

### 3. Linkages between regional trade agreements and international production networks: Evidence from five case studies in Asia

*Mochamad Pasha*

#### 3.1. Background

International production networks have become important drivers of global trade as well as regional trade in Asia, particularly in the past two decades. These networks are channels through which national economies are becoming interlinked by using the advantages of production fragmentation. The establishment of networks has influenced the patterns of trade in Asian economies (see, for example, Athukorala, forthcoming). Trade agreements have been another major factor influencing trade patterns (and flows). Since 1995, there has been a proliferation of free (or preferential<sup>1</sup>) trade arrangements, both bilateral and regional.

The pattern of global trade in terms of commodity and geographical structure has indeed changed substantially in the past three decades. This was marked by an increasing share of trade in parts and components in total trade, compared with trade in final goods. Statistically, for example, the value of trade in parts and components increased three times from 1987 to 2003, while the value of trade in final goods increased by about two times during the same period. This increase represents an increase in the share of trade in parts and components from 16 per cent in 1987 to 20 per cent in 2003.

Based on the literature survey detailed in the previous chapter, much of the increase in the global parts and components trade was in the East Asian region. Many recent studies (e.g., Ando and Kimura, 2003; Kimura and Ando, 2005a; and Athukorala and Yamashita, 2006) have shown evidence of this change. Ando and Kimura (2003), for example, noted very high shares of parts and components in machinery trade for countries in the region, reaching about 40 per cent to 50 per cent. In the case of South-East Asian countries, the share reached about 80 per cent. Meanwhile, Athukorala and Yamashita (2006) showed that the share of East Asian countries – excluding Japan – in global exports almost doubled between the early 1990s and 2000s. They also noted that the degree of dependence on the trade in components was proportionally greater in the East Asian region than in other regions of the world.

The increased trade in parts and components indicates the rising importance of IPNs. The formation of the network is facilitated by the growing production fragmentation, at the international level. According to Athukorala and Yamashita (2006), international

---

<sup>1</sup> The term “preferential trade agreement” is also used in the literature to denote an exception from the non-discriminatory principle of WTO (MFN clause – Article I). In the current study, RTA refers to any type of reciprocal exchange of discriminatory trade concessions between two or more countries.

production fragmentation is broadly defined as cross-border dispersion of component/assembly within a vertically integrated production process, with each country specializing in a particular stage of the production sequence.

Ando and Kimura (2003) and Kimura and Ando (2005a) provided some evidence at the company level on the existence of international production fragmentation – and hence, IPNs – using data from Japanese firms operating in East Asian countries.<sup>2</sup> Among other findings, these two studies showed that investment by Japanese companies was directed more to other countries in East Asia and that it was concentrated more in the manufacturing sector, which differed from the Japanese investment in North America and European countries. In addition to the investment factor, another Japanese corporate behaviour characteristic perhaps provides more support for the claimed importance of international production fragmentation and IPNs – i.e., Japanese affiliates in the East Asian region are more export-oriented than those in other parts of the world. More importantly, from the perspective of “regional” production networks (i.e., international production networks operating in a single geographical region), most Japanese affiliates in East Asia direct their exports back to the region.

The extent of participation by individual countries in production networks greatly varies. In South-East Asia there are three layers of countries with regard to participation in IPNs. The countries that are most involved are Malaysia and Thailand. The middle layer comprises Indonesia and the Philippines while the bottom layer includes countries that have yet to become more integrated in the global /regional production networks and trade.

Parallel to the growing trend of IPNs, in recent years there has also been a proliferation of preferential trade agreements, particularly in East Asia. The rapid increase in the number of RTAs signed by countries in East Asia was triggered by competition between China, Japan and the Republic of Korea. The ASEAN-China Free Trade Agreement is the third-largest free trade area in the world, in terms of geographical scope, after the European Union and NAFTA. The significant size of the Chinese economy and the establishment of the ASEAN-China Free Trade Agreement triggered the domino effect that resulted in the proliferation of trade agreements in the region.

As noted in the introduction, this chapter addresses the question as to the extent that regional trade arrangements affect the existing IPNs. Do they moderate, inhibit or foster development or have no effect (i.e., are neutral) on existing IPNs. The study described here is expected to contribute to the existing literature in at least two ways. First, it adds to the empirical facts on IPNs. As noted by Kimura (2006a), there is a need to expand the empirical literature (particularly from the East Asian region), as such findings are necessary for the enhancement of theoretical thinking on the subject. Unlike the other topics related to trade and industrialization, the phenomenon of IPNs is still relatively new and thus there is plenty of room for theoretical development. The second potential contribution is a better understanding on the “mechanism” behind the international

---

<sup>2</sup> See also Kuchiki, 2005, for an example of regional production network formation in China's automotive sector, i.e., Toyota's plants in Tianjin.

production networks, particularly in relation to the world's growing reliance on regional integration

This chapter presents the results of five country case studies that explore linkages between IPNs and RTAs in three different sectors. The case studies focus on sectors in which IPNs are prevalent in the selected countries. The studies on China, India and Indonesia focus on the automotive industry. The study on Thailand covers the hard-disk drive industry while the Bangladesh study concentrates on the textile and clothing sector. This chapter begins with a brief description of the establishment of IPNs in East Asia in order to introduce the following sections on the automotive, hard disk drive, and textile and clothing sectors.

## **3.2. Establishment of IPNs in Asia**

The rise of IPNs in East Asia can be explained by two policy factors. Going back to the 1980s, the "hollowing-out" of the Japanese economy triggered the relocation of Japanese firms to neighbouring countries (Baldwin, 2007). The hollowing-out was caused by the erosion of the competitiveness of Japanese industries, stemming from the increase in unit labour costs. Meanwhile, about the same time, developing countries in East Asia, such as the four "tigers", began implementing the so-called "dual-track" strategic approach to industrialization (Kimura, 2006a). The idea of the dual-track approach is to promote import substitution and exports simultaneously.

The hollowing-out of Japan and the dual track approach of developing East Asian countries complemented one another. This combination of policies set off another sequence of policy responses from the countries that had been the destination for the industrial relocations of Japanese companies (Baldwin, 2006). The scope of the policies was on trade and investment in order to attract investment by more firms. The investment policy response focused on attracting foreign direct investment (FDI). The trade policy response was, in essence, a unilateral reduction in tariffs, often regarded as a "race to the bottom" (Baldwin, 2006). Most of the tariff cuts were in the form of duty drawback and duty-free treatment specifically for relocation in export processing zones (EPZs). Over time, trade policy shifted away from these special treatments, such as those mentioned above, to lowering applied MFN tariff rates in expectation of lower trade costs. Hence, many of these countries continued to cut their tariffs unilaterally from 1989 to 2003 (Baldwin, 2006). Therefore, the cumulative effect from the hollowing-out of developed countries in East Asia, dual-track industrialization, and trade and investment liberalization prompted development of production networks within East Asia.

The previous discussion reveals that the establishment and growth of IPNs in East Asia has been driven by market forces rather than by formal trade and investment agreements. This is because the bulk of the unilateral tariff cuts that occurred in the 1980s and 1990s were motivated by pressure from the private sector on their governments (Baldwin, 2007) as well as the so-called Washington consensus. In the aftermath of the 1997-1998 Asian economic crisis, initiatives were introduced for advancing regional integration in East Asia; in other words, attempts were made to formalize the establishment

of IPNs through trade agreements. One example is the expectation of policymakers in Indonesia that the establishment of the Indonesia-Japan Economic Partnership agreement would expand and strengthen the production network developed by MNCs and other firms, particularly in the automotive sector where tariffs for numerous auto parts and components were reduced, thereby increasing the country's exports and promoting economic growth. That expectation has yet to be realized, as indicated during the interviews with Indonesian automakers who mentioned they had not yet experienced the effect of the agreement. Nevertheless, there is still a need to explore the impacts of these conscious efforts to expand regional trade and widen regional integration of already established IPNs and on the establishment of new ones.

One caveat has to be mentioned. Despite the increasing number of trade agreements in the region,<sup>3</sup> only a handful have been fully implemented so far (see annex to this chapter). Therefore, it is perhaps too early to explore the impacts of RTAs.

Another factor in the development of IPNs is the reduction of service links, which make connecting with the network more efficient and cheaper, and translates into a deeper level of integration in IPNs. In relation to the current study, one way of examining the service link costs is through the Logistics Performance Index (LPI) ranking calculated by the World Bank. It is clear from looking at the rankings that China has taken major steps to improve its trade infrastructure in order to gain a stronger foothold in IPNs that have led to the impressive economic growth of that country. The LPI ranking for Indonesia is rather peculiar as it exhibits a sharp decrease in the span of just three years. It should be noted that LPI rankings are based on the perceptions of actors in the global freight forwarding and express carriers industry. As such, Indonesia's LPI ranking is interpreted as indicating that the country is lagging behind in improving its logistics infrastructure compared to other countries, such as China.<sup>4</sup> Although the LPI index may not be a particularly good indicator, as it relies on perceptions, it does provide an approximate indication of the logistics situation in the countries it ranks.

**Table 3.1. LPI ranking of selected countries**

Country	LPI 2007	LPI 2010
Bangladesh	87	79
China	30	27
India	39	47
Indonesia	43	75
Thailand	31	35

Source: World Bank, 2010.

<sup>3</sup> China initiating an RTA with ASEAN (ASEAN-China FTA) triggered the proliferation of RTAs in the region. The ASEAN-China FTA (ACFTA) encouraged Japan and Republic of Korea to pursue similar agreements, either collectively with ASEAN or bilaterally, in order to remain competitive in the region.

<sup>4</sup> World Bank Logistics Performance Index 2010: Indonesia.

From the case studies it was found that:

- (a) All five countries surveyed had adopted similar liberalization policies in developing their industries, albeit to varying degrees;
- (b) The case studies also support the finding that IPNs predate RTA with MNCs and their partners operating in the automotive, electronics, and textile and clothing sectors. In general, Indonesia and Thailand were the first countries to participate in the formation of IPNs in the late 1980s and early 1990s. Trade and investment promotion policies have been used largely by these two countries, especially Thailand, to attract the establishment of local production facilities by foreign MNCs. Moreover, both countries are part of the ASEAN Free Trade Area (AFTA), which dates back to 1992;
- (c) India and Bangladesh also began to liberalize their economies in the 1980s by allowing more liberal access to foreign firms and developing their private sectors. Both countries also actively took part in trade agreements as far back as 1975 with the signing of Asia-Pacific Trade Agreement (APTA, then known as the Bangkok Agreement);
- (d) China only began taking an active role in establishing RTAs after its accession to WTO in 2001. It also joined APTA in 2002 and started to play an important role in the proliferation of RTAs in the region, as discussed earlier.

