

China and India: Challenges and Opportunities for ASEAN from Japanese Perspectives

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Key words: FTA, inter-industry trade, intra-industry trade

Abstract

The rise of China and India as an industrial power is now regarded as an opportunity rather than as a threat for ASEAN. The paper shows that whether this view is consistent with the underlying economic force or not depends on the country in question.

With respect to a FTA between ASEAN and China, both Singapore and Malaysia seem to gain both through inter- and intra-industry specialization. Thailand appears to gain significantly as well through intra-industry specialization vis-à-vis China. Indonesia and the Philippines may not gain much through the formation of FTA unless substantial efforts are made in order to promote their industrial development. A FTA between ASEAN and China may make a significant impact on Japan as well, since Japanese companies have invested in these two regions substantially for the past two decades.

The promotion of economic cooperation between ASEAN and India, on the other hand, may make sense in the long run, but its immediate impact on both sides still seems to be limited. First, the success of India continues to depend on the services sector. Second, there is still very little intra-industry specialization between ASEAN and India. The announcement of the formation of a FTA between India and ASEAN may make economic sense in the long run, but substantial benefits may not be expected at least in the short run yet.

1. Introduction

Beginning in the 1990s, China accelerated its economic growth with an annual average rate of as high as 10 percent throughout the 1990s (Okamoto 2005a, 48). The 1997–98 Asian crisis, which disrupted many economies in East Asia and especially the ASEAN members, did not affect China as severely. On the contrary, the Chinese economy continued to grow at around 7 percent annually in subsequent years.

Initially the rise of China as an industrial power was regarded as a threat to the ASEAN economies. Because of its almost inexhaustible supply of unskilled labor and its absorption of a huge amount of foreign direct investment (FDI), China was considered to pose a great challenge to the ASEAN countries in their home and third-country markets (Wang 2005, 35).

Whereas China's rise in the 1990s caused a great deal of concern among the ASEAN countries, China's expansion during the first decade of the 21st century seems to have instead generated confidence among them (Wang 2005, 17). The cornerstone of this shift is a framework agreement on comprehensive economic cooperation between ASEAN and China, including the establishment of an ASEAN–China FTA by 2010 for the original ASEAN members, and 2015 for the new members.¹ As such, China's expanding economy is now regarded more as an opportunity than as a threat.

ASEAN also concluded a framework agreement on comprehensive economic cooperation with India in Bali in October 2003.² Ever since India unveiled its “look-east policy” in the early 1990s (Ambatkar 2001, 85), its economy has continued to grow steadily, although not quite as rapidly as China. In particular, the development of IT-related industries, especially software development, has been remarkable in India. ASEAN also seems to regard India as an opportunity rather than a threat to the business of its members. An interesting question is to ask whether the rapid shift in the policy stance of ASEAN vis-à-vis China and India is consistent with underlying economic forces.

According to Langhammer and Hiemenz (1990, 59), regional integration among developing countries often fails to lead to materialized expected benefits. This is partly because there is little scope either for inter-industry or intra-industry specialization among countries in the scheme, as they tend to possess comparative advantage in the same products (Langhammer and Hiemenz 1990, 68). Exactly for this reason, the swift shift in the policy stance of ASEAN presents an intellectual puzzle and a policy question (Wang 2005, 17).

¹ For details of the framework agreement on comprehensive economic cooperation between ASEAN and China, see www.aseansec.org.

² For details of the framework agreement on comprehensive economic cooperation between ASEAN and India, see www.aseansec.org

The objective of this paper is, therefore, to compare trade structures among ASEAN, China and India, and to investigate whether ASEAN and China and ASEAN and India are more competitive or complementary to each other. If they are more or less complementary to each other, there may be room for them to gain through trade, either through inter-industry trade or intra-industry trade or both. If they are competitive with each other, on the other hand, there may not be much room for gain through specialization and trade.

In section II, the paper first briefly compares the economic performance of ASEAN, China and India in the world economy. Section III then calculates the indexes of revealed comparative advantage (RCA) for ASEAN, China and India, respectively, and observes whether there is room for gain through inter-industry specialization. In section IV, the indexes of intra-industry trade between ASEAN and China and between ASEAN and India, respectively, are calculated to investigate whether there is room for ASEAN to gain through intra-industry specialization vis-à-vis China and India. Section V conducts market share analyses and observes whether ASEAN and China compete or complement each other in third markets such as the U.S. and Japan. Section VI presents an overview with respect to how the closer economic cooperation between ASEAN and China and ASEAN and India might impact Japan. Section VII summarizes the findings.

2. ASEAN, China, and India in the Global Economy

2.1 International trade and production

The word ‘BRICs’ is often heard in the center stage of international politics these days. It includes Brazil, Russia, India and China. The latter two are especially considered as two most promising and influential countries economically and politically in the world in the 21st Century. Then, to what extent are China and India gaining an importance in the global economy relative to ASEAN?

First of all, ASEAN, China and India are compared in terms of production and trade (Table 1). Table 1 shows the remarkable rise of China as an economic power in all aspects. As China grew very rapidly over the past decade, the share of China including Hong Kong will soon reach 5 percent in global GDP at the current exchange rate vis-à-vis US dollar. If the Chinese currency is revalued, its share will increase sharply.

< Table 1 >

The actual economic power of China may be reflected better in trade figures, since the real economic value of non-tradable goods included in GDP figures is difficult to measure. According to the same table, the share of China including Hong Kong in merchandise trade will reach almost 9 percent both in terms of export and import. Its share almost doubled only within a decade or so. The share of China also increased rapidly in services trade. Although China

still runs trade deficits in services, its share in global services export (including Hong Kong) increased from 1 to 4 percent.

According to Table 1, the steady rise of India is also clear, although the rate of growth is much slower than that of China. What is most striking in India is the rapid growth of the services sector. Unlike China, services exports grew much more rapidly than merchandise ones. The share of India in global services exports increased from 0.6 to 1.4 percent between 1990 and 2003, while that in global merchandise exports increased only from 0.5 to 0.7 percent during the same period.

Table 2 also illustrates some characteristics of the growth pattern of India. According to the table, India has been most successful in attracting export-oriented FDI in IT and IT-related services in Asia. This is one of the important factors to explain why services trade has been growing much faster than merchandise trade in India.

