The ASEAN-China free trade zone: challenges and opportunities for ASEAN

*Tulus Tambunan**

Abstract

This paper assesses the implication of "ASEAN plus China" on ASEAN inter- and intra-trade. Based on secondary data analysis and survey of key literature, it shows a number of interesting findings. First, despite the establishment of the ASEAN Free Trade Area, regions outside ASEAN are still the most important markets for individual member countries, for both export and import. Second, recent data show that after the United States, the European Union, and Japan, China tends to become ASEAN's largest trading partner; trade between China and ASEAN continues to increase, and its rate tends to accelerate. Third, based on various analytical approaches, the implementation of ASEAN plus China will most likely lead to trade diversion (TD), at least to some member countries. The paper concludes, therefore, that the ASEAN-China free trade zone will most likely generate higher trade volume between China and ASEAN at the cost of ASEAN intra-trade.

1. Background

The ASEAN Free Trade Area (AFTA) has now been virtually established. ASEAN member countries have made significant progress in lowering intraregional tariffs through the common effective preferential tariff (CEPT) scheme for AFTA. More than 99 percent of the products on the CEPT inclusion list (IL) of ASEAN-6—composed of Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, and Thailand—have been brought down to the 0-5 percent tariff range. ASEAN's exports had regained upward trend in the two years following the financial crisis of 1997-1998, reaching its peak in 2000 when total export was valued at US$ 408 billion. Recent data show that after the United States, the European Union, and Japan, China tends to become ASEAN's largest trading partner, in export as well as import.

* Professor of Economics, Faculty of Economics, University of Trisakti, Jakarta, Indonesia; director, Center for Industry and SMEs Studies, University of Trisakti.

As often discussed in the literature, the challenges posed by Chinese accession to the World Trade Organization (WTO) will, at least in the short run, be greater for the People's Republic of China (PRC) than for its trading partners. This notion may also apply to Chinese accession to ASEAN market via the establishment of China-ASEAN free trade zone. Recent data indicate that export growth on average per year from China to ASEAN market has been higher than the other way around (i.e., ASEAN export to China). Following this trend, the ASEAN-China free trade zone may generate higher trade volume between China and ASEAN (with China's export more than that of ASEAN member countries) at the cost of ASEAN intra-trade—inasmuch as historical data show that since the establishment of ASEAN, the growth of its inter-trade has always been higher than that of its intra-trade.

With this background, this paper aims to assess the implication of "ASEAN plus China" on ASEAN inter- and intra-trade, and the challenges and opportunities that ASEAN will likely face.

2. ASEAN total trade

Total exports and imports on goods from ASEAN-6 had regained upward trend in the two years following the financial crisis of 1997-1998, reaching its peak in 2000 when total exports and imports were valued at US$ 408 billion and almost US$ 350 billion, respectively. After declining to US$ 366.8 billion in 2001, resulting from the economic slowdown in the United States (US) and Europe and the recession in Japan, ASEAN-6 exports recovered in 2002 when it was valued at US$ 380.2 billion and continued to increase in 2003. Total imports of ASEAN-6 also show an upward trend since 2001 (Figure 1).

Exports as a percentage of gross domestic product (GDP) are often used as an indicator of the importance of exports to an economy and also as an indicator of the economy's international competitiveness, while imports as a percentage of GDP are often used as an indicator of an economy's import dependency. Whereas the share of total trade to GDP—i.e., the percentage share of exports plus imports to GDP—is often used as an indicator of the "openness" of an economy. As shown in Figure 2, the development of ASEAN-6 total exports as a percentage of total GDP of the region during the same period exhibited an upward trend after 1999, reached its peak in 2000, and started to decline again since then. The ratio of total imports to GDP also shows a similar trend.

To assess the implication of ASEAN plus China on ASEAN inter- and intra-trade, the importance of ASEAN economic integration in trade (other areas such as investment and finance are not the focus of this study) for individual member countries must be assessed first. For trade in goods, indicators often used for this purpose are intra-ASEAN exports, imports, and trade (exports plus imports). The following figures show these indicators for ASEAN-8 (ASEAN-6 plus Myanmar and Cambodia). First, Figure 3 shows that extra-ASEAN trade (exports and imports) is

much higher than intra-ASEAN trade, indicating that despite integration, regions outside ASEAN are still the most important markets for individual ASEAN member countries, for both export and import. After Singapore, Malaysia is the member country with the largest extra-ASEAN export, followed by Indonesia (Figure 4). With respect to extra-ASEAN import, Thailand and Malaysia are the two member countries, after Singapore, that imported a lot from non-ASEAN markets (Figure 5).

Figure 1. Trend of ASEAN-6 total exports and imports, 1993-2003
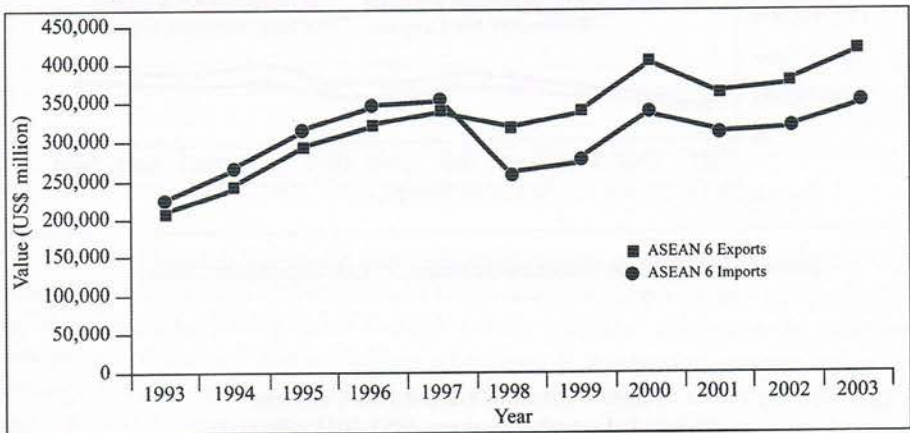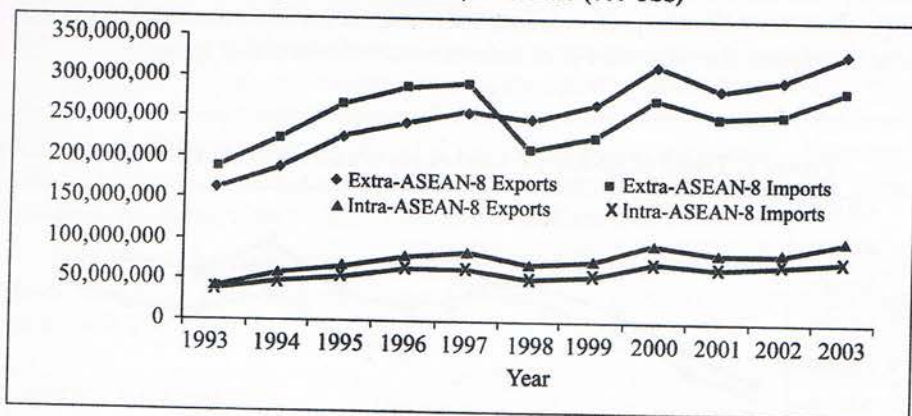

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 2. Trend of ASEAN-6 exports and imports as a percentage of GDP, 1996-2003
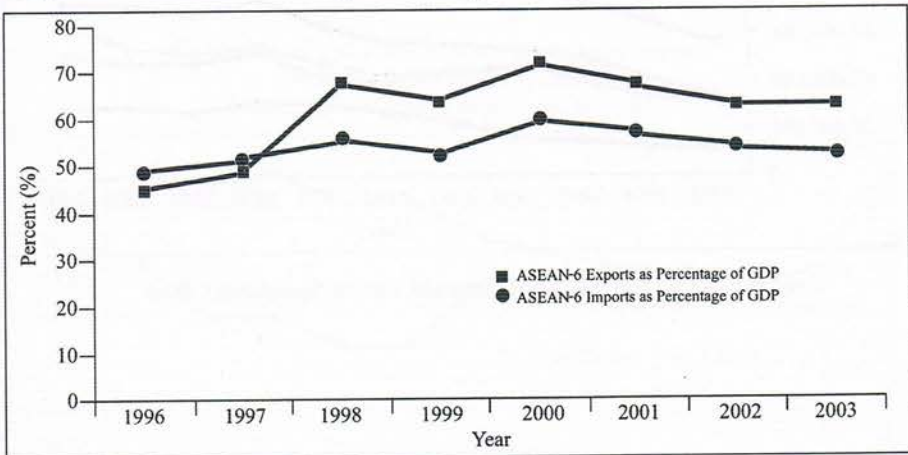
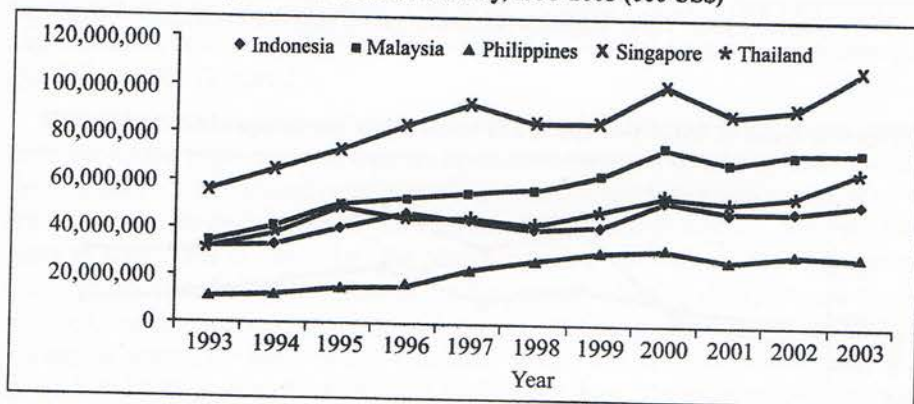Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 3. Trend of extra-ASEAN exports and imports and intra-ASEAN exports and imports of ASEAN-8, 1993-2003 (000 US$)
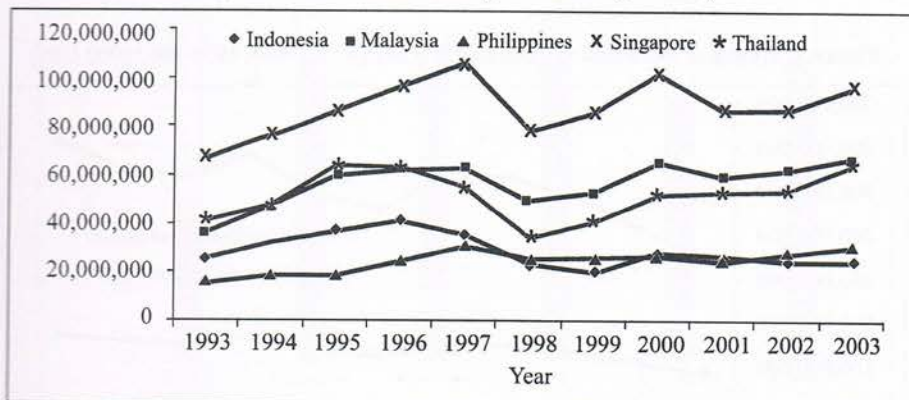