As already established these five countries are engaged in IPNs in various forms and are a part of various RTAs. The extent of the network integration between the countries varies, depending on the policy environment in each country and the industries concerned.

The following synthesis of the research findings starts by providing summaries of the individual country studies. It then identifies common issues across industries and countries covered by the study. The analysis is aimed at obtaining a better perspective on industry characteristics and common issues, which is essential to formulating policy recommendations.

### **3.3. Presentation of key findings from the selected sectors**

#### **3.3.1. Automotive industry**

Japanese MNCs dominate the Indian and Indonesian automotive industries. In Indonesia, 90 per cent of the market is dominated by Japanese products. In China, however, the market shares are relatively more balanced between Japanese, the United States and European companies. The leading foreign companies in the automotive industries of China, India and Indonesia include Toyota, Suzuki, Volkswagen and Chrysler.

The initial development of the industry in the five countries differed. The automotive industry in China began with the establishment of First Auto Works in 1953, followed by the Shanghai Automotive Industry Corporation and Dongfeng Motors in 1958 and 1967, respectively. Foreign MNCs only entered the Chinese auto industry in the 1980s when

Chrysler and Volkswagen were permitted to form joint ventures with the three local corporations.

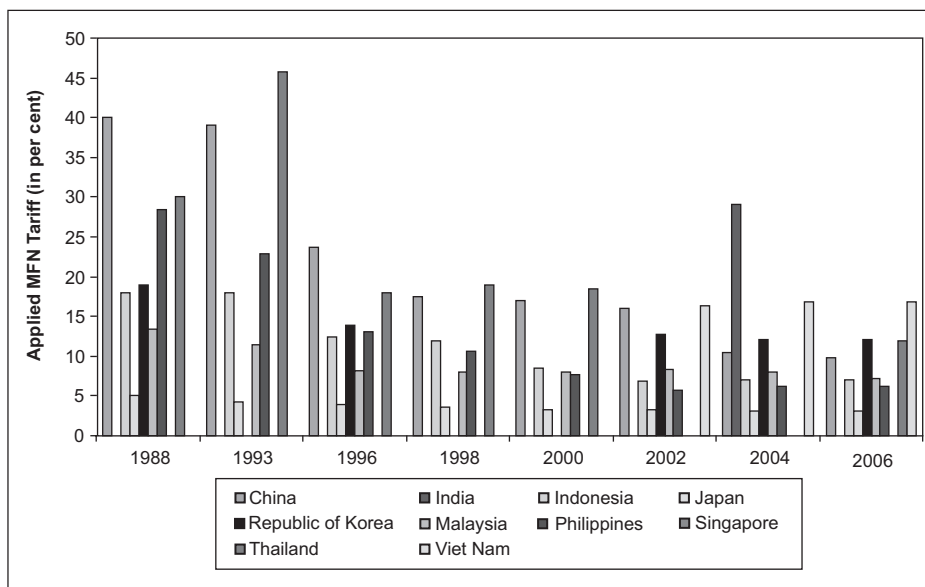
In India, despite the establishment of the automotive industry in the 1940s, growth in the industry only began to pick up in the 1970s, because cars were previously considered a luxury, expansion was limited and tariffs were prohibitive. In 1985, India gained its first auto joint venture business when the local company Maruti Udyog entered the passenger vehicle market with Suzuki. Coupled with economic reforms in India, joint ventures began to flourish – culminating in the 1990s when the Indian automotive industry was dominated by Maruti Suzuki, Tata Motors and Hindustan Motors plus Premier Padmini in the motorcycle market.

The Indonesian automotive industry began as early as the 1920s with General Motors setting up a production facility to supply the colonial market. However, the industry only began to take off in the 1970s as an import substitution industry. Initially, Indonesia was an importer of automobiles and parts. However, the Government of Indonesia at that time imposed a ban on the import of completely built up (CBU) cars and prohibited foreign MNCs from assembling and distributing directly. Thus, joint ventures were established to serve the domestic market; MNCs from Japan, the United States and Europe had to establish joint ventures with domestic partners to import cars in completely knocked down (CKD) form for assembly and distribution. Japanese joint venture companies included PT. Indomobil Suzuki International and PT. Toyota Astra Motor.

There are similarities in the development of the automotive industries in each of the three countries. Policies directed at liberalizing the industries initiated the participation of MNCs, thereby planting the seed for IPNs. Even though MNCs were already established in the early 1980s, their activities only began to expand in the late 1980s. Figure 3.1 shows that the average applied MFN tariff rates for selected East Asian countries have been reduced significantly since 1988. As tariffs are an important component of service link costs, the reductions have also meant that such costs can be appropriately reduced. As stated by Baldwin (2006), the unilateral “race to the bottom” (i.e., unilateral tariff liberalization) prompted the development of IPNs. However, as will be explained later in this chapter, these low applied MFN rates may have had a limited liberalization effect of RTAs.

Incentives in the form of liberalization policies ensure that costs of relocation for MNCs are less than the benefits. Therefore, all three countries surveyed have relied on incentives to encourage foreign MNCs to establish production locally. The Government of India has a range of incentives aimed at developing the automotive industry, ranging from the provision of excise duty and tax incentives as well as incentives to promote R&D, to export promotion measures and reductions of import duty on components. Indonesia has incentives in the form of zero tariffs for imports of components for passenger vehicles with local content exceeding 40 per cent and for commercial vehicles with local content exceeding 60 per cent. Incentives in China include reductions in tax rates when making fixed asset investments, priority approval when listing on stock exchanges, and easier access to capital from abroad and government loans.

**Figure 3.1. Simple average applied MFN rates in East Asian countries**



Source: UNCTAD TRAINS.

Notes: Thailand data for 2002 and 2004 are not available. For the Republic of Korea, data for 1993, 1998, and 2000 are not available. The only available data for India are for 2004.

In the development of the automotive industry in China and India, despite the high profile of MNCs, local companies have taken an active role and have maintained a strong presence in the market. Local automakers began to emerge in China with companies such as Geely, Cherry and Brilliance. Tata Motors in India recently launched its low-cost product, the Nano. Thus the automotive industries in China and India are able to manufacture their own products and compete with foreign MNCs.

Conversely, Indonesia's attachment to automotive giants from Japan stems from the fact that developing a competitive automotive industry needs huge investment, research and development, which are currently scarce in that country. Thus, local firms prefer to partner with more experienced MNCs, such as Toyota, Suzuki and Daihatsu, in developing new products. One example is the production of the Toyota Avanza and Daihatsu<sup>5</sup> Xenia, combining Daihatsu's skill in developing compact cars and Toyota's high-quality standards. The product has a local content of between 60 per cent and 70 per cent.

Thus, participation in the production network has enabled China and India to develop local products, while the network has enabled Indonesian automakers to tap into the vast resources of MNCs to develop its own product.

<sup>5</sup> In Indonesia, Daihatsu is Toyota's subsidiary.

The role of the components and parts industry is vital because it provides support to car manufacturers. In addition, component manufacturing can expand a country's involvement in IPNs, taking advantage of the increasingly fragmented manufacturing process. In the past, auto makers in China imported parts and components. Today, a growing number of the components are manufactured in China for both domestic use and export. This is mainly due to the influx of major components manufacturers in China. This scenario is perhaps due to tariff reductions for parts and components tariffs as well as final products. In 2006, the tariffs for cars, SUVs and minibuses in China were reduced from 28 per cent to 25 per cent. Components such as transmissions, clutches and radiators are subject to a 10 per cent tariff rate. Moreover, taxes on selected parts have also been reduced from 13.8 per cent to 10 per cent.

Of the world's top 100 auto parts and components firms, 70 per cent have already set up production facilities in China, including, for example, Delphi, Bosch, Visteon and Continental. Local auto parts and components manufacturers such as Wanxiang, Shaanxi Fast, Fuyao Glass, Xinyi Glass and Nanjing Autocar have also made notable entries in the components sector by taking advantage of the 1,000 auto parts industrial parks across the country. This indicates that agglomeration supports the strengthening of IPNs by reducing service link costs and coordination issues between production blocks, implying the spatial advantage that China enjoys. Improvements made by local components manufacturers in terms of design and quality have contributed to the growing significance of China in the auto parts and components export market. Even though China is a late entrant in the auto parts and components industry, economies of scale of its industry have reduced the average service link costs, thereby providing these firms with a competitive edge over other manufacturers.

In summary, the success of China's automotive industry is attributable to four factors:

- (a) Low labour costs, at least at the initial stage;
- (b) Incentives provided by the Government including, among others, land, import and export duty rebates, and conditional access to the domestic market;
- (c) The size of the Chinese economy, which allows the exploitation of economies of scale and can be used to gain a competitive edge in other markets; and
- (d) Protection of the domestic automotive sector, which provides the opportunity for domestic firms to increase capacity and capability.

Thus, the case of China provides evidence that trade barriers may act as an effective tool for developing competitive advantage. However, three conditions must exist in order to allow that to happen: (a) a significant domestic market; (b) an initial competitive advantage in the industry, such as low labour costs; and (c) a specific (that is, with a finite duration) period of protection.

The development of auto parts and components in India began in the 1960s. Local content policy, entitled the Phased Manufacturing Programme, was introduced in 1991 and laid the foundations for further development of the Indian auto components industry, which



is relatively labour-intensive and is currently undergoing transition to become more competitive in world markets, relying on its advantage of skill-oriented, labour-intensive components production. Manufacturing costs in India are 25 per cent to 30 per cent lower than those of its western counterparts and there is a well-established pool of engineering talent, which has resulted in MNCs such as Suzuki relocating their R&D centres to India. Thus, India's auto parts and components industry is in a good position to support the growth of its automotive industry. Industrial clusters also play an important role in the Indian industry, with most components suppliers located close to original equipment manufacturers. The three main automotive industrial clusters in India are located in Chennai, Pune and the National Capital Region, which includes New Delhi and its surrounding areas. The development of auto parts and components in India began in the 1960s.

