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China and India: challenges and opportunities for ASEAN from Japanese perspectives

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Abstract

The rise of China and India as industrial powers is now regarded as an opportunity rather than a threat for member countries of the Association of Southeast Asian Nations (ASEAN). The paper shows that whether or not this view is consistent with the underlying economic forces depends on the country in question.

Singapore and Malaysia seem to gain through inter- and intra-industry specialization if a free trade agreement (FTA) is formed between ASEAN and China. Thailand appears to gain significantly through intra-industry specialization vis-à-vis China. An FTA between ASEAN and China may significantly impact Japan as well, since Japanese companies have heavily invested in these two regions for the past three 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 as well as on Japan still seems to be limited.

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1. Introduction

Since the 1990s, China has accelerated its economic growth, with an annual average rate as high as 10 percent throughout the 1990s [Okamoto 2005a:48]. The 1997-1998 Asian crisis—which disrupted many economies in East Asia, especially ASEAN—did not affect China as severely. On the contrary, the Chinese economy continued to grow at about 7 percent annually in subsequent years.

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

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Whereas China's rise in the 1990s caused a great deal of concern among ASEAN countries, China's expansion during the first decade of the 21st century instead seems to have 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 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 information technology (IT)-related industries, especially software development, has been remarkable in India. ASEAN also seems to regard India as an opportunity rather than threat to its members' business. An interesting question is 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 the realization of expected benefits. This is partly because there is little scope for either 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].

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 with or complementary to each other. If they are more or less complementary, there may be room for them to gain through trade—through inter-industry trade, 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 2, the paper briefly compares the economic performance of ASEAN, China, and India in the world economy. Section 3 then calculates the indices 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 4, the indices 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 5 conducts market share analyses and observes whether ASEAN and China compete with or complement each other in third markets such as the United States

[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.

and Japan. Section 6 presents an overview of how a closer economic cooperation between ASEAN and China and between ASEAN and India might impact Japan. Section 7 summarizes the findings.

2. ASEAN, China, and India in the global economy

2.1. *International trade and production*

The word "BRICs"—an acronym for Brazil, Russia, India, and China—is often heard in the center stage of international politics these days. India and China are especially considered as two of the most promising and influential countries economically and politically in the 21st century. To what extent then are China and India gaining importance in the global economy relative to ASEAN?

First, 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, its share, including Hong Kong, will soon reach 5 percent in global gross domestic product (GDP) at the current exchange rate vis-à-vis the US dollar. If the Chinese currency is revalued, its share will increase sharply.

China's actual economic power may be better reflected in trade figures, since the real economic value of nontradable goods included in GDP figures is difficult to measure. The same table shows that 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 3 percent to 4 percent.

Table 1 also shows India's steady rise, although its growth rate is much slower than that of China. Most striking in India is the rapid growth of the services sector, which grew much more swiftly than its merchandise exports. The share of India in global services exports increased from 0.6 percent to 1.4 percent between 1990 and 2003, while that in global merchandise exports increased only from 0.5 percent to 0.7 percent during the same period.

Table 2 also illustrates some characteristics of India's growth pattern. 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.

The dynamism of ASEAN as a whole, unlike that of China and India, seems to have been lost after the 1997-1998 crisis. Table 1 shows that 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 particularly significant. This indicates the fact that after the crisis, ASEAN was very much constrained 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.

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 Indication 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

Note: See Table 1.

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. As shown in Table 3, FDI continues to flow into China and India increasingly. The combined 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 2000. In 2003, the total inflow of FDI in India is larger than that of any other ASEAN country, except Singapore.

The absolute amount of FDI inflow, on the other hand, tended to decline in most ASEAN countries after the 1997-1998 Asian crisis. The loss of dynamism is most significant in Indonesia, from which foreign firms seemed 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, ASEAN's share in world FDI flows as a whole declined by 2-7 percent after the crisis. Singapore is the only exception: the amount of FDI inflow to Singapore in the 2000s exceeds the precrisis levels.

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

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	32.799	40.715	53.505
Hong Kong, China	7.781	61.939	13.561
India	1.676	2.319	4.269
ASEAN	21.241	21.150	15.407
Indonesia	3.518	-4.550	-.597
Malaysia	5.816	3.788	2.474
Philippines	1.343	1.345	.319
Singapore	8.295	17.217	11.409
Thailand	2.269	3.350	1.802
World	310.879	1,387.953	559.576
(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].