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 4. Trend of extra-ASEAN exports by selected member country, 1993-2003 (000 US$)

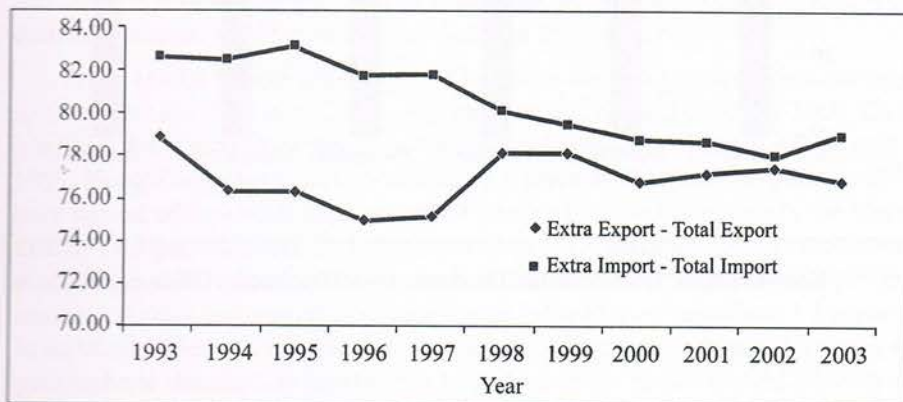Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

**Figure 5. Trend of extra-ASEAN imports
by selected member country, 1993-2003 (000 US$)**

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Second, Figure 6 shows the trend of development of extra-ASEAN export and import as a percentage, respectively, of total ASEAN exports and imports, probably the most important integration indicator. This indicator measures the relative importance of internal market within an economic integration. As can be seen, although both trends decline during the period reviewed, the ratios are still high. Third, Figure 7 shows trend of development of extra- and intra-ASEAN trade (export plus import). Although both trends increase, the gap is obvious. In 2003, total value of extra-ASEAN trade of ASEAN-8 reached more than US$ 600 billion, while that of intra-ASEAN trade is less than US$ 200 billion. Figures 8 and 9 show the importance of extra- and intra-ASEAN trade for selected member countries.

**Figure 6. Trend of extra-ASEAN exports and imports
by selected member country, 1993-2003
(percent of total ASEAN exports and imports)**

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 7. Trends of extra-and intra-ASEAN trade (ASEAN-8), 1993-2003 (000 US$)
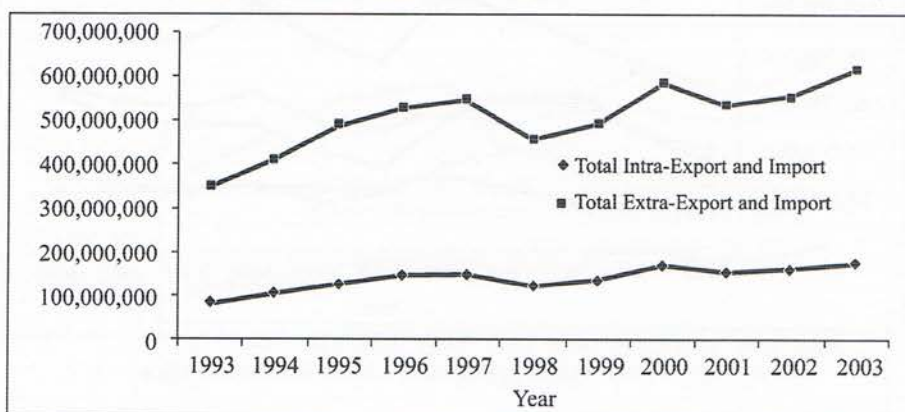
Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 8. Shares of ASEAN-6 extra- and intra-ASEAN exports by country, 1993-2003

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 9. Shares of ASEAN-6 extra- and intra-ASEAN imports by country, 1993-2003

Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

3. ASEAN trading partners

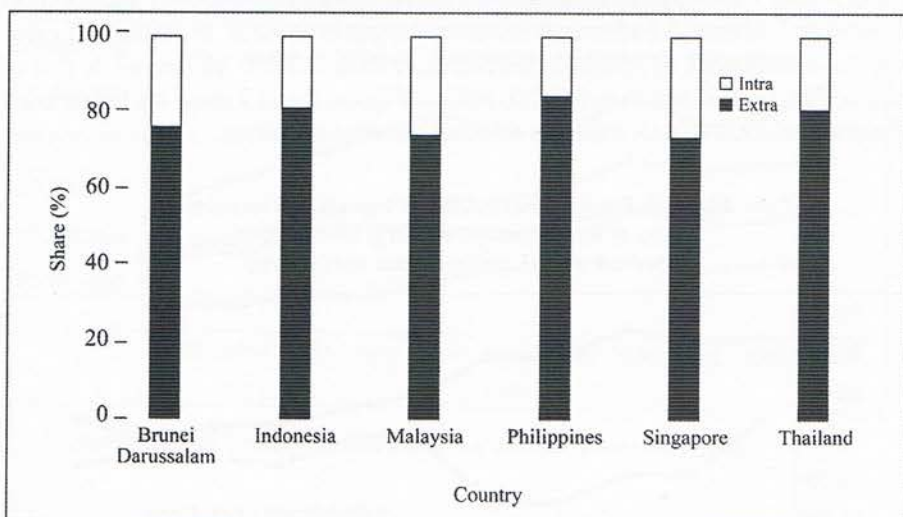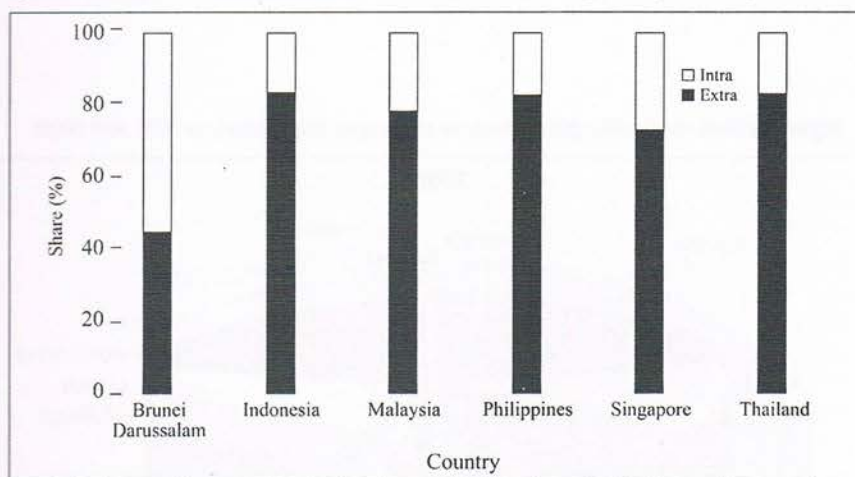From ASEAN export side, Figure 10 reveals the geographical distribution of ASEAN's exports to its major trading partners in 1995 and 2000. In 2000, China was ASEAN's sixth largest export market, accounting for 3.1 percent of the latter's global exports, behind other ASEAN countries (23.2 percent), the United States (17.4 percent), the European Union (14.8 percent), Japan (13.3 percent), and South Korea (3.6 percent). Two important points are worth noting. First, China plus Hong Kong has constituted 8.6 percent of ASEAN's global exports. Second, the share of China in ASEAN's total export basket has risen by a full percentage point in the last five years. Further, based on recent data from the ASEAN Secretariat, Figure 11 shows the geographical distribution of ASEAN's export to its major trading partners for 2002 and 2003. It reveals that the share of intra-trade (export) of ASEAN declined while that, for instance, with China increased during the period reviewed.

From ASEAN import side, Figure 12 reveals the geographical distribution of ASEAN's imports from its major trading partners in 1995 and 2000. By 2000, China constituted 4.8 percent of the overall imports of ASEAN-5, up from 2.9 percent in 1995. Hong Kong plus China constituted 7.9 percent of ASEAN's imports in 2000, only behind other ASEAN members (21.4 percent), Japan (19 percent), the United States (14.3 percent), and the European Union (11.4 percent). China constitutes a much larger share of trade with Indonesia (5.7 percent) and Singapore (5.3 percent) among ASEAN-5, and was of least significance in the Philippines (about 1.5 percent). In addition, based on recent data from the ASEAN Secretariat, Figure 13 shows the geographical distribution of ASEAN's imports from its major trading partners for 2002 and 2003.