In Indonesia, however, the auto parts and components industry is still underdeveloped compared to the vehicle assembling industry. Attempts were made to encourage the growth of the auto parts and components industry in Indonesia through a local content policy throughout the late 1970s and 1980s, as in the case of India. The Government of Indonesia introduced incentive schemes, such as tariff exemptions for local content between 40 per cent and 60 per cent, to increase local content in cars manufactured domestically. However, the launch of the "National Car Programme" in 1996, which was not in line with WTO principles,<sup>6</sup> derailed the incentives programme. A new policy aimed at the automotive industry, and which was in line with WTO recommendations, was implemented in 1999. This policy adopted the approach of reducing tariffs for auto parts and components to zero, thereby encouraging the imports of components to boost the industry's output. The "local content policy" was completely abandoned in favour of opening the market. However, car manufacturers pay only a 5 per cent duty when exporting their products to any ASEAN member country, provided the products have a minimum of 40 per cent local content from any ASEAN member (applying the cumulation principle).

With regard to the "race to the bottom" in tariff protection, figure 3.2 compares the reductions in tariff rates imposed in 1999 and 2009 by the three countries on auto parts and components. The largest reduction was in India where the average tariff for auto parts and components was 30.6 per cent in 1999 and 8.9 per cent in 2009. The tariff reductions were vital to the promotion of IPNs in the three countries, since it would be cheaper to move components between production blocks.

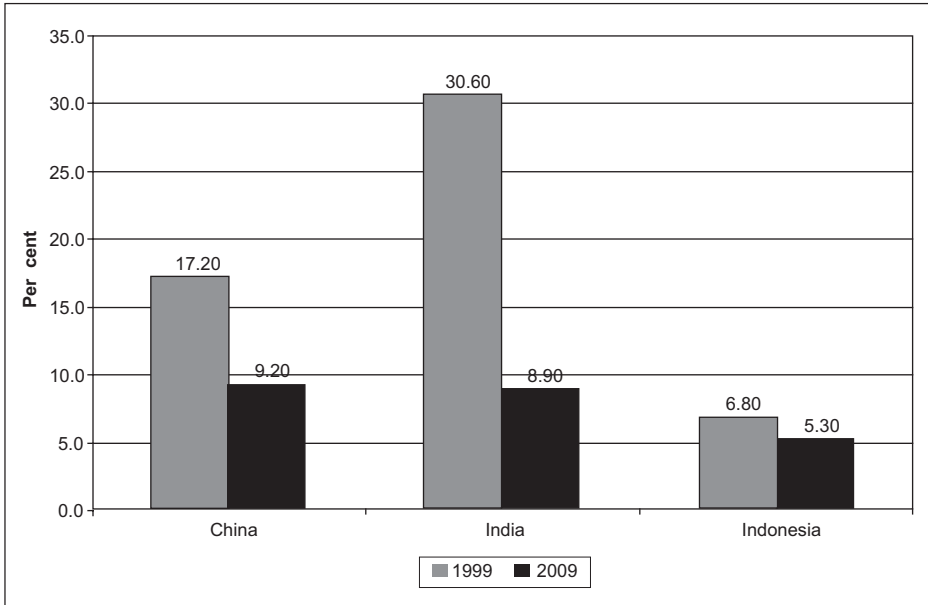
Identifying the countries' major trading partners in auto parts and components around the world is useful in revealing whether their major partners comprised mainly East Asian countries (table 3.2). China's top five export destinations for auto parts and components are the United States, Japan, the Republic of Korea, Germany and the United Arab Emirates. Meanwhile, China relies heavily on imports from Japan, Germany, the Republic of Korea, Hungary and the United States. The diverse regional representation in China's major trading partners in exports and imports indicates that while China is deeply

---

<sup>6</sup> The "National Car Programme" violated Indonesia's obligation under GATT Article I on General MFN Treatment as well as Article III on National Treatment on Internal Taxation and Regulation.

integrated in East Asia, it also connects with other markets. Japan and the Republic of Korea are China's main trading partners in East Asia.

**Figure 3.2. Simple average applied MFN tariffs for auto parts and components**



Source: UNCTAD TRAINS raw data.

Note: Tariff data for India do not specifically mention applied tariffs.

**Table 3.2. China's top five trading partners**

	2004	2005	2006	2007	2008
<b>Export partner (as percentage of total exports of parts and components)</b>					
United States	34.17	34.16	34.60	30.96	26.59
Japan	10.81	10.83	10.60	9.25	8.91
Republic of Korea	1.63	2.01	3.08	3.79	3.93
Germany	2.30	2.53	2.83	2.86	3.07
United Arab Emirates	2.90	2.65	2.46	2.50	3.01
<b>Import partner (as percentage of total imports of parts and components)</b>					
Japan	34.77	39.51	38.15	38.65	43.57
Germany	25.83	16.59	20.42	23.83	25.58
Republic of Korea	14.83	23.03	15.98	11.59	8.94
Hungary	2.18	1.02	2.23	3.99	4.43
United States	3.43	4.25	4.93	5.45	4.04

Source: Calculations based on United Nations Comtrade data.

Meanwhile, India's major export destinations comprised non-East Asian countries, which may explain India's modest East Asian export values (table 3.3). The United States and European countries are India's main export partners. However, on the import side, India's import sources comprise mainly East Asian countries, i.e., the Republic of Korea, Japan, China and Thailand. This suggests that India is becoming increasingly dependent on East Asian countries for parts and components. It also explains India's automotive industry's reserved attitude towards pursuing RTAs with East Asia, as it fears such agreements would only result in one-way trade.

**Table 3.3. India's top five trading partners**

	2004	2005	2006	2007	2008
<b>Export partner (as percentage of total exports of parts and components)</b>					
United States	18.94	17.11	19.50	18.19	17.61
Italy	3.61	4.87	6.04	6.88	6.69
United Arab Emirates	5.69	6.19	5.08	4.71	4.40
Germany	3.86	2.88	3.00	4.09	4.30
United Kingdom	5.54	4.93	4.38	5.76	3.68
<b>Import partner (as percentage of total imports of parts and components)</b>					
Republic of Korea	32.83	27.31	25.69	29.42	28.06
Japan	19.93	16.43	10.54	12.41	16.56
China	2.29	5.64	9.86	12.23	12.68
Thailand	6.93	12.98	10.56	8.83	7.23
Czech Republic	9.71	10.97	14.26	6.57	6.09

Source: Calculations based on United Nations Comtrade data.

Indonesia's major trading partners are all East Asian countries (table 3.4). However, Indonesia imports more than it exports, reflecting the fact that the country's auto parts and components sector is not yet well developed. Japan is the dominant partner, which supports the argument that the Indonesian auto industry is heavily connected with Japanese MNCs. The dominance of Japan and Thailand, both as export destinations and import sources, underlines the fact that Indonesia is a part of the production network built by Japanese MNCs, with Thailand as its hub, to increase their foothold in the region. A good example is Honda, which made Thailand its production base (Raymundo and Taningco, 2009). Honda not only conducts assembling in South-East Asia, but also builds components – i.e., constant velocity joints produced in Malaysia, intake valves in the Philippines, engine parts in Indonesia, and body and stamped parts in Thailand. In addition to the production side, IPNs provide steadily increasing car sales opportunities in emerging markets (Tullao, Conchada and Aguinaldo, 2009) such as China, India and Indonesia, given the size of their populations.

**Table 3.4. Top five trading partners of Indonesia**

	2004	2005	2006	2007	2008
<b>Export partner (as percentage of total exports of parts and components)</b>					
Japan	23.88	24.36	24.07	23.66	21.28
Thailand	9.25	8.63	9.97	10.55	12.07
United States	7.79	7.22	12.71	13.47	11.97
Malaysia	8.80	13.88	9.14	6.29	8.51
Philippines	5.79	4.45	3.79	3.89	4.72
<b>Import partner (as percentage of total imports of parts and components)</b>					
Japan	62.03	56.97	47.20	33.51	45.59
Thailand	14.63	17.92	22.95	32.82	28.40
China	4.62	4.18	5.23	8.16	5.96
Malaysia	2.07	2.68	3.37	4.25	4.79
Singapore	1.41	1.78	3.34	2.18	3.18

Source: Calculations based on United Nations Comtrade data.

Table 3.5 shows the intra-industry trade (IIT) index<sup>7</sup>, which signals the existence of IPNs, for auto parts and components of the three countries with East Asia from 2004 to 2008, using the formula developed by Grubel and Lloyd (1975) in which the values of IIT lie between 0 and 1:

$$IIT = \frac{\sum_{i=1}^n (X_i + M_i) - \sum_{i=1}^n |X_i - M_i|}{\sum_{i=1}^n (X_i + M_i)}$$

where X stands for exports, M for imports, i for a product or a sector, and n for total number of products or sectors.

When the index is close to 1, this indicates the existence of IPNs. The IIT of both China and Indonesia with East Asia showed an increasing trend during the period studied. Nevertheless, the IIT for Indonesia fell from 0.98 in 2007 to 0.81 in 2008, when the IIT was less close to 1; this may be due to the slowdown in the Indonesian automotive industry brought about by the economic downturn. However, the IIT during the same period indicated the existence of IPNs between East Asia, China and Indonesia, and that the extent of this network was increasing. The IIT for India from 2004 to 2008 appears relatively modest compared with those of China and Indonesia, suggesting that the network between India and East Asia was not as extensive as those between its two counterparts.

<sup>7</sup> Calculated based on SITC Revision 3 at the 4- and 5-digit levels. Tyres for motor cars, tyres for motorcycles, and motor vehicle chasses and engines are at the 4-digit level, respectively. The remaining data that is used is at the 5-digit level. For a complete list of product codes used for the automotive sector, see Annex II.