< Table 2 >

Contrary to China and India, the dynamism of ASEAN as a whole seems to have been lost after the 1997-98 crisis. According to Table 1, the share of ASEAN in the global economy both in terms of production and trade declined during the first decade of the 21st Century. The decline of ASEAN in merchandise imports seems to be significant in particular. This indicates the fact that after the crisis ASEAN was constrained very much by its capacity to borrow from abroad in order to purchase goods and services. Although the situation varies from country to country, ASEAN as a whole does not seem to have fully recovered from the crisis yet.

2.2 Inflow of FDI

The loss of dynamism of ASEAN is also observed in the flow of foreign direct investment. Table 3 shows the inflow of FDI in ASEAN, China and India both in terms of the absolute amount and their shares in total. According to Table 3, FDI continues to flow into China and India in an increasing manner. Combining the share of China and Hong Kong exceeds more than 10 percent of the global FDI flow. As observed in Table 3, India also succeeds in attracting FDI increasingly especially after the year of 2000. Except Singapore the total inflow of FDI in India is larger than any other ASEAN country in 2003.

< Table 3 >

The absolute amount of FDI inflow, on the other hand, tends to decline in most of the ASEAN countries after the 1997-98 Asian crisis. The loss of dynamism is most significant in Indonesia, from which foreign firms seem to continue to withdraw after the crisis. In 2003 the inflow of FDI in the Philippines dropped significantly as well. Although not as bad as Indonesia and the Philippines, neither Malaysia nor Thailand has regained its strength in attracting FDI after the crisis. Consequently, the share of ASEAN in the world FDI flow as a

whole declined from around 7 to 2 percent after the crisis. Singapore is the only exception: the amount of FDI inflow in Singapore in the 2000s exceeds the level of the pre-crisis period.

The trend of FDI indicates that ASEAN, as a region, is losing its economic attractiveness after the crisis, while China and India are viewed as an increasingly appealing global partner. Does the closer economic cooperation between ASEAN and two future economic superpowers provide a way for ASEAN to revitalize their economies and to regain its pre-crisis economic strength vis-à-vis China and India? It partly depends on their trade structure.

3. A Revealed Comparative Advantage (RCA) Approach

3.1 RCA index and spearman's rank correlation

Balassa was the first to come up with a way to investigate the changing pattern of comparative advantage in goods and services empirically.³ That is called an index of revealed comparative advantage (RCA). The index is calculated as follows:

$$RCA_{ij} = (X_{ij} / \sum_i X_{ij}) / (X_{iw} / \sum_i X_{iw}), \quad (1)$$

where X_{ij} is the export value of product group i of country j , $\sum_i X_{ij}$ is the total export value of country j , X_{iw} is the world export value of product group i , and $\sum_i X_{iw}$ is the total world export value. RCA_{ij} exceeding 1 indicates that country j has a comparative advantage in the production of product i in the global economy. RCA_{ij} less than 1 indicates the opposite. The RCA indexes are calculated for each ASEAN member (Indonesia, Malaysia, Philippines, Singapore and Thailand) as well as for China and India at the two-digit level of SITC R1.

Then, the indexes are ranked for each country respectively and Spearman's rank correlation coefficients between the rankings of RCA indexes is calculated between ASEAN and China, and between ASEAN and India respectively. If the coefficient is positive and statistically significant, their trade structure is very similar and competitive. This implies that there may not be much room for ASEAN and China or ASEAN and India to gain through inter-industry specialization. If the coefficient is negative and statistically significant, on the other hand, their trade structure is very different and complementary to each other. In the latter case, the formation of a FTA could bring about substantial gains through inter-industry specialization.

3.2 Findings

Table 4 shows the results. First of all, both Thailand and the Philippines possess high Spearman's rank correlation coefficients with both China and India, and in most of the years the

³ See Balassa (1989) for details with respect to RCA index.

coefficients are statistically significant. This means that both Thailand and the Philippines have a trade structure which is quite similar to that of China and India. These statistical results imply that the inter-industry specialization may not develop much between the former (the Philippines and Thailand) and the latter (China and India), even if the closer economic cooperation is promoted between the two.

< Table 4 >

Spearman's rank correlation coefficients are, on the other hand, low or even negative between other three ASEAN countries (Indonesia, Malaysia and Singapore), and China and India. Moreover, none of the coefficients are statistically significant. This implies that it is indeterminate whether both groups are more competitive or complementary to each other. In other words, in some respects their trade structures may be very similar and competitive, and in other respects they may be very dissimilar and complementary to each other.

4. A Intra-industry Trade (IIT) Approach

4.1 Importance of intra-industry trade in the modern world

The opening-up of the Chinese and Indian economies to the world could serve as a tremendous opportunity for ASEAN as well if there are strong prospects for intra-industry trade brought about by rising income, product differentiation and economies of scale (Chirathvat and Mallikamas 2005: 102-103). This is true even if the overall trade structure is very similar between two countries.

Helpman and Krugman (1985) are some of the pioneers to show that countries can gain through intra-industry specialization. The earlier models such as Helpman and Krugman (1985) tended to focus on the product differentiation and the horizontal division of labor in final products.

More recent models show a gain through trade in intermediate inputs (Jones 2000). Okamoto (2005b) empirically showed the rise of intra-industry trade in intermediate inputs in the Asia-Pacific region during the 1990s and their potential impacts on industrial productivity growth of the countries in the region.

4.2 IIT index

The IIT index is calculated as follows:

$$IIT_{ijk} = [1 - |X_{ijk} - M_{ijk}| / (X_{ijk} + M_{ijk})], \quad (2)$$

where X_{ijk} is the value of product group i that country j exports to country k , and M_{ijk} is the import value of the same product group i that country j imports from country k . The index takes a value between 0 and 1. The higher the index is, the more the two countries are engaged in intra-industry trade.

In this paper, the IIT index is first calculated at the four-digit level of SITC R1. Then, the author aggregates them into the IIT index at the one-digit level using the value of trade (summing up the values of export and import at the four-digit level of SITC R1) between two countries as a weight.

4.3 Findings

Table 5 shows the IIT indexes calculated between individual ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand) and China, and ASEAN and India respectively. First of all, we find that the values of IIT index of product category ranging from 5 to 8 of SITC R1 are much higher than those of product category from 0 to 4 of SITC R1. This indicates that, as trade theory suggests, there is much more room to gain through intra-industry specialization between two countries in manufactured than in non-manufactured goods.