Figure 10. Share of ASEAN's exports to major trading partners, 1995 and 2000
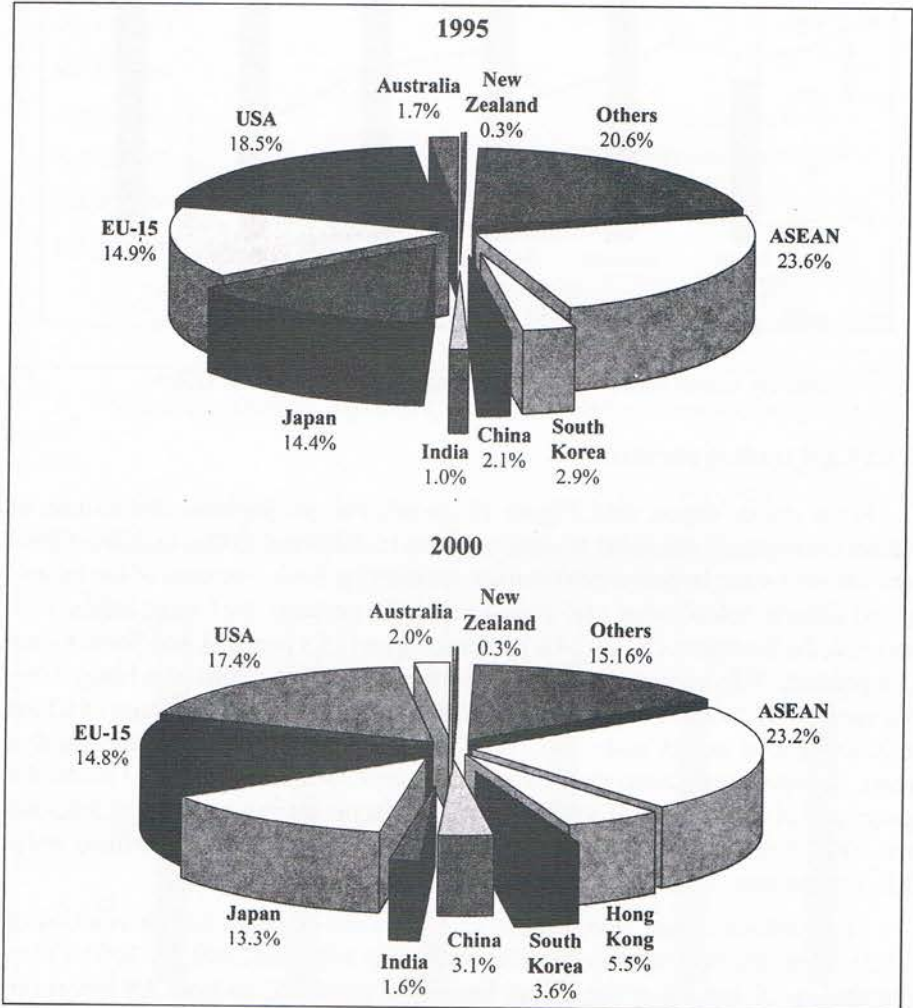
Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 11. Share of ASEAN's imports to major trading partners, 2002 and 2003
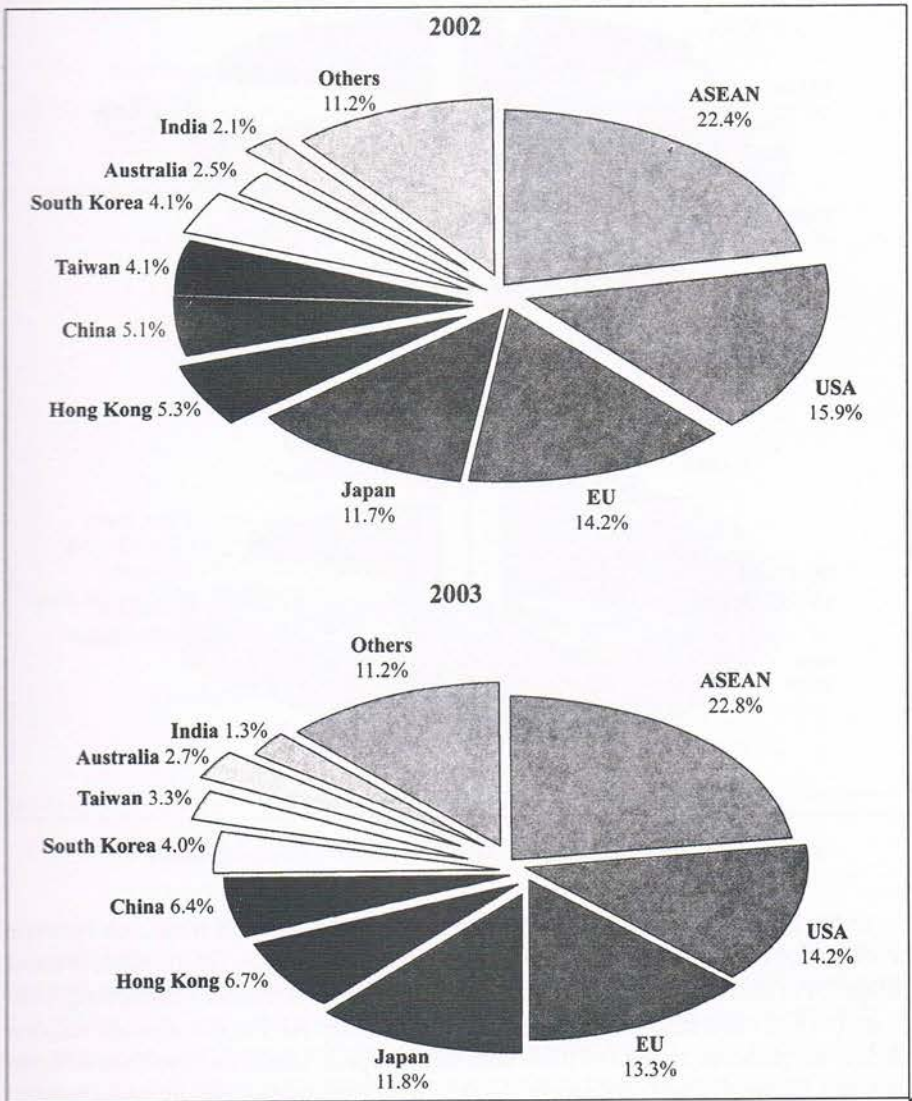
Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Figure 12. Share of ASEAN's exports to major trading partners, 1995 and 2000

1995

USA 14.7% · Australia 2.3% · New Zealand 0.3% · Others 19.9% · EU-15 14.7% · ASEAN 16.9% · Japan 24.8% · India 0.6% · China 2.3% · South Korea 3.6%

2000

USA 17.4% · Australia 2.0% · New Zealand 0.3% · Others 15.1% · EU-15 14.8% · ASEAN 23.2% · Japan 13.3% · India 1.6% · China 3.1% · South Korea 3.6% · Hong Kong 5.5%
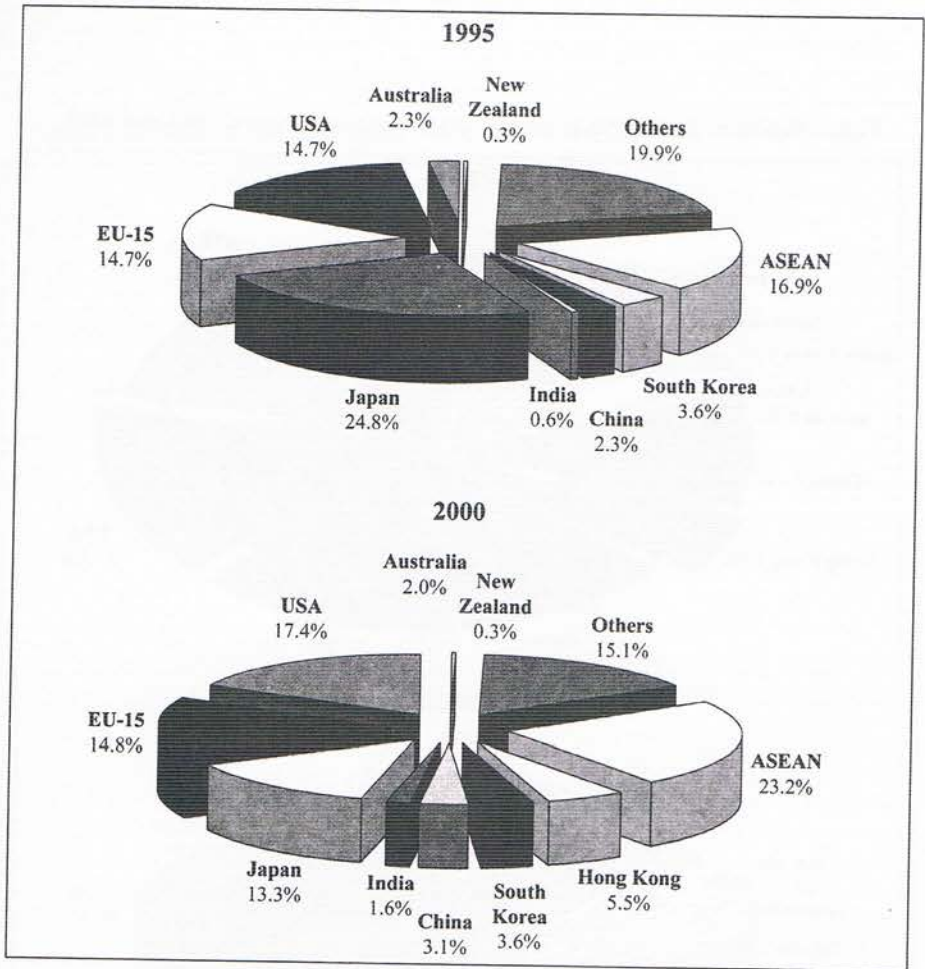
Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

In the last few years, ASEAN's development, particularly its trade, has become the subject of many studies. Sakakibara and Yamakawa [2002], for instance, present a snapshot of East Asia's average trade share for 1998-2000 (Table 1), reflecting both the global and intraregional nature of East Asia's trade. All but the smallest nations conduct a significant amount of trade with the European Union and the United States (between 10 percent and 30 percent share of their total trade). But intra-regionally, the trade shares of individual countries are even larger with ASEAN; in this case, the smaller countries have the larger share. If the expanded ASEAN+3 (APT) is considered, the shares rise significantly for all countries, primarily because of the high level of trade with Japan (representing 10-28 percent for most countries), except for Hong Kong, in which case it is trade with China that pushes up the share with APT.