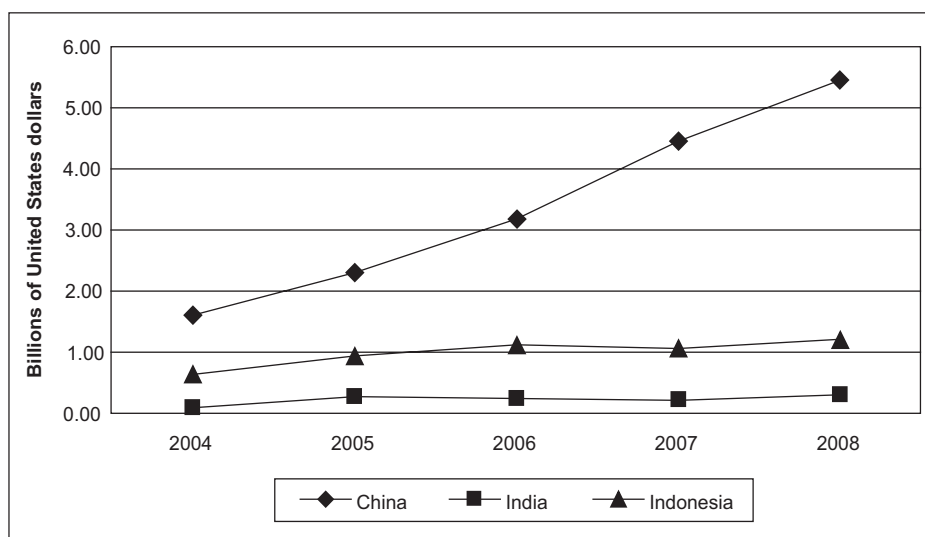
**Table 3.5. IIT in auto parts and components with East Asia**

Country	Intra-industry trade index				
	2004	2005	2006	2007	2008
China	0.87	0.89	0.91	0.94	0.95
India	0.76	0.83	0.81	0.72	0.68
Indonesia	0.89	0.93	0.99	0.98	0.81

*Source:* Calculations based on United Nations Comtrade data, using SITC Revision 3 at the 4- and 5-digit levels. For a complete list of product codes used for the automotive sector, see Annex II.

As reported by Ramasamy (chapter 4 in this volume), China's IIT for parts and components almost tripled from 23 per cent in 1992 to 60 per cent in 2007; the increase in IIT occurred for most product categories in the parts and components sector. Meanwhile, Nag (Chapter 5 in this volume) reported that the IIT of India with Western countries was high compared to the ITT with East Asian countries, particularly for ignition parts and seats (United States) where the ITT was 0.55 and 0.57, respectively, rubber products (Italy), and chassis and body parts (Germany). Therefore, this raises the question of whether the Indian automotive sector can benefit from RTAs between India and East Asian countries.

Among the three countries surveyed, China was the more dominant in East Asia, in terms of both exports and imports of auto parts and components (figure 3.3). During 2004-2008, its import values increased from \$1.62 billion in 2004 to \$5.46 billion in 2008. Meanwhile, Indian and Indonesian exports to East Asia were much lower than those of

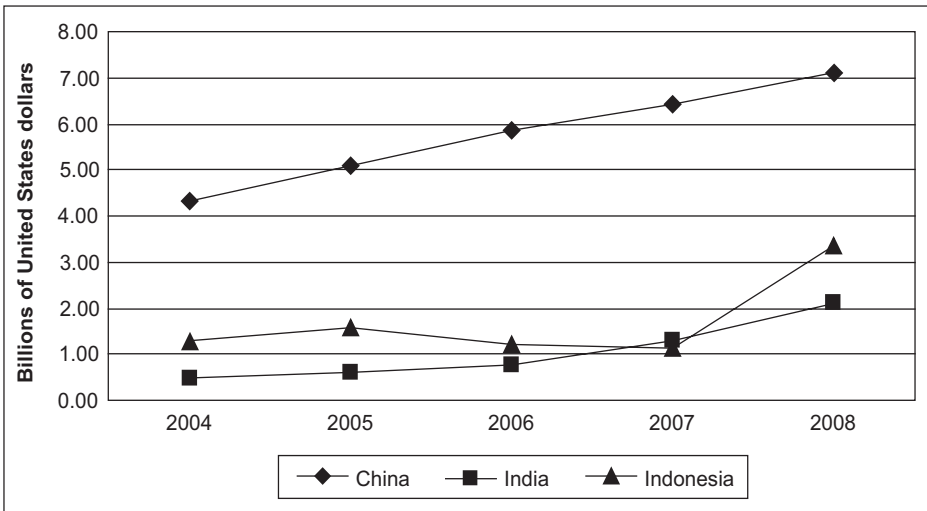
**Figure 3.3. Exports of auto parts and components to East Asia**

*Source:* Based on United Nations Comtrade data.

China and were relatively stable, with Indonesia ranging between \$900 million and \$1 billion and India remaining below \$1 billion during the same period.

China’s imports from East Asia also increased significantly from \$4.33 billion in 2004 to \$7.09 billion in 2008 (figure 3.4). Meanwhile, contrary to their export trends, India and Indonesia’s imports of auto parts and components increased. India’s imports from East Asia increased from \$500 million in 2004 to \$2.09 billion in 2008. Indonesia’s imports of auto parts and components also showed an increasing trend, albeit with a minor decrease between 2005 and 2007, after which they increased sharply in 2008 to \$3.34 billion.

**Figure 3.4. Imports of auto parts and components from East Asia**



Source: Based on United Nations Comtrade data.

The observed trend uncovered the increasing significance of the East Asian market in the case of China, with both exports and imports growing. Meanwhile, figures for Indian and Indonesian exports to East Asia were low and relatively stagnant. However, their imports from East Asia showed an increasing trend, indicating that India and Indonesia rely more on imports of parts and components from East Asia, with Indonesia being the more dependent of the two countries. The export and import figures also indicate that the integration is deeper in the case of China compared to India and Indonesia.

Table 3.6 details exports of auto parts and components by China, India and Indonesia to East Asia. Note the similarities between the exported products, which suggest that trade is done based on the quality of similar products that are produced in these three countries. On the import side (table 3.7), India and Indonesia import similar products, which confirms that trade in these products between East Asia and the two countries is based on the difference in product quality. Meanwhile, with the exception of SITC 78439 and 78432, China’s top five products are different from those of India and Indonesia. Therefore, SITC

**Table 3.6. Top five export products to East Asia****(Unit: Billions of United States dollars)**

<b>SITC Rev. 3</b>	<b>Product name</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>China</b>						
78439	Other motor vehicle parts	0.80	1.18	1.52	1.98	2.48
71323	Parts/access motorcycles	0.22	0.26	0.35	0.46	0.59
6252	Motor vehicle body parts n.e.s	0.16	0.26	0.35	0.44	0.53
78434	Tyres, new, bus or lorry	0.16	0.18	0.26	0.41	0.47
78432	Recip. piston eng >1,000 cc	0.00	0.02	0.21	0.44	0.41
<b>India</b>						
78439	Other motor vehicle parts	0.05	0.16	0.14	0.07	0.10
71323	Tyres, new, bus or lorry	0.04	0.05	0.06	0.07	0.07
6252	Motor vehicle gear boxes	0.00	0.04	0.04	0.04	0.05
78434	Motor vehicle chassis+engine	0.00	0.00	0.00	0.00	0.02
78432	Motor vehicle body parts n.e.s.	0.00	0.00	0.00	0.01	0.02
<b>Indonesia</b>						
78439	Other motor vehicle parts	0.29	0.44	0.42	0.41	0.44
71323	Tyres, new, for motor car	0.14	0.19	0.23	0.25	0.30
6252	Motor vehicle gear boxes	0.03	0.05	0.11	0.13	0.17
78434	Motor vehicle body parts n.e.s	0.01	0.02	0.04	0.02	0.09
78432	Parts/access motorcycles	0.07	0.10	0.13	0.06	0.05

Source: Calculations based on United Nations Comtrade data.

**Table 3.7. Top five import products from East Asia****(Unit: Billions of United States dollars)**

<b>SITC Rev. 3</b>	<b>Product name</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>China</b>						
78434	Motor vehicle gear boxes	0.78	0.93	1.44	2.10	2.67
78439	Other motor vehicle parts	1.34	1.51	1.63	1.84	1.87
78432	Motor vehicle body parts n.e.s	1.08	1.36	1.49	1.18	1.07
71322	Recip. piston eng >1,000 cc	0.45	0.58	0.48	0.40	0.53
78433	Motor vehicle brakes/parts	0.32	0.37	0.44	0.48	0.46
<b>India</b>						
78439	Other motor vehicle parts	0.30	0.37	0.39	0.57	1.16
71323	Diesel etc. engines	0.05	0.09	0.13	0.20	0.23
6252	Tyres, new, bus or lorry	0.01	0.02	0.05	0.10	0.13

**Table 3.7 (continued)****(Unit: Billions of United States dollars)**

<b>SITC Rev. 3</b>	<b>Product name</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
78434	Motor vehicle gear boxes	0.01	0.04	0.06	0.07	0.12
78432	Motor vehicle body parts n.e.s	0.02	0.01	0.01	0.10	0.10
<b>Indonesia</b>						
78439	Other motor vehicle parts	0.67	0.89	0.62	0.42	1.78
71323	Parts/access motorcycles	0.27	0.26	0.28	0.19	0.61
6252	Motor vehicle drive axles etc.	0.03	0.04	0.03	0.08	0.19
78434	Motor vehicle body parts n.e.s	0.04	0.06	0.05	0.10	0.16
78432	Recip. piston eng <1,000 cc	0.05	0.06	0.04	0.05	0.12

Source: Calculations based on United Nations Comtrade data.

78439 and 78432 products are intensively traded by the three countries in East Asia based on product quality.

### **3.3.1.1. Impact of RTAs on IPNs in the automotive sector**

This sub-section explores whether the proliferation of RTA supports the development of IPN. Survey evidence from China, India and Indonesia is unanimous in showing that the current regime of RTAs does not help to enhance IPNs in the automotive sector in those countries. However, the evidence does show that RTAs have the potential to boost trade in the automotive industry in the region. There are several common driving factors.

