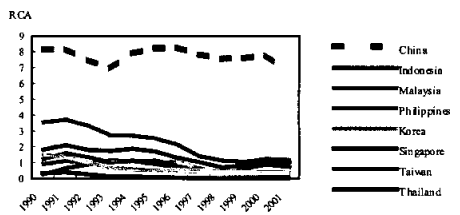
HS85 (The largest import item of the U.S. from the SEACEN-7 and China)



HS94



HS95



4.1.3 Similarities between the SEACEN-7's and China's Export Structures

This section analyses the similarities between export structures of the SEACEN-7 and China in the U.S. by using the Spearman rank correlation analysis. The higher the coefficient in their export structures, the greater competition they will encounter from each other. Table 4.1.6 provides the correlation coefficients of the RCA value, classified in all 2-digit HS products, between each SEACEN-7 country and China with respect to their exports to the U.S. The following conclusions can be drawn from Table 4.1.6:

1. The results indicate that Taiwan and Korea shared the highest degree of similarity in product competition structures in the U.S. during the 1990s. Indonesia and Malaysia were next.
2. In the late 1990s, the export structures of Taiwan, Thailand, and the Philippines closely resembled that of China.
3. The degree of similarity decreased from the record posted in the early 1990s for most SEACEN-7 countries, except for Thailand, which moved in the other direction.

4.2 Export Competition in Japan

By applying the same approach, this section compares the competitiveness of the SEACEN-7's and China's exports in the Japanese market during the period from 1990 to 2001, based on the Japanese customs data.

4.2.1 The SEACEN-7's and China's Product Competitiveness

A. The MS and RCA Performances of the SEACEN-7's and China's Exports

This section analyses the MS and RCA performances of the SEACEN-7's and China's exports in Japan and identifies products with competitive advantages for each country in the market. As shown in Table 4.2.1 below, market shares of products from China and all the SEACEN-7 (except for Indonesia) in Japan expanded due to closer trade and investment relations within the region. The largest growth in market shares was seen in China. Korea's market share in Japan was the highest among the SEACEN-7 countries.

Table 4.1.6 Correlation Coefficients between Export Structures of the SEACEN-7 and China in the U.S.
(By HS 2-digit)

	China	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand
China	1999-2001	1.000						
	1990-1992	1.000						
Indonesia	1999-2001	0.392 **	1.000					
	1990-1992	0.396 **	1.000					
Korea	1999-2001	0.315 *	0.247 *	1.000				
	1990-1992	0.494 **	0.241 *	1.000				
Malaysia	1999-2001	0.159	0.558 **	0.319 *	1.000			
	1990-1992	0.326 *	0.647 **	0.333 **	1.000			
Philippines	1999-2001	0.407 **	0.483 **	0.287 *	0.379 **	1.000		
	1990-1992	0.437 **	0.529 **	0.376 **	0.582 **	1.000		
Singapore	1999-2001	0.039	0.188	0.129	0.468 **	0.256 *	1.000	
	1990-1992	0.104	0.380 **	0.169	0.591 **	0.318 *	1.000	
Taiwan	1999-2001	0.461 **	0.355 **	0.582 **	0.514 **	0.467 **	0.348 **	1.000
	1990-1992	0.506 **	0.374 **	0.689 **	0.545 **	0.473 **	0.364 **	1.000
Thailand	1999-2001	0.428 **	0.451 **	0.318 *	0.228 *	0.476 **	0.119	0.376 **
	1990-1992	0.396 **	0.539 **	0.394 **	0.452 **	0.544 **	0.262 *	0.519 **

* Reject null hypothesis at 5% significance level, ** Reject null hypothesis at 1% significance level.

Source: Calculation based on the U.S. Customs data.

Table 4.2.1 Performances of the SEACEN-7's and China's Exports in Japan
(By HS 2-digit)

	China		Indonesia		Malaysia		Philippines		Thailand		Korea		Singapore		Taiwan	
	1990~	1999~	1990~	1999~	1990~	1999~	1990~	1999~	1990~	1999~	1990~	1999~	1990~	1999~	1990~	1999~
	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001	1992	2001
MS of all categories (%)	6.1	15.0	5.3	4.2	2.6	3.7	1.0	1.8	2.2	2.9	5.1	5.2	1.4	1.7	3.9	4.3
Number of categories	45	70	10	16	5	10	7	5	20	21	38	34	4	6	37	25
MS ≥ 5% Total Export Shares (%)	67.6	93.8	17.9	78.1	39.9	65.8	47.7	44.9	51.8	37.5	79.2	67.5	7.7	45.2	74.5	86.3
Number of categories	22	19	4	8	5	4	9	6	16	11	21	8	6	7	21	7
RCA ≥ 2.5 Total Export Shares (%)	44.0	45.9	70.8	68.7	39.9	43.1	48.7	73.1	48.3	24.3	48.5	9.3	24.4	47.4	53.8	40.3
Number of categories	22	19	4	8	5	4	7	5	16	11	21	8	4	6	21	7
RCA ≥ 2.5 and MS ≥ 5% Total Export Shares (%)	43.9	45.9	70.8	68.7	39.9	43.1	47.7	44.9	48.3	24.3	48.5	9.3	7.7	45.2	53.8	40.3

Source: Calculations based on Japan Customs data.

The top 15 exported products, classified in 2-digit HS, from each SEACEN-7 country and China with a market share in Japan exceeding 5% and index value of RCA exceeding 2.5 may be considered as the country's most important and competitive products in Japan. During the period from 1999 to 2001, those products are listed in Table 4.2.2.

Table 4.2.2 China's and the SEACEN-7's Highly Competitive Products in Japan

Countries	China	Indonesia	Malaysia	Philippines	Thailand	Korea	Singapore	Taiwan
Product	HS07	HS26	HS15	HS08	HS16	HS72	HS18	HS72
	HS16	HS27	HS44	HS74	HS17	HS73	HS19	HS84
Categories	HS42	HS44	HS85	HS85	HS23		HS49	HS94
	HS61	HS48			HS40		HS74	
	HS62	HS52						
	HS63	HS75						
	HS64							
	HS95							
Total Categories	8	6	3	3	4	2	4	3

Source: Based on author's research findings.

According to Table 4.1.2, we group products at more general definition of HS-2 digit commodity classification of China and the SEACEN-7 have highly competitive products in the Japanese market are listed as follows:

China: agricultural products (HS07), food and beverages (HS16), light industry products (HS42, HS64, and HS95), Textiles (HS61, HS62, and HS63);

Indonesia: mining products (HS26 and HS27), wood and paper (HS44 and HS48), textiles (HS52), and basic metals (HS75);

Malaysia: agricultural products (HS15), wood and paper (HS44), and electrical machinery (HS85);

Philippines: agricultural products (HS08), basic metals (HS74), and electrical machinery (HS85);

Thailand: food and beverages (HS16, HS17, HS23), mining products (HS23), and chemicals (HS40);

Korea: basic metals (HS72, HS73);

Singapore: food and beverages (HS18, HS19), wood and paper (HS49), and basic metals (HS74), general and precision machinery (HS84); and

Taiwan: basic metals (HS72), general and precision machinery (HS84), and light industry products (HS94).

B. Product Competitive Positions of the SEACEN-7 vis-à-vis China

As in the analysis on the U.S. market in the previous section, this section starts by ranking the MS values for exports of the SEACEN-7 and China to the Japanese market to compare their absolute competitiveness. Then, we also compare each product's relative competitiveness by observing the changes of percentage points in the MS of the SEACEN-7's and China's products in Japan between the early 1990s and the late 1990s. Again, the SEACEN-7 are classified into the NIE-3 and the ASEAN-4 groups to compare the absolute and relative competitiveness of their products with China (Table 4.2.3 and Table 4.2.4).

Based on Table 4.2.3, we derive the following findings:

Korea: for HS27 (fuels and mineral oil), HS72 (iron and steel), and HS84 (machinery and mechanical appliances), both absolute and relative competitiveness were at least not worse than China; for HS00 (special products), HS03 (fish and crustaceans), HS29 (organic chemicals), HS39 (plastics) and HS76 (aluminium), absolute competitiveness was close to China but relative competitiveness was inferior to China.

Singapore: for HS18 (cocoa), HS27 (fuels and mineral oil), and HS49 (printed books, newspapers) both absolute and relative competitiveness were not worse than China, especially HS18 (cocoa), whose absolute and relative competitiveness were both better than China; for HS00 (special products), HS29 (organic chemicals), HS71 (pearls, precious stones), HS74 (copper), and HS84 (machinery and mechanical appliances), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Taiwan: for HS00 (special products), HS72 (iron and steel) and HS84 (machinery and mechanical appliances), both the absolute and relative competitiveness were not inferior to China; for HS03 (fish and crustaceans), HS29 (organic chemicals), HS39 (plastics), and HS76 (aluminium), absolute competitiveness was close to that of China but relative competitiveness was inferior to China.

Table 4.2.3 Comparison of Competitiveness of the NIE-3's and China's Top 15 Exports to Japan

Absolute competitiveness comparison	Relative competitiveness comparison	Categories (HS code)		
		Korea	Singapore	Taiwan
+	+		18	
	o	72	49	84
	-		74	
o	+	27		38
	o	84	27	00, 72
	-	00, 03, 29, 39, 76	00, 29, 71, 84	03, 29, 39, 76
-	+			
	o			
	-	16, 42, 61, 64, 73, 85, 90	03, 19, 21, 38, 39, 85, 90	70, 73, 85, 87, 90, 94, 95

Source: Calculations based on Japan Customs data.

Table 4.2.4 summarises the results of comparing the top 15 exports from Indonesia, Malaysia, the Philippines and Thailand in Japan with those from China.

Indonesia: for HS26 (ores, slag and ash), HS40 (rubber) and HS48 (paper and paperboard), absolute and relative competitiveness were not inferior to China; for HS03 (fish and crustaceans), HS27 (fuels and mineral oil), HS44 (wood), HS75 (nickel products), and HS76 (aluminium), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Malaysia: for HS15 (animal or vegetable fats and oil), HS27 (fuels and mineral oil), HS74 (copper), and HS84 (machinery and mechanical appliances), absolute and relative competitiveness were not inferior to China; for HS29 (organic chemicals), HS40 (rubber), and HS44 (wood), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

The Philippines: for HS27 (fuels and mineral oil), absolute competitiveness was close to China but relative competitiveness was better than China; for HS08 (edible fruit and nuts), HS26 (ores, slag and ash), and HS74 (copper), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Thailand: for HS23 (waste from the food industries), absolute and relative competitiveness were both better than China; for HS03 (fish and crustaceans), HS17 (sugars), HS40 (rubber), and HS71 (pearls, precious stones), absolute competitiveness was better than or close to China, but relative competitiveness was inferior to China.

Table 4.2.4 Comparison of Competitiveness of the ASEAN-4's and China's Top 15 Exports to Japan

Absolute comparison of competitiveness	Relative comparison of competitiveness	Categories (HS code)			
		Indonesia	Malaysia	Philippines	Thailand
+	+	26	15		23
	0	40, 48	74		
	-	27, 44, 75	40, 44	8, 74	17, 40
0	+		27	27	
	0		84		00
	-	03, 76	29	26	03, 71
-	+				
	0	52	39, 85, 94	84, 85	16
	-	16, 39, 62, 84, 85, 94	00, 03, 38, 61, 90	00, 03, 39, 44, 62, 87, 90, 94, 95	02, 39, 61, 84, 85, 87, 90, 94

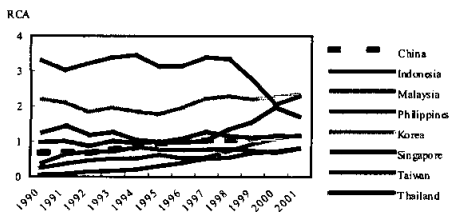
Source: Calculations based on Japan Customs data.

4.2.2 The RCA Performance of the SEACEN-7's and China's Products

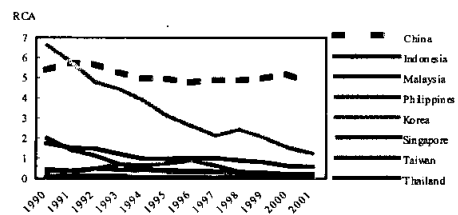
This section analyses the changes in comparative advantages of each country's products by studying the RCA performance of the SEACEN-7's and China's major export products with significant changes in market shares in Japan during 1990-2001. These products include HS39 (plastics), HS61 (apparel and clothing, knitted or crocheted), HS62 (apparel and clothing, not knitted or crocheted), HS64 (footwear, gaiters), HS72 (iron and steel), HS84 (machinery and mechanical appliances), HS85 (electrical machinery and equipment), HS94 (furniture) and HS95 (toys, games). Our findings are as follows:

1. The RCA of China's exports mainly exhibited an upward trend similar to what we observe in the U.S. market, except for HS61 (apparel and clothing, knitted or crocheted), whose RCA did not drop as much as in the U.S. market.
2. The RCA of HS61 (apparel and clothing, knitted or crocheted), HS62 (apparel and clothing, not knitted or crocheted), and HS64 (footwear, gaiters) from Korea and HS64 (footwear, gaiters), HS94 (furniture) and HS95 (toys, games) from Taiwan both fell substantially during the period, indicating the decreasing competitiveness in labour-intensive products from these two countries.
3. Except for Singapore, RCA of HS84 (machinery and mechanical appliances) and HS85 (electrical machinery and equipment) for the SEACEN-7 and China all registered growth. However, Singapore remained highly competitive in these two products categories.