Figure 13. Share of ASEAN's imports from major trading partners

2002

Others 14.4%
ASEAN 21.7%
Saudi Arabia 1.9%
Australia 2.2%
Hong Kong 2.4%
Taiwan 3.8%
South Korea 4.5%
China 7.0%
Japan 16.3%
EU 12.3%
USA 13.4%

2003

Others 14.7%
ASEAN 20.4%
Saudi Arabia 2.0%
Hong Kong 2.1%
Australia 2.1%
South Korea 4.25%
Taiwan 4.4%
China 7.3%
Japan 16.3%
EU 12.0%
USA 14.0%
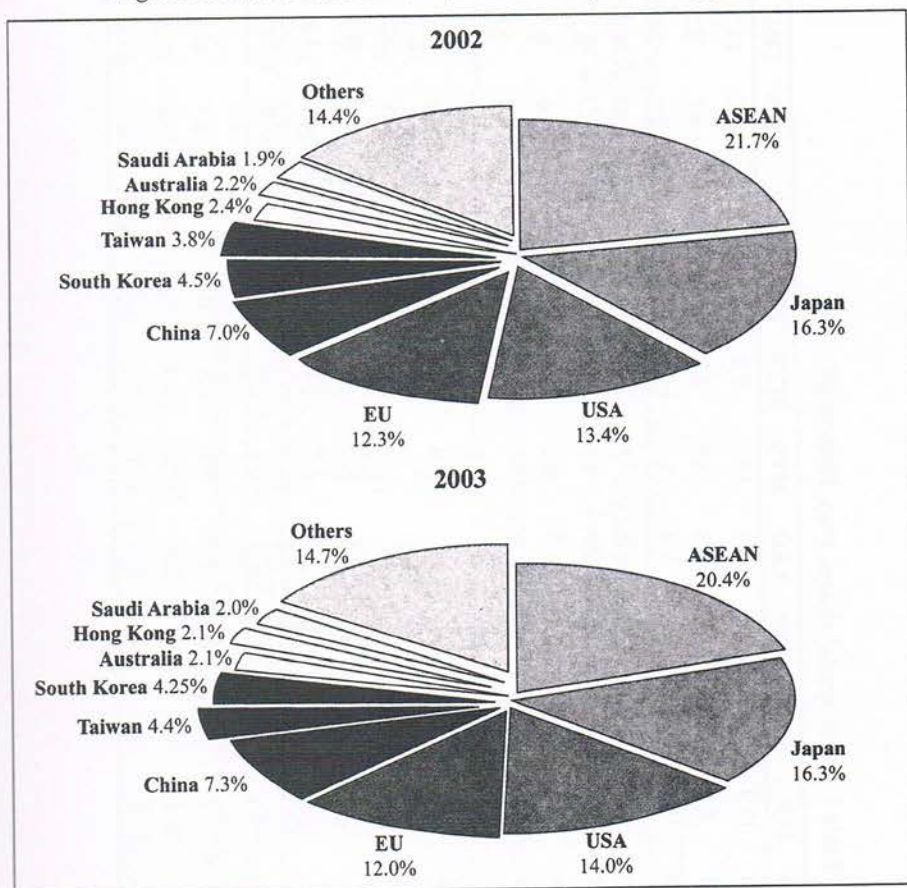
Source: ASEAN Trade Statistics Database, ASEAN Secretariat Office.

Sakakibara and Yamakawa [2002] also use the trade intensity index, as another measure, which is more complex in terms of its calculation as well as the information it provides. The trade intensity index is used to determine the actual intensity of one group member's trade with another group member or, in other words, the bias within a group of members to trade with one another. It gives a clearer, more accurate picture of the trading patterns of countries and, especially, of regions, than does the trade share measure. Table 2 shows merchandise trade intensities for East Asian countries from 1998 to 2000.

Table 1. Total trade[1] shares (%), 1998-2000[2]

	BRU	CAM	CHN	HKG	IDN	JPN	KOR	LAO	MYS	MYN	PHL	SGP	TWN	THA	VNM
Japan	27.6	3.2	16.8	8.8	19.9	-	15.0	20.9	12.1	7.9	18.2	11.9	18.2	19.3	15.2
Korea	7.6	2.9	6.3	3.2	6.9	5.2	-	0.8	3.9	5.7	5.6	3.2	4.1	2.5	7.6
China	0.7	4.1	-	38.5	5.2	9.2	8.6	2.7	3.0	15.6	2.5	4.3	0.0	3.8	7.6
Hong Kong	1.2	8.3	16.3	-	2.6	3.5	4.1	0.9	3.6	2.9	4.8	5.4	12.0	4.2	6.1
Taiwan	0.7	5.5	5.5	6.1	4.1	5.9	3.6	0.8	4.7	3.5	7.2	4.1	-	4.2	3.0
Brunei	-	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.2	0.0	0.0	4.1	0.0	0.3	0.0
Cambodia	0.0	-	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0
Indonesia	2.4	1.7	1.2	0.7	-	2.5	2.4	0.2	2.0	5.4	1.3	3.8	1.6	2.0	1.3
Laos	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.4	3.3
Malaysia	7.5	2.3	1.3	1.6	3.3	3.1	2.5	0.1	-	9.0	3.8	16.3	2.9	4.5	0.4
Myanmar	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.0	0.2	-	0.0	0.2	0.0	0.0	2.7
Philippines	0.1	0.1	0.6	0.9	1.0	1.9	1.6	0.0	1.9	0.2	-	2.4	2.1	1.6	0.0
Singapore	16.2	12.3	2.3	3.4	10.2	3.1	2.8	3.1	16.9	15.3	6.9	-	3.2	8.5	1.2
Thailand	7.3	10.2	1.1	1.3	2.5	2.8	1.0	41.8	3.5	0.0	2.6	4.4	1.9	-	9.7
Vietnam	0.0	10.9	0.4	0.2	0.9	0.5	0.6	2.7	0.4	0.0	0.5	1.0	0.7	0.9	-
ASEAN	33.5	33.9	7.0	8.1	18.1	14.0	11.2	48.0	25.2	29.8	15.2	28.7	12.4	18.2	22.2
ASEAN + 3	69.4	44.4	30.1	58.6	50.1	28.5	34.9	72.4	44.1	59.0	41.5	48.2	34.6	43.9	51.0

Table 1. Total trade[1] shares (%), 1998-2000[2] (continued)

	BRU	CAM	CHN	HKG	IDN	JPN	KOR	LAO	MYS	MYN	PHL	SGP	TWN	THA	VNM
APEC	85.6	76.0	75.1	82.5	75.6	71.7	69.7	76.6	75.9	74.1	84.5	78.4	76.3	73.4	71.2
CER	2.9	0.4	1.9	1.3	4.0	3.3	3.1	0.2	2.6	0.3	1.8	2.3	2.2	2.4	4.9
EU	12.9	9.7	14.4	12.5	14.9	15.7	12.4	11.7	13.3	9.2	14.6	13.6	14.6	14.4	17.5
US	11.3	17.4	17.8	14.9	13.0	26.6	20.4	1.7	19.7	7.8	27.4	17.7	21.7	17.6	4.0
NAFTA	11.3	17.6	19.6	16.2	14.5	29.5	22.8	2.0	20.7	8.5	28.7	18.6	23.4	18.9	4.6

Source: Sakakibara and Yamakawa's (2002) calculations based on data from IMF, Direction of Trade Statistics.

1. Total trade = sum of imports and exports.
2. Table reads as total trade share of a country in the top row with a partner country in the left-hand column; e.g., starting top left, Brunei's exports to and imports from Japan as percentage of Brunei's total trade. Some of the data for the year 2000 was estimated, including all countries' trade with Taiwan and some countries' trade with Vietnam. Singapore does not report its trade with Indonesia to the IMF; therefore, Singapore's trade with Indonesia is estimated using data from Indonesia.