3. A revealed comparative advantage approach

3.1. RCA index and spearman's rank correlation

Balassa [1989] first proposed a way to investigate the changing pattern of comparative advantage in goods and services empirically: the index of revealed comparative advantage. The index is calculated as follows:

$$RCA_{ij} = \left(X_{ij}/\Sigma X_{ij}\right)/\left(X_{iw}/\Sigma X_{iw}\right) \quad (1)$$

where X_{ij} is the export value of product group i of country j, ΣX_{ij} is the total export value of country j, X_{iw} is the world export value of product group i, and ΣX_{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* indices 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 the Standard International Trade Classification, Revision 1 (SITC R1).

[3]See Balassa [1989] for details with respect to RCA index.

Then, the indices are ranked for each country respectively, and Spearman's rank correlation coefficients between the rankings of *RCA* indices are 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 from and complementary to each other. In the latter case, the formation of an FTA could bring about substantial gains through inter-industry specialization.

3.2. *Findings*

Table 4 shows the results. Both Thailand and the Philippines possess high Spearman's rank correlation coefficients with both China and India, and in most of the years the coefficients are statistically significant. This means that both Thailand and the Philippines have a trade structure 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 closer economic cooperation is promoted between the two.

Table 4. Spearman's rank correlations coefficients of the rankings of the RCA indexes 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

Table 4. Spearman's rank correlations coefficients of the rankings of the RCA indexes between ASEAN and China, and between ASEAN and India (continued)

ASEAN	Year	China	India	ASEAN	Year	China	India
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 ***

ASEAN	Year	China	India
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 calculations using figures from the
United Nations Commodity Trade Statistics Database (UN Comtrade).
Notes: *** represents statistical significance at 1 percent level.
** represents statistical significance at 5 percent level.
* represents statistical significance at 10 percent level.
China includes the trade value of Hong Kong.

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

4. An intra-industry trade approach

4.1. *Importance of intra-industry trade in the modern world*

The opening 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 (IIT) 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] pioneered in showing that countries can gain through intra-industry specialization. The earlier models (e.g., 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. *Intra-industry trade index*

The IIT index is calculated as follows:

$$IIT_{ijk} = \left[1 - \left|X_{ijk} - M_{ijk}\right| \Big/ \left(X_{ijk} + M_{ijk}\right)\right] \qquad (2)$$

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, 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 indices calculated between individual ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand) and China, and ASEAN and India, respectively. First, 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 nonmanufactured goods.

Second, ASEAN countries tend to have higher IIT values vis-à-vis China than India, except product category 5 of SITC R1. There are two reasons for this. First, India's goods market 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 about 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] Second, multinational companies (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.

Also, 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 3. A country such as the Philippines may not, on the contrary, gain much by way of a China-ASEAN FTA because the overall trade structure of the Philippines is very similar to that of China, and intra-industry trade between the two countries has not been developed substantially thus far.

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

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

Table 5. IIT indices between ASEAN and China, and between ASEAN and India

		China					*India*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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

Table 5. IIT indices between ASEAN and China, and between ASEAN and India (continued)

		China					*India*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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

Notes:

(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 indices 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.

Indonesia shows a trade structure dissimilar to China's, 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, however, through intra-industry trade in manufactured goods, since the IIT indices 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. Matrix of RCA index and IIT index

		Spearman's rank correlation coefficient of the rankings of the RCA indices between ASEAN and China	
		Low or minus	High
IIT indices between ASEAN and China	High	Malaysia Singapore	Thailand
	Low	Indonesia	Philippines

Source: Author's construction.

5. Market share analysis in major international markets

5.1. *ASEAN, China, and India in major international markets*

The formation of an FTA with China and India may also affect ASEAN through its impact on FDI flow. Without doubt, FDI, especially, export-oriented FDI, has played an important role in the 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 United States and Japan. In this case, the formation of an 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 an 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 an FTA. Or both parties may not be affected at all by it.

[5] See Okamoto [1994], for instance, on the role of FDI in Malaysia's economic development.

5.2. Market share analysis

Initially, the overall competitiveness of ASEAN, China, and India in the major international markets is examined. Table 6 shows the market shares of ASEAN, China, and India, respectively, between 1993 and 2003 in three major international markets: Japan, the United States, and the European Union. First, 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 severe competition between ASEAN and China in the US market, since the share of China in it has expanded from 7.3 percent to 13.2 percent between 1993 and 2003. That of ASEAN, on the other hand, declined from 7.3 percent to 6.6 percent during the same period. ASEAN seems to be losing its competitiveness in the United States vis-à-vis China.

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

Table 6. Shares of ASEAN, China, and India in the major international markets (%)

	Japan			*United States*			*European Union*		
	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.