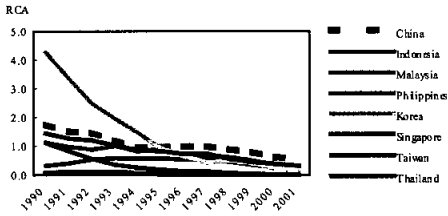
HS39



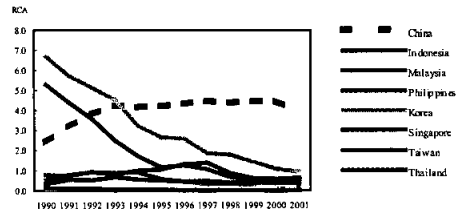
HS61



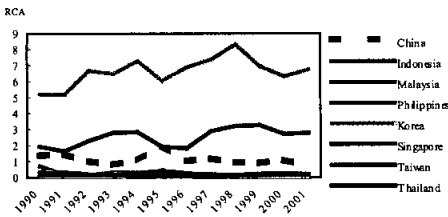
HS62



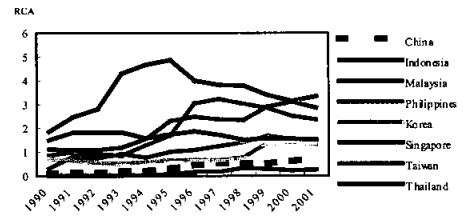
HS64



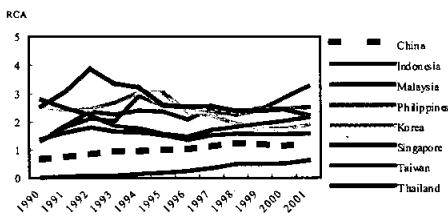
HS72



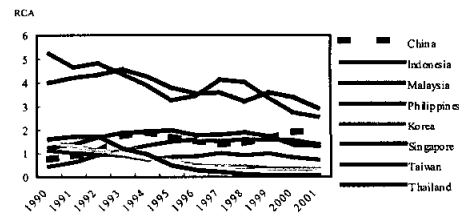
HS84



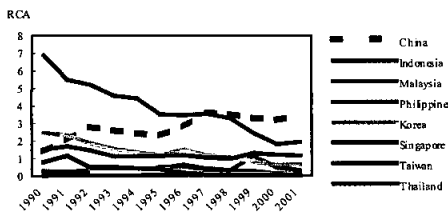
HS85



HS94



HS95



To sum up, in the late 1990s, products from the SEACEN-7 and China with comparative advantages in Japan were more diverse than those in the U.S. market. For China, these products with comparative advantages were mainly labour-intensive products. For Indonesia, Malaysia, the Philippines, and Thailand, products with greater comparative advantages were mainly those made of animals and plants, related processed products, and labour-intensive products. Among those, Malaysia and the Philippines enjoyed relatively strong competitiveness in electrical machinery equipment. As for Korea and Taiwan, articles of iron and steel, base metals, and textiles enjoyed greater comparative advantages. Singapore's mechanical appliances possessed stronger comparative advantages.

4.2.3 Similarities between the SEACEN-7's and China's Export Structures

By using the same approach as in the U.S. market, this section studies the similarity of export structures between the SEACEN-7 and China in Japan. The greater the similarity in their export structures, the greater competition they will face from each other. Table 4.2.4 provides the correlation coefficients of the RCA value between each SEACEN-7 country and China. The following findings are drawn from Table 4.2.4:

1. The results indicated that in the 1990s, exports from Taiwan and Korea shared the highest degree of similarity in their export structures in Japan, followed by the pair of Singapore and Malaysia.
2. In the late 1990s, Taiwan and Korea were very similar to China in terms of export structures, but the similarity had faded from the early 1990s.
3. The similarity between other SEACEN-7 countries and China also faded in the late 1990s.

Shafaeddin (2002) studied the impact of China's accession to WTO on the exports of developing countries by conducting a correlation analysis of their export structures. He showed that a high correlation coefficient of 0.42 existed between China and Thailand. Coefficients for other SEACEN-7 countries were relatively low and statistically insignificant. In contrast to Shafaeddin's approach, we analyse the similarities of the SEACEN-7's and China's export structures in the U.S. and Japanese markets. We find that the export structures of Taiwan, Korea, Thailand, and the Philippines are very similar to China in those two markets.

Table 4.2.5 Rank of Correlation Coefficients between Export Structures of the SEACEN-7 and China in Japan (By HS 2-digit)

		China	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan	Thailand
China	1999-2001	1.000							
	1990-1992	1.000							
Indonesia	1999-2001	0.007	1.000						
	1990-1992	0.223 *	1.000						
Korea	1999-2001	0.348 **	0.212 *	1.000					
	1990-1992	0.480 **	0.156	1.000					
Malaysia	1999-2001	0.004	0.536 **	0.230 *	1.000				
	1990-1992	0.064	0.513 **	0.154	1.000				
Philippines	1999-2001	0.221 *	0.322 *	0.361 **	0.264 *	1.000			
	1990-1992	0.245 *	0.390 **	0.281 *	0.399 **	1.000			
Singapore	1999-2001	-0.251 *	0.210 *	0.259 *	0.543 **	0.179	1.000		
	1990-1992	-0.211 *	0.171	0.119	0.524 **	0.249 *	1.000		
Taiwan	1999-2001	0.364 **	0.235 *	0.559 **	0.395 **	0.346 **	0.239 *	1.000	
	1990-1992	0.387 **	0.217 *	0.583 **	0.234 *	0.340 **	0.094	1.000	
Thailand	1999-2001	0.268 *	0.308 *	0.389 **	0.341 **	0.423 **	0.243 *	0.416 **	1.000
	1990-1992	0.354 **	0.241 *	0.266 *	0.290 *	0.434 **	0.188	0.447 **	1.000

* Reject null hypothesis at 5% significance level, ** Reject null hypothesis at 1% significance level.

4.3 China's Export Expansion and Export Competitiveness

4.3.1 Pressure from China's Export Expansion

After China enters the WTO, its export structure will adjust accordingly based on comparative advantages, which will help Chinese products with comparative advantages to compete in the world market. In the meantime, China enters the WTO as a developing economy so she will continue to enjoy the general preferential treatment provided by advanced economies. In other words, WTO membership will expand China's exports and enhance the competitive position and market shares of China's exports. Other countries will face stronger pressure from China's export expansion.

From the previous two sections of this chapter, we find that the market share of each NIE-3 country posted declines in the U.S. market but trended up in the Japanese market. As for the ASEAN-4 and China, their market shares in both the U.S. and Japanese markets increased (except that Indonesia's market share in the U.S. declined), with China's market share expanding at a faster pace.

In addition, the SEACEN countries with export structures similar to China will face more intense competition. The ASEAN-4 will face competition pressure from China in exporting labour-intensive products. The NIE-3 are capable of producing higher capital-intensive and technology-intensive products that China cannot catch up with. But for lower technology-intensive and labour-intensive products, China poses a threat to the NIE-3.

Finally, due to concerns over globalisation and cost cutting by transnational corporations, the declines in market shares of the SEACEN countries do not necessarily mean that their competitiveness is falling. However, if their losses in market shares in the above markets cannot be compensated by market share increases in China or other Original Equipment Manufacturing countries, or if they cannot find new markets for their core industries, products from these countries will soon be displaced. Therefore, in the face of China's export expansions, the SEACEN countries should export products with better competitiveness based on the principles of comparative advantages.

4.3.2 Textile Exports

Our study shows that HS61 (apparel and clothing, knitted or crocheted), HS62 (apparel and clothing, not knitted or crocheted), and HS63 (other made up textile products) are still the SEACEN-7's three main export products to the U.S. and Japan. During the 1990s, RCAs and MSs of China's and the SEACEN-7's textiles in the U.S. market all registered declines (except in the cases of Thailand and Indonesia) owing to increased imports from Mexico and Central American countries following the establishment of the NAFTA.

As for the comparison of absolute and relative competitiveness between China and the SEACEN-7, we find that the absolute competitiveness for textiles of the SEACEN-7 in the U.S. and Japan were inferior to that of China, but in relative competitiveness, SEACEN-7's textiles were better than those of China in the U.S. market. Part of the strength was attributed to the quota restrictions placed on Chinese textile exports.

After the WTO, China's tariff will be reduced and hence the production cost of the Chinese textile industry will decrease as China imports cheaper textile raw materials. Also, according to the Agreement of Textile and Clothing, quotas imposed on China's textile exports will be gradually removed during the transition period, and China will be able to enjoy lower tariff, most favoured nation treatment and special treatment provided by her developing country status.

Especially, after the removal of quotas on textiles and garments to the U.S., Canada, and the European Union, China's exports of textiles will increase.³² Therefore, the growing competitiveness of China's textile exports poses a threat to the exports of SEACEN countries' textiles.

4.3.3 Exports of Electronic and Information Products

In addition to textiles, our research finds that HS84 (machinery and mechanical appliances), HS85 (electrical machinery and equipment) are two main export products of the SEACEN-7 and China in the U.S. market. Market shares of these two product categories rose significantly. HS84 and HS85 are also key exports from the SEACEN-7 and China to Japan. HS84 and HS85 are also categories with the highest degree of overlap on the SEACEN-7's and China's imports and exports lists.

Based on our previous analysis, we find that HS85 (electrical machinery and equipment) from the SEACEN-7 were inferior to China in absolute competitiveness in both the U.S. and Japan, but the SEACEN-7 performed better in HS84 and HS85 in the Japanese market than that in the U.S. market. Particularly, HS84 of both Taiwan and Korea enjoy similar or superior absolute and relative competitiveness to China as a result of the following factors: (1) Korea and Taiwan are two major inheritors of Japan's mature industries, and Japan's investment and bilateral trade relations with these two countries have strong foundations. (2) The U.S. is the largest market for final goods, so many of transnational corporations assemble their mature products in China and distribute those products directly from China. This causes greater displacement of the SEACEN-7's exports in the U.S. market than in Japan. The differences between HS84 and HS85 in the competition between the SEACEN-7 and China in the U.S. and Japan indicate that the SEACEN-7 should try to develop products that require different levels of technology from China and target the specific needs of individual markets.

32. According to the WTO's Agreement on Textiles and Clothing, quotas imposed on textiles and clothing among WTO member countries should be gradually removed in order to promote free trade on textiles and clothing. Ianchovichina, Martin and Fukase (2001) argue that China's export of clothing will increase from 20% to 47% of total clothing export of the world due to the lifting of textile and clothing quotas.

In the meantime, China's removal of restrictions on foreign investment will attract more international high-tech companies to invest and establish manufacturing plants in China, which in turn will turn China into the world's largest manufacturing and assembly centre. Many of China's high-tech exports already pose a threat to the SEACEN-7 countries. As China's exports of electronic products continue to increase and their shares in the global market expand accordingly, market shares of the SEACEN-7 might fall correspondingly. In other words, the export competitiveness of the SEACEN-7's electronic and information products will be squeezed by China's growing presence in this industry, and the SEACEN countries should take note of this development.

CHAPTER 5

THE PRC'S WTO ACCESSION AND FOREIGN DIRECT INVESTMENT IN THE SEACEN-7

During the 1990s, China became the largest foreign direct investment (FDI) recipient in the emerging market, while FDI inflows to the SEACEN-7 started to decelerate in the late 1990s. After joining the WTO, China promises to provide national treatment to foreign enterprises, open its services market to foreign ownership, and improve its investment climate and policy to facilitate foreign investment. Coupled with the potential demand from China's domestic market, China has become much more attractive to investors from all over the world. Hence, China's WTO accession may affect FDI inflows to the SEACEN-7. This chapter discusses several investment-related issues for the SEACEN-7 after China's WTO entry.

5.1 Foreign Direct Investment in China

During the 1980s, capital inflows to China were mainly in the form of foreign loans. From the 1990s onward, FDI has become the main type of foreign capital inflow. FDI in China amounted to US\$3.49 billion in 1990, and the figure skyrocketed to US\$44.24 billion in 2001, representing an annual average growth rate of 26.7%. At the end of 2001, total FDI in China accumulated to US\$395.2 billion. For nine consecutive years beginning from 1993, China ranked first among developing countries and second only to the U.S. globally in attracting FDI.³³ At present, more than 400 of the Fortune top 500 transnational corporations (TNCs) listed have established operations in China. This section analyses the origin and industrial structure of FDI inflows to China.

5.1.1 Country Origin of FDI in China

During the period between 1979 and 2001, FDI in China, as shown in Table 5.1.1, was mainly from Hong Kong (47.3%), the U.S. (8.7%), Europe (8.1%), Japan (8.1%), Taiwan (7.4%), Singapore (4.8%), and Korea (3.2%). FDI from Hong Kong, Singapore and Taiwan accounted for almost 60% in China's total FDI mainly due to the geographical, cultural and linguistic affinities of these

33. The UNCTAD's *World Investment Report 2002* indicates that China ranked the 47th position in terms of FDI relative to GDP. If measured by actual FDI, FDI into China in 2001 reached \$47 billion, the largest among developing countries.

countries with China. During the 1990s, the shares of FDI in China from Taiwan and Hong Kong posted declines while those from Japan and the U.S. remained stable,³⁴ and investment from Europe, Korea, and Singapore was generally on an upward trend. The country of origin of China's FDI has shown increasing diversification.

Compared with investment by Korea, Singapore, and Taiwan, investment from Malaysia and Thailand both accounted for 0.6% of China's total FDI inflows at the end of 2001, followed by 0.3% from the Philippines and 0.2% from Indonesia (Table 5.1.1).

Most FDI in China flowed to the export processing industry. In particular, the export processing industry combines China's low labour cost with foreigner's technologies and marketing skills, and that is one of the major reasons for the increasing importance of China's exports in the global market. Since the mid 1980s, export by foreign affiliates located in China has grown at a faster pace than China's overall export. For instance, foreign-invested enterprises accounted for 70.8% in China's processing exports in 2001.

5.1.2 The Industry Structure of FDI in China

Unlike the advanced countries' FDI that was mainly seen in cross-border mergers and acquisitions, FDI in China mainly flowed in for green-field investment projects.³⁵ Most FDI in China flowed to the manufacturing sector (mainly in electronic communications equipment, textiles, and chemicals), with its share of total FDI inflows rising to 67.8% in 2001 from 56.1% registered in 1999 (Table 5.1.2). As for the services sector, in 2000, the real estate sector was most attractive to foreign investment and accounted for 23.6% of total FDI into China's services sector, followed by 3.5% for wholesale and retail trade, 2.9% for construction and 2.4% for transportation, warehousing, post and telecommunications. However, foreign investment in the financial, insurance and trade industry remained low³⁶.

34. One of the important reasons for the decrease of investment from Hong Kong and Taiwan is related to the increase of FDI in China from Virgin Islands, Cayman Islands and Western Samoa. Most of the enterprises registered in those islands are from Hong Kong and Taiwan, which target their final investment in China.