Table 2. Trade intensity index, 1998-2000

	BRU	CAM	CHN	HK	IDN	JPN	KOR	LAO	MYS	MYN	PHL
BRU	-	-	0.2	0.0	3.6	8.0	5.9	-	2.4	0.0	0.2
CAM	-	-	0.5	0.6	0.1	0.3	0.0	-	0.5	-	0.2
CHN	0.1	1.9	-	6.2	1.5	2.8	1.7	0.8	0.7	5.0	1.1
HK	0.6	3.1	11.1	-	0.8	1.0	0.7	0.5	0.7	0.9	1.8
IDN	2.7	4.0	1.6	0.9	-	3.8	3.0	0.0	2.5	7.4	2.4
JPN	0.4	0.4	1.8	1.6	2.3	-	2.5	0.5	2.2	1.1	3.6
KOR	0.4	2.0	3.2	1.9	3.2	1.9	-	0.5	2.1	3.1	3.9
LAO	-	-	0.5	0.0	0.0	7.9	0.1	-	0.0	-	-
MYS	9.3	1.8	0.9	1.4	2.9	2.1	1.4	0.2	-	7.6	2.9
MYN	1.6	-	2.0	0.7	1.1	1.2	0.5	-	3.2	-	0.4
PHL	0.5	0.2	0.5	1.5	0.7	2.6	1.3	0.0	3.5	0.4	-
SGP	15.1	12.1	1.2	1.8	4.3	1.3	1.5	2.2	14.0	9.1	4.4
THA	2.5	23.7	1.2	1.6	3.7	2.7	0.8	61.5	3.2	0.0	2.9
TWN	-	-	-	6.8	2.0	1.8	1.0	-	1.9	-	3.6
VNM	0.2	30.8	1.0	0.6	7.2	3.3	1.0	32.8	1.9	-	3.8

Table 2. Trade intensity index, 1998-2000 (continued)

	SGP	THA	TWN	VNM	ASEAN	APT	APEC	EU	NAFTA	CER	US
BRU	3.8	11.9	0.3	0.1	4.2	4.9	2.0	0.1	0.5	2.6	0.7
CAM	5.0	3.0	0.9	68.5	4.4	1.7	1.3	0.3	1.4	0.1	1.8
CHN	1.1	0.7	0.8	2.0	1.0	1.9	1.6	0.4	1.0	1.2	1.3
HK	1.2	1.0	1.0	1.1	1.1	2.9	1.7	0.4	1.0	1.1	1.2
IDN	5.7	2.0	2.0	2.9	3.7	3.2	1.6	0.4	0.7	2.4	0.8
JPN	2.0	3.0	3.5	1.7	2.3	2.2	1.7	0.4	1.3	1.6	1.6
KOR	1.5	1.3	2.4	4.3	2.1	2.3	1.5	0.4	0.9	1.5	1.1
LAO	0.5	9.6	0.5	0	1.7	3.4	1.2	0.5	0.2	0.0	0.2
MYS	8.9	3.7	2.3	2.0	5.9	2.8	1.7	0.4	1.0	2.0	1.2
MYN	3.5	-	0.9	-	2.1	1.6	1.1	0.4	0.9	0.2	1.0
PHL	3.6	2.8	4.0	1.0	2.9	2.1	1.7	0.5	1.4	0.6	1.8
SGP	-	4.8	2.1	5.9	8.1	3	1.6	0.4	0.8	2.2	1.0
THA	4.6	1.9	-	4.9	4.1	2.6	1.6	0.5	1.0	1.9	1.2
TWN	1.7	-	2.0	4.7	2.1	1.5	1.7	0.4	1.1	1.2	1.4
VNM	2.5	2.8	1.8	-	3.1	2.5	1.3	0.8	0.3	6.3	0.3

Source: Sakakibara and Yamakawa (2002).

Note: Table reads as trade intensity of a country in the left-hand column with a country in the top row;some 2000 import and export data was estimated, including all countries' trade with Taiwan and some countries' trade with Vietnam. Singapore does not report its trade with Indonesia to the IMF; therefore, Singapore's trade with Indonesia is estimated using Indonesia's data.

4. ASEAN-China

Although ASEAN has not yet been in the first rank of the most important tradin
partners of China, trade between China and this region continued to increase. Dat
from various sources show that in 1998, export from China to ASEAN (Brune
Darussalam, Indonesia, Malaysia, Philippines, Singapore, and Thailand) was US
11.21 billion, while its import from ASEAN in the same period was US$ 9.20 billior
Comparatively, in the same period, China's export to and import from the Unite
States were US$ 71.17 billion and US$ 14.24 billion, respectively; with the Europea
Union, US$ 36.73 billion and US$ 15.24 billion, respectively; and with Japan, US
29.66 billion and US$ 28.27 billion, respectively. In 2000, ASEAN's import from an
export to China were US$ 24.99 billion and US$ 34 billion, respectively.

Not only because of China's accession to WTO but also in the era of ASEAN plu
China, ASEAN members are expected to face particularly intense competitive pressur
from China in view of the overlap in relative factor endowments. Some studies warr
that the "China threat" to ASEAN may be immediate and severe in labor-intensiv
products in which China has a strong comparative advantage, but could move or
to impact the broader technological spectrum.[1] However, such drawbacks from
stiffer competition could be outweighed by the potential for mutually beneficial and
complementary relationships that may accrue to its trading partners from China's
economic growth and trade expansion. It is thus important to understand the relative
performances of China and ASEAN countries over time, as well as the intensity and
changing dynamics of their intraregional economic interactions.

In the last few years, there have been many studies on the implications of
China's emergence as a strong economy on many other countries of the world.
For instance, Srivastava and Rajan [2003] studied the implications of the growing
Chinese economy and external trade on ASEAN and India. They examined trends
in merchandise trade, trade in commercial services, and global foreign direct
investment (FDI) flows at an aggregate level for China, ASEAN, and India, and the
dynamics of economic interactions among these economies since the mid-1980s.
They also analysed the impact of China's emergence on the more advanced ASEAN
members—especially Indonesia, Malaysia, Philippines, Singapore, and Thailand—
with regard to export competitiveness in manufacturing and the services sector at
a disaggregated product level. Their study shows that the global share of China's
merchandise trade increased from 1.5 percent in 1980 to 2.7 percent in 2000, while
that of ASEAN-5 rose from 4 percent to about 6.5 percent. In 1996-2000, Singapore
got the highest share (2.2 percent) in world exports and trade among ASEAN-5
members, followed by Malaysia (1.5 percent) and Thailand (1.1 percent). This
finding may suggest that due to the fact that the performance of ASEAN varies with
member countries, the implication of ASEAN plus China would also vary from one
member country to another.

---

[1]See, e.g., Lall [2003] and Lall and Albaladejo [2001].

Data from the Asian Development Bank (ADB) show that trade between China and ASEAN-4 (i.e., Indonesia, Malaysia, Philippines, and Singapore) more than doubled between 1993 and 2000, reaching US$ 36 billion. China ran a trade deficit of US$ 5.9 billion with these countries in 2000. The principal imports into China include iron-ore sand, chromium ore, and leather and textile materials. For some years, China has been importing more from ASEAN countries as a whole than it has been exporting to them. Exports from these countries to China also moved up the value-added ladder. Electronic products and machinery have penetrated Chinese market. With the lowering of tariff rates and the removal of nontariff barriers, trade from these countries should be further enhanced. However, as noted earlier, ASEAN is still relatively small in trade with China. Even in Asia, more than half of China's imports are from newly industrialized economies (NIEs) and Japan. Low production costs have attracted the relocation of less dynamic industries from NIEs as well as Japan to China. The largest trade deficit of China has been with Taiwan Province of China, i.e., more than US$ 15 billion in 2000. If products sold by Taiwan Province of China enterprises in the mainland were to be included, the figure would be much larger. Japan is China's largest trading partner in Asia. Trade with the Republic of Korea grew fast from very low levels in the early 1990s to more than US$ 30 billion in 2000.

In addition to some figures already shown in the previous section on distribution of ASEAN external trade by important countries of destination (including China), Figure 14 specifically reveals trends in merchandise trade of China and ASEAN over the period 1984-2001. While ASEAN's exports were nearly triple that of China in 1984, exports of China by 2001 closely matched that of ASEAN-5 countries. Of course, the convergence between China and ASEAN's exports largely took place between 1996 and 2000, the period of general downturn in much of Southeast Asia following the regional financial crisis of 1997-1998. A broadly similar trend is observed for imports, although China's export growth has outpaced its growth in imports since the early 1990s, leaving China with aggregate merchandise trade surplus vis-à-vis the rest of the world. In contrast, ASEAN-5, which had registered continuing and increasing trade deficits up to the crisis in 1997, ran trade surpluses thereafter.

Although the previous section already presented some information on the trade relationship between China and ASEAN, the next table may provide more information on trade between China and individual member countries, by showing some indicators measuring the importance of China in ASEAN member countries' trade. As can be seen, the performance of these indicators varies with member country. With respect to Indonesia, China's export share in Indonesian total export rose from 0.5 percent in 1985 to 5 percent in 2001, while Indonesian import rose from 2.4 percent in 1985 to 6.8 percent in 2001.

Using data from the ADB, Shafaeddin's study [2002] shows that a structura transformation took place in trade between China and ASEAN between 1993 an 2000. In 1993, ASEAN exports to China were dominated more by primary product like wood & wood articles and mineral fuels. By 2000, the product compositio shifted markedly to manufactured products, particularly electrical, electronic, an nuclear boiler products. This is evident in the increasing share of these products i ASEAN exports to China over that period. These products, along with nuclear boiler and parts, accounted for about 50 percent of ASEAN imports from China by 2000 There is, therefore, increasing evidence of intra-industry trade in these product between ASEAN-5 and China. As Shafaeddin explained, China is rapidly improving its production and export capacity in light manufactured products as well as in th assembly of parts and components of a limited number of capital goods. Its export of light manufactured goods compete mainly with South Asian countries and a few Latin American and African countries in the third markets, while it compete head-on with some lower and middle-income ASEAN countries in the productior and assembly of some capital goods. However, insofar as the intermediate good used in the manufacture of China's exports of capital goods are largely imported from ASEAN and other East Asian countries, trade is as much complementary as i is competitive.