< Table 5 >

Second, ASEAN countries tend to have higher IIT values vis-à-vis China than India except product category 5 of SITC R1. Two reasons can be considered as to why this may happen. The first reason is that the goods market of India is still highly protected, so that there is not much room for two countries to engage in intra-industry trade. According to the trade policy review of India summarized by the Secretariat of the World Trade Organization (WTO) in 2002, its applied Most Favored Nation (MFN) tariff rate is still around 32 percent. Although there are no comparable data, the average tariff rate of China seems to be at least much lower than that of India.⁴ The second reason is that the MNCs have been active in direct investment activities both in China and ASEAN since the latter half of 1980s, so that the intra-firm activities have been developed fast between China and ASEAN.

Third, the degree of development of intra-industry trade is different among individual ASEAN members. Malaysia, Singapore and Thailand tend to show higher values of IIT index than Indonesia and the Philippines especially in such product categories as 6, 7 and 8 at the one-digit level of SITC R1. This implies that a country such as Thailand tends to have much room to gain through intra-industry specialization with China, although there may not be much room to gain through inter-industry specialization as observed in Section III. A country such as the Philippines may not, on the contrary, gain much through a China-ASEAN FTA, since not only the overall trade structure is very similar between the Philippines and China, but also the intra-industry trade has not been developed substantially between the two countries thus far.

Malaysia and Singapore may, on the other hand, gain a great deal through a

⁴ According to Chirathvat and Mallikamas (2005:84), the import-weighted average tariff rate of China is around 9.4 percent.

China-ASEAN FTA. This is partly because the overall trade structure of both countries is dissimilar to that of China, so that there is some room for them to gain through inter-industry trade. Besides, they tend to show high values of IIT index in trade with China especially for machinery (product category 7 at the one-digit level of SITC R1). This means that the closer economic cooperation between Malaysia, Singapore and China may generate significant gain both through inter- and intra-industry trade.

Indonesia shows a trade structure dissimilar to China, suggesting that a China-ASEAN FTA may generate some gain for Indonesia through the enhancement of inter-industry trade. There may not be much room to gain, though, through intra-industry trade in manufactured goods, since the IIT indexes in this category are still low between Indonesia and China.

Figure 1, which summarizes the trade relationship between ASEAN and China, clarifies the fact that trade relationship between an individual ASEAN member and China varies from country to country. Thus, the magnitude and the source of gain or loss through the closer economic relation may be quite different among ASEAN members. Thus, unlike the case of Europe, the flexibility is necessary in the implementation of the closer economic cooperation between ASEAN and China.

< Figure 1 >

5. Market Share Analysis in the Major International Markets

5.1 ASEAN, China, and India in the major international markets

The formation of a FTA with China and India may also affect ASEAN through its impact on the flow of FDI. Without any doubt, FDI, especially, export-oriented FDI has played an important role in economic development of China and ASEAN.⁵ The FTA may affect ASEAN greatly if ASEAN and China or ASEAN and India compete in the same type of products in the third markets such as the U.S. and Japan. In this case, the formation of a FTA between two countries may give an incentive for MNCs to consolidate the export-oriented production sites that currently exist in different countries. ASEAN may gain or lose through the formation of a FTA depending on whether the FTA enhances the cost advantage of ASEAN more than China, India or vice versa.

If ASEAN and China or India do not, however, compete in the same category of products in the international major markets in the first place, both may gain through the formation of a FTA. Or both parties may not be affected at all by it.

5.2 Market share analysis

⁵ See Okamoto (1994), for instance, the role of FDI in economic development of Malaysia.

Initially, the overall competitiveness of ASEAN, China and India is examined in the major international markets. Table 6 shows the market shares of ASEAN, China, and India respectively between 1993 and 2003 in three major international markets: Japan, the U.S. and EU. First of all, India is growing, but its relative position in the international goods market is still considerably low. Second, the market shares of ASEAN, China and India are all small in Europe, although that of China seems to be expanding rapidly even at the low level of penetration. Third, there seems to be a severe competition between ASEAN and China in the U.S. market, since the share of China in it has expanded to reach from 7.3 to 13.2 percent between 1993 and 2003. That of ASEAN, on the other hand, declined from 7.3 to 6.6 percent during the same period. ASEAN seems to be losing its competitiveness in the U.S. vis-à-vis China.

< Table 6 >

Interestingly, while the share of China increased dramatically in the Japanese market from 9.4 to 20.1 percent between 1993 and 2003, that of ASEAN also increased slightly from 14.7 to 15.3 percent during the same period. The rapid penetration of Chinese products in the Japanese market is clear and without any question, but the competitiveness of ASEAN has not been eroded in Japan in spite of it.

5.3 Spearman's rank correlation coefficients of the rankings of the market shares between ASEAN and China

The above difference between the Japanese and the U.S. markets seems to be confirmed by Tables 7 and 8. Table 7 shows Spearman's rank correlation coefficients of the rankings of the market shares in the U.S. market between China and each ASEAN member. Their market shares are, first, calculated at the four-digit level of SITC R1. Then, rank correlation coefficients are calculated for each of the broader product categories.⁶ High rank correlation coefficients imply that the kind of product China and each ASEAN member exports to the U.S. is quite similar. In other words, ASEAN and China highly compete with each other in exports to the U.S. markets. Low or negative rank correlation coefficients mean that they export more or less different types of product to the U.S. Table 8 shows the results for the Japanese market.

< Tables 7,8 >

According to Table 7, first of all, ASEAN and China show relatively high rank correlation coefficients which are also statistically significant especially in such product categories as food (0), basic manufacturers (6), machinery (7), and miscellaneous manufactured goods (8). This

⁶ It ranges from 0 to 8 product category at the one-digit level of SITC R1.

means that ASEAN may lose the market share further to China unless ASEAN makes an effort to sell differentiated and higher value added products in the U.S. market, given the fact that China has a cost advantage over many of the ASEAN countries due to the ample availability of low-cost labor.

Table 8 shows the results between ASEAN and China in Japan. The Spearman's rank correlation coefficients of the rankings of their market shares in the Japanese market are much lower than those of the U.S. Besides, many of the coefficients are not statistically significant. This implies that ASEAN and China do not necessarily compete in the Japanese market. It could be possible that MNCs in ASEAN and China already differentiate between the types of product exported to Japan.

6. Implication for Japan

The closer economic cooperation of ASEAN with China and India may make a great impact on Japan as well, since Japanese companies have invested in Asia significantly for the past two decades.

6.1 Japanese companies abroad

Figures 2 and 3 show sales revenues of Japanese companies abroad over the period of 1993-2002 by broad industry category and by region respectively. According to Figure 2, overseas economic activities of Japanese companies are active and increasing in the manufacturing sector, but they tend to be stagnant in the non-manufacturing sector. This indicates that Japanese companies are competitive more in the former than in the latter.