35. See *World Investment Report 2002*.

36. See Sun (2002).

Table 5.1.1 Inward FDI of China by Country Shares

Year	Hong Kong	U.S.A.	Europe	Japan	Taiwan	Singapore	Korea	Malaysia	Thailand	Philippine	Indonesia	Others	Total
1991	55.3	7.1	6.1	13.1	10.1	1.2	0.0	0.0	0.4	0.1	0.0	6.4	100.0
1992	68.2	4.6	2.9	6.6	9.3	1.1	1.1	0.2	0.7	0.2	0.2	4.9	100.0
1993	62.8	7.4	2.8	4.9	11.3	1.8	1.4	0.3	0.8	0.4	0.2	5.7	100.0
1994	58.4	7.3	4.9	6.1	10.0	3.5	2.1	0.6	0.7	0.4	0.3	5.6	100.0
1995	53.4	8.2	6.0	8.5	8.4	4.9	2.8	0.7	0.8	0.3	0.3	5.9	100.0
1996	49.5	8.2	7.1	8.8	8.3	5.3	3.6	1.1	0.8	0.1	0.2	7.1	100.0
1997	47.6	7.6	10.1	9.7	7.4	5.8	4.9	0.8	0.4	0.3	0.2	5.1	100.0
1998	40.7	8.6	9.5	7.5	6.4	7.5	4.0	0.7	0.5	0.4	0.2	14.1	100.0
1999	40.6	10.5	11.9	7.4	6.4	6.6	3.2	0.6	0.4	0.3	0.3	12.0	100.0
2000	38.1	10.8	11.7	7.2	5.6	5.3	3.7	0.5	0.5	0.3	0.4	16.0	100.0
2001	35.7	9.5	9.6	9.3	6.4	4.6	4.6	0.6	0.4	0.4	0.3	18.8	100.0
1991-2001	47.1	8.6	8.3	7.9	7.7	5.0	3.4	0.7	0.6	0.3	0.3	10.2	100.0
1979-2001	47.3	8.7	8.1	8.1	7.4	4.8	3.2	0.6	0.6	0.3	0.3	10.7	100.0

Source: China Statistical Yearbook 2002

Table 5.1.2 Inward FDI of China by Sector

Unit: US\$ Million

Year	1999		2000		2001	
	Amount	Percentage (%)	Amount	Percentage (%)	Amount	Percentage (%)
Total	40,319	100.0	40,715	100.0	46,878	100.0
Farming, Forestry, Animal Husbandry and Fishery	710	1.8	676	1.7	899	1.9
Mining and Quarrying	557	1.4	583	1.4	513	1.1
Manufacturing	22,603	56.1	25,844	63.5	30,907	65.9
Electric Power, Gas and Water Production and Supply	3,703	9.2	2,242	5.5	2,273	4.8
Construction	917	2.3	905	2.2	807	1.7
Transport, Storage, Post and Telecommunication	1,551	3.8	1,012	2.5	909	1.9
Wholesale & Retail Trade	965	2.4	858	2.1	1,169	2.5
Real Estate Management	5,588	13.9	4,658	11.4	5,137	11.0
Social Services	2,551	6.3	2,185	5.4	2,595	5.5
Health Care and Social Welfare	148	0.4	106	0.3	119	0.3
Education, Culture, Radio, Film and Television	61	0.2	54	0.1	36	0.1
Other Sectors	965	2.4	1,591	3.9	1,051	2.2

Source: *China Statistical Yearbook 2002*.

5.2 FDI Inflows to the SEACEN-7

This section discusses FDI inflows to the SEACEN-7 from the 1990s onwards, with an emphasis on the country origin and main industry structure of FDI in Indonesia, Malaysia, the Philippines and Thailand (the ASEAN-4), and highlights the differences between FDI inflows to the ASEAN-4 and China.³⁷ Both the ASEAN-4 and China are major destinations for FDI rather than significant investors in each other's economy. In this section, source country FDI data is used, because its data permits cleaner cross-country comparison

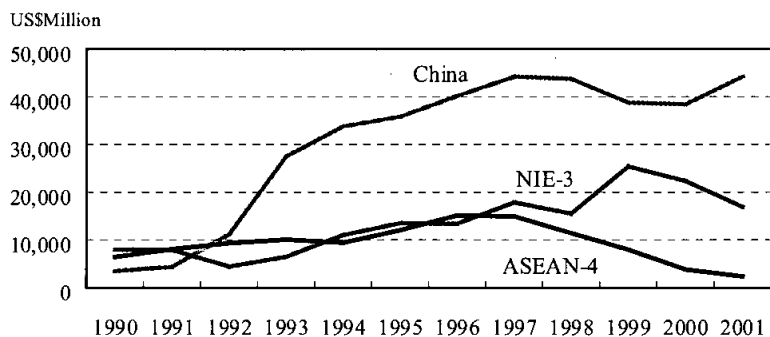
5.2.1 FDI in the SEACEN-7

In the 1990-1997 period, before the outbreak of the Asian financial crisis, FDI inflows to the SEACEN-7 registered robust growth. Of these inflows, FDI to Korea, Singapore and Taiwan (the NIE-3) and the ASEAN-4 grew on average by 28.2% and 13.6%, respectively. However, during the same period, FDI inflows from the globe to China grew as fast as 54.1%. During the period between 1997 and 2000, global FDI continued to grow. However, FDI inflows to the ASEAN-4 rapidly subsided at a rate of 35.2%. Declines in FDI to the NIE-3 were much milder at merely 0.6%. During the same period, FDI to China also decreased. FDI inflows to China shrank by 4.5%. Global FDI flows declined sharply in 2001 for the first time in a decade. However, as FDI flows to the SEACEN-7 shrank by 18%, inflows to China registered a 15% growth in 2001 (Chart 5.2.1).

Although FDI flows to the ASEAN-4 trended downwards after the outbreak of the Asian financial crisis, there are considerable differences across countries. For instance, inward FDI in Indonesia and Malaysia decreased dramatically after 1996, while inflows to Thailand and the Philippines remained stable (Chart 5.2.2). The decline in FDI inflows to the ASEAN-4 were due to a combination of factors, namely global excess capacity, the decline in M&A activities, domestic problems in the major investor countries and continued economic and political uncertainties in the region.

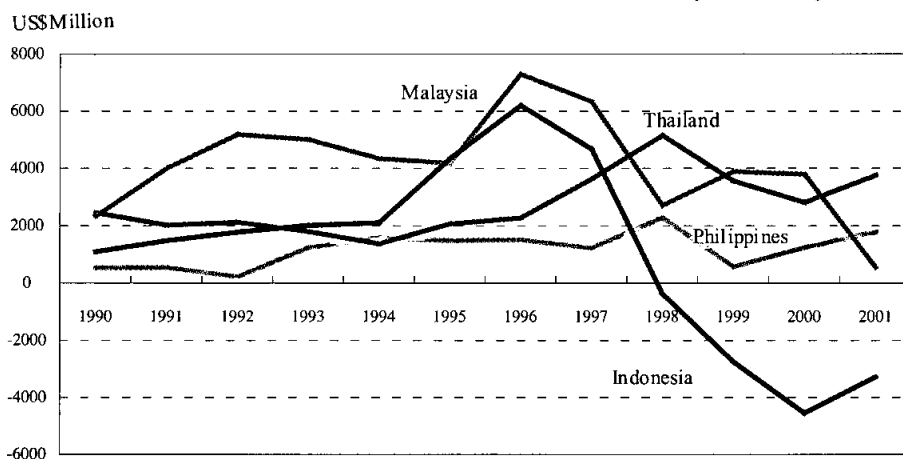
37. FDI data is notorious for being inconsistent among reporting sources, see Wu, Siaw, Sia, and Keong (2002).

Chart 5.2.1 Inward FDI in China and the SEACEN-7



Source: IFS (2002).

Chart 5.2.2 Inward FDI in the ASEAN-4 by Country



Source: Same as Chart 5.2.1.

According to the Inward FDI Performance Index of the UNCTAD (2002a), which is defined as the ratio of a country's share of global inward FDI to its share of global GDP, a country with an FDI performance index greater than one is recognised to have received more FDI than that implied by the size of its economy. It indicates that the country may have a comparative advantage in production or better growth prospects. Singapore, Malaysia, Thailand and China had an FDI performance index greater than one during the period of 1998-2000 (Table 5.2.1). With respect to the changes in country ranking, the SEACEN-7 in the 1998-2000 period registered steep declines from the 1988-1990 period, except for Korea; however, China's ranking improved.

Table 5.2.1 The UNCTAD FDI Performance Index

Country	1988-1990		1998-2000	
	Index	Rank	Index	Rank
Singapore	13.8	1	2.2	18
Malaysia	4.4	8	1.2	44
Thailand	2.6	25	1.3	41
Philippines	1.7	39	0.6	89
Indonesia	0.8	63	-0.6	138
Taiwan	0.9	58	0.3	112
China	0.9	61	1.2	47
Korea	0.5	93	0.6	87
Asia	1.07	-	0.85	-

Source: *World Investment Report 2002*, UNCTAD.

To sum up, the share of the ASEAN-4 in overall FDI inflows to Asia dropped from 34.8% registered in 1991 to 2.8% in 2001. During the same period, the NIE-3's share in overall FDI inflows to Asia fell from 31.7% to 15.6%, while China's share rose from 18.9% to 45.9%. The trend indicates that FDI flows to Asia have been diverted to China from the SEACEN-7.³⁸ Consequently, the setbacks caused by the Asian financial crisis, China's emergence in world markets, and other factors have already altered the competitive edge of the ASEAN-4 in terms of FDI attraction.

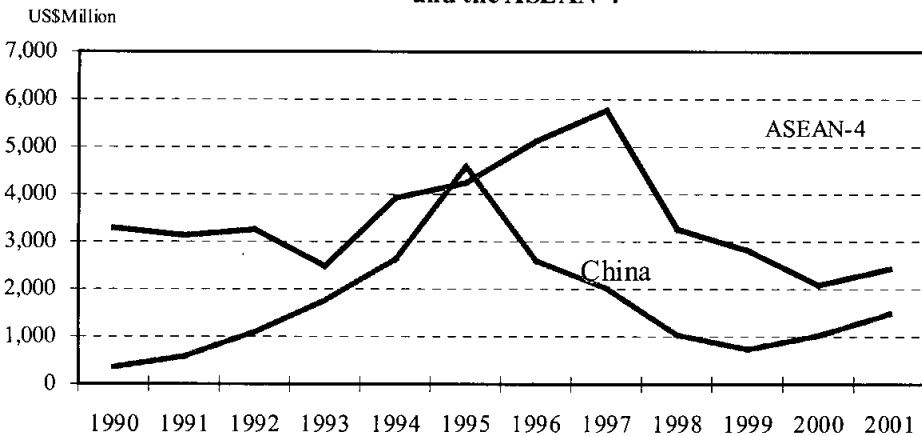
38. Keong, Sia, Siaw, and Wu (2002) argue that declines in FDI in the ASEAN-4 is mainly attributable to the adverse impact of the Asian financial crisis, rather than the emergence of the Chinese economy.

5.2.2 Japan's and the U.S.'s Investment in the ASEAN-4

(A) Japan

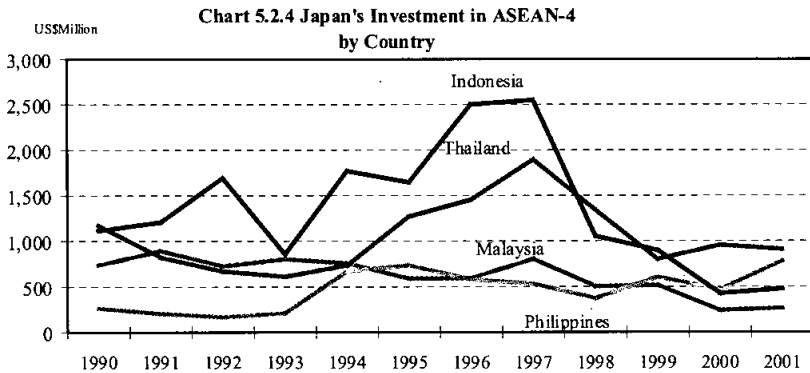
Japan has been the most important source of FDI for the ASEAN-4, based on the data published by the Ministry of Finance of Japan. Due to Japan's large investment in the electronic and electrical appliances industry in the region, the ASEAN-4 became the production and assembly centre for the world's electronic and electrical appliances industry in the early 1990s. However, Japan's direct investment in the ASEAN-4 has tumbled since 1997 (Chart 5.2.3) and the largest drop was seen in Indonesia and Thailand (Chart 5.2.4). During the past two years, FDI from Japan to the ASEAN-4 rebounded. In comparison with its FDI flows to the ASEAN-4, Japan's direct investment in China reached a peak in 1995 but later subsided.³⁹ From 1999 onwards, Japan's direct investment in China started to grow again (Chart 5.2.3).

Chart 5.2.3 Japan's Investment to China and the ASEAN-4



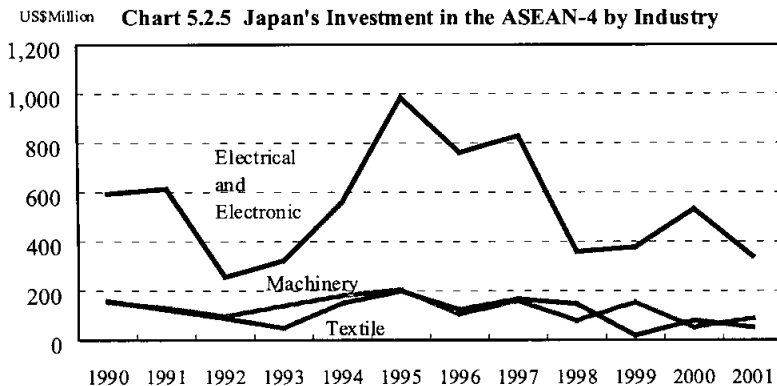
Source: Website of the Ministry of Finance, Japan.

39. According to the report "Survey of China's ODA effect" published by Mitsubishi Research Institute, Japanese investment in China mounted to a peak level following the Japanese yen's appreciation in 1995. But the investment wave soon reversed as the Japanese yen started to depreciate, and the stagnating Japanese economy caused financial institutions trapped with large amounts of non-performing loans to tighten their funding to enterprises.



Source: Same as Chart 5.2.3.

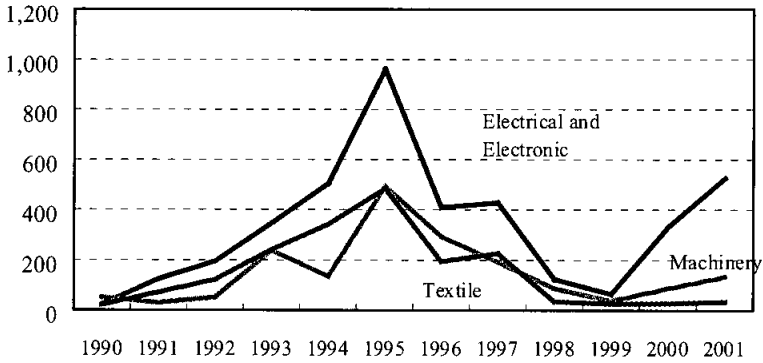
With regard to the industry structure of Japanese investment in the ASEAN-4, Japan's investment mainly focused on the electronic and electrical appliance industry and it declined significantly since the mid 1990s, while its investment in machinery and textile industries slightly declined (Chart 5.2.5). From country-specific perspectives, Japanese investment in the electrical and electronic appliance industry in Malaysia and Thailand posted mild growth. However, it remained sluggish in Indonesia, and had experienced larger volatility in the Philippines. Japanese investment in the machinery industry has obviously rebounded in Thailand and the Philippines in recent years.