First, RTAs signed by China, India and Indonesia either exclude the automotive industry or the agreement is too general to accommodate that industry's specific needs. In the case of India, since it trades more with Western countries than with East Asia, the benefit of signing an RTA with countries in East Asia is debatable. Although auto parts and components in the Indonesia-Japan Economic Partnership Agreement (IJEPA) (table 3.9) encompass a wide variety of parts and component products, industry players in Indonesia have noted that IJEPA does very little to expand Indonesia's automotive industry. This may be due to the fact that these products have different tariff reduction schedules. Tariffs for some products are immediately reduced when the agreement is in force; some are even eliminated after the agreement is in force while others have different reduction schedules, ranging from 4 to 15 years' annual schedule. However, the RTA between India and Thailand reveals a positive outlook, as trade between the two countries in gearboxes and parts used for spark ignition in engines has increased (chapter 5 in this volume).

Nevertheless, the mixed current outcome of IPN formalization through trade agreements in the case of the automotive industry indicates that RTAs have not reached their potential yet. In the case of China, RTAs do not affect the trade of auto parts and components simply because they exclude those products. This is due to the view held by



**Table 3.8. RTA partners of China, India and Indonesia**

RTA partners	China	India	Indonesia
China	–	(a)	(c)
India	(a)	–	(b)
Indonesia	(c)	(b)	–
Japan	–	–	(e)
Malaysia	(c)	(b)	(d)
Philippines	(c)	(b)	(d)
Republic of Korea	(a)	(a)	(f)
Singapore	(c)	(b)	(d)
Thailand	(c)	(b)	(d)
Viet Nam	(c)	(b)	(d)

*Sources:* Compiled from Asia-Pacific Trade Agreements Database (APTIAD) and WTO RTA database.

*Notes:* The existence of RTAs between countries is denoted by the green cells. The blue cell denotes RTAs that are still under negotiation. Gray cells indicate no RTA. The characters in the brackets stand for: (a) RTA partner in APTA (in force since 17 June 1976); (b) RTA partner in ASEAN-India RTA (in force since 1 January 2010, goods only); (c) RTA partner in ASEAN-China FTA (in force since 1 January 2005 (goods) and 1 July 2007 (services)); (d) RTA partner in ASEAN Free Trade Area; (e) Indonesia-Japan Economic Partnership Agreement (in force since 1 July 2008); and (f) RTA partner in ASEAN-Republic of Korea RTA (in force since 1 January 2010 (goods) and 1 May 2009 (services)).

the Chinese authorities that China is not ready yet for tariff-free competition in automotive goods (chapter 4 in this volume). As such, given the completion of tariff reductions in IJEPA and the ongoing dynamics of ITFTA, RTAs could provide more support in expanding IPNs.

With regard to ACFTA, the mutual exclusion of the automotive sector, including parts and components, is of interest. Four ASEAN countries that have a thriving automotive sector, i.e., Indonesia, Malaysia, the Philippines and Thailand, have included the sector in their highly sensitive lists. Meanwhile, China also includes cars, trucks, buses and auto parts in its highly sensitive list. Therefore, why are these countries ignoring the lucrative benefits to be gained from opening their automotive sectors? There are two possible reasons.

First, from the perspective of the ASEAN countries, their automotive sectors are not yet ready to compete with Chinese firms. This view is also shared by the Chinese firms and authorities; an RTA would benefit a country only when the capabilities and capacities of the industry have reached a competitive level.

The second reason is the significant presence of Japanese MNCs in the automotive industry in ASEAN countries. Japanese MNCs have been dominating the region's automotive sector for more than 40 years, during which they have been steadily increasing their capacity and expertise, and expanding their networks in the region. Chinese automotive firms must tread carefully and build up their capacity and capability in order to compete with Japanese MNCs. To date, the presence of Chinese firms in South-East Asia

remains insignificant. The only presence of Chinese automotive firms in the region is in Indonesia, with Geely and Chery conducting low-volume CKD operations. Geely assembles less than 50 cars per month and Chery only sold 240 cars in 2009 (Chrysler, 2010).

The exclusion of the automotive sector from ACFTA is in stark contrast to the RTAs between individual ASEAN countries and Japan. In IJEPA, for example, the automotive industry is given more market access through tariff elimination schedules. In particular, numerous auto parts and component products are included in IJEPA (table 3.9).

The inclusion of numerous auto parts and components is significant, since on paper this sector has the potential to expand the IPN in the auto sector between Indonesian and Japanese firms. In view of this, Japanese MNCs are one step ahead of Chinese firms. Nonetheless, China is slowly building its capacity in the automotive sector, especially in manufacturing parts and components. In 2007, China became a net exporter of auto parts and components; by 2008 it had become the third largest automobile manufacturer, trailing the United States and Japan (chapter 4 in this volume). Considering the emergence of China's auto industry, it is only a matter of time before the automotive sector is brought into trade negotiations between China and ASEAN countries.

**Table 3.9. Auto parts and components included in IJEPA and IFTA**

RTA	Products included in RTA	
	HS Code	Description
Indonesia-Japan Economic Partnership Agreement (IJEPA) <sup>a</sup>	4009	Pipes and hoses of vulcanized rubber other than hard rubber, with or without their fitting (for example, joints, elbows, flanges)
	4010	Conveyor or transmission belts or belting of vulcanized rubber
	4011	New pneumatic tyres, of rubber
	4012	Retreaded or used pneumatic tyres of rubber; solid or cushion tyres, tyre treads and tyre flaps, of rubber
	4013	Inner tubes, of rubber
	4016	Other article of vulcanized rubber other than hard rubber
	6813	Brake linings and pads
	7320	Springs and leaves for springs, of iron or steel
	8407	Spark-ignition reciprocating or rotary internal combustion piston engines
	8409	Compression-ignition internal combustion piston engines (diesel or semi-diesel engines)
	8413	Pumps for liquids, whether or not fitted with measuring device; liquid elevators

Table 3.9 (continued)

RTA	Products included in RTA	
	HS Code	Description
	8421	Centrifuges, including centrifugal dryers; filtering or purifying machinery and apparatus, for liquids of gases
	8482	Ball and roller bearings
	8483	Transmission shafts (including cam shafts and crank shafts) and cranks, bearing housing and plain shaft bearings; gears and gearing; ball or roller screws; gear boxes and other speed changers, including torque converters; flywheels and pulleys, including pulley blocks; clutches and shaft couplings (including universal joints)
	8484	Gaskets and similar joints of metal sheeting combined with other materials or of two or more layers of metal; sets of assortments of gaskets and similar joints, dissimilar in composition, put up in pouches envelopes or similar packing; mechanical seals
	8706	Chassis fitted with engines, for vehicles of headings 8701 to 8705
	8708	Parts and accessories of the motor vehicles of heading 8701 to 8705
India-Thailand Free Trade Agreement (IFTA) <sup>b</sup>	870840	Gear boxes
	840991	Parts used for spark ignition in engines

Sources: <sup>a</sup> Pasha and Setiati, chapter 6 in this volume and <sup>b</sup> Nag, chapter 5 in this volume.

Note: China's RTA excludes automotive parts and components.

Second, the costs of complying with RTA procedures to obtain exemptions outweigh its benefits. In China, industry respondents were of the opinion that if auto parts and components were to be included in RTAs then documentation requirements to utilize the tariff concessions would need to be less cumbersome. This is particularly important for assemblers who obtain components from various countries and are partners in different RTAs. Complying with RTA procedures to obtain concessions may not be worth the effort if the tariff reductions are small. Related to this factor is the issue of rules of origin (RoO). Custom procedures impede the flow of goods to and from the three countries. There are a number of methods to determine origin.<sup>8</sup> The three basic approaches are: (a) change in tariff classification; (2) the criteria of local value-added content; and (c) specific manufacturing process requirements. There are also three additional factors to take into account: (a) cumulation; (b) the *de minimis* rule (tolerance); and (c) duty drawback. Table 3.10 lists the methods being used to determine origin by selected RTAs in which China, India and Indonesia are participating. Table 3.10 shows that the selected RTAs use

<sup>8</sup> These methods are explained in more detail in chapter 2.

a combination of methods to determine origin. The use of multiple methods to establish origin will result in overlapping RoO among RTAs and create the so-called “noodle bowl” effect.

The threshold for local value-added content in the RTAs listed in table 3.10 is 40 per cent, with some exceptions for the India-Thailand Free Trade Agreement. The adoption of the 40 per cent rule implies a move towards simpler RoO, which would assist in facilitating the expansion of trade between the countries involved and thereby expand IPNs, while reducing the “noodle bowl” effect.

Another important issue is the implementation of RoO. One example revealed by the survey in China is non-tariff barrier-related RoO, where classification of parts and components is a huge problem. In Japan and Malaysia the product code for ABS braking systems is HS 9032 (electrical systems), while in Thailand the product code for ABS braking systems is HS 8708 (hydraulic brakes). In addition, HS 8708 is included in Thailand’s list of highly sensitive products in ACFTA, while HS 9032 is not included in Malaysia’s list of sensitive and highly sensitive products in ACFTA. The difference in the import duty between these two codes varies greatly (Ramasamy, 2011). Thus, variations in customs codes pose a problem for manufacturers who source parts from various countries, thereby inhibiting wider IPNs.

**Table 3.10. Rules of origin in selected RTAs involving China, India and Indonesia**

RTA	Change of tariff classification	Value-added domestic or regional content	Specific manufacturing process	Cumulation	Tolerance
ASEAN FTA (AFTA) <sup>a</sup>	Yes	Regional (40%)		Diagonal	
ASEAN-China (ACFTA) <sup>a</sup>	Yes	Regional (40%)		Diagonal	
Indonesia-Japan Economic Partnership Agreement (IJEPA) <sup>b</sup>	Yes	Domestic (40%)	Yes	Bilateral	10%
India-Thailand Free Trade Agreement <sup>c</sup>	Yes	Domestic 40% (20% and 30% for some products)	Yes	Bilateral	

Sources: <sup>a</sup> Manchin and Pelkmans-Balaoing, (2007); <sup>b</sup> Chapter 3: Rules of origin of the Agreement between Japan and the Republic of Indonesia for an Economic Partnership, <sup>c</sup> Framework Agreement with Thailand: Interim Rules of Origin.

The surveys also showed the importance of transportation and telecommunications in developing IPNs. Indian firms have adopted e-sourcing to help them reorganize the purchasing process, thereby reducing time spent on negotiations. Rapid development of ICT and infrastructure has played an important role in allowing MNCs to reduce costs and risks in China. The Indonesian survey highlighted the lack of a proper transport infrastructure, particularly the problem of congested roads connecting production facilities and ports. Thus, the importance of reducing service link costs was underlined.