< Figures 2,3 >

According to Figure 3, sales revenues of Japanese companies abroad are expanding the most in Asia. Although their sales revenues are increasing in North America, the gap between North America and Asia is shrinking significantly. This indicates that Japan will be influenced in the near future by the evolution of economic relationship in Asia more than in any other region.

Table 9 shows further breakdown of sales revenues of Japanese companies abroad by location for each industry at the end of 1997 and 2002. This table indicates that while the share of Japanese companies in Asian NIEs declined in many of the industrial sectors, that of Japanese companies in China increased substantially. On the other hand, ASEAN continues to occupy an important role in overseas activities of Japan, since there has been almost no big change in the share of sales revenues of Japanese companies in ASEAN except steel industry. Currently, ASEAN and China seem to be the two most important regions for the operation of Japanese companies in Asia

< Table 9 >

6.2 Closer linkage among Japanese companies abroad?

The linkage among overseas Japanese companies themselves does not seem to be fully developed yet, though. Table 10 shows both the revenue of Japanese companies in ASEAN4 by sales destination and their amount of procurement of materials, parts and components by source country.⁷ It is very clear that Japanese companies abroad became to procure more locally than from Japan between 1993 and 2002. Japanese affiliates also began to sell their own products more back to Japan than to sell them locally during the same period. This reveals that the backward and forward linkages have been developed in ASEAN4 after the substantial amount of resources was invested in ASEAN by Japanese companies through a form of FDI.

< Table 10 >

The shares of ‘other Asia’ in Table 10 are, on the other hand, constant during the same period, although the absolute amount of transaction increased significantly. This implies that the closer economic relationship between ASEAN and the rest of Asia such as China through the formation of a FTA will enable Japanese companies abroad to exploit further gain through specialization either in the form of inter- or intra-industry or both.

In contrast, impacts of the closer economic relationship between India and ASEAN on Japan will be limited at least in the short run. This is precisely because Japanese outward flow of FDI into India is still considerably small compared to China and ASEAN. Figure 4 shows the outward flow of Japanese FDI into three: ASEAN, China and India. According to Figure 4, not only Japanese FDI did not flow very much into India for the past decade but also no clear increasing trend of FDI from Japan to India emerged yet. It is very important to add, though, that India will play an important role in Asia in the medium- or in the long-run, since India seems to be on a sustainable growth path, its economy is stable, and more importantly the software sector of India has become to play an important role in the global economy.

< Figure 4 >

7. Conclusion

The further rise of China as an industrial power, especially after its entry into the WTO, is now regarded as an opportunity rather than as a threat for ASEAN. The above results show that whether this view is consistent with the underlying economic force or not depends on the country

⁷ Data of China cannot be presented in the same manner as ASEAN4, since in 1993 the figures of China and Hong Kong are available respectively, but in 2002 the figures of both countries are combined and are not separable.

in question. Both Singapore and Malaysia seem to gain both through inter- and intra-industry specialization if a FTA is formed between ASEAN and China. Thailand appears to gain significantly as well through intra-industry specialization vis-à-vis China. A FTA between ASEAN and China may make a significant impact on Japan as well, since Japanese companies have invested in these two regions substantially for the past two to three decades.

Indonesia and the Philippines, on the other hand, may not gain much. First, as yet there is not much intra-industry trade between China and these two ASEAN countries. Moreover, China and the Philippines have a very similar overall trade structure. This implies that the Philippines may not gain much through closer economic cooperation with China or India.

Substantial efforts are necessary in order to promote industrial development of Indonesia and the Philippines. Otherwise, the formation of a China–ASEAN FTA may end up speeding up the force of divergence that seems to have set in among ASEAN countries since the 1997–98 crisis.⁸

The promotion of economic cooperation between ASEAN and India, on the other hand, may make a sense in the long run, but its immediate impact on both sides as well as on Japan still seems to be limited. First, the success of India continues to depend on the services sector. Second, there is still very little intra-industry specialization between ASEAN and India. Third, the inflow of Japanese FDI into India is still small yet. The announcement of the formation of a FTA between India and ASEAN may make economic sense in the long run, but substantial benefits may not be expected at least in the short run.

⁸ See Okamoto (2005a, 50–52).

Table 1 Shares of ASEAN, China, and India in the World Economy (%)

		1990	1995	2000	2003
GDP (current US\$)	China	1.6	2.4	3.4	3.9
	(+ Hong Kong)	2.0	2.9	3.9	4.3
	India	1.5	1.2	1.4	1.6
	ASEAN	1.5	2.1	1.7	1.7
Merchandise exports (current US\$)	China	1.8	2.9	3.8	5.8
	(+ Hong Kong)	4.1	6.2	6.9	8.8
	India	0.5	0.6	0.7	0.7
	ASEAN	4.0	6.0	6.3	5.6
Merchandise imports (current US\$)	China	1.5	2.5	3.4	5.3
	(+ Hong Kong)	3.9	6.2	6.5	8.3
	India	0.7	0.7	0.8	0.9
	ASEAN	4.4	6.5	5.2	4.6
Commercial service exports (current US\$)	China	0.8	1.6	2.0	2.7
	India	0.6	0.6	1.2	1.4
	ASEAN	3.8	6.0	4.4	3.9
Commercial service imports (current US\$)	China	0.5	2.1	2.5	3.3
	India	0.8	0.9	1.3	1.3
	ASEAN	3.6	6.3	5.5	5.1

Source: Author's calculation using World Bank, *World Development Indicators Online*.

Note: ASEAN includes only Indonesia, Malaysia, Philippines, Singapore and Thailand.

Table 2 Export-oriented FDI Projects in Call Centers, Shared Services Centers (SSCs), and IT Services by Destination, 2002– 2003.

	Call centers		SSCs		IT services	
	No. of projects	Share of total (%)	No. of projects	Share of total (%)	No. of projects	Share of total (%)
China	30	21.7	4	6.3	60	23.9
(+ Hong Kong)	32	23.2	4	6.3	74	29.5
India	60	43.5	43	67.2	118	47.0
ASEAN	46	33.3	17	26.6	59	23.5

Source: UNCTAD, *World Investment Report 2004*, p. 163.

Note: see Table 1.