Source: Same as Chart 5.2.3.

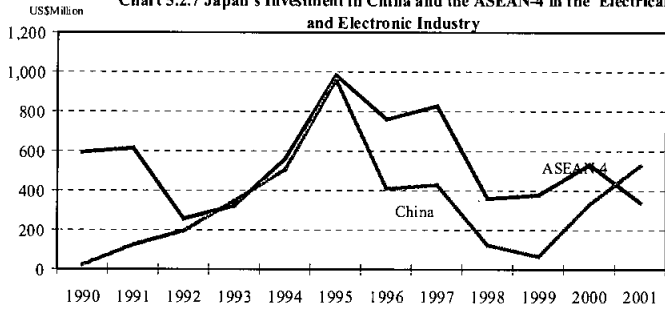
US\$Million

Chart 5.2.6 Japan's Investment in China by Industry



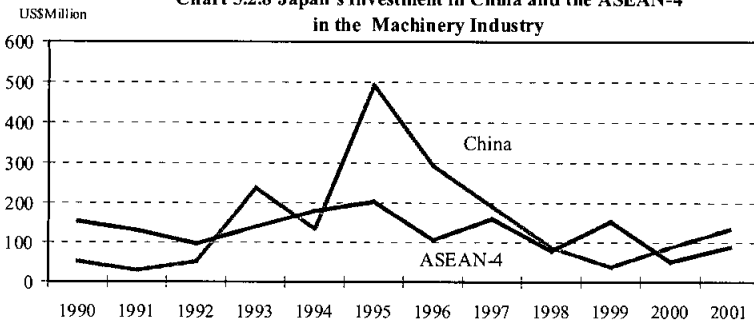
Source: Same as Chart 5.2.3.

Chart 5.2.7 Japan's Investment in China and the ASEAN-4 in the Electrical and Electronic Industry



Source: Same as Chart 5.2.3.

Chart 5.2.8 Japan's Investment in China and the ASEAN-4 in the Machinery Industry

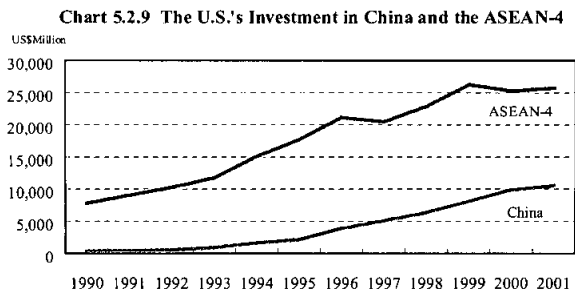


Source: Same as Chart 5.2.3.

Japanese investment in China's electrical and electronic appliance industry since 1995 (Chart 5.2.6) exhibited downward patterns which is similar to its investment in the ASEAN-4. However, since 1999 such investment has rebounded sharply, and exceeded investment in the ASEAN-4 in 2001. In the machinery industry, Japanese investment in both China and the ASEAN-4 decreased after 1995 before bouncing back recently and the investment in China also exceeded that in the ASEAN-4 in 2001. Japanese and the ASEAN-4's investment in the textile industry in China also slipped over the years, but such investment in China was still far below the investment in the ASEAN-4 (Charts 5.2.5 and 5.2.6).

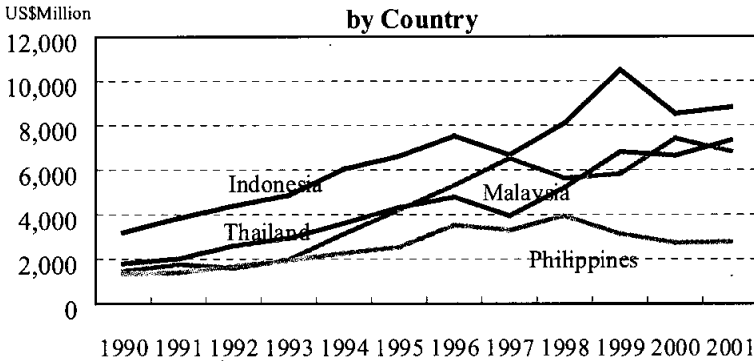
(B) The U.S.

During the 1990-2001 period, U.S. direct investment in the ASEAN-4 generally exhibited a stable expansionary trend despite a temporary slowdown in 1997 because of the Asian financial crisis (Chart 5.2.9), based on the data published by the US Department of Commerce. Different from the Japanese FDI, U.S. investment in the ASEAN-4 (except in the Philippines) continued to grow in the late 1990s (Chart 5.2.10). U.S. investment in China also trended upward in the early 1990s and the pace further accelerated in 1996.



Source: *Survey of Current Business*, the U.S. Department of Commerce.

**Chart 5.2.10 The U.S.'s Investment in the ASEAN-4
by Country**

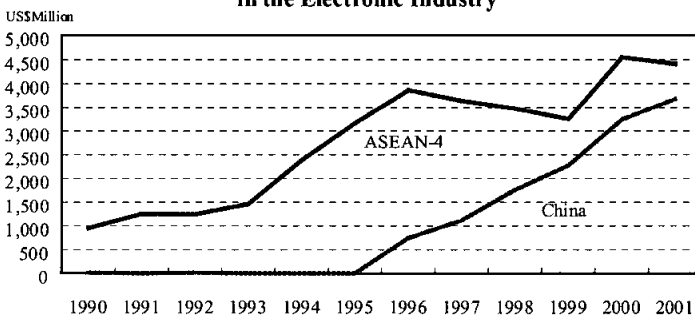


Source: Same as Chart 5.2.9.

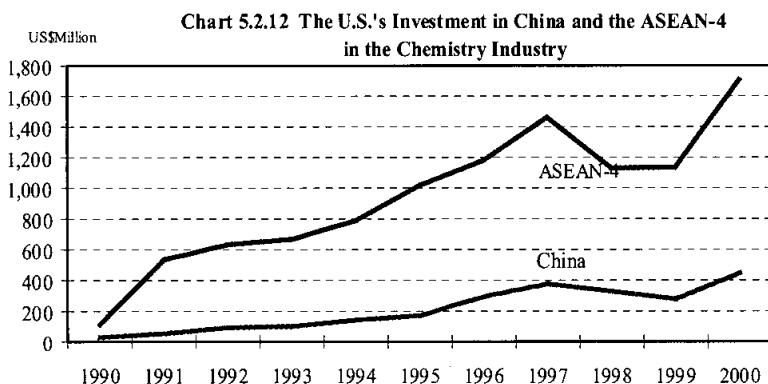
U.S. investment in the ASEAN-4 concentrated in the petroleum, electronic, chemistry, and machinery industries. Among these industries, investment in the petroleum industry was concentrated in Indonesia and Thailand and investment in electronic manufacturing was mainly in Malaysia. Investment in the chemical industry mainly went to Thailand. Machinery investment was mainly focused on Malaysia and Thailand.

In comparison with U.S. investment in China, in the late 1990s, U.S. electronic manufacturing investment in China accelerated at a faster pace than in the ASEAN-4 since 1995, but U.S. investment in the ASEAN-4 still surpassed that in China (Chart 5.2.11). U.S. chemical investment in the ASEAN-4 still accelerated at a faster pace than in China (Chart 5.2.12). As for machinery investment, U.S. investment in China and the ASEAN-4 generally moved in the same direction in the late 1990s (Chart 5.2.13).

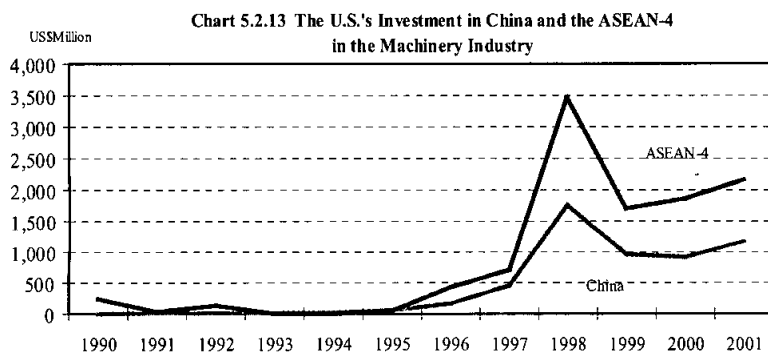
**Chart 5.2.11 The U.S.'s Investment in China and the ASEAN-4
in the Electronic Industry**



Source: Same as Chart 5.2.9.



Source: Same as Chart 5.2.9.



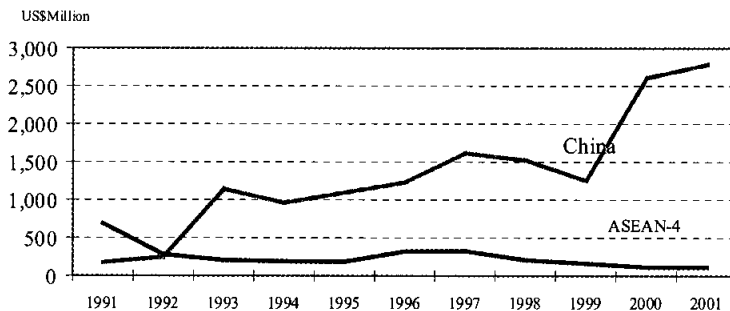
Source: Same as Chart 5.2.9.

5.2.3 *Taiwan's and Singapore's Investment in the ASEAN-4*

(A) **Taiwan**

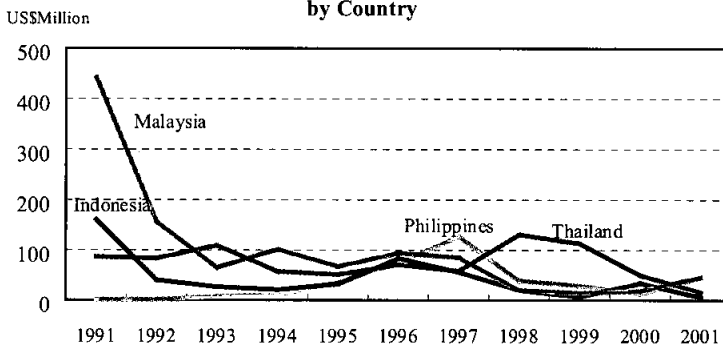
Taiwan's investment in the ASEAN-4 slowed down during the 1990s, based on the data published by the Ministry of Economic Affairs of the Republic of China. In the past two years, Taiwanese investment in China registered significant growth and the volume was consistently larger than that in the ASEAN-4 (Chart 5.2.14), while its investments in Malaysia grew slightly but continued to decline in the other three countries (Chart 5.2.15).

Chart 5.2.14 Taiwan's Investment in China and the ASEAN-4



Source: *Statistics on Overseas Chinese & Foreign Investment, Outward Investment, and Indirect Investment*, Investment Commission, Ministry of Economic Affairs, Taiwan.

Chart 5.2.15 Taiwan's Investment in the ASEAN-4 by Country



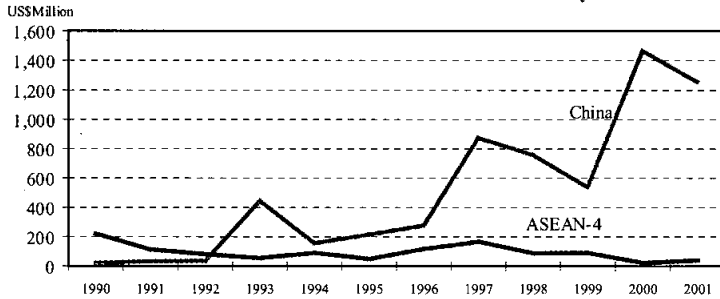
Source: Same as Chart 5.2.14.

Since the second half of the 1990s, Taiwanese FDI in the ASEAN-4 has gone primarily into the electronic manufacturing industry in Thailand, the Philippines, and Malaysia. But the scale of these investments has largely decreased over the past two years. In addition to the electrical and electronic industry, Taiwanese firms also established investments in the base metal manufacturing, textile, garment, and chemical industries. Compared to the early 1990s, Taiwanese investment in the above industries declined in the late 1990s.

We use the electronic manufacturing industry as an example to illustrate the trend of Taiwanese investment in China and the ASEAN-4. In the late 1990s,

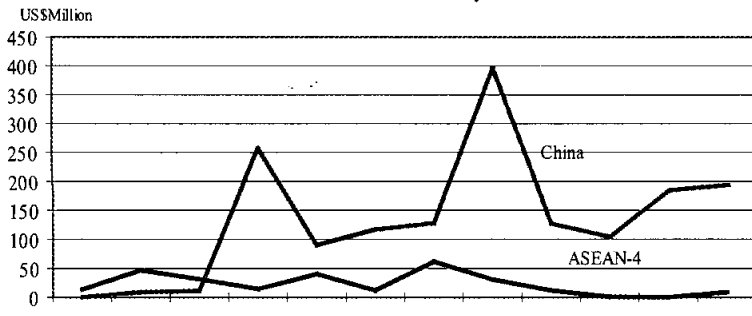
Taiwanese investment in China burgeoned while its flows to the ASEAN-4 showed a slowdown (Chart 5.2.16). The same pattern can be seen in the base metal manufacturing industry (Chart 5.2.17).

Chart 5.2.16 Taiwan's Investment in China and the ASEAN-4 in the Electrical and Electronic Industry



Source: Same as Chart 5.2.14.

Chart 5.2.17 Taiwan's Investment in China and the ASEAN-4 in the Basic Metal Industry

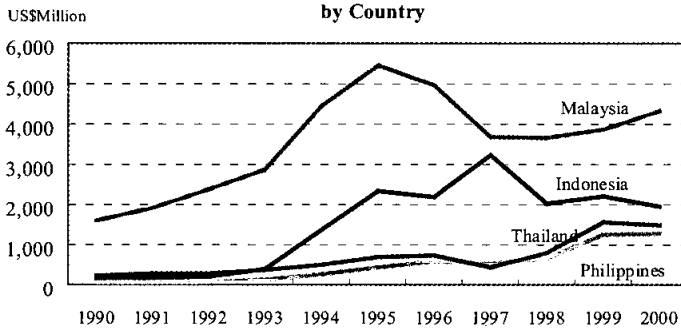


Source: Same as Chart 5.2.14.