Notes:

(1) The European Union includes the following European countries: Belgium, France, Germany, Italy, Luxembourg, Holland, Denmark, Ireland, Britain, Greece, Portugal and Spain.

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

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

The above difference between the Japanese and the US 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 US 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 United States is quite similar. In other words, ASEAN and China highly compete with each other in exports to the US markets. Low or negative rank correlation coefficients mean that they export more or less different types of product to the United States. Table 8 shows the results for the Japanese market.

Table 7. Spearman's rank correlation coefficients of the ranking of market shares in the United States between ASEAN and China

		Rank correlation coefficients					*Statistical significance*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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					

[6] Data of China cannot be presented in the same manner as ASEAN-4; the 1993 figures of China and Hong Kong are available separately, but in 2002 the figures of both countries are combined and are not separable.

Table 7. Spearman's rank correlation coefficients of the ranking of market shares in the United States between ASEAN and China (continued)

		Rank correlation coefficients					*Statistical significance*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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 7 shows that ASEAN and China exhibit 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 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 US 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 United States. Besides, many of the coefficients are not statistically significant. This implies that ASEAN and China do not necessarily compete in the Japanese market. It is possible that MNCs in ASEAN and China already differentiate between the types of product exported to Japan.

Table 8. Spearman's rank correlation coefficients of the ranking of the market shares in Japan between ASEAN and China

		Rank correlation coefficients					*Statistical significance*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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			**	***	

Table 8. Spearman's rank correlation coefficients of the ranking of the market shares in Japan between ASEAN and China (continued)

		Rank correlation coefficients					*Statistical significance*				
SITC	YR	IDN	MYA	PHI	SIN	THA	IDN	MYA	PHI	SIN	THA
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.

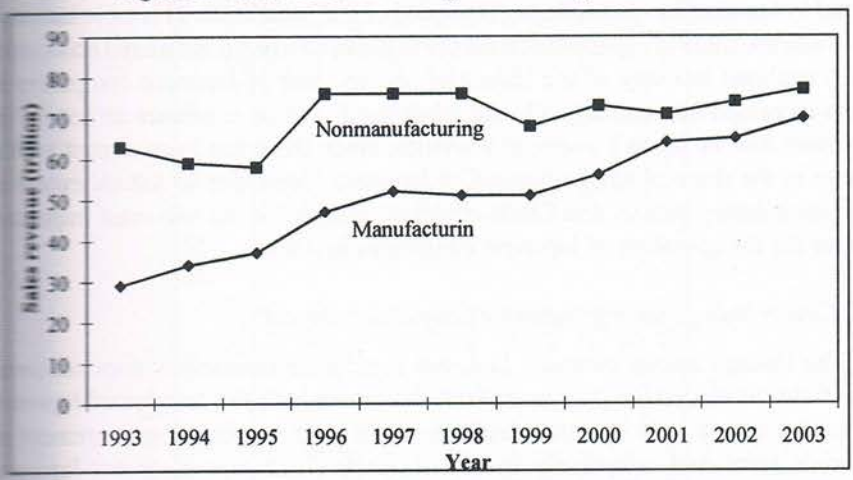
6. Implication for Japan

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

6.1. Japanese companies abroad

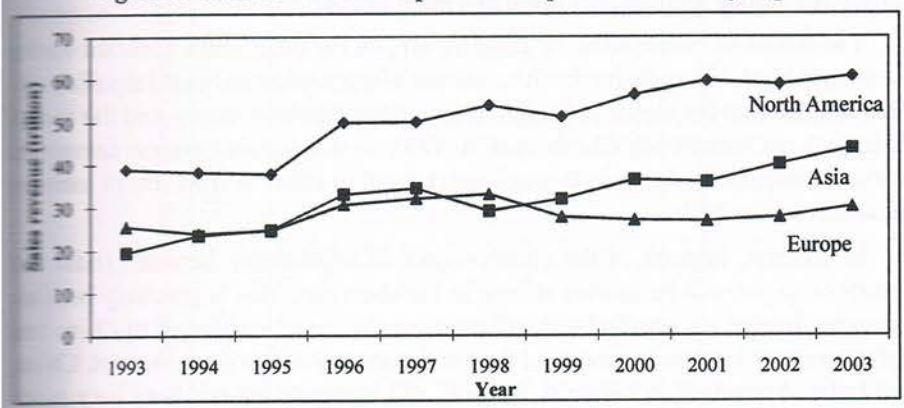
Figures 2 and 3 show sales revenues of Japanese companies abroad over the period 1993-2002 by broad industry category and by region, respectively. According to Figure 2, overseas economic activities of Japanese companies are active and increasing in the manufacturing sector, but they tend to be stagnant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

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: METI [2005].
Noe: 2003 figures are preliminary.