Table 3 Inflow of Foreign Direct Investment in ASEAN,
China and India, and their Shares in the World Total

(a) US\$ Million	1992–1997 (Annual average)	2000	2003
China	32799	40715	53505
Hong Kong, China	7781	61939	13561
India	1676	2319	4269
ASEAN	21241	21150	15407
Indonesia	3518	-4550	-597
Malaysia	5816	3788	2474
Philippines	1343	1345	319
Singapore	8295	17217	11409
Thailand	2269	3350	1802
World	310879	1387953	559576
(b) %	1992–1997 (Annual average)	2000	2003
China	10.6	2.9	9.6
(+ Hong Kong)	13.1	7.4	12.0
India	0.5	0.2	0.8
ASEAN	6.8	1.5	2.8

Source: UNCTAD (2004), *World Investment Report 2004*.

Table 4 Spearman's Rank Correlations Coefficients of the Rankings of the RCA Indexe between ASEAN and China, and between ASEAN and India

ASEAN	Year	China		India		ASEAN	Year	China		India	
Indonesia	1990	-0.11		0.19		Singapore	1990	0.03		0.05	
	1991	-0.15		0.18			1991	-0.02		0.06	
	1992	-0.06		0.22			1992	-0.01		0.05	
	1993	0.02		0.33	**		1993	0.00		0.04	
	1994	0.03		0.29	**		1994	0.03		0.05	
	1995	0.01		0.23	*		1995	0.04		0.06	
	1996	0.00		0.10			1996	0.11		0.05	
	1997	0.00		0.03			1997	0.12		0.10	
	1998	-0.08		0.08			1998	-0.06		0.04	
	1999	-0.07		0.07			1999	-0.11		0.07	
	2000	-0.02		0.09			2000	-0.08		0.06	
	2001	0.01		0.06			2001	-0.07		0.02	
	2002	-0.04		0.09			2002	-0.05		0.16	
2003	-0.06		0.13		2003	-0.07		0.11			
Malaysia	1990	-0.11		-0.04		Thailand	1990	0.37	***	0.44	***
	1991	-0.19		-0.05			1991	0.41	***	0.47	***
	1992	-0.14		-0.03			1992	0.50	***	0.49	***
	1993	-0.08		0.06			1993	0.49	***	0.51	***
	1994	-0.12		-0.04			1994	0.41	***	0.40	***
	1995	-0.10		-0.05			1995	0.33	**	0.44	***
	1996	-0.03		-0.07			1996	0.37	***	0.37	***
	1997	0.04		-0.10			1997	0.38	***	0.33	**
	1998	0.03		-0.07			1998	0.34	**	0.34	**
	1999	-0.05		-0.12			1999	0.31	**	0.33	**
	2000	-0.06		-0.09			2000	0.29	**	0.32	**
	2001	-0.03		-0.09			2001	0.27	**	0.31	**
	2002	-0.05		-0.06			2002	NA		NA	
2003	-0.07		-0.09		2003	0.21		0.38	***		
Philippines	1990	0.15		0.26	*						
	1991	0.11		0.28	**						
	1992	0.14		0.21							
	1993	0.18		0.30	**						
	1994	0.24	*	0.28	**						
	1995	0.17		0.30	**						
	1996	0.26	*	0.26	*						
	1997	0.29	**	0.21							
	1998	0.30	**	0.23	*						
	1999	0.28	**	0.20							
	2000	0.28	**	0.19							
	2001	0.27	**	0.23	*						
	2002	0.25	*	0.10							
2003	0.21		0.06								

Source: Author's calculation using UN COMTRADE..

Note: *** represents statistical significance at the 1 percent level.

** represents statistical significance at the 5 percent level.

* represents statistical significance at the 10 percent level.

China includes the trade value of Hong Kong.

Table 5 IIT Indexes between ASEAN and China, and between ASEAN and India

SITC	YEAR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
		China					India				
0	1990	3.1	0.3	0.1	2.3	3.7	0.4	0.6	0.0	30.6	0.1
0	1995	2.2	4.0	4.1	7.4	2.6	0.6	1.4	1.5	18.7	0.4
0	2000	3.0	2.9	3.4	18.4	8.5	5.6	4.6	2.9	35.5	3.0
0	2003	4.1	11.0	4.2	9.3	18.9	4.9	3.2	2.9	19.4	5.3
1	1990	0.0	4.9	0.0	2.7	0.0	0.0	0.5	0.0	0.0	0.0
1	1995	0.1	13.5	5.0	51.3	20.8	0.0	18.8	0.0	0.3	0.0
1	2000	0.8	7.9	0.0	17.2	49.8	0.0	5.3	5.9	2.3	1.6
1	2003	0.3	28.6	0.6	8.4	33.6	0.1	23.1	0.0	9.2	0.2
2	1990	0.0	0.1	1.4	2.4	0.6	6.9	0.1	0.3	2.8	0.8
2	1995	2.6	2.4	0.3	8.8	2.4	11.2	1.8	1.3	9.1	3.0
2	2000	6.0	2.9	2.4	9.3	3.4	8.8	1.5	1.1	9.7	3.2
2	2003	5.1	3.1	6.9	7.4	2.7	5.5	7.3	13.6	7.0	5.0
3	1990	2.7	0.0	0.0	10.6	0.1	0.0	8.5	0.0	1.8	0.0
3	1995	13.8	0.3	10.9	8.7	3.0	0.0	0.0	42.6	14.6	0.4
3	2000	31.2	2.4	19.4	4.2	25.1	0.3	0.1	1.0	29.2	27.7
3	2003	46.7	24.0	43.2	0.7	0.5	0.8	0.5	34.8	4.1	2.7
4	1990	0.8	0.1	0.0	0.5	0.4	0.0	0.0	0.0	0.6	0.0
4	1995	0.3	0.1	0.1	3.0	0.0	0.0	0.0	0.0	2.0	0.9
4	2000	0.1	1.3	0.0	15.9	1.0	0.1	0.3	0.0	12.2	2.1
4	2003	0.1	0.2	0.8	15.4	20.8	0.0	0.1	12.9	22.6	0.2
5	1990	3.0	10.8	5.4	28.5	13.7	2.5	18.3	14.4	22.6	6.4
5	1995	25.1	17.5	7.1	28.7	17.3	39.1	25.4	4.6	38.8	15.2
5	2000	14.8	17.9	18.3	30.1	17.6	44.0	38.1	12.5	31.0	30.3
5	2003	23.6	19.0	22.2	21.5	26.7	28.4	41.4	7.7	33.3	27.0
6	1990	1.0	5.8	0.6	8.7	2.9	1.8	3.8	0.8	24.0	3.7
6	1995	9.8	7.0	2.0	38.4	11.2	8.3	10.5	15.5	20.6	10.3
6	2000	15.0	23.3	6.6	24.2	21.7	10.8	12.8	4.1	21.8	16.7
6	2003	20.9	32.9	5.5	40.7	27.1	13.4	15.7	3.2	24.5	17.2
7	1990	0.0	24.4	2.2	51.8	8.5	0.1	21.3	1.4	35.1	11.3
7	1995	8.0	40.3	17.3	49.0	33.8	2.4	21.4	17.5	42.3	35.1
7	2000	24.9	59.2	36.1	62.2	63.5	18.4	60.2	22.7	33.7	17.5
7	2003	36.9	55.2	39.6	57.2	74.7	21.7	23.3	15.7	14.9	38.6
8	1990	0.2	12.0	12.2	20.7	15.1	1.2	4.1	1.4	11.8	21.8
8	1995	12.2	25.1	6.2	28.7	26.5	6.9	14.4	14.1	12.5	19.2
8	2000	30.5	31.3	20.6	23.2	29.4	17.5	27.0	22.2	22.6	38.2
8	2003	25.4	43.7	14.2	24.3	33.7	19.4	34.2	14.7	13.9	36.9