The survey in China also reported that streamlined customs and clearance procedures would be beneficial. Based on the perceptions of logistics ground operators, China and India are doing far better in providing logistics infrastructure compared to Indonesia (as shown in table 3.1). It implies that both China and India are taking the necessary steps to reduce service link costs in order to facilitate IPNs further. The recognition of the importance of reducing service link costs in China, India and Indonesia implies that such costs alone cannot solely depend on RTA tariff reductions, but must also be accompanied by improvement in trade facilitation.<sup>9</sup>

### **3.3.2. Hard disk drive industry**

Thailand is one of the world's major producers and exporters of hard disk drives (HDD) in the world. HDD production began in Thailand around 1983 with the entry of Seagate Technology of the United States. The company's prime motive for the relocation was to access the relatively low cost of labour in Thailand. During the initial five years of operation in Thailand, Seagate trained numerous technical workers (resulting in a positive spillover effect), many of whom were employed by new suppliers; the consequence was the emergence of local suppliers. As a result, other HDD manufacturers such as IBM and Fujitsu began relocating to Thailand.

Subsequently, the Government of Thailand, through its Board of Investment (BOI), began to implement trade and investment promotion policies to advance the HDD industry. Thailand also began to lower its related tariff rates; however, the tariff rates for HDD components are higher than tariffs for the final product. Nevertheless, this distorted tariff structure (the opposite of tariff escalation that is normally practiced) is offset by the investment promotion policy. HDD makers with an export-sale ratio greater than 30 per cent are granted tariff exemptions. Thus, the incentive policy plays an important factor in Thailand's HDD industry and its IPN participation. Table 3.11 shows Thailand's IIT levels in HDD parts and components between 2004 and 2008<sup>10</sup>.

Thailand is a major player in the HDD industry in East Asia. Table 3.12 shows that Thailand's major HDD trading partners are Asian countries. This indicates a strong integration within the industry in Asia, particularly East and South-East Asia.

<sup>9</sup> Trade facilitation is defined by WTO as removing obstacles to the movement of goods across borders, e.g., the simplification of custom procedures.

<sup>10</sup> Calculated based on Harmonized System (HS) 1996 at the 4 and 6 digit levels. The data at the 6-digit level are ball bearings and other components. The rest of the data are at the 4-digit level. For a complete list of product codes used for the HDD sector, see Annex II

**Table 3.11. Thailand's IIT in HDD parts and components**

Year	IIT
2004	0.93
2005	0.89
2006	0.98
2007	0.87
2008	0.82

Source: Calculated from United Nations Comtrade data.

**Table 3.12. Thailand's five major trading partners in HDD components**

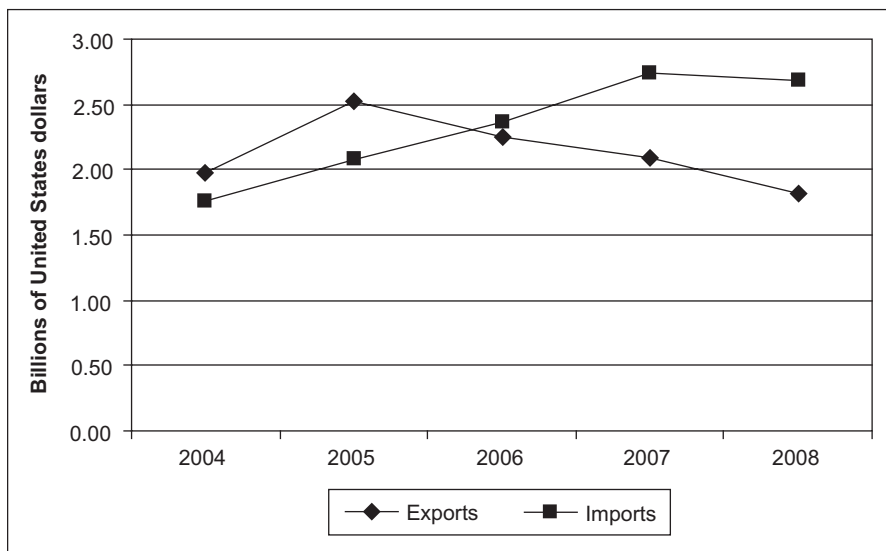
Partner	(Unit: \$ billion)				
	2004	2005	2006	2007	2008
<b>Export partner</b>					
Japan	0.83	0.80	0.77	0.65	0.56
China	0.19	0.62	0.53	0.67	0.49
Hong Kong, China	0.40	0.48	0.63	0.52	0.39
Singapore	0.53	0.49	0.46	0.31	0.31
Malaysia	0.24	0.39	0.24	0.22	0.26
<b>Import partner</b>					
Japan	0.80	0.80	0.86	0.93	0.93
China	0.45	0.49	0.63	0.77	0.78
Australia	0.27	0.37	0.54	0.56	0.60
Malaysia	0.15	0.35	0.47	0.58	0.38
Taiwan Province of China	0.22	0.21	0.21	0.22	0.19

Source: Calculations based on United Nations Comtrade data.

However, it is interesting to note that Thailand has steadily increased its imports of HDD components from Asia, while exports of HDD components from Thailand to East Asia have shown a decreasing trend (figure 3.5). On the other hand, Thailand is a strong exporter of HDD final products in East Asia with export values far above import values, with net export values increasing from \$1.42 billion in 2004 to \$5.07 billion in 2008 (figure 3.6).

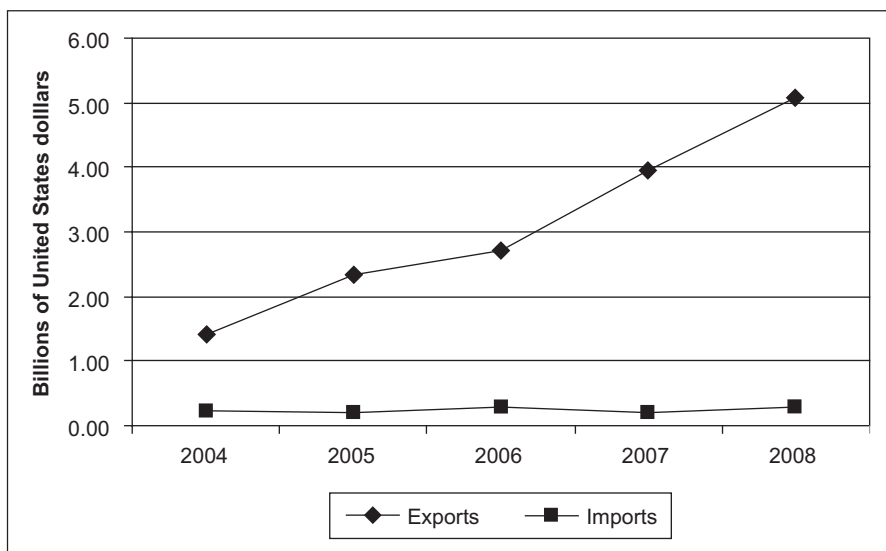
An interesting aspect of the Thailand case study is the coexistence between industrial clustering and production networking. Domestic fragmentation resulting from industrial clustering does not completely rule out the industry making use of globalized production. It depends on what layers of the process are fragmented. In the production network of HDD components, manufacturers are at the centre with at least two layers of suppliers. In the first layer, HDD makers interact directly with Tier 1 suppliers. The second layer emerges when Tier 1 suppliers obtain inputs from Tier 2 suppliers. Domestic

**Figure 3.5. Thai exports and imports of HDD components with Asian partners**



*Source:* United Nations Comtrade data. The partners are Brunei Darussalam, Cambodia, China, Indonesia, Japan, Republic of Korea, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore and Viet Nam.

**Figure 3.6. Thai exports and imports of HDD final products with its Asian partners**



*Source:* United Nations Comtrade data. The partners are Brunei Darussalam, Cambodia, China, Indonesia, Japan, Republic of Korea, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore and Viet Nam.

fragmentation is likely to occur in the first layer, since various customized parts and components are traded in that layer. Thus, interpersonal participation is required in order to create effective and efficient coordination. The need for customization in HDD parts and components requires a high degree of control. That control is provided by the cluster through close geographical proximity, which reduces service link costs from weaker control. International fragmentation occurs in the second layer between Tier 1 and Tier 2 suppliers. This is because the intermediates used by Tier 1 require less customization (for example, printed circuit boards and integrated circuits, which can also be used in other industries).

Thus, the market-led IPN has been successful in transforming Thailand into a major player in the HDD industry. Survey evidence showed that RTAs have a neutral effect on the IPN in Thailand's HDD industry. HDD manufacturer and components suppliers stated they had no plan to utilize RTA-related concessions. There is no problem with market access since the tariff for HDD is zero in accordance with the Information and Technology Agreement. On procuring intermediates that have non-zero tariffs, using the BOI exemption scheme is preferable to using RTA schemes, as the BOI scheme offers tariff exemptions on imports of inputs used for export-oriented activities. For example, the Thailand case study examined the pattern of motor imports, a component essential to producing HDDs. In 2009, 63.4 per cent of motor imports applied for tariff exemption schemes, whereas motor imports under the RTA preferential scheme accounted for only about 2 per cent. The Government of Thailand provides incentives such as tariff exemption on inputs and facilitates the development of industrial clusters, which is interesting as this has inadvertently reduced service link costs which foster market-led IPNs.

### **3.3.3. Textiles and clothing industry**

Bangladesh is a major exporter of knitwear and woven-wear products. The country's IPN in textiles and clothing has been developed gradually since the 1980s. The low cost of production induced by low wage level attracted foreign firms to relocate this labour intensive production process to Bangladesh. The Multi-Fibre Agreement (MFA) also provided least developed countries such as Bangladesh with a quota facility for duty-free exports of apparel to the United States and European Union markets. This also induced foreign firms to shift production facilities to Bangladesh in order to reap the benefits from the MFA quota system.