Using the revealed competitive advantage (RCA) indices for exports and imports, Shafaeddin [2002] analysed the vulnerability of selected developing countries, including ASEAN, if China's competitive position is improved due to its entry to WTO. In contrast to existing literature that concentrates on labor-intensive products as a group, his study considers products at a disaggregate level since products in the same group are often not homogeneous. The study shows that in labor-intensive manufactured goods, China competes mainly with South Asian countries and a few Latin American and African countries. In the final market for capital goods, China competes with NIEs and ASEAN countries, and in a limited number of goods with Mexico and Costa Rica. With respect to ASEAN, some important findings are the following: (a) China's export structure is similar to that of Malaysia in the final market for a number of "finished" capital goods. In contrast, Thailand is vulnerable in clothing, miscellaneous household equipment, and electric machinery. (b) Indonesia has little to worry except for furniture. (c) Vietnam has similar export structure with China in some clothing items, but overall Vietnam has been aggressive in exporting these products. (d) China's attempt at increasing domestic value added in exports could lead to improvement in its competitiveness in technology/skill-intensive products of interest to ASEAN.

Figure 14. Trends in merchandise trade of China and ASEAN, 1984-2001

Source: ADB [2002].

**Table 3. Export (X), import (M), and trade (T) shares of PRC
in ASEAN member countries (percent)**

| Member	Indicator	1985	1990	1995	1996	1997	1998	1999	2000	2001
Indonesia	X	0.5	3.2	3.8	4.1	4.2	3.8	4.1	4.5	5.0
	M	2.4	3.0	3.7	3.7	3.6	3.3	5.2	6.0	6.8
	T	1.2	3.1	3.8	3.9	3.9	3.6	4.5	5.0	5.7
Malaysia	X	1.0	2.1	2.6	2.4	2.3	2.7	2.7	3.1	4.2
	M	2.0	1.9	2.2	2.4	2.8	3.2	3.3	3.9	4.9
	T	1.5	2.0	2.4	2.4	2.6	2.9	3.0	3.5	4.5
Philippines	X	...*	...	...	...	...	...	...	...	...
	M	5.4	1.4	2.3	2.1	2.5	4.2	3.3	2.4	2.6
	T	2.9	0.9	1.4	1.2	1.5	2.2	1.6	1.1	1.3
Singapore	X	1.5	1.5	2.3	2.7	3.2	3.7	3.4	3.9	4.4
	M	8.6	3.4	3.2	3.4	4.3	4.8	5.1	5.3	6.2
	T	5.3	2.5	2.8	3.1	3.8	4.2	4.3	4.6	5.3
Thailand	X	3.8	1.2	2.9	3.4	3.0	3.2	3.2	4.1	4.4
	M	2.4	3.3	2.8	2.7	3.6	4.2	5.0	5.5	6.0
	T	3.0	2.4	2.9	3.0	3.3	3.7	4.0	4.7	5.2
ASEAN-5	X	1.2	1.8	2.6	2.8	2.9	3.1	3.0	3.4	4.0
	M	5.2	2.9	2.9	2.9	3.6	4.1	4.5	4.8	5.5
	T	3.1	2.4	2.7	2.9	3.2	3.5	3.6	4.1	4.7

Note: *Data not available.
Source: ADB [2002].

Sakakibara and Yamakawa [2002] provide another interesting evidence. T examined the shift over time of ASEAN's external trading pattern. A review this shift can indicate the regional/global trends in external trade of this regio economic integration. The following four figures reveal how the trade share the region with some of its major trading partners has changed between 1980 ; 2000, and particularly how the importance of China for ASEAN trade has shif over time.

Figure 15. ASEAN import shares
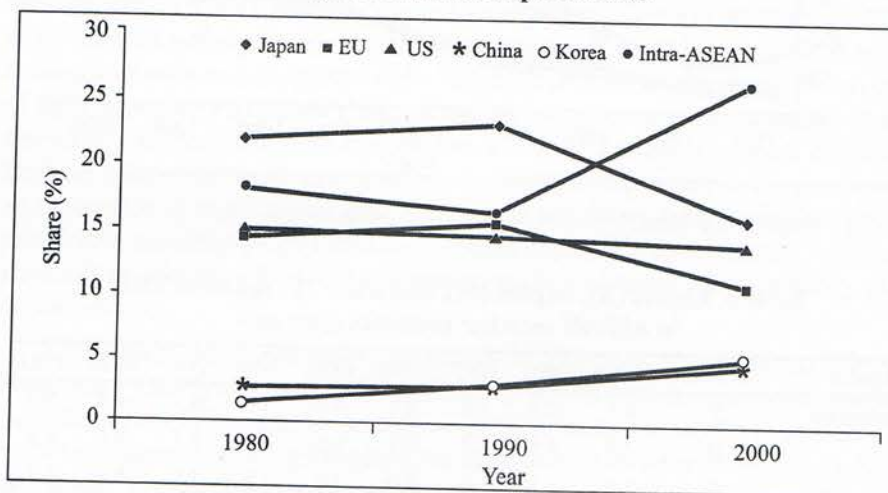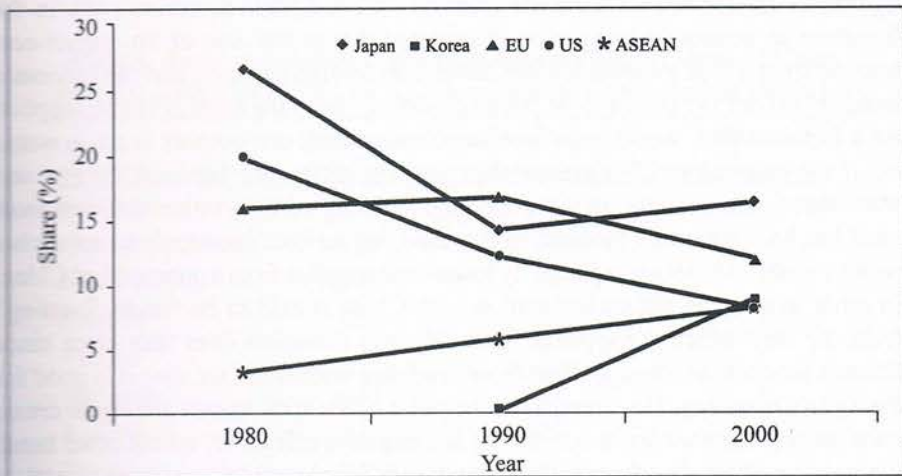

Source: Sakakibara and Yamakawa [2002].

Figure 16. ASEAN export shares
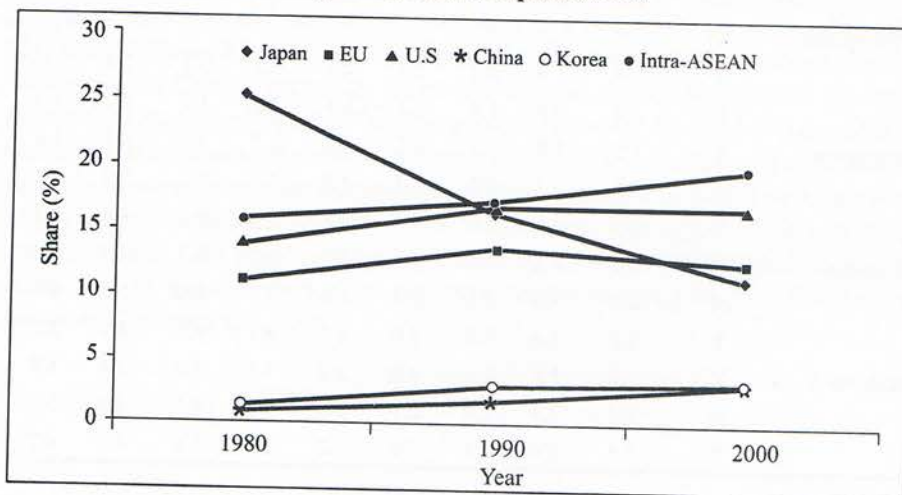
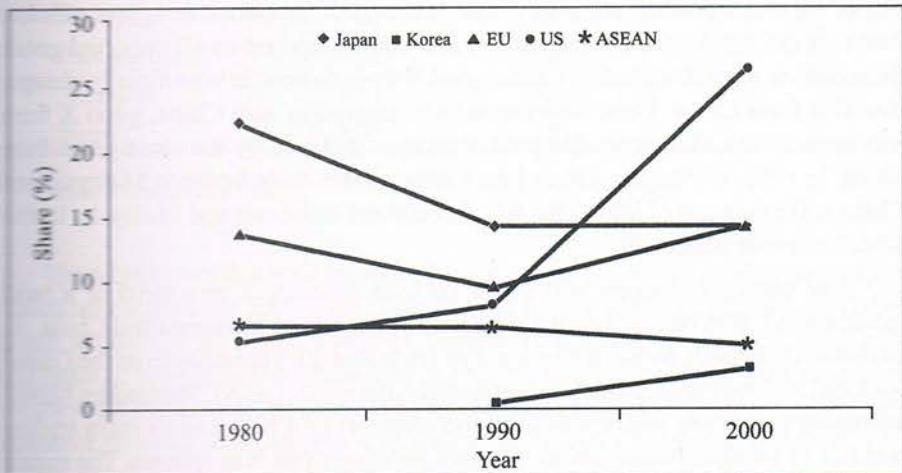Source: Sakakibara and Yamakawa [2002].

Figure 17. China import shares

Source: Sakakibara and Yamakawa [2002].

Figure 18. China export shares

Source: Sakakibara and Yamakawa [2002].