Source: the author's calculation using UN COMTRADE.

Note: (1) IDN --- Indonesia, MYA --- Malaysia, PHI---Philippines, SIN --- Singapore, THA --- Thailand.

- (2) SITC R1 0 --- Food and live animals
 SITC R1 1 --- Beverages and tobacco
 SITC R1 2 --- Crude materials, inedible
 SITC R1 3 --- Mineral fuels
 SITC R1 4 --- Animal and vegetable oils and fats
 SITC R1 5 --- Chemicals
 SITC R1 6 --- Basic manufacturers
 SITC R1 7 --- Machinery
 SITC R1 8 --- Miscellaneous manufactured goods

(3) IIT indexes were originally calculated at the four-digit level of SITC R1. The author aggregated them into the one-digit level IIT index using the trade share as a weight.

(4) China includes the trade value of Hong Kong.

Figure 1 Matrix of RCA Index and IIT Index

Spearman's Rank Correlations Coefficient of the Rankings of the RCA Indexes between ASEAN and China

		Low or minus	High
		High	High
IIT Indexes between ASEAN and China	High	Malaysia Singapore	Thiland
	Low	Indonesia	Philippines

Source: Author's construction.

Table 6 Sares of ASEAN, China and India in the Major International Markets (%)

	<u>Japan</u>			<u>US</u>			<u>EU</u>		
	ASEAN	China	India	ASEAN	China	India	ASEAN	China	India
1993	14.7	9.4	1.0	7.3	7.3	0.8	2.5	2.5	0.5
1994	14.4	10.9	1.0	7.9	7.5	0.8	2.5	2.5	0.6
1995	14.5	11.6	0.9	8.4	7.7	0.8	2.5	2.5	0.6
1996	15.1	12.4	0.8	8.4	7.9	0.8	2.8	2.6	0.6
1997	14.8	13.1	0.8	8.2	8.5	0.9	3.0	2.8	0.6
1998	14.2	13.9	0.8	8.1	9.1	0.9	2.9	3.0	0.6
1999	14.9	14.4	0.7	7.7	9.4	0.9	2.9	3.2	0.5
2000	15.7	15.0	0.7	7.3	9.5	0.9	3.0	3.6	0.6
2001	15.6	17.0	0.6	6.8	10.1	0.9	2.8	3.8	0.6
2002	15.3	18.8	0.6	6.8	11.9	1.0	2.7	4.1	0.6
2003	15.3	20.1	0.6	6.6	13.2	1.1	2.8	4.6	0.6

Source: Table 4.

Note: (1) EU includes the following European countries: Belgium, France, Germany, Italy, Luxemborg, Holland, Denmark, Ireland, Britain, Greek, Portugal, and Spain.

(2) China includes the trade value of Hong Kong.

Table 7 Spearman's Rank Correlation Coefficients of the Ranking of Market Shares in the U.S. between ASEAN and China

SITC	YEAR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
Rank Correlation Coefficients						Statistical Significance					
0	1990	0.37	0.25	0.06	0.21	0.22	***	*			*
0	1995	0.53	0.45	0.25	0.44	0.24	***	***	*	***	***
0	2000	0.43	0.50	0.21	0.30	0.43	***	***	*	**	***
0	2003	0.47	0.35	0.23	0.23	0.52	***	***	*	*	***
1	1990	-0.27	-0.31	0.03	-0.11	0.20					
1	1995	-0.30	-0.37	0.00	-0.08	0.13					
1	2000	0.37	-0.19	0.14	-0.19	0.32					
1	2003	0.15	0.67	-0.24	0.30	-0.24					
2	1990	-0.21	-0.33	-0.12	-0.09	-0.01		**			
2	1995	-0.13	-0.10	0.00	-0.05	-0.11					
2	2000	0.06	-0.02	0.10	-0.05	-0.11					
2	2003	0.06	-0.07	0.18	-0.02	-0.06					
3	1990	-0.54	-0.28	-0.65	-0.95	-0.34				***	
3	1995	-0.50	-0.51	na	-0.74	-0.69		*		***	**
3	2000	-0.19	-0.20	0.66	-0.44	-0.05			**		
3	2003	-0.33	-0.09	na	-0.48	-0.24					
4	1990	-0.69	-0.55	-0.78	-0.40	0.41	*		**		
4	1995	-0.78	-0.14	-0.87	-0.54	0.52	***		***		
4	2000	-0.29	-0.57	-0.38	0.03	0.29		**			
4	2003	-0.51	-0.21	-0.34	-0.04	-0.02	*				
5	1990	-0.01	-0.14	-0.01	-0.03	-0.10					
5	1995	0.20	-0.14	0.07	0.03	0.13					
5	2000	0.23	-0.05	0.11	0.17	0.09	*				
5	2003	0.11	0.12	0.11	-0.27	0.11				**	
6	1990	0.26	0.28	0.34	0.10	0.39	***	***	***		***
6	1995	0.34	0.23	0.43	0.19	0.46	***	***	***	***	***
6	2000	0.28	0.21	0.35	0.20	0.37	***	***	***	***	***
6	2003	0.39	0.27	0.44	0.14	0.42	***	***	***	*	***
7	1990	0.21	0.47	0.23	0.36	0.53		***	*	***	***
7	1995	0.55	0.54	0.45	0.41	0.59	***	***	***	***	***
7	2000	0.52	0.52	0.36	0.40	0.48	***	***	***	***	***
7	2003	0.54	0.54	0.40	0.31	0.55	***	***	***	***	***
8	1990	0.49	0.46	0.56	-0.07	0.59	***	***	***		***
8	1995	0.51	0.38	0.38	-0.15	0.47	***	***	***		***
8	2000	0.52	0.10	0.26	-0.17	0.45	***		*		***
8	2003	0.46	0.00	0.19	-0.32	0.37	***			**	***

Source: See Table 4.