The involvement of entrepreneurs from the Republic of Korea, Taiwan Province of China and Hong Kong, China, who were attracted by the MFA advantages, paved the way for the development of export processing zones (EPZs) that provided benefits such as tax holidays, duty drawback and tariff exemption for raw material imports. Over time, spillover effects gave way to the development of local entrepreneurship. Domestic policies assisted in developing such entrepreneurship, such as easy bank loans and back-to-back letters of credit. In addition, the textile and clothing industry flourished under the MFA until its dissolution in 2004, and utilized the European Union EBA (Everything but Arms) market access initiative; in essence that granted Bangladesh the same duty-free access as that under the MFA, albeit without the quota. Moreover, unilateral liberalization took place through the reduction of tariffs, non-tariff barriers and quantitative restrictions. In summary,



Bangladesh's involvement in the textile and clothing IPN is due to low labour costs, preferential access provided by the MFA and European Union EBA, autonomous trade liberalization and growth of local entrepreneurship.

However, the depth of the IPN in Bangladesh's textile and clothing trade with East Asia needs to be carefully assessed. Table 3.13 shows that Bangladesh has a modest IIT in raw materials and intermediates,<sup>11</sup> (specifically within the textile and clothing industry) with East Asia. Nonetheless, the IIT for 2006 displays an anomaly of 0.62, which is considerably higher in comparison with other years. This may be attributable to the characteristics of the textile and clothing industry in which buyers can instruct firms to use specific materials from a specific country.

**Table 3.13. Bangladesh IIT with East Asia in raw materials and intermediates**

Year	IIT
2003	0.01
2004	0.05
2005	0.05
2006	0.62
2007	0.08

*Source:* Calculated from United Nations Comtrade data.

Further examination of Bangladesh's main import partners confirms this fact (table 3.14). In 2006, Bangladesh imported \$970 million worth of raw materials and intermediate products from China. This also confirms the survey result showing the growth of Bangladesh imports from China, not only because of the price factor but also because of specific instructions from buyers to use particular types of materials from specific countries.

**Table 3.14. Top five import partners of Bangladesh in textiles and clothing raw materials and intermediaries**

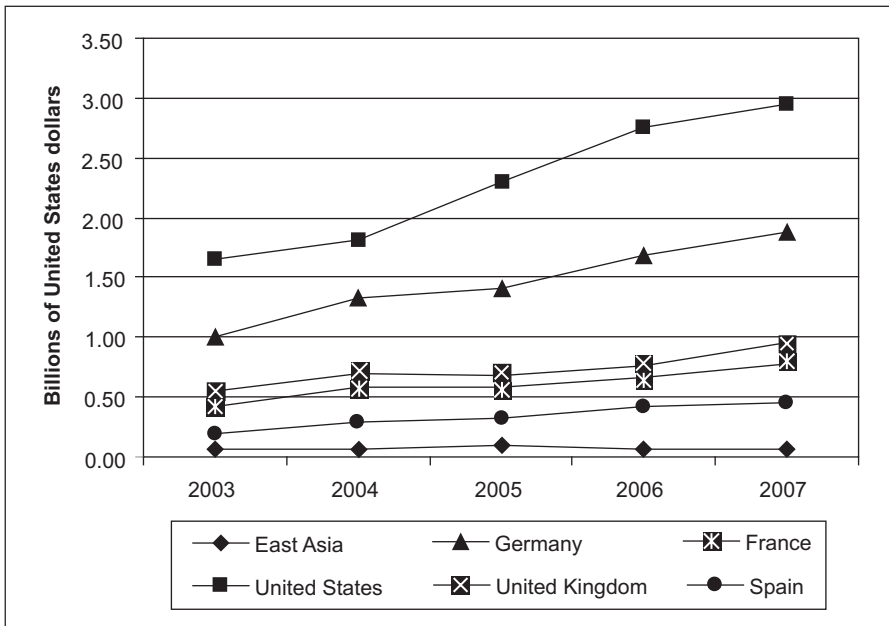
Partner	(Billions of United States dollars)				
	2003	2004	2005	2006	2007
China	0.47	0.58	0.64	0.97	0.64
India	0.29	0.35	0.30	0.44	0.57
Uzbekistan	0.24	0.32	0.34	0.44	0.51
Taiwan Province of China	0.23	0.22	0.21	0.18	0.19
Thailand	0.10	0.11	0.11	0.14	0.18

*Source:* United Nations Comtrade data.

<sup>11</sup> Calculated based on Harmonized System (HS) 1996 at the 2-digit level. For a complete list of product codes used for the HDD sector, see Annex II.

Meanwhile, East Asia does not appear as a main Bangladesh export destination for textile and clothing final goods. As figure 3.7 shows, values of exports to East Asia are relatively small compared to those for exports to the United States and the European Union. This fact can also be used to support the claim that networks between Bangladesh and East Asia are not yet extensive enough.

**Figure 3.7. Export values of final goods from Bangladesh**



Source: United Nations Comtrade data. For a complete list of the product codes of textile and clothing final goods, see Annex II.

RTAs are not considered an important factor in the development of the textiles and clothing IPN in Bangladesh. This is largely because the sourcing pattern for raw materials and intermediate products in the textile and clothing industry relies heavily on buyer's specifications, geographical proximity, adequate supplies of the materials, the long-term relationship between buyer and seller, and the price and quality of the products. Thus, the role of RTAs in strengthening the IPN is less evident.

An important feature of the Bangladesh textile and clothing industry is its reliance on preference given by developed countries, such as that under the European Union EBA, to attract foreign investors. However, relying solely on the European Union EBA is not enough to move up the production chain. Investment in newer technology is needed so that the textile and clothing industry can increase its product quality and move one step ahead of the competitors in countries that are also given the European Union EBA preferences. However, newly acquired technology without product diversification to produce more sophisticated products cannot move Bangladesh's textile and clothing industry up the

ladder. This can also be seen in the case of Viet Nam, where new technology made it possible for rapid production adjustment; however, its textile and clothing industry still neglects markets with high-quality requirements and continues to cater to markets for unsophisticated products such as shirts and jackets (Trinh and Dinh, 2009). Another interesting fact revealed by the Bangladesh survey is that trade facilitation is considered essential to improving the procurement process of raw materials and intermediate products. Therefore, improved trade facilitation is an important element in reducing service link costs and IPN development.

In summary, there is less evidence of IPNs in the textile and clothing industry in Bangladesh. This is largely because the sourcing pattern for raw materials and intermediate products relies heavily on buyer specifications, geographical proximity, adequate supplies of materials, the long-term relationship between buyer and seller, and price and quality of the products. Thus, there is only a one-way trade in the textile and clothing industry. Compared to the automotive and HDD sectors, Bangladesh's IPN network in the textile and clothing sector is still in the early stages of development.

### **3.4. Summary of findings in the case studies**

A common theme emerges from the five case studies. They reveal that in an age of numerous RTAs, policy initiatives are still a critical part in attracting foreign MNCs. These policy initiatives are mostly in the form of tariff exemptions for importing intermediate products or for high local content value and tax reductions. The policies are an integral part of the countries' strategy to attract foreign MNCs to relocate some of their production activities to the countries studied. This finding highlights the important role of MNCs in developing IPNs. Another important finding is that based on the perception of the business sector in the countries being studied, they all concur that RTAs are not a major factor in the development of IPNs. This may be explained by the fact that most of the RTAs are still in the early period of enforcement and it will take some time for them to have a drastic effect on trade; for example, the schedule for IJEPA tariff reductions for automotive parts and components varies between immediate reduction after the agreement has been enforced and a reduction or elimination after 15 years. Given the discrepancies in the tariff reduction schedule for different automotive parts and component products, it may be that the effect of RTAs on IPNs can only be noticed after some time has passed. In addition, some RTAs exclude specific sectors from the agreement. One example is ACFTA, in which the automotive sector is excluded, thereby driving a wedge in the IPN development of IPN between the Chinese automakers and their South-East Asian counterparts.

Another important theme that has emerged from the case studies is the sceptical view in the business sector regarding the role of existing RTAs in IPN development. This is mainly due to the complex procedure required to qualify for tariff reduction under RTAs. Figure 3.1 shows that unilateral tariff reductions result in low MFN rates. However, low MFN rates appear to lead to the low utilization of RTA facilities, i.e., preferential tariff rates. A study done by Kirk (2007) found that low MFN rates contributed to the limited impact of AFTA on trade, where less than 5 per cent of total intra-ASEAN trade took place under the Common Effective Preferential Tariff (CEPT). This implies that 95 per cent of intra-ASEAN

trade occurred under MFN. There are two factors that help explain this: (a) the cost of complying with RoO is high; and (b) the margin of preference, which is the difference between the MFN rate and the preferential rate, is too small to compensate for the administrative costs involved in applying for preferential treatment.

RoO are an important element of any RTA since they are required to ensure that preferences are available only to those that take part in the agreement. Thus, complying with RoO in order to be eligible to receive preferential rates entails administrative costs. As a rule of thumb, if meeting the conditions of the RoO results in an increase in the cost of intermediate goods compared to pre-RTA levels, then there is potential for trade diversion to occur (Kirk, 2007). In Indonesia's case there is low utilization of the ASEAN CEPT, which stems from the fact that MFN rates are already low in addition to the high cost and cumbersome procedures involved in filling Form D<sup>12</sup> (Anas, 2007). Moreover Anas indicated that most of Indonesia's imports from ASEAN countries were already subject to MFN rates of less than 5 per cent. In this case, trade diversion did not occur; Indonesia just chose to utilize MFN rates instead of using the AFTA preferential rates provided by ASEAN CEPT.

Furthermore, Kirk (2007) showed that AFTA's margin of preference is too small to compensate for the administrative cost of applying for preferential rates. A recent study by Kawai and Wignaraja (2010) confirmed this. They surveyed firms operating in Japan, China, Republic of Korea, Singapore, Thailand and the Philippines. Their study revealed that out of 551 sample firms, 17 per cent of them preferred not to utilize RTA benefits because of the low margins of preference. In addition, 15 per cent of the firms stated that their non-use of RTA benefits was due to the administrative cost related to RoO. However, it should be noted that in their study, 35 per cent of the firms surveyed reported the major reason for not using RTA benefits was the lack of information on RTAs. However, existing RTAs in the countries studied show that the thresholds for local value-added content are set at a uniform rate of 40 per cent. The adoption of the 40 per cent rule implies a move towards a simpler RoO, which would facilitate more trade between countries involved in the RTA. Therefore, this would make RTAs more relevant in strengthening IPNs. Thus, the overlapping RoO would not be a huge hindrance since the rate for local content is the same at 40 per cent. It may be that the problem is not with the RoO, but rather with their implementation. The bureaucratic process involved in determining origin can be quite difficult and time-consuming for firms, and may be a hindrance to using RTA benefits. This implies that the cost of complying with RoO is high.