(B) Singapore

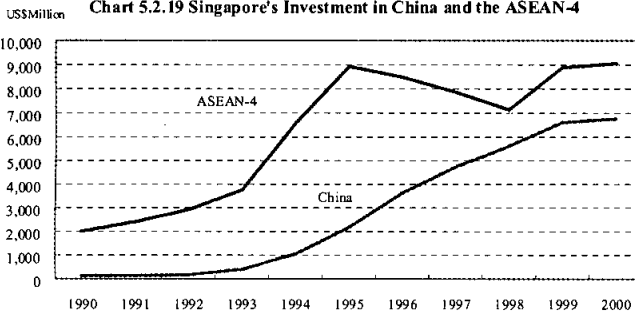
The ASEAN-4 have been of great importance to Singapore's outward investment, based on the data published by the Singapore Department of Statistics. Singaporean investment in the early 1990s mainly went to Malaysia (Chart 5.2.18). Beginning in the mid 1990s, with its flows to Indonesia's manufacturing industry rising significantly, Singapore has played a much more important role in investment to the ASEAN-4. Since then, as Singapore increased investment in China, investment in the ASEAN-4 gradually trended down, especially in Malaysia and Indonesia (Chart 5.2.19). Singaporean investment in Thailand and the Philippines remained at levels comparable to those in previous years (Chart 5.2.18). Singapore's investment in China has rapidly grown since 1993. However, Singapore's investment in the ASEAN-4 still surpassed its investment in China.

Chart 5.2.18 Singapore's Investment in the ASEAN-4 by Country



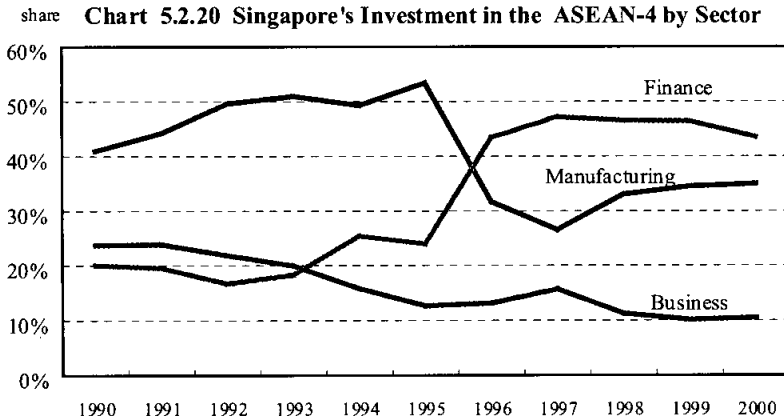
Source: Website of the Singapore Department of Statistics.

Chart 5.2.19 Singapore's Investment in China and the ASEAN-4



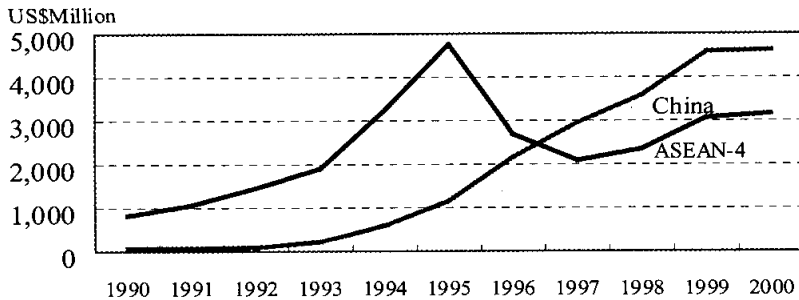
Source: Same as Chart 5.2.18.

In regard to the industry structure, before 1995, Singapore's investment in the ASEAN-4 has primarily gone to the manufacturing industry. Thereafter, investment in financial services started to climb up in 1995 and has accounted for over 40% of Singapore's overall investment in the ASEAN-4 since 1996 (Chart 5.2.20). Singapore's investment in China's manufacturing industry has leapt in the late 1990s while its investment in the ASEAN-4 exhibited small increases (Chart 5.2.21).



Source: Same as Chart 5.2.18.

Chart 5.2.21 Singapore's Investment in China and the ASEAN-4 in the Manufacturing Industry



Source: Same as Chart 5.2.18.

To conclude, investment made by the U.S. and Japanese firms in the ASEAN-4 and China generally moved simultaneously in the same direction. Taiwan has shifted its investment focus to China. Singapore's investment in China has continued to grow while its flows to the ASEAN-4 have dropped except for Malaysia. Our analysis in this section indicates that several industries in the ASEAN-4, such as the information technology industry in Malaysia, have encountered challenges following China's emergence.

However, investment by the U.S., Japanese and NIE-3 firms in labour-intensive industries such as textiles and garments did not show rapid expansion in China and their investment in the ASEAN-4 remained largely stable. FDI flows to the ASEAN-4 in energy related industries such as the petroleum and chemical industries continued to grow. In the late 1990s, Indonesia suffered from huge outflows of foreign capital, but FDI continued to be injected into Indonesia's petroleum and chemical industries. Meanwhile, to secure the sustainable supply of energy for future economic development, China has also carried out large-scale investment projects in the ASEAN-4's energy sector, as evident in the mining and petroleum industries in Thailand and the Philippines.

5.3 Possible Impacts on FDI in the SEACEN-7

5.3.1 Competitive Advantages of the SEACEN-7 and China in Attracting FDI

To discuss the impact of the PRC's WTO entry on FDI in the SEACEN-7, we use the UNCTAD's *World Investment Report* (2002a) to compare the performance and potential of the SEACEN-7 and China in attracting FDI. The UNCTAD employs the FDI Inward Performance Index and the Inward FDI Potential Index to evaluate various countries' performance and potential in attracting FDI. The Inward FDI Performance Index measures a country's share in global FDI divided by that country's share in global GDP, while the Inward FDI Potential Index provides a ranking of each country's potential in attracting FDI according to the mean of a country's scores in eight important economic variables. The eight variables comprising the Inward FDI Potential Index are: growth rates of GDP, per capita GDP, shares of exports to GDP, telephone lines per 1,000 inhabitants, commercial energy use per capita, shares of R&D expenditures to gross national income, share of tertiary students to total population, and country risk.⁴⁰

40. See UNCTAD (2002a).

Based on the above two indices provided by the UNCTAD (2002a), the SEACEN-7 and China are categorised by the UNCTAD into: (1) leading countries with strong FDI performance and potential, including Malaysia, Singapore and Thailand; (2) above-potential countries with high FDI performance and low potential, such as China;⁴¹ (3) below-potential countries with low FDI performance and high potential, such as Korea and Taiwan;⁴² and (4) poorly-performing countries with low FDI performance and low potential, including Indonesia and the Philippines.

In fact, important policy implications can be derived from an analysis of the competitive advantages of the SEACEN-7 and China.⁴³ According to the UNCTAD (2002a), in the short run, the PRC's entry into the WTO may raise its Inward FDI Performance Index but will not greatly raise the Inward FDI Potential Index. Therefore, in the short run, the PRC's WTO accession will not significantly affect the gap between the SEACEN-7 and China in competitive advantages in attracting FDI.

In addition, some factors should be taken into account when considering FDI in China. Following its WTO entry, China progressively practices national treatment to foreign investors and cancels super national treatment that was previously granted. This is likely to decrease preferential-policy oriented FDI. Particularly, the elimination of super national treatment will affect Taiwan, Singapore and Korea most significantly, and the U.S. and Japan might also be affected, but the impact will not be severe.⁴⁴ In the future, FDI from transnational corporations of the U.S. and Japan will continue to grow steadily in China.

41. The group of above potential economies comprises mainly countries without strong structural capabilities that have done well in attracting FDI. Most of these economies are relatively poor and lack a strong industrial base. See UNCTAD (2002a).

42. The group of below-potential economies include many rich and relatively industrialised economies that have a weak FDI performance because of policy and a tradition of low reliance on FDI and social factors or weak competitiveness.

43. For instance, Malaysia, Singapore and Thailand need to consider how to retain their leading positions in attracting FDI. For the poorly-performing Indonesia and the Philippines, an improvement in investment environment is needed to raise their inward FDI potential. Likewise, for Korea and Taiwan, countries with high potential and less than satisfactory performance in attracting FDI, they need to incorporate operation strategies and other considerations for investment to enhance their competitive advantages.

44. See Lu's (2001) research about China's WTO accession on its FDI flows.

5.3.2 Increase in Transnational Corporations' Investment in China

Although China's WTO accession should not have significant direct impact on FDI in the SEACEN countries, the growing importance of China's role in the global production network might still be a threat to the SEACEN countries.⁴⁵ Most of the major manufacturers around the world have already set up production bases in China. A newly-issued report on multinational companies' investment in China indicates that in 2003, investment forms by these companies will shift from launching new plants to merger and acquisition, from founding joint venture of wholly owned company, and from single project to industrial chain development.⁴⁶ TNCs are paying close attention to China's role in the global division of labour in high technology products and incorporating China into their global production networks.⁴⁷ Take Japanese TNCs for example. Cannon established its largest factory in China; Toshiba moved its production base for laptop computers to China; Sony will set up chip assembly factories in China; NEC closed its factories in Malaysia and moved its desktop computer production to China.

It is worth noticing that TNCs' investment strategies in China shift from moving their production lines to China to exporting new technologies to China.⁴⁸ For instance, Japanese TNCs are among the first to transfer advanced production technologies to China.⁴⁹ The operation strategy shifts from "China lags behind," to "Japan and China move simultaneously," and then to "China advances."⁵⁰

45. Roland-Holst (2003) analyse global supply network in the context of East Asia and in recognition of the catalytic role played by international capital allocation or FDI.

46. Please refer to news article in China Economic News on April 28, 2003.

47. In the 1990s, lower transport and communication costs and reduced trade barriers facilitated production sharing, and international production networks were developed. International production sharing allows firms to exploit the comparative advantages specific to the production of particular components, including economies of scale and differences in labour costs across countries. For details of such arguments, see Ng and Yeats (1999) and UNCTAD (2001).

48. Technologies applied by foreign affiliates in China are usually developed within three years. See Hu (2002).

49. Refer to news article in China Economic News on January 13, 2003, regarding the report about some Japanese companies are planning to increase the proportion of high value-added products developed and sold in China.

50. Please refer to news article in China Economic News on November 13, 2002, regarding the transfer of designing and development functions by Japan's home appliance firms to China.

Korean corporations also transfer advanced and innovative technologies to China and focus on high value-added products in the China market.⁵¹

Moreover, in the recent years, TNCs have started to develop R&D centres in China as part of their global positioning strategies. These R&D centres are still at their initial stages and are still focused on applied technologies in the manufacturing process. Nevertheless, the establishment of R&D centres at least suggests that TNCs are starting to transfer technologies to China.⁵² To vie for business opportunities in China after the WTO accession, TNCs will continue to expand direct investment in China, move their global procurement centres to China, lower their costs by purchasing made-in-China products, as well as extend their global procurement networks to China.⁵³

Following the PRC's WTO accession, Japan's integrated circuits, Korea's electrical appliances, and Europe's and the U.S.'s telecommunications products will expedite transferring production capacity, orders and factories to China.⁵⁴ As TNCs speed up relocating their investment and technologies, and establishing their regional procurement headquarters and R&D centres in China, the SEACEN countries may experience declining FDI and may thus be marginalised in TNCs' global strategies. Meanwhile, TNCs gradually upgrade their production in China from products of low-level technologies to high value-added products. As a result, China, as a competitor of the SEACEN-7 in export markets, will strengthen its export competitiveness.

Finally, many TNC's will give investment priority to production service trade in an attempt to access China service sectors, including banking, insurance, security, retail, telecommunications service, accounting, and management. The above sectors will surely become the hot spots of investment by TNC's in China after the entry into the WTO.

51. Please refer to news articles in China Economic Times on June 10, 2002, regarding the new characteristics of Korea's recent investment in China.

52. The Chinese government adopted supportive policies in assisting TNCs establishing R&D centres in China. TNCs such as JUFITSU, NEC, National /Panasonic, AT&T, and Siemens have started up more than 100 R&D centres in China. World Investment Report (2002) also provides some discussion regarding TNC's transfer of technology and R&D to China.

53. For example, TNCs such as General Electric, Hewlett-Packard, Motorola, Dell Computer, Microsoft, Kodak, and Wal-Mart have established procurement units in China.

54. For instance, Intel's motherboards, Cicso's switch routers, Sony's Play Station, and IBM's computers, have been shifted to China from their original production bases such as Malaysia, Mexico, Japan, and Britain.

5.3.3 Possible Impact on FDI Flows into the SEACEN-7

In the 1990s, due to the emergence of China, the impact of the Asian financial crisis, global excess capacity, the decline in M&A activities, and continued economic and political uncertainties in the region, FDI in the Asian region underwent structural transformation. Since the 1990s, FDI in Asia has shifted from the SEACEN-7 to China. Despite the decline of FDI in the SEACEN-7 over recent years, there are wide variations across countries. In addition, the decline in FDI to SEACEN-7 could be attributable to many other factor, including the slowdown in the world economy and a weakening of business confidence, a sharp reduction of cross border mergers and acquisitions that take place predominantly between industrialised countries.

However, China's entry to the WTO may not significantly affect the NIE-3 adversely in terms of the volume of FDI coming to the NIE-3. More FDI is expected to enter China following the PRC's WTO entry, lured by China's comparative advantages in labour-intensive products and attractive large domestic market. This is likely to pose greater competition to the ASEAN-4 than the NIE-3. Since the NIE-3 efforts in attracting FDI have shifted over the years to high-end, capital and technologically intensive manufacturing activities, and building global logistics.

After China's WTO entry, for example, FDI into Malaysia in 2002 still registered a significant decrease with FDI decreasing to RM\$ 34.79 billion from RM\$46.24 billion in 2001, while FDI in the Philippines increased by 66.9%. Approved FDI in Indonesia and Thailand also both decreased by 34.9% and 86.7%, respectively.⁵⁵ During the same period, FDI to Singapore and Taiwan also significantly decreased by 21% and 46.9%, respectively, while Korea increased by 31%.

55. Please refer to official data released on the following websites: www.bnm.gov.my, www.bsp.gov.ph, www.boj.gov.th, and www.bkpm.go.id. The decline in FDI in Thailand in 2002 was due to a number of factors notably remittance of foreign investors' investment in Financial Sector Restructuring Authority assets, financial management restructuring of some MNCs, and MNC's source of fund shifting to local domestic borrowing.