Note: See Table 4.

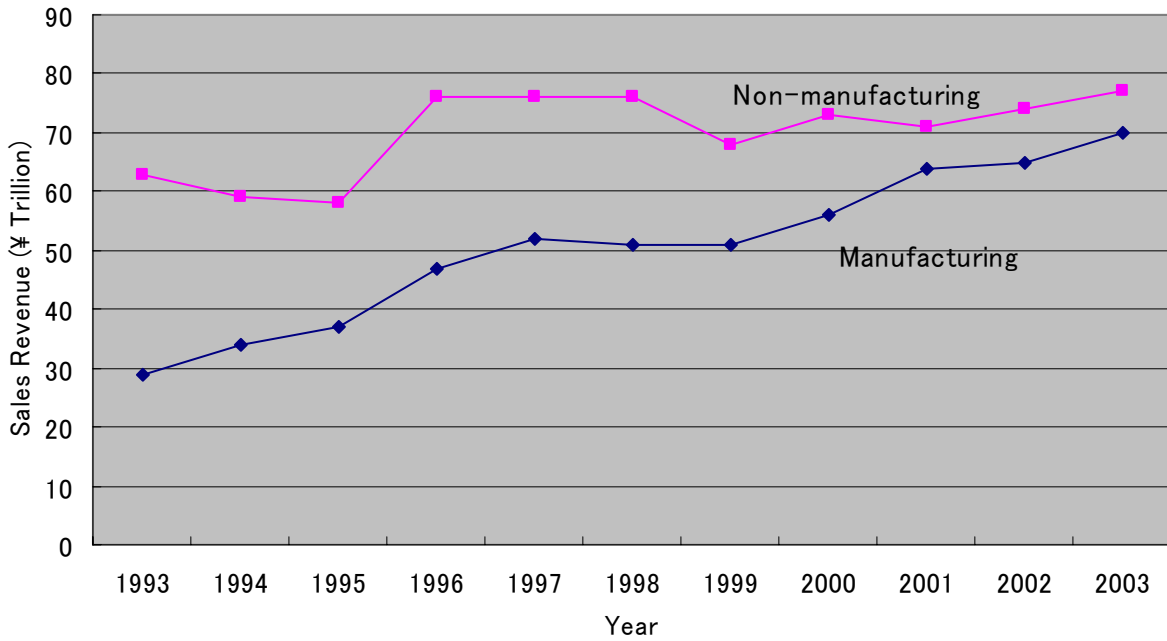
Table 8 Spearman's Rank Correlation Coefficients of the Ranking of the Market Shares in Japan between ASEAN and China

SITC	YEAR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
Rank Correlation Coefficients						Statistical Significance					
0	1990	-0.03	-0.05	-0.08	-0.18	0.19					
0	1995	0.12	0.08	0.00	0.08	0.30					**
0	2000	0.16	-0.01	0.16	0.04	0.35					***
0	2003	0.13	0.03	0.04	0.07	0.29					**
1	1990	0.34	0.51	-0.31	-0.23	0.59					
1	1995	-0.41	0.25	-0.44	-0.18	0.29					
1	2000	-0.41	-0.46	0.03	0.14	0.04					
1	2003	-0.22	0.11	0.45	-0.06	0.36					
2	1990	-0.16	-0.30	-0.14	-0.24	-0.18		***		**	
2	1995	0.10	-0.05	0.01	0.03	0.07					
2	2000	-0.12	0.10	-0.03	0.01	0.07					
2	2003	-0.13	0.02	-0.07	0.00	-0.12					
3	1990	-0.17	-0.14	0.04	-0.37	-0.39					
3	1995	-0.48	-0.58	-0.51	-0.85	-0.63	*	**	**	***	**
3	2000	-0.78	-0.40	-0.45	-0.45	-0.70	***				***
3	2003	-0.66	-0.82	-0.68	-0.62	-0.42	**	***	**	*	
4	1990	-0.45	-0.67	-0.85	-0.50	-0.28		**	***		
4	1995	-0.26	-0.52	-0.60	0.13	0.24		*	**		
4	2000	-0.12	-0.49	-0.88	-0.14	0.09		*	*		
4	2003	0.03	-0.64	-0.51	-0.12	0.04		**			
5	1990	-0.02	-0.16	-0.02	-0.19	-0.06					
5	1995	-0.17	-0.14	-0.10	-0.29	-0.09				**	
5	2000	0.10	-0.10	-0.17	-0.26	0.12				**	
5	2003	0.10	0.03	-0.27	-0.36	0.11			**	***	
6	1990	0.11	0.09	0.16	-0.09	0.11			**		
6	1995	0.14	0.03	0.18	-0.02	0.04	*		**		
6	2000	0.07	0.02	0.13	0.00	0.09					
6	2003	0.03	0.02	0.15	-0.08	0.06			*		
7	1990	0.13	0.34	0.18	0.31	0.50		**		**	***
7	1995	0.39	0.54	0.51	0.41	0.41	***	***	***	***	***
7	2000	0.15	0.31	0.22	0.02	0.21		**	*		*
7	2003	0.26	0.44	0.38	0.19	0.29	**	***	***		**
8	1990	0.50	0.29	0.67	-0.06	0.54	***	**	***		***
8	1995	0.47	0.25	0.44	-0.18	0.37	***	*	***		***
8	2000	0.34	0.15	0.26	-0.32	0.36	**		*	**	***
8	2003	0.37	0.22	0.32	-0.22	0.35	***	*	**	*	***

Source: See Table 4 .

Note: See Table 4.