5. Possible trade diversion: some analytical approaches

Theoretically, two possibilities can emerge when ASEAN forms a free tr agreement (FTA) with China: trade creation (TC) and trade diversion (TD). In literature on economic integration, it is stated that in the case of TD, higher-c imports from a bloc member replace lower-cost foreign supplies, and the econor integration (or FTA) is said to be "trade diverting" from the most efficient suppl As a further effect, world trade is reduced and at least one country is made wo off if the external tariff is greater than the cost difference between the FTA a nonmember sources. But, in this paper, the meaning of TD is rather different fr what has been generally thought. In this case, higher-cost imports from a meml country within ASEAN are replaced by lower-cost supplies from a nonmember, Chi In other words, the ASEAN integration with China is said to be "trade divertin from the least efficient suppliers. Thus, if trade diversion does take place sin China's products are cheaper than those produced within ASEAN, then it is good f the ASEAN economy. However, from the point of view of ASEAN aiming to crea trade among member countries, the TD is a negative effect. TC, on the other han is a positive effect, i.e., the trade volume of individual member countries or ASEA as a group increases when China freely enters the ASEAN market without reducir intra-ASEAN trade.

As an example, suppose Indonesia exports good X to Malaysia (or Malays imports X from Indonesia) with no tariff barrier. The price of good X is higher tha that of the same product made in China (industry X in Indonesia is less efficiei than that in China). But, because of external tariffs imposed on all imported gooc from outside ASEAN, including China, good X from Indonesia is artificially cheape than that from China. Now, with the ASEAN integration with China, good X fror Indonesia in the Malaysian domestic market is replaced by the same good fror China. In other words, the ASEAN plus China creates trade between Malaysia an China at the expense of intra-ASEAN trade between Indonesia and Malaysia. In thi case, Indonesia suffers TD.

How serious Indonesia will suffer TD from granting a zero tariff or a tarif reduction to China depends on the similarity of exports of Indonesia and China. A indirect approach, by using Commodity Trade Statistics database from the Unitec Nations Department of Economic and Social Affairs (UN-DESA), Shafaeddin [2002 attempted to analyse similarities in export structure of China and its main trading partners by using rank correlation. The process of analysis is as follows. The expor items (at the digit level) of China and its competitors are ranked in order of their RCA indicator for 1997-1998; the indicator for each product shows the ability of each country to gain market share in that product in the international market. Then 50 are chosen for each country and the index of rank correlation between the related export items of China and each of the selected countries is calculated. The 50 items that were chosen for China account for nearly three quarters of the total exports of China. The coefficient correlation equal to unity implies a maximum degree of

competition between China and the country concerned. The lower the coefficient, the lower the degree of rivalry between China and the country concerned in international market for the related products. The results are shown in Table 4.[2]

Table 4. Rank correlation coefficients between export items of China (at SITC 3-digit level) and its main competitors in developing countries

Countries	Correlation coefficient	Number of common products	Statistical significance (%)
Sri Lanka	0.75	24	1
Hong Kong (China)	0.59	29	1
Macao (China)	0.59	25	1
Pakistan	0.56	21	1
Vietnam	0.55	28	1
Indonesia	0.53	25	1
Bangladesh	0.46	25	5
Thailand	0.42	31	5
India	0.39	19	10
Myanmar	0.20	18	...
Republic of Korea	0.08	20	...
Philippines	0.04	29	...
Malaysia	0.02	27	...
Taiwan (China)	0.01	26	...
Singapore	-0.03	23	...
Nepal	-0.06	19	....

Source: Shafaeddin [2002].

The table shows that for a number of countries the calculated coefficients are not statistically significant. Except for Hong Kong (China) and Macao (China), the Asian group, especially Sri Lanka, Pakistan, Vietnam, Indonesia, Bangladesh, Thailand, and India (if judged by the similarities in their pattern of RCA and export structure) are the main competitors of China. These countries are basically exporters of labor-intensive products and compete with China for a certain number of products, i.e.,

---

[2] As explained in the study, one problem with this methodology is that there might be some products for which China has gained market share (RCA greater than unity) but do not figure among the chosen (50) export items of China. If these items happen to be among the first 50 export items of a competing country, they are not captured by the calculation of the correlation coefficient. Such an exclusion takes importance only if RCA for the product(s) concerned for China is greater than the relevant RCA for its competitor(s), i.e., China's gain in market share is greater than that of its competitor(s). Nevertheless, as the product(s) is (are) not among the products in which China has gained the highest market shares, i.e., the most dynamic export products of China, the table provides useful information for the study's purpose.

19 in the case of India and 28 for Vietnam, from the 50 main export items of Ch
As explained in the study, the high correlation coefficient between China and H
Kong (China), and between China and Macao (China), is partly due to similaritie
their export structure, and partly due to the fact that a large number of exports fi
Hong Kong (China) and Macao (China) are re-exports originating from China.
other Asian countries, correlation coefficients are small and statistically insignifi(
(items 10-16). Some Asian countries, i.e., the Republic of Korea, Malaysia, Taiv
Province of China, and Singapore, do have "complementarity" relations with Ch
because capital and intermediate goods are important in their export structure.

One important implication of this study's findings is that the implementat
of ASEAN plus China will most likely lead to TD at least to some member countr
such as Indonesia, Malaysia, Thailand, and Vietnam, as the study has shown t
these countries have similarities with China in RCA pattern and export structure

With respect to direct approach, there are some methods to identify TD. C
commonly adopted method in the literature is to compare the export similar
index (ESI) between member and nonmember countries to the union's marke
Assume there are two countries in ASEAN, Indonesia (I) and Malaysia (M), a
one nonmember country, China. Indonesia and China export to Malaysia, so
$ESI_{IC \to M}$ denote the ESI between Indonesia and China to the market in Malays
the index is then defined as follows:

$$ESI_{IC \to M} \equiv \left\{ \sum I \min \left[X_{i;I \to M}, X_{i;C \to M} \right] \right\}$$

where $X_{i;I \to M}$ is Indonesian export share of commodity i to Malaysia, and $X_{i;C \to i}$
is China's export share of the same commodity to Malaysia. Clearly, the index
between zero (0) and one (1). If the commodity distribution of exports to Malays
from Indonesia and that from China are identical, the $ESI = 1$, and if they are total
different then the index is zero (0). The larger $ESI_{IC \to M}$ is, the more similar
overlapping Indonesia's and China's export structure to Malaysia, indicating th
Malaysia or Indonesia (and hence ASEAN) will more likely suffer TD from liftir
bilateral tariffs between ASEAN (or Malaysia) and China.

Thus, how serious Indonesia (or other individual member countries) will suff
TD from granting a tariff reduction/lifting to China depends on how similar tl
exports of China and those of Malaysia are to Indonesia. Although the index has i
virtues in less data dependency, by requiring only export data, which are availab
on a standardized basis for all countries, this approach has several shortcoming
which is summarized by Huang [1996] as follows: the index tends to shift over tin
due to a trade structural change, and detracts from their usefulness in predicting TI
aggregation bias may affect the analysis and thus yield a result that may not refle(
what really happened; an overall similarity index may not be very meaningful t
measure TD because the degree of tariff reduction may vary with good (so this to(

---

[3]This index was developed by Finger and Kreinin [1979] and adopted in many studies
(e.g., Kellman and Schroder [1983]; Huang [1996]).

may not be useful to examine TD in this case of ASEAN plus China); the index may fail to reflect dynamic changes in the market; and the index may be incapable of identifying TD in the case of intra-industry trade.

Another easily observable shortcoming can be explained as follows: suppose there are three ASEAN countries, Indonesia (I), Thailand (T), and Malaysia (M), and one nonmember, China (C); and Indonesia, Thailand, and China export to Malaysia. Suppose, $ESI_{IC \to M} = ESI_{CT \to M} = ESI_{CT \to M} = 1$, because the export shares to Malaysia are identical among the three. This identical ESI may conclude that there is no difference in the TD effect between Indonesia and Thailand. However, this conclusion may be wrong, because at the same time it can be that both Indonesia (or Thailand) and Malaysia have the same pattern of trade with China; whereas, on the contrary, the pattern of trade between China and Thailand (or Indonesia) is just the opposite. This means that Indonesia (or Thailand) and Malaysia are similar in their comparative advantage. In this case, intuitively, the trade similarity of Indonesia (Thailand) and Malaysia in their trade pattern with China implies that Indonesia (or Thailand) will suffer more a TD effect from the implementation of ASEAN plus China than Thailand (or Indonesia) does.

Alternatively, Huang [1996] developed an index, called the trade similarity index (TSI). First, the trade specification index, $SI_{(k), i \to j}$, is defined as follows:

$$SI_{(k), i \to j} = \left[X_{(k), i \to j} - M_{(k), i \to j} \right] / \left[X_{(k), i \to j} + M_{(k), i \to j} \right] \tag{2}$$

where $X_{(k), i \to j}$ is the export value of good k from country i to j and $M_{(k), i \to j}$ is the corresponding import value. The index is between -1 and 1: $SI_{(k), i \to j} \geq 0$ implies country i is a net exporter of good k to country j; $SI_{(k), i \to j} = 1$ indicates a one-way export of good k from country i to country j (country i exports good k to country j but country j [i] does not export [import] good k to [from] country i [j]); $SI_{(k), i \to j} \leq 0$ means that country i is a net importer of good k from country j; and $SI_{(k), i \to j} = -1$ implies a one-way export of good k from country j to country i.

In the case of ASEAN plus China, then the TSI can be defined between Indonesia (I) and China (C) for domestic market in Malaysia (M), denoted by $TSI_{IC \to M}$, as follows:

$$TSI_{IC \to M} \equiv \text{correlation} \left(SI_{I \to M}, SI_{C \to M} \right) \tag{3}$$

i.e., the correlation coefficient of $SI_{I \to M}$ and $SI_{C \to M}$.

Suppose there are three member countries of ASEAN, i.e., Indonesia (I), Malaysia (M), and Thailand (T). Thus, if $TSI_{IC \to M} > TSI_{IT \to M}$, it means that Indonesia's trade pattern with Malaysia is more similar to China's than to Thailand's. Thus, if ASEAN (or in this case, Malaysia) forms an FTA with China, then Indonesia will suffer more from TD than Thailand does.