Take Japanese investment in China and the ASEAN-4 for example. According to a survey conducted by Japan Bank for International Cooperation (JBIC) in 2001,⁵⁶ 82% of Japanese enterprises regarded China as the most promising country for industrial transfer, this being the fourth time in a row that China ranked ahead of all the other countries. Among those enterprises that planned to expand overseas business in the next three years, 76.3% would like to expand their operations in China. This shows that China will become a major destination for FDI and industrial transfer from Japan.

Moreover, according to a survey conducted by Nihon Kei Zai Shimbun, Inc. (NIKKEI), since the start of 2001, Japan's manufacturing sector has either shut down or severely downsized at least 22 production bases in Thailand, Malaysia, Singapore, Indonesia and the Philippines and moved them to China. The major motivation was the low production costs and the huge consumer market in China. In addition, according to the Japan External Trade Organization's (JETRO) *2002 Investment White Paper*, the investment strategy of Japanese TNCs for the next three years will focus on speeding up investment in China, while maintaining some bases in the ASEAN.

5.4 Impact on the SEACEN-7's Investment in China

This section analyses how the PRC's WTO accession will affect the SEACEN-7's investment in China. As shown in section 5.1 of chapter five, as of 2001, investment from Taiwan, Singapore and Korea accounted for 7.4%, 4.8% and 3.2% of total foreign investment in China respectively. As China still lags behind in production technology levels, Korea, Singapore and Taiwan will continue to increase their investment in China in the future. The production and marketing mode of the past with these countries importing raw materials, processing them into final products and then exporting these products to Europe, the U.S. and Japan have gradually phased out. China takes over as the delivery hub. The upstream key components, which China is still incapable of producing, are imported from neighbouring countries or provided by nearby suppliers, forming a regional production network. Large international corporations' marketing positioning in China further promotes Korea, Singapore and Taiwan investment in China.

56. According to Japan Bank for International Cooperation (JBIC)'s survey of 792 Japanese manufacturing firms that have institutional units overseas in 2001.

In terms of FDI in services, service sectors in China will be further liberalised or deregulated after China's entry to the WTO. The financial industries, transportation sectors, and civil engineering sectors are expected to be opened for more foreign investors. In particular, investment from Korea, Singapore and Taiwan in China have already involved in the real estate, commercial, financial and other services sectors. Over the recent years, investors from the NIE-3 in finance, securities, and transportation have continuously established bases in China in preparation for entering the China market. In other words, Korea, Singapore and Taiwan have already accumulated some experiences during the opening-up process of China's services sector.

After the PRC joins the WTO, Korea, Singapore and Taiwan may continue expanding their investment and trade with China. To meet the needs of trade and investment, the NIE-3 also actively invest in China's services sector. Especially, China provides a huge market to real estate, tourism, transportation, finance, insurance, securities and other services. Singapore and Taiwan possess an advantage of close historical, linguistic and cultural linkages with China, offering them special comparative advantages in exploring China's services market. Similarly, Korea also has its niche in locational advantages and historical affinities with China. Judged from the above observations, the NIE-3 will expand their investment in China's services sector.

As for the ASEAN-4's direct investment in China, up to now, the flows of FDI from those economies to China are very limited as compared to the NIE-3, and it accounts for a small proportion of FDI in China. Following the PRC's WTO entry, the ASEAN-4 may increase their investment in China, but due to their limited investment scope and not the main destinations for the ASEAN-4's investors, the ASEAN-4's investment in China's manufacturing and service sectors is likely to grow slightly than those of the NIE-3.

CHAPTER 6

CHINA'S ECONOMIC DEVELOPMENT AFTER THE WTO ENTRY AND ITS IMPACTS

Following its WTO accession, the PRC speeded up market opening and globalisation of its economic and trade regimes. These measures in turn will bring momentum to the economic and trade development in the SEACEN countries. Some issues related to the PRC's WTO entry that may impact the SEACEN countries' economic and trade relations with the PRC are worth noting. We will take a close look at the PRC's fast economic growth and increasing industrialisation.

6.1 Impact of China's Fast Economic Growth

The PRC was one of the fastest growing economies in the world during the period from 1978 to 2001, with an average GDP growth rate of 9.4%, ahead of the 3.3% recorded by the world economy. By 2001, the PRC had become the country with the world's sixth largest GDP and fourth largest trade volume. China's WTO accession is conducive to economic growth and trade activity in the PRC, and should boost the SEACEN countries' integration with China.⁵⁷

6.1.1 The Driving Forces of China's Fast Economic Growth

Based on the PRC's economic performance over the past decades, it is widely believed that the China's outlook for economic growth remains positive. The main driving forces for the PRC's future economic growth are summarised as follows:⁵⁸

1. The PRC's market opening and reform measures over the years have laid the foundation of a market economy. The development of the market mechanism has become the main engine to continually upgrade economic efficiency and productivity.

57. Lin (2002) argues that China is likely to maintain a rapid economic growth, which is around 7-8% annual GDP growth rate, in the coming decades.

58. See Deutsche Bank (2002), Goldman Sachs (2002) and National Bureau of Statistics of China (2002).

2. As per capita income increases, consumption patterns in China have also changed significantly.⁵⁹ In particular, the new generation of consumers have higher demand for housing, automobiles, digital products and travel, thereby helping to boost the PRC's economic growth.
3. As urbanisation gradually spreads deeply in the PRC, related economic activities and infrastructure investments will increase, thereby creating a higher demand for automobile consumption and housing investment. The PRC's on-going policy to develop its western region also requires large-scale investment in infrastructure works, and that further stimulates economic growth.
4. Private enterprises are also an emerging force behind the China's economic growth. At the end of 2001, the financial assets held by the PRC's private sector amounted to RMB 11 trillion, exhibiting vibrant potential for economic growth.
5. The PRC's past performance reinforces foreign investors' confidence in its potential for further economic developments. Growing foreign investment is also expected to be one of the driving forces of the China's economic growth.

6.1.2 Limits on China's Economic Growth

Contrary to the above-mentioned factors favourable for economic growth, the PRC faces the following limits on economic growth:

1. Structural problems such as unemployment, oversupply of labour, and an aging population loom large in the PRC. Take unemployment for example. In addition to new labour force entering the market, reform of state-owned enterprises and government agencies, structural adjustments, and excess supply of labour in rural villages continue to put pressure on unemployment.
2. The China's per capita share of natural resources is only one third of the world average. Especially, the shortage of oil and a coal-centred energy supply and consumption pattern may create environmental hazards and curtail economic development.

59. See National Bureau of Statistics of China (2002).

3. The PRC still lags far behind international standards in manufacturing equipment and technologies. The ratio of R&D expenditure to GDP is significantly lower than that of advanced countries and newly industrialised countries. Inadequate investment in R&D imposes a bottleneck on economic development.
4. Problems associated with imbalanced development across regions and increasingly skewed income distribution that have surfaced in the PRC, eroding social stability and economic development.⁶⁰

6.1.3 The SEACEN Countries' Growing Dependence on China

Businesses and governments of the SEACEN countries are divided over whether the China's WTO entry will boost or constrain the SEACEN countries' economic development. Some argue that transnational corporations, coveting the PRC's huge domestic market and cheap production costs, will move their production bases to the PRC in increasing numbers. Thus, FDI will continue to move out of the SEACEN countries and shift to China,⁶¹ causing the hollowing out of the SEACEN countries' manufacturing sectors. In addition, the China's cheap exports may take over the export markets of the SEACEN and emerging market economies, hampering their economic growth. Therefore, an emerging China poses a serious threat to the SEACEN countries.⁶²

Others, however, maintain that the PRC's fast economic growth provides an extensive market for its neighbouring countries. It will also create opportunities for the SEACEN countries to upgrade their industrial structures by moving the less competitive labour-intensive industries to China. In other words, the PRC will bring along the SEACEN countries and even Asia in the course of economic development.

In reality, China has become an integral part of the production chain of Asia's manufacturing industry, importing components from other Asian countries and then exporting final products to advanced countries. After the China's WTO accession, FDI to China continues to increase, which stimulates the production of PRC-made exports. The PRC's WTO entry also reduces trade barriers

60. See Jin (2002).

61. See Kwan (2002).

62. Goldman & Sachs' report (2002) doubts if the statement is based on facts.

imposed on PRC exports, and thus, the China's export capacity is greatly boosted. On the other hand, the PRC's market opening will present new opportunities for the SEACEN countries and promote the intra-regional trade in Asia.

Taking a medium- and long-term perspective, economic development in China provides both threats and opportunities for the SEACEN countries, and the SEACEN-7's economic dependence on China will be deepened. Along with these developments, enhancing regional economic cooperation and letting the undervalued renminbi float become urgent issues.

6.2 Impact of a Newly Industrialised China

China's exports of manufacturing products have increased tremendously over recent years. After the PRC joins the WTO, to vie for market shares, transnational corporations expedite investment in and technology transfers to China, as well as establish procurement headquarters and R&D centres there. China is moving from manufacturing labour-intensive products to processing high-technology products. Clearly, the PRC's manufacturing sector is developing a new niche beyond labour-intensive products.

6.2.1 China's Strengths and Weaknesses in Manufacturing

Compared with other emerging market economies, the PRC's niche lies in the following aspects:

1. China's labour costs are among the lowest. The weekly wages of China's manufacturing sector are lower than those in most SEACEN-7 countries.⁶³ The main reason for China's persisting low levels of labour costs in the manufacturing sector has been the long-term abundant supply of labour force.
2. With the implementation of the nine-year mandatory education, the average education level of workers will gradually rise. Labour force quality will rise correspondingly.⁶⁴

63. Shafaceddin (2002) compared the ratio of wages and unit labour cost of the manufacturing sector for selected countries and China, and found that average wages for China's manufacturing sector is much lower than those for all other countries.

64. For example, the number of student enrolled in higher education institutions in 1980 was around 1.14 million, and has increased to 5.56 million in 2000. See National Bureau of Statistics of China (2002).

3. China has removed most of the bottlenecks in domestic infrastructure works. Energy, transportation, and communication sectors now can provide necessary support to the manufacturing sector.
4. The basic industrial infrastructure has been established in China. With the exception of a few high-tech equipment and electric components, most raw material, equipment and components needed in the manufacturing sector that can be produced in China at a cost lower than imports.
5. Due to the massive size of the domestic market, the production volume of electrical appliances and telecommunications equipment have grown rapidly, making the PRC one of the world's leading production centres in electronic consumer products, computer hardware and telecommunications products.

However, the PRC still lags behind advanced countries in manufacturing technologies.⁶⁵

1. Of all the PRC's manufacturing exports, 51% are processed products. The supply of some key raw materials depends heavily on imports. For example, 100% optical fiber is imported, above 80% integrated circuits, oil and oil products are imported, and 57% machinery products are imported.
2. The China's manufacturing sector lags behind in the production and operational scale of enterprises. In 2001, only eleven PRC enterprises were ranked among the world's top 500 enterprises, but none of these eleven enterprises were in the manufacturing sector.
3. A wide gap exists between the PRC's R&D capacity and that of advanced countries. According to the statistics of the PRC's Ministry of Science and Technology, the PRC's R&D expenditure accounted for only 1% of GDP in 2000.⁶⁶ Without control over core technologies, the China's manufacturing sector will not be able to independently upgrade its industrial structure and raise its competitive edge, thus reducing the profits of "made in China" products. In other words, the lack of core technologies has become the most severe bottleneck in the development of "made in China" products.

65. See Lu (2002).

66. For detailed discussion, please see Great Wall Enterprise Institute (2002).

6.2.2 From a Processing and Assembly Place to a Manufacturing Base

From the perspective of the global manufacturing chain, “made in China” products have comparative advantages mainly in manufacturing and processing. Over recent years, transnational corporations have quickened their pace in production technology transfer, R&D introduction and market strategy transplanting to China. This shows that China is undergoing a transformation from a processing and assembly plant to a manufacturing base.⁶⁷

The PRC is changing its role from a processing and assembly plant to a manufacturing base, starting to produce more complicated components and final manufacturing products. In addition, the labour forces in the PRC are highly educated and demand lower wages than in other developing countries.⁶⁸ Hence, in recent years, China’s potential to become the world’s supply base in manufacturing products has attracted global attention. The PRC is dubbed “World Factory,” taking the lead in the production of some 80 products, including textile, clothes, household electrical appliances, medicine and electronic components.⁶⁹

6.2.3 Competitive Pressure on the SEACEN Countries’ Exports

After joining the WTO, the PRC will be able to maintain its comparative advantage in labour-intensive products with almost unlimited supply of low-cost labour. The PRC is also raising its production of high-technology products. The PRC’s manufacturing products pose a serious threat to the SEACEN countries, whose local markets are likely to be awash with cheap “made in China” imports in the future. In addition, the China’s WTO entry will further attract foreign capital to move away from neighbouring countries to China, in support of the PRC’s exports. In recent years, China ran a huge trade surplus with the rest of the world and China’s balance of payments is clearly in surplus, implying that

67. According to the Development Bank of Japan’s report, Japan’s technology competitiveness is superior to China in thirteen industries such as ship making, steel, and chemicals. On the contrary, Japan is inferior to China in ten industries such as artificial fabric and home appliances in terms of price competitiveness (2002).

68. Please refer to Trade and Development Report, UNCTAD (2002b).

69. According to the report of the Grand Wall Institute (2002), China’s manufacturing industry accounted for 34.4% of its GDP and 5% in world manufacturing volume in 2002, ranking fourth in the world.

the renminbi is undervalued. In addition, China has been criticised for intentionally undervaluing the renminbi to strengthen export competitiveness, thus causing negative effects on the SEACEN countries and other developing countries. As a result, the undervaluation of the renminbi is an issue that needs to be emphasised.

CHAPTER 7

CONCLUSIONS AND POLICY IMPLICATIONS

7.1 Conclusions

Our main findings are summarised as follows:

1. Regarding the development of trade relations between the SEACEN-7 and China, we found that Korea, Singapore and Taiwan exhibit a higher degree of intra-industry trade with China than Indonesia, Malaysia, the Philippines and Thailand. This mainly reflects that Korea, Singapore and Taiwan have higher degrees of horizontal division of labour with China, and larger scale of direct investment in China.
2. To study how China's WTO tariff concessions may affect the SEACEN-7's exports to China, we find that most of the tariff cuts are related to agricultural products, clothing and textiles, and motor vehicles and parts. We then measure the rank correlation coefficient between the structure of China's WTO tariff concessions and the structure of the SEACEN-7's exports to China. The result shows that the coefficients are mostly negative and marginal, indicating that the magnitude of China's tariff reduction is in minor association with the structure of the SEACEN-7's exports to China. That implies that most of the SEACEN-7's exports to China are not likely to gain great advantages from China's tariff reduction.
3. We also measure the impacts of China's post-WTO removal of non-tariff barriers, which includes lifting import licensing, eliminating import quota licensing and removing import tendering, on the SEACEN-7's exports to China. We find that Korea gains the most benefits, followed by Thailand, Singapore, Malaysia, Taiwan, Indonesia and the Philippines. This shows that China's post-WTO removal of non-tariff barriers, to some extent, has different impacts on each SEACEN-7 individual country due to its different export structure to China.
4. By adopting the Revealed Comparative Advantage Index (RCA) and market share (MS), we find that export product categories from Indonesia, Malaysia, the Philippines, and Thailand to China with comparative advantages are mostly primary products such as animal and plant processed products. Taiwan and Korea have comparative advantages mainly in textiles. Mineral fuels

are Singapore's major export product categories but their comparative advantages are diminishing. As for machinery and electrical equipment, Taiwan and Korea enjoy relatively strong comparative advantages and market shares in the China market.