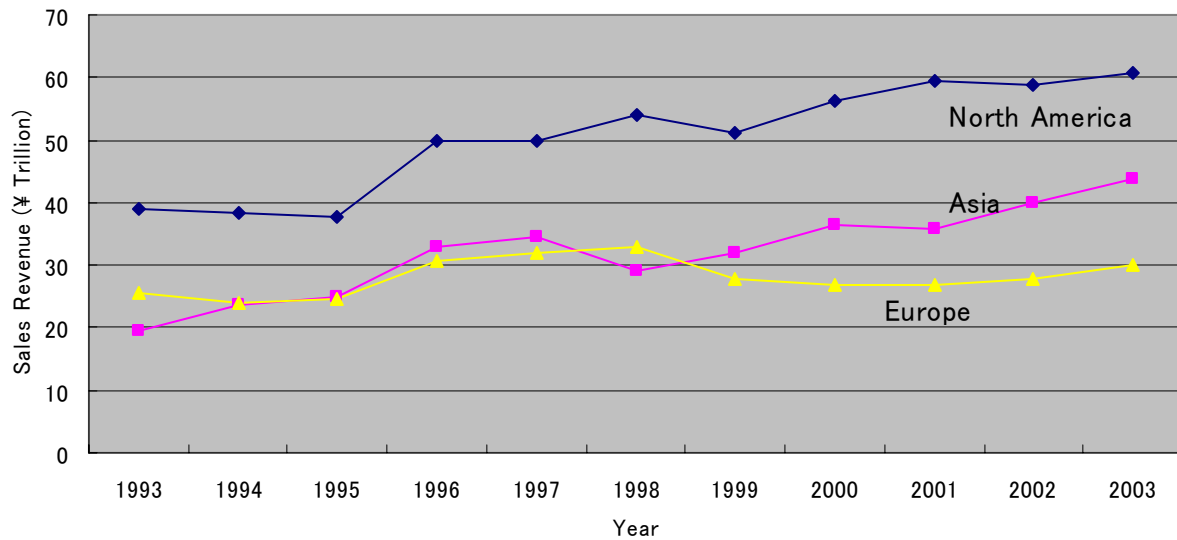
Figure 2 Sales Revenue of Japanese Companies Abroad



Source: METI (2005).

Note: The figures of the year of 2003 are preliminary.

Figure 3 Sales Revenue of Japanese Companies Abroad by Region



Source: See Figure 2.

Note: See Figure 2.

Table 9 Shares of Sales Revenue in Asia by Industry (%)

	1997				2002			
	ASEAN4	NIEs4	China	Total	ASEAN4	NIEs4	China	Total
Food	39.9	52.8	7.4	100.0	51.0	23.7	25.3	100.0
Textile	28.0	56.1	15.9	100.0	32.6	33.0	34.4	100.0
Chemical	39.5	53.8	6.7	100.0	37.5	49.3	13.2	100.0
Steel	62.4	27.4	10.2	100.0	39.1	38.6	22.3	100.0
Non-metal	54.7	39.4	6.0	100.0	52.7	23.4	23.8	100.0
General machinery	27.1	55.9	17.0	100.0	24.2	46.4	29.4	100.0
Electrical machinery	42.4	48.0	9.6	100.0	41.4	40.9	17.6	100.0
Transport equipment	59.7	30.0	10.4	100.0	59.6	21.7	18.7	100.0
Precision instruments	21.8	55.0	23.2	100.0	29.4	51.5	19.1	100.0
Others	44.3	43.0	12.7	100.0	41.1	38.7	20.2	100.0
Total Manufacturing	44.1	45.2	10.7	100.0	43.9	36.5	19.6	100.0

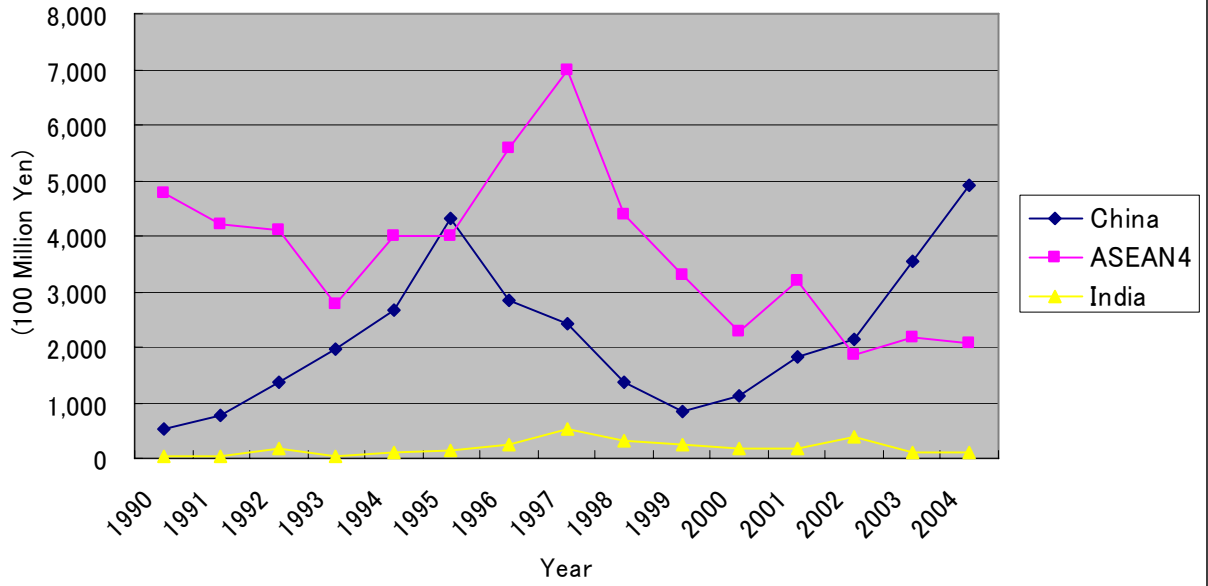
Source: METI (2001), METI (2005)

Table 10 Japanese Manufacturing Companies in ASEAN4

(a) Sales by destination (¥ Million, %)				
	1993	2002	1993	2002
Local	1520281	4032968	46.8	43.6
Japan	572744	2236807	17.6	24.2
Other Asia	728794	1860222	22.4	20.1
North America:	205034	526987	6.3	5.7
Europe	85391	341702	2.6	3.7
Others	134464	245535	4.1	2.7
Total	3246708	9244221	100.0	100.0
(b) Procurement by Source (¥Million, %)				
	1993	2002	1993	2002
Local	700245	3311112	39.4	51.7
Japan	705475	2002445	39.7	31.3
Other Asia	271474	964437	15.3	15.1
North America:	20710	71670	1.2	1.1
Europe	15876	26986	0.9	0.4
Others	64009	27410	3.6	0.4
Total	1777789	6404060	100.0	100.0

Source: MITI (1995), METI(2005)

Figure 4 Japanese Outward FDI by Destination



Source: WWW.MOF.GO.JP (downloaded on October 21, 2005).

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