Figure 19 shows the values of net export (exports-imports) to China of six AS
member countries. During that whole period reviewed, only Indonesia has posi
value of net exports to China, mainly because the main important component
Indonesian export to that country are oil and gas and some agricultural commodi
including crude palm oil (CPO). However, in some years within that period, the va
net exports of Singapore to China appear as the largest among the six countrie

Finally, Tables 5 and 6 present the calculated trade specification and tr
similarity indices, respectively, of four ASEAN countries with China. This analy
is based on data on total trade with China, not by commodity. As can be se
none of these four countries were a net exporter with China for the whole peri
However, Indonesia appears to be much better than the other three countries, si
only in 1994 that the country was a net importer. Table 6 shows that, with resp
to Indonesia, $TSI_{IS \to C} > TSI_{IF \to C} > TSI_{IM \to C}$, as also indicated by the Spearm
index of almost 0.58. This reflects that Indonesian trade pattern with China is m
similar to Singapore's than to the Philippines' and Malaysia's. Thus, from
individual member country's perspective—for instance, Indonesia—if China for
an FTA with ASEAN, then Singapore or Indonesia will suffer more from TD than
Philippines and Malaysia. From the Malaysian perspective, the ASEAN plus Chi
will make Malaysia or Singapore suffer more from TD than the Philippines a
Indonesia, and so on. Overall, with the ASEAN plus China, Indonesia or Malay
will suffer more from TD than other ASEAN member countries.

Figure 19. Values of net exports of six ASEAN countries to China
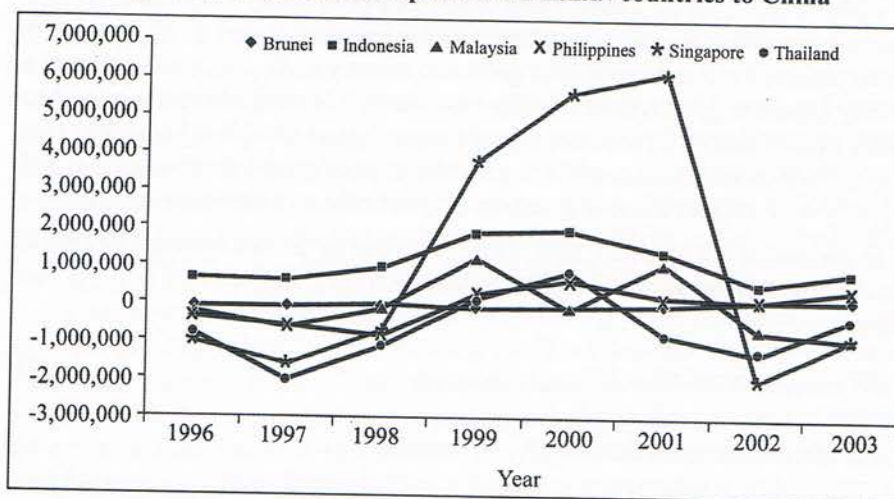
Source: ASEAN Secretariat (database)

Table 5. Trade specification index of four member countries of ASEAN with China

	Indonesia	*Malaysia*	*Philippines*	*Singapore*
1993	0.1	0.2	0	-0.1
1994	-0.1	0.2	-0.3	-0.16
1995	0.1	0.1	-0.4	-0.19
1996	0.2	-0.1	0.3	-0.13
1997	0.2	-0.2	-0.6	-0.16
1998	0.3	0	-0.6	-0.09
1999	0.4	0.2	0.1	0.17
2000	0.3	0	0.1	0.21
2001	0.2	0.1	0	0.24
2002	0.1	-0.1	0	-0.13
2003	0.1	-0.1	0.1	-0.04

Source: Calculated from ASEAN database (ASEAN Secretariat).

Table 6. Trade similarity index of four member countries of ASEAN with China

	TSI	*Spearman's rho*
Indonesia		
- Malaysia	-0.114	-0.084
- Philippines	0.132	0.195
- Singapore	0.598	0.579
Malaysia		
- Indonesia	-0.114	-0.084
- Philippines	0.082	-0.012
- Singapore	0.26	0.15
Philippines		
- Indonesia	0.132	0.195
- Malaysia	0.082	-0.012
- Singapore	0.456	0.492
Singapore		
- Indonesia	0.598	0.579
- Malaysia	0.26	0.15
- Philippines	0.456	0.492

Source: Calculated from ASEAN database (ASEAN Secretariat).

6. ASEAN challenges and opportunities

No doubt, ASEAN countries as a group or individually will face challenge well as opportunities from the implementation of ASEAN plus China. From the ASI export side, China, with more than one billion people and increasing income capita, is certainly a huge market opportunity for ASEAN. As shown in this pa although ASEAN has not yet been in the first rank of the most important trad partners of China, trade between China and this region continued to increa From the ASEAN import side, the serious challenge facing individual mem countries is the competition between domestic products and imported products fr China. One thing is certain: individual members of ASEAN will face particula intense competitive pressure from China in view of the overlap in relative fac endowments. The "China threat" to ASEAN may be immediate and severe in lab intensive products in which China has a strong comparative advantage.

It is most likely that the ASEAN-China free trade zone may generate higher tr volume between China and ASEAN at the cost of ASEAN intra-trade. Especially sir the establishment of ASEAN, the growth of its inter-trade has always been higl than that of its intra-trade, which might be caused by at least four main factors: most member countries produce or specialize in the production of similar goods; comparative advantages are not so different among member countries; (3) less tr incentive facilities such as export credits are provided among member countr in ASEAN intra-trade; (4) and the ASEAN market could not meet the demand individual member countries for both consumer and producer goods, so that ea member country depends heavily on imported goods from countries outside ASEA including China. These are the greater challenges for ASEAN.

References

Adhikari, A. and Y. Yang [2002] "China's increasing openness: threat or opportunity?" Asian Development Bank, mimeo, February.

ASEAN-China Expert Group on Economic Cooperation [2001] "Forging closer ASEAN China economic relations in the 21st century", mimeo, October, Jakarta.

Asher, M., R. Sen, and S. Srivastava [2003] "ASEAN-India: emerging economic opportunities" in: F. Grare and A. Mattoo, eds., *Beyond the rhetoric: the economics of India's look-east policy*. New Delhi: CSH-Manohar.

Asian Development Bank (ADB) [2002] *Key indicators of developing Asian Pacific countries*. Manila: ADB.

Banerjee, S. [2002] "Recovery and growth in Indonesian industry: elements of a future policy framework", UNSFIR Working Paper No. 02/08, Jakarta, www. unsfir.or.id.

Bhaskaran, M. [2003] "China as potential superpower: regional responses", Deutsche Bank Research Report, January 15.

Fernald, J., H. Edison, and P. Lougani [1999] "Was China the first domino? Assessing links between China and the rest of emerging Asia", *Journal of International Money and Finance* **18**: 515-536.

Finger, J.M. and M.E. Kreinin [1979] "A measure of 'export similarity' and its possible uses", *The Economic Journal* **89**: 905-912.

Garnaut, R. and K. Anderson [1980] "ASEAN export specialization and the evolution of comparative advantage in the Western Pacific Region" in: Ross Garnaut, ed., *ASEAN in a changing Pacific and world economy*. Canberra: ANU Press.

Huang, D.-S. [1996] "On the prediction of TD under intra-industry trade with an application to NAFTA and Taiwan", Discussion Paper No. 9605, February, The Institute of Economics Academia Sinica, Taipei.

Kellman, M. and T. Schroder [1983] "The export similarity index: some structural tests", *The Economic Journal* **93**: 193-198.

Kwan, C.H. [2002] "The rise of China and Asia's flying-geese pattern of economic development: an empirical analysis based on US import statistics", NRI Papers No.52, Nomura Research Institute, Tokyo.

Lall, S. [2003] "Assessing industrial competitiveness: how does Singapore fare?" in: R. Rajan, ed., *Sustaining competitiveness in the new global economy: a case study of Singapore*. Cheltenham: Edward Elgar for IPS.

Lall, S. and N. Albaladejo [2001] "The competitive impact of China on manufactured exports by emerging economies in Asia", a paper prepared for UNIDO, Queen Elizabeth House, University of Oxford.

Lien, J. [2002] "Bush targets FTAs with more ASEAN nations", *Business Times*, October 28, Singapore.

Li, Yuefen [2002] "China's accession to WTO: exaggerated fears?" Discussion Par No. 165, November, UNCTAD.

Martin, W. and E. Ianchovichina [2001] "Implications of China's accession to t World Trade Organisation for China and the WTO", *The World Economy 2* 1205-1219.

Mattoo, A. [2002] "China's accession to the WTO: the services dimension", Poli Research Working Paper No. 2932, The World Bank, Washington, D.C.

Pomfret, R. [1981] "The impact of EEC enlargement on non-member Mediterane: countries' exports to the EEC", *Economic Journal* 92: 726-30.

Sakakibara, E. and S. Yamakawa [2002] "Regional integration in East Asi challenges and opportunities", World Bank East Asia Project, World Bank.

Shafaeddin, S.M. [2002] "The impact of China's accession to WTO on the expor of developing countries", Working Paper No.160, June, UNCTAD.

Srivastava, S. and R.Ṣ. Rajan [2003] "Implications of the economic rise of the PF for ASEAN and India: trade and foreign direct investment", IPS Working Pap No. 14, November, South Asian Studies Programme, National University (Singapore, Singapore

World Bank [2003a] *East Asia integrates: a trade policy agenda for shared growt.* World Bank Report, Advance Edition. Washington: World Bank.

World Bank [2003b] World development indicators database on CD-RON Washington, D.C.: World Bank.