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 newly industrialized economies (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 Japan's overseas activities, since there has been almost no big change in the share of sales revenues of Japanese companies in ASEAN except in the steel industry. ASEAN and China currently seem to be the two most important regions for the operation of Japanese companies in Asia.

6.2. Closer linkage among Japanese companies abroad?

The linkage among overseas Japanese companies themselves does not seem to be fully developed yet, however. Table 10 shows both the revenue of Japanese companies in ASEAN-4 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 procured 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 ASEAN-4 after Japanese companies invested substantial resources in ASEAN through a form of FDI.

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 an 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 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 did Japanese FDI not flow very much into India for the past decade but also no clear increasing trend of FDI from Japan to India has emerged. It is very important to add, though, that India will play an important role in Asia in the medium term or in the long run, since India seems to be on a sustainable growth path, its economy is stable, and, more important, its software sector plays an important role in the global economy.

[7]Data of China cannot be presented in the same manner as ASEAN-4; the 1993 figures of China and Hong Kong are available separately, but in 2002 the figures of both countries are combined and are not separable.

Table 9. Shares of sales revenue in Asia by industry (%)

	1997				*2002*			
	ASEAN-4	*NIEs-4*	*China*	*Total*	*ASEAN-4*	*NIEs-4*	*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
Nonmetal	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

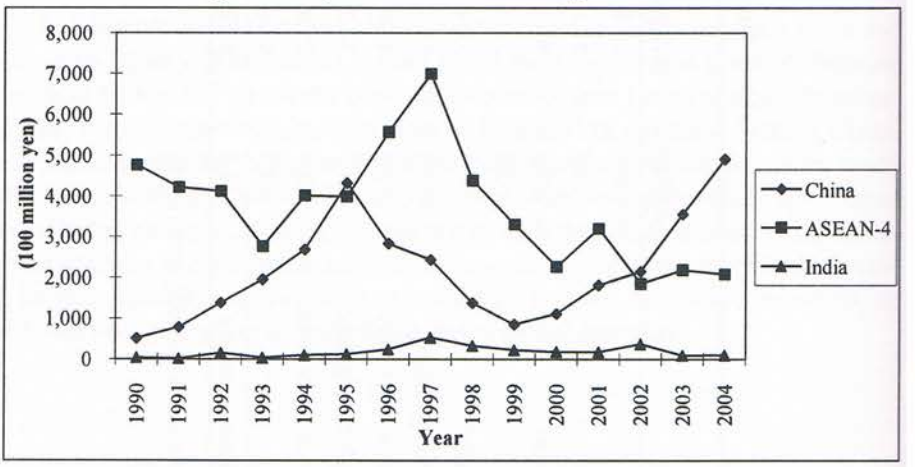
Sources: METI [2001]; METI [2005].

Table 10. Japanese manufacturing companies in ASEAN-4

	1993	2002	1993	2002
(a) Sales by destination (million, %)				
Local	1520.281	4,032.968	46.8	43.6
Japan	572.744	2,236.807	17.6	24.2
Other Asia	728.794	1,860.222	22.4	20.1
North America	205.034	526.987	6.3	5.7
Europe	85.391	341.702	2.6	3.7
Others	134.464	245.535	4.1	2.7
Total	3246.708	9,244.221	100.0	100.0
(b) Procurement by source (million, %)				
Local	700.245	3,311.112	39.4	51.7
Japan	705.475	2,002.445	39.7	31.3
Other Asia	271.474	964.437	15.3	15.1
North America	20.710	71.670	1.2	1.1
Europe	15.876	26.986	0.9	0.4
Others	64.009	27.410	3.6	0.4
Total	1,777.789	6,404.060	100.0	100.0

Sources: MITI [1995]; METI [2005].

Figure 4. Japanese outward FDI by destination



Source: www.mof.go.jp (accessed 21 October 2005).

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 a threat for ASEAN. The above results show that whether this view is consistent with the underlying economic forces or not depends on the country in question. Both Singapore and Malaysia seem to gain both through inter- and intra-industry specialization if an FTA is formed between ASEAN and China. Thailand appears to gain significantly as well through intra-industry specialization vis-à-vis China. An FTA between ASEAN and China may significantly impact 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, there has not been 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 to promote the 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 1997-1998 crisis (see Okamoto [2005a:50-52]).

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 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. The announcement of the formation of an 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.

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