5. In addition, we use the rank correlation coefficient for the RCA index of the SEACEN-7 to measure the similarity in their export structures. The result shows that Taiwan and Korea exhibit the highest degree of similarity in the structures of their exports to China, and therefore are likely to engage in more intense competition in post-WTO China.
6. The expansion capability of China's exports upon its accession to the WTO will increase the pressure on export competition between the SEACEN-7 and China in the U.S. market. We find that the SEACEN-7 face increasing competition from China in the U.S. market. However, Indonesia has comparative advantages no less than China in coco; Malaysia in animal and vegetable fats and oil, fuels and mineral oil, and organic chemicals; Thailand in aquatic animal products; Korea in fuels and mineral oil; Singapore in fuels and mineral oil, vehicles and parts, and aircraft and parts; Taiwan in steel, and vehicles and parts.

We further study changes in individual countries' RCAs in major export product categories to the U.S. market. China experiences rising RCAs in all products except knitted or crocheted fabrics and other clothing. The RCAs of knitted or crocheted fabrics and other clothing drop in selected SEACEN countries except for Indonesia and Thailand; however, Korea still possesses strong competitiveness in this category. Taiwan's RCAs in plastics, shoes, boots, furniture, toys, and sports products decline significantly. In terms of the correlation of export structure similarities among the SEACEN-7 and the PRC in the U.S. market, a higher degree of similarity with China is observed in Taiwan, Thailand and the Philippines among the SEACEN-7 and, therefore, these countries are likely to encounter more competition with China's products.

7. Our research also studied export competition between the SEACEN-7 and China in the Japanese market. We also find increasing threat from China in the Japanese market for most products, except that Korea enjoys no less competitive advantages than China in fuels and mineral oil, steel, and machinery equipment; Singapore in coco, and fuels and mineral oil; Taiwan

in steel and machinery equipment; Indonesia in ores and slag, rubber, and paper products; the Philippines in mineral fuels and oil; Thailand in food and prepared animal fodder.

In terms of the RCAs of individual countries in the Japanese market, China's RCAs generally rise as in the U.S. market. China's RCA of knitted or crocheted fabrics, which declines in the U.S. market, rises in the Japanese market. The RCAs of the SEACEN-7 and China in machinery and electrical equipment generally rise, with Singapore's RCAs in these two categories dropping but still relatively high. An analysis of the similarities in the export structures between the SEACEN-7 and China in the Japanese market reveals that Taiwan's export structure is most similar to China, followed by Korea's. In other words, Korea and Taiwan are likely to encounter a higher degree of competition with China's products in the Japanese market.

8. With respect to foreign direct investment, after the PRC joins the WTO, to vie for market shares, transnational corporations will expedite investment in and technology transfers to China, and establish procurement and R&D centres there. This move will exert a negative impact on the SEACEN countries' appeal to FDI. In addition, transnational corporations gradually upgrade their production in China from low technology to high value-added products, enhancing the PRC's export competitiveness. As most of the SEACEN countries depend heavily on foreign capital inflows, their competition with the PRC in attracting FDI will further intensify after the PRC's WTO entry. It is also noted that as the PRC further opens its services market after joining the WTO, Korea, Singapore, and Taiwan begin to increase their investment in China.
9. In sum, the PRC's fast economic growth, growing role in the world's supply base of manufacturing, magnetic appeal to international technology and capital, and aggressive expansion of export have caught the world's attention over the past decade. These factors have made it an urgent issue for the SEACEN countries to make use of the business opportunities in China to build their own niches. Only by striving to raise competitiveness and become an integral part of the global division of labour can the SEACEN countries avoid being excluded from the global supply chain. In addition, each SEACEN country has its own unique competitive advantage while closely related to and complementing each other in economy and trade. Regional economic

cooperation should be promoted to minimise the negative impact from the PRC's entry into the WTO.⁷⁰

7.2 Policy Implications

Policy implications of our research works are summarised as follows:

1. The SEACEN-7 are encouraged to adjust their export structures and build export competitiveness

After entry to the WTO, China could reinforce its key export strength and sharpen its comparative advantage. For SEACEN-7 countries, given their trade structure proximity to China, the major concern arising from China's export is growing competitive pressure in the third markets. Our findings suggest that SEACEN-7's exports have been exposed to increasing competition from China in both the US and Japanese markets in a number of product categories. These results reveal that SEACEN-7 countries need to adjust their industrial and export structures in response to the growing export capacity of China. To meet this challenge, domestic companies in the SEACEN-7 should put more emphasis on building export competitiveness by developing new products, speeding up technological upgrades and exploring their product niches.

2. Carefully reviewing the implementation of China's accession commitments

After entering the WTO, China has committed to undertake a series of measures to provide a more predictable environment for trade and foreign investment in accordance with WTO rules. However, the fulfillment and enforcement of the accession commitment is not easy, and will take a long time to complete. Since China is an increasingly important market for the SEACEN-7, the implementation of China's commitments should be carefully examined to ensure that China will truly fulfill its commitments. For instance, after China's accession commitments, China's IPR legal system is still not fully consistent with the WTO's TRIPS requirements. This disadvantage will hurt investment by foreign investors in information and technology industries in China.

70. The framework of economic cooperation can contain several major elements, such as simplification of customs procedures, holding of trade policy and business sector dialogues, mutual acceptance of standards and conformity assessment procedures.

3. Improving the SEACEN countries' investment environments

After entry into the WTO, China is likely to attract more FDI at the expense of Asian economies. China's WTO entry has the potential to hurt the region, by possibly diverting foreign direct investment that would have otherwise gone to the SEACEN countries. However, the recent drop in FDI flows to the SEACEN countries were not totally related to China's increasing attractiveness as an FDI destination. Particularly, in the area of information technology industries, the SEACEN-7 play an important role in the global supply chain. Several SEACEN countries are developing its Internet, telecommunications and biotech industries by drawing on its current high-tech industries. China and the SEACEN-7 hold vital niches for their own industries to attract major multinational enterprises have invested. Therefore, the government policy of the SEACEN-7 should remain committed to position their domestic investment environment as an attractive destination by providing a cost-competitive business, preferential trade schemes, clusters of economic activity and industrial parks, sound infrastructure and legal frameworks, and reducing uncertainties for foreign investors.

4. Enhancing SEACEN countries' trade dispute-resolution mechanism and safeguard measures

After China's WTO accession, domestic market opening will increase China's general import demand and induce competition between the domestic products and imported products from the SEACEN-7 countries. Therefore, the growing trade conflicts and trade disputes between the SEACEN-7 and China are expected. China will not only launch their anti-dumping charges, countervailing and safeguard measures against products imported from the SEACEN countries, but also guide domestic enterprises to actively defend their rights and interests in investigation cases against Chinese exports. Moreover, the rapid growth in China's exports to the SEACEN countries may heat up competition with locally made commodities and possible disruptive effects on domestic producers, and increase SEACEN countries' tendency to adopt anti-dumping measures. The SEACEN countries may adopt safeguard measures or impose restrictions on China's imports.

After China's WTO entry, more trade conflicts and disputes can be expected, so governments and enterprises in the SEACEN countries should train themselves to closely follow market changes and detect possible anti-dumping cases early. In order to resolve coming trade disputes between the SEACEN-7 and China,

the SEACEN countries hereby are encouraged to enhance and improve their review mechanism to deal with the safeguard measures imposed by China government on imports of certain products. The SEACEN countries should make good use of WTO safeguards against China's dumping and enhance their own countermeasures against floods of Chinese imports.

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**APPENDIX I: CLASSIFICATION OF
COMMODITY BY HS CODE**

HS Code	Trade Commodities and Definition
00	Special (Agricultural products)
03	Fish and crustaceans, mollusca and other aquatic invertebrates (Agricultural products)
07	Edible vegetables and certain roots and tubers (Agricultural products)
08	Edible fruit and nuts; peel of citrus fruit or melons (Agricultural products)
09	Coffee, tea, mate and spices (Agricultural products)
10	Cereals (Agricultural products)
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medical plants; straw and fodder (Agricultural products)
15	Animal or vegetable fats and oil and their cleavage products; prepared edible fats; animal or vegetable waxes (Agricultural products)
16	Preparations of meat, of fish or of crustaceans, mollusks or other aquatic invertebrates (Food and beverages)
17	Sugars and sugar confectionery (Food and beverages)
18	Cocoa and cocoa preparations (Food and beverages)
19	Preparations of cereals, flour, starch or milk; pastry cooks' products (Food and beverages)
20	Preparations of vegetables, fruit, nuts or other parts of plants (Food and beverages)
22	Beverages, spirits and vinegar (Food and beverages)
23	Residues and waste from the food industries; prepared animal fodder (Food and beverages)

HS Code	Trade Commodities and Definition
24	Tobacco and manufactured tobacco substitutes (Food and beverages)
26	Ores, slag and ash (Mining products)
27	Mineral fuels, mineral oil and products of their distillation; bituminous substances; mineral waxes (Mining products)
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes (Chemicals)
29	Organic chemicals (Chemicals)
31	Fertilizers (Chemicals)
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; putty and other mastics; inks (Chemicals)
37	Photographic or cinematographic goods (Chemicals)
38	Miscellaneous chemical products (Chemicals)
39	Plastics and articles thereof (Chemicals)
40	Rubber and articles thereof (Chemicals)
41	Raw hides and skins (other than fur skins) and leather (Light industry products)
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut) (Light industry products)
44	Wood and articles of wood; wood charcoal (Wood and paper)
47	Pulp of wood or of other fibrous cellulosic material; waste and scrap of paper or paperboard (Wood and paper)
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard (Wood and paper)

HS Code	Trade Commodities and Definition
49	Printed books, newspapers, pictures and other products of the printing industry; manuscripts, typescripts and plans (Wood and paper)
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric (Textiles)
52	Cotton (Textiles)
54	Man-made filaments (Textiles)
55	Man-made staple fabric (Textiles)
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use (Textiles)
60	Knitted or crocheted fabrics (Textiles)
61	Articles of apparel and clothing accessories, knitted or crocheted (Textiles)
62	Articles of apparel and clothing accessories, not knitted or crocheted (Textiles)
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags (Textiles)
64	Footwear, gaiters and the like; parts of such articles (Light industry products)
67	Prepared feathers and down and articles made of feathers or of down; artificial flower; articles of human hair (Light industry products)
70	Glass and glassware (Pottery products)
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metals, and articles thereof; imitation jewellery; coin (Other)
72	Iron and steel (Basic metals)

HS Code	Trade Commodities and Definition
73	Articles of iron or steel (Basic metals)
74	Copper and articles thereof (Basic metals)
75	Nickel and articles thereof (Basic metals)
76	Aluminium and articles thereof (Basic metals)
82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal (Basic metals)
83	Miscellaneous articles of base metal (Basic metals)
84	Nuclear reactors, boilers machinery and mechanical appliances; parts thereof (General and precision machinery)
85	Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles (Electrical machinery)
86	Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signality (Transportation machinery)
87	Vehicles other than railway or tramway rolling-stock, and parts and accessories thereof (Transportation machinery)
88	Aircraft, spacecraft and parts thereof (Transportation machinery)
89	Ships, boats and floating structures (Transportation machinery)
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof (General and precision machinery)

HS Code	Trade Commodities and Definition
91	Clocks and watches and parts thereof (General and precision machinery)
94	Furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not else where specified or included; illuminated signs, illuminate (Light industry products)
95	Toys, games and sports requisites; parts and accessories thereof (Light industry products)
98	Miscellaneous (Other)
99	Other Special Imports Provisions (Other)

APPENDIX II: TRADE MEASUREMENT INDICATORS

1. Market Share (MS)

Market share is measured as the percentage of specific market w 's import of product i from country j in its total import of product i . The corresponding formula is: .

$$MS_{ij} = \frac{M_{ij}}{M_{iw}}$$

where

M_{ij} = specific market w 's import of product i from country j

M_{iw} = specific market w 's total import of product i

2. Revealed Comparative Advantage Index (RCA)

In order to measure the RCA of a country in a certain product, Balassa (1965) compared the share of that product in that country's exports to the share of that product in the world market. In this report, RCA_{ij} describes the quotient of country j 's market share of product i in the specific market w divided by country j 's market share of all products in the market w . The formula is:

$$RCA_{ij} = \frac{\frac{M_{ij}}{M_{iw}}}{\frac{M_j}{M_w}}$$

Where

M_{ij} = specific market w 's import of product i from country j

M_{iw} = specific market w 's total import of product i

M_j = specific market w 's import from country j

M_w = specific market w 's total import

3. Intra-industry Trade (IIT)

To measure the IIT, this paper conducts the adjustment method developed by Aquino(1978). The formula for IIT is:

$$Q_j = \left\{ 1 - \frac{|X_{ij}^e - M_{ij}^e|}{(X_{ij}^e + M_{ij}^e)} \right\} \times 100$$

$$Q_j = \left\{ 1 - \frac{\sum_i |X_{ij}^e - M_{ij}^e|}{\sum_i (X_{ij}^e + M_{ij}^e)} \right\} \times 100$$

where

$$X_{ij}^e = X_{ij} \times \frac{\sum_i (X_{ij} + M_{ij})}{\sum_i (X_{ij} + X_{ij})}$$

$$M_{ij}^e = M_{ij} \times \frac{\sum_i (X_{ij} + M_{ij})}{\sum_i (M_{ij} + M_{ij})}$$

where

X_{ij} = Country j 's export of product i to specific market w

M_{ij} = Country j 's import of product i from specific market w

This index can take values between 0 and 100, with the degree of intra-industry trade increasing along with the value of the index.

APPENDIX TABLE

Appendix Table 2.1.1 Real GDP Growth and
Trade Dependence of China

Year	Real GDP growth rate	GDP (1)	Value of trade (2)=(3)+(4)	Value of exports (3)	Value of imports (4)	Trade Dependence (2)(1)	Exports Dependence (3)(1)	Imports Dependence (4)(1)
	%	US\$ billion	US\$ billion	US\$ billion	US\$ billion	%	%	%
1990	3.8	388	115.4	62.1	53.3	29.8	16.0	13.8
1991	9.2	406	135.7	71.9	63.8	33.4	17.7	15.7
1992	14.2	483	165.5	84.9	80.6	34.3	17.6	16.7
1993	13.5	601	194.1	91.0	103.1	32.3	15.1	17.1
1994	12.6	543	236.7	121.0	115.7	43.6	22.3	21.3
1995	10.5	700	280.9	148.8	132.1	40.1	21.2	18.9
1996	9.6	817	289.9	151.0	138.8	35.5	18.5	17.0
1997	8.8	898	324.9	182.7	142.1	36.2	20.3	15.8
1998	7.8	946	324.1	183.7	140.4	34.3	19.4	14.8
1999	7.1	991	361.0	195.2	165.8	36.4	19.7	16.7
2000	8.0	1,080	474.3	249.2	225.1	43.9	23.1	20.8
2001	7.3	1,159	510.2	266.7	243.6	44.0	23.0	21.0

Source: *China Statistical Yearbook 2002*, China Statistics Press.

Appendix Table 2.1.2 Trade Balance and Dependence of China by Selected Trade Partner

Year	1990	1995	1996	1997	1998	1999	2000	2001
Trade balance of China with selected trade partner (US\$million)								
North America	-2,457	7,446	9,572	16,319	20,853	22,629	29,184	27,436
Japan	1,423	-538	1,705	2,829	1,411	-1,358	91	2,268
European Union	-4,363	-2,158	-42	4,626	7,403	4,835	7,342	5,326
Korea	234	-3,605	-4,982	-5,762	-8,755	-9,415	-11,921	-10,851
Taiwan	-3,629	-11,686	-13,378	-13,036	-12,827	-15,586	-20,457	-22,338
Singapore	1,127	103	148	-64	-325	442	695	652
Thailand	453	141	-636	-503	-1,253	-1,345	-2,136	-2,209
Malaysia	-495	-790	-873	-565	-1,080	-1,932	-2,915	-2,982
Philippines	125	754	642	1,007	982	473	-213	-324
Indonesia	-424	-614	-853	-832	-1,290	-1,272	-1,341	-1,041
Hong Kong	12,392	27,393	25,080	36,801	32,116	30,024	35,099	37,079
Exports of China to selected trade partner / Total exports of China (%)								
North America	9.0	17.6	18.7	18.9	21.8	22.8	22.2	21.6
Japan	14.5	19.1	20.4	17.4	16.2	16.6	16.7	16.9
European Union	7.6	12.8	13.1	13.0	15.3	15.5	15.3	15.4
Korea	0.6	4.5	5.0	5.0	3.4	4.0	4.5	4.7
Taiwan	1.2	2.1	1.9	1.9	2.1	2.0	2.0	1.9
Singapore	3.2	2.4	2.5	2.4	2.1	2.3	2.3	2.2
Thailand	1.3	1.2	0.8	0.8	0.6	0.7	0.9	0.9
Malaysia	0.5	0.9	0.9	1.1	0.9	0.9	1.0	1.2
Philippines	0.3	0.7	0.7	0.7	0.8	0.7	0.6	0.6
Indonesia	0.6	1.0	0.9	1.0	0.6	0.9	1.2	1.1
Hong Kong	42.9	24.2	21.8	24.0	21.1	18.9	17.9	17.4
Imports of China from selected trade partner / Total imports of China (%)								
North America	15.1	14.2	13.5	12.9	13.7	13.2	11.6	12.4
Japan	14.2	22.0	21.0	20.4	20.2	20.4	18.4	17.6
European Union	17.0	16.1	14.3	13.5	14.8	15.4	13.7	14.6
Korea	0.2	7.8	9.0	10.5	10.7	10.4	10.3	9.6
Taiwan	8.2	11.2	11.7	11.6	11.9	11.8	11.3	11.2
Singapore	1.6	2.6	2.6	3.1	3.0	2.5	2.2	2.1
Thailand	0.7	1.2	1.4	1.4	1.7	1.7	1.9	1.9
Malaysia	1.6	1.6	1.6	1.7	1.9	2.2	2.4	2.5
Philippines	0.2	0.2	0.3	0.2	0.4	0.5	0.7	0.8
Indonesia	1.5	1.6	1.6	1.9	1.8	1.8	2.0	1.6
Hong Kong	26.7	6.5	5.6	4.9	4.7	4.2	4.2	3.9
Exports of selected trade partner to China / Total exports of selected trade partner (%)								
North America	1.2	1.8	1.7	1.6	1.7	1.6	1.7	2.2
Japan	2.1	4.9	5.3	5.2	5.2	5.6	6.3	7.7
European Union	0.5	0.8	0.9	0.9	0.9	0.9	1.0	1.2
Korea	*1.4	7.4	8.9	10.0	9.1	9.5	10.7	12.1
Taiwan	*9.1	16.0	16.5	16.8	16.6	17.5	17.6	19.6
Singapore	*1.5	2.3	2.7	3.2	3.7	3.4	3.9	4.4
Thailand	1.2	2.9	3.4	3.0	3.2	3.8	4.1	4.4
Malaysia	2.1	2.6	2.4	2.4	2.7	2.7	3.1	4.3
Philippines	0.8	1.2	1.6	1.0	1.2	1.6	1.7	2.4
Indonesia	3.2	3.8	4.1	4.2	3.8	4.1	4.5	6.3
Hong Kong	24.7	33.3	34.3	34.9	34.4	33.4	34.6	36.9
Imports of selected trade partner from China / Total imports of selected trade partner (%)								
North America	2.7	5.5	5.8	6.4	7.0	7.2	7.6	8.4
Japan	5.1	10.7	11.6	12.3	13.2	13.8	14.5	16.6
European Union	0.9	1.7	1.8	2.0	2.1	2.3	2.6	2.8
Korea	*4.2	5.5	5.7	6.9	7.0	7.4	8.0	9.4
Taiwan	*1.8	3.0	3.0	3.4	3.9	4.1	4.4	5.5
Singapore	3.4	3.2	3.4	4.3	4.6	5.1	5.3	6.2
Thailand	3.3	3.0	2.7	3.6	4.2	5.0	5.5	6.0
Malaysia	1.9	2.2	2.4	2.8	3.2	3.3	3.9	5.1
Philippines	1.4	2.3	1.9	2.5	4.2	3.2	2.3	3.0
Indonesia	3.0	3.7	3.7	3.6	3.3	5.2	6.0	10.1
Hong Kong	36.7	36.2	37.1	37.7	40.6	43.6	43.1	43.5

Source: Direction of Trade Statistics 2001 Yearbook/IMF & China customs. *1991 data

APPENDIX TABLE 2.13
COMPOSITION OF CHINA'S TRADE BY COMMODITY

Item	Total	Primary goods			Manufactured goods					
		food and live animals used chiefly for food	mineral fuels, lubricants and related materials		chemicals and related products	light and textile products, rubber products, mineral products	machinery and transport equipment	miscellaneous products	products not otherwise classified	
Year	Exports									
1990	100	25.6	10.6	8.4	74.4	6.0	20.3	9.0	20.4	18.7
1991	100	22.5	10.1	6.6	77.5	5.3	20.1	10.0	23.1	19.0
1992	100	20.0	9.8	5.5	80.0	5.1	19.0	15.6	40.3	0.0
1993	100	18.2	9.2	4.5	81.8	5.0	17.9	16.7	42.3	0.0
1994	100	16.3	8.3	3.4	83.7	5.2	19.2	18.1	41.3	0.0
1995	100	14.4	6.7	3.6	85.6	6.1	21.7	21.1	36.7	0.0
1996	100	14.5	6.8	3.9	85.5	5.9	18.9	23.4	37.4	0.0
1997	100	13.1	6.1	3.8	86.9	5.6	18.8	23.9	38.6	0.0
1998	100	11.2	5.7	2.8	88.8	5.6	17.7	27.3	38.2	0.0
1999	100	10.2	5.4	2.4	89.8	5.3	17.1	30.2	37.2	0.0
2000	100	10.2	4.9	3.2	89.8	4.9	17.1	33.1	34.6	0.1
2001	100	9.9	4.8	3.2	90.1	5.0	16.5	35.7	32.7	0.2
Year	Imports									
1990	100	18.5	6.3	7.7	81.5	12.5	16.7	31.6	3.9	16.9
1991	100	17.0	4.4	7.8	83.0	14.5	16.4	30.7	3.8	17.5
1992	100	16.4	3.9	7.2	83.6	13.8	23.9	38.9	6.9	0.0
1993	100	13.7	2.1	5.2	86.3	9.3	27.4	43.3	6.2	0.0
1994	100	14.3	2.7	6.4	85.7	10.5	24.3	44.5	5.9	0.6
1995	100	18.5	4.6	7.7	81.5	13.1	21.8	39.9	6.3	0.5
1996	100	18.3	4.1	7.7	81.7	13.0	22.6	39.4	6.1	0.5
1997	100	20.1	3.0	8.4	79.9	13.6	22.6	37.1	6.0	0.6
1998	100	16.4	2.7	7.6	83.6	14.4	22.2	40.5	6.0	0.5
1999	100	16.2	2.2	7.7	83.8	14.5	20.7	41.9	5.9	0.8
2000	100	20.8	2.1	8.9	79.2	13.4	18.6	40.8	5.7	0.7
2001	100	18.8	2.0	9.1	81.2	13.2	17.2	43.9	6.2	0.7

Source: China Statistics Press. *China Statistical Yearbook 2002*

Appendix Table 2.2.1 Major Trading Partners of the SEACEN-7

SEACEN-7	Rank and percentage share of exports*					Rank and percentage share of imports*				
	1st (%)	2nd (%)	3rd (%)	4th (%)	China (%)	1st (%)	2nd (%)	3rd (%)	4th (%)	China (%)
Taiwan	USA	China	European Union	ASEAN	2nd	Japan	USA	ASEAN	European Union	6th
Share	22%	22%	15%	12%	22%	24%	17%	15%	12%	6%
Korea	USA	China	Japan	European Union	2nd	Japan	USA	ASEAN	China	4th
Share	21%	12%	11%	9%	12%	19%	16%	12%	9%	9%
Singapore	ASEAN	USA	European Union	Japan	5th	ASEAN	USA	European Union	Hong Kong	6th
Share	25%	15%	14%	12%	7%	25%	15%	14%	8%	5%
Thailand	USA	ASEAN	European Union	Japan	6th	Japan	ASEAN	USA	European Union	5th
Share	21%	19%	16%	14%	5%	24%	17%	12%	11%	7%
Malaysia	ASEAN	USA	European Union	Japan	6th	ASEAN	Japan	USA	European Union	6th
Share	24%	20%	14%	13%	4%	22%	19%	16%	13%	5%
Philippines	USA	European Union	Japan	ASEAN	8th	Japan	USA	ASEAN	European Union	8th
Share	28%	20%	16%	15%	2%	21%	17%	16%	11%	3%
Indonesia	Japan	ASEAN	European Union	USA	6th	ASEAN	Japan	European Union	USA	5th
Share	31%	20%	18%	18%	4%	18%	16%	12%	10%	6%

* The percentage share is the exports/imports of an individual SEACEN-7 country to/from its largest 4 export/import partners and China divided by the total export/import of the country.

Source: Official Statistics of individual SEACEN-7 countries in 2001.

Appendix Table 5.1.1 Inward FDI of China by Country

Year	Hong Kong		U.S.A.		Europe		Japan		Taiwan		Singapore		Korea		Malaysia		Thailand		Philippine		Indonesia		Others	
	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)	Amount	(%)
1991	2,579	55.3	331	7.1	286	6.1	610	13.1	472	10.1	58	1.2	0	0	2	0	20	0.4	6	0.1	2	0	301	
1992	7,706	68.2	519	4.6	323	2.9	748	6.6	1,053	9.3	126	1.1	120	1.1	25	0.2	84	0.7	17	0.2	20	0.2	551	
1993	17,445	62.8	2,068	7.4	788	2.8	1,361	4.9	3,139	11.3	492	1.8	381	1.4	91	0.3	234	0.8	123	0.4	66	0.2	1,583	
1994	19,823	58.4	2,491	7.3	1,660	4.9	2,086	6.1	3,391	10	1,180	3.5	726	2.1	201	0.6	235	0.7	140	0.4	116	0.3	1,897	
1995	20,185	53.4	3,084	8.2	2,266	6	3,212	8.5	3,165	8.4	1,861	4.9	1,047	2.8	259	0.7	288	0.8	106	0.3	112	0.3	2,221	
1996	20,852	49.5	3,444	8.2	3,003	7.1	3,692	8.8	3,482	8.3	2,247	5.3	1,504	3.6	460	1.1	328	0.8	55	0.1	94	0.2	2,974	
1997	21,551	47.6	3,461	7.6	4,560	10.1	4,390	9.7	3,342	7.4	2,607	5.8	2,228	4.9	382	0.8	194	0.4	156	0.3	80	0.2	2,306	
1998	18,508	40.7	3,898	8.6	4,309	9.5	3,400	7.5	2,915	6.4	3,404	7.5	1,803	4	340	0.7	205	0.5	179	0.4	69	0.2	6,433	
1999	16,363	40.6	4,216	10.5	4,797	11.9	2,973	7.4	2,599	6.4	2,642	6.6	1,275	3.2	238	0.6	148	0.4	117	0.3	129	0.3	4,822	
2000	15,500	38.1	4,384	10.8	4,765	11.7	2,916	7.2	2,297	5.6	2,172	5.3	1,490	3.7	203	0.5	204	0.5	111	0.3	147	0.4	6,526	
2001	16,717	35.7	4,433	9.5	4,484	9.6	4,348	9.3	2,980	6.4	2,144	4.6	2,152	4.6	263	0.6	194	0.4	209	0.4	160	0.3	8,794	
1991-2001	177,229	47.1	32,329	8.6	31,241	8.3	29,736	7.9	28,855	7.7	18,933	5	12,726	3.4	2,464	0.7	2,134	0.6	1,219	0.3	995	0.3	38,408	
1979-2001	187,014	47.3	34,465	8.7	31,821	8.1	32,149	8.1	29,140	7.4	19,135	4.8	12,478	3.2	2,468	0.6	2,187	0.6	1,238	0.3	997	0.3	42,134	