Despite the fact that RTAs appear irrelevant in developing IPNs, they still have the potential to increase trade and strengthen IPNs. One example is ITFTA, which has significantly increased trade in certain auto parts and components between the two countries. The survey of the HDD industry in Thailand suggests the coexistence of IPNs and industrial clustering. Industrial clustering has enabled foreign MNCs to reduce service link costs. Cumbersome customs procedures, minimal logistics and the transportation infrastructure are important issues raised by all the respondents in interviews and focus

---

<sup>12</sup> Form D is used by ASEAN members to obtain ASEAN CEPT rates for their products.

group discussions. In other words, service link costs are not low enough to facilitate more trade. Thus, RTAs without measures to smooth out trade friction arising from high service link costs will not have any significant effect in generating more trade between the countries involved.

## Annex

### List of RTAs whose members are surveyed in this study

Country	Trade agreement	Title	Scope	Signed (year)	Status
<b>Bangladesh</b>	APTA	Asia-Pacific Trade Agreement (previously known as the Bangkok Agreement)	Regional	1975	In force since 1976
	BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation	Regional		In force since 2004
	GSTP	Global System of Trade Preferences among Developing Countries	Global (developing countries)	1988	In force since 1989
	India-Bangladesh	Trade Agreement between India and Bangladesh	Bilateral	2006	In force since 2006
	PTA-D-8	Preferential Tariff Arrangement-Group of 8 Developing Countries	Cross-Continental Plurilateral	2006	Pending country ratification
	SAFTA	South Asian Free Trade Area	Regional	2004	In force since 2006
	TPS – OIC	Framework Agreement on Trade Preferential System among the Member States of the Organization of the Islamic Conference	Cross-Continental Plurilateral	2004	Pending country ratification
<b>China</b>	ACFTA	Agreement on Trade in Goods of the Framework Agreement on Comprehensive Economic Cooperation between the Association of Southeast Asian Nations and the People's Republic of China	Country-Bloc	2004	In force since 2005
	ACFTA-Services	Agreement on Trade in Services of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China	Country-Bloc	2007	In force since 2007
	APTA	Asia-Pacific Trade Agreement (previously known as the Bangkok Agreement)	Regional	1975	In force since 1976
	Australia-China	Australia-China Free Trade Agreement	Bilateral		Under negotiation since 2005
	China-Chile	Free Trade Agreement between the Government of the People's Republic of China and the Government of the Republic of Chile	Bilateral	2005	In force since 2006

**Annex (continued)**

<b>Country</b>	<b>Trade agreement</b>	<b>Title</b>	<b>Scope</b>	<b>Signed (year)</b>	<b>Status</b>
	China-Hong Kong, China	Mainland and Hong Kong Closer Economic Partnership Agreement	Bilateral	2003	In force since 2004
	China-Republic of Korea	China-Korea Free Trade Agreement	Bilateral		Under negotiation since 2005
	China-Macao, China	Mainland and Macao Closer Economic Partnership Agreement	Bilateral	2003	In force since 2004
	China-Norway		Bilateral		Under negotiation since 2009
	China-Pakistan	Free Trade Agreement between the Government of the People's Republic of China and the Government of the Islamic Republic of Pakistan	Bilateral	2006	In force since 2007
	China-Peru	Free Trade Agreement between the Government of the People's Republic of China and the Government of the Republic of Peru	Bilateral	2009	Pending country ratification
	China-Singapore	Free Trade Agreement between the Government of the People's Republic of China and the Government of the Republic of Singapore	Bilateral	2008	In force since 2009
	New Zealand-China	New Zealand-China Free Trade Agreement	Bilateral	2008	In force since 2008
	Pakistan-China Services	Agreement on Trade in Services between the Government of the People's Republic of China and the Government of the Islamic Republic of Pakistan	Bilateral	2009	Pending country ratification
<b>India</b>	APTA	Asia-Pacific Trade Agreement (previously known as the Bangkok Agreement)	Regional	1975	In force since 1976
	ASEAN-India FA	ASEAN-India Framework Agreement on Comprehensive Economic Cooperation	Country-Bloc	2003	In force since 2004
	Bhutan-India	Bhutan-India Free Trade Agreement	Bilateral	2006	In force since 2006
	BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation	Regional		In force since 2004

**Annex (continued)**

<b>Country</b>	<b>Trade agreement</b>	<b>Title</b>	<b>Scope</b>	<b>Signed (year)</b>	<b>Status</b>
	EC-India		Country-Bloc		Under negotiation since 2007
	EFTA-India		Country-Bloc		Under negotiation since 2008
	GSTP	Global System of Trade Preferences among Developing Countries	Global (developing countries)	1988	In force since 1989
	India-Afghanistan	India-Afghanistan Preferential Trade Agreement	Bilateral	2003	In force since 2003
	India-Bangladesh	Trade Agreement between India and Bangladesh	Bilateral	2006	In force since 2006
	India-Chile	Preferential Trade Agreement between the Republic of India and the Republic of Chile	Bilateral	2006	Pending country ratification
	India-GCC	Framework Agreement on Economic Cooperation between the Republic of India and the Member States of the Cooperation Council for the Arab States of the Gulf	Country-Bloc	2004	In force since 2006
	India-MERCOSUR	India-MERCOSUR Preferential Trade Agreement	Country-Bloc	2004	Pending country ratification since 2005
	India-Nepal	Indo-Nepal Treaty of Trade	Bilateral	1991	In force since 1991
	India-SACU	Preferential Trade Agreement between SACU and India	Country-Bloc		Under negotiation since 2002
	India-Singapore	Comprehensive Economic Cooperation Agreement between the Republic of India and the Republic of Singapore	Bilateral	2005	In force since 2005
	India-Sri Lanka	Free Trade Agreement between the Republic of India and the Democratic Socialist Republic of Sri Lanka	Bilateral	1998	In force since 2001
	India-Thailand	India-Thailand Framework Agreement for establishing an FTA	Bilateral	2003	In force since 2004
	Japan-India	Japan-India Economic Partnership Agreement	Bilateral		Under negotiation since 2007



**Annex (continued)**

<b>Country</b>	<b>Trade agreement</b>	<b>Title</b>	<b>Scope</b>	<b>Signed (year)</b>	<b>Status</b>
	Republic of Korea-India	Korea-India Comprehensive Economic Partnership Agreement	Bilateral		Pending country ratification (2009)
	SAFTA	South Asian Free Trade Area	Regional	2004	In force since 2006
<b>Indonesia</b>	AANZFTA	ASEAN-Australia-New Zealand Free Trade Agreement	Country-Bloc	2009	Pending country ratification
	ACFTA	Agreement on Trade in Goods of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China	Country-Bloc	2004	In force since 2005
	ACFTA-Services	Agreement on Trade in Services of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China	Country-Bloc	2007	In force since 2007
	AJCEP	Agreement on Comprehensive Economics Partnership among Japan and the Member States of ASEAN	Country-Bloc	2008	In force since 2008
	AKFTA	Agreement on Trade in Goods under the Framework Agreement on Comprehensive Economic Cooperation among the Governments of the Member States of ASEAN and the Republic of Korea	Country-Bloc	2006	In force since 2007
	ASEAN-European Union	ASEAN-European Union Free Trade Agreement	Bloc-Bloc		Under negotiation since 2007
	ASEAN-India FA	ASEAN-India Framework Agreement on Comprehensive Economic Cooperation	Country-Bloc	2003	In force since 2004
	ASEAN-Republic of Korea FA	Framework Agreement on Comprehensive Economic Cooperation among the Governments of the Member States of ASEAN and the Republic of Korea	Country-Bloc	2005	In force since 2006
	ASEAN Goods-AFTA	ASEAN Free Trade Area	Regional	1992	In force since 1993

**Annex (continued)**

<b>Country</b>	<b>Trade agreement</b>	<b>Title</b>	<b>Scope</b>	<b>Signed (year)</b>	<b>Status</b>
	ASEAN Services-AFAS	ASEAN Framework Agreement on Services	Regional	1995	In force since 1996
	GSTP	Global System of Trade Preferences among Developing Countries	Global (developing countries)	1988	In force since 1989
	Japan-Indonesia	Japan-Indonesia Economic Partnership Agreement	Bilateral	2007	In force since 2008
	PTA-D-8	Preferential Tariff Arrangement-Group of 8 Developing Countries	Cross-Continental Plurilateral	2006	Pending country ratification
	United States-Indonesia	USA-Indonesia Free Trade Agreement	Bilateral		Under negotiation since 2006
	United States-ASEAN	Trade and Investment Framework Arrangement between the United States of America and ASEAN	Country-Bloc	2006	In force since 2006
<b>Thailand</b>	AANZFTA	ASEAN – AUSTRALIA – NEW ZEALAND FREE TRADE AGREEMENT	Country-Bloc	2009	Pending country ratification
	ACFTA	Agreement on Trade in Goods of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China	Country-Bloc	2004	In force since 2005
	ACFTA-Services	Agreement on Trade in Services of the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and the People's Republic of China	Country-Bloc	2007	In force since 2007
	AJCEP	Agreement on Comprehensive Economics Partnership among Japan and the Member States of ASEAN	Country-Bloc	2008	In force since 2008
	ASEAN-European Union	ASEAN-European Union Free Trade Agreement	Bloc-Bloc		Under negotiation since 2007
	ASEAN-India FA	ASEAN-India Framework Agreement on Comprehensive Economic Cooperation	Country-Bloc	2003	In force since 2004
	ASEAN Goods-AFTA	ASEAN Free Trade Area	Regional	1992	In force since 1993
	ASEAN Services-AFAS	ASEAN Framework Agreement on Services	Regional	1995	In force since 1996

**Annex (continued)**

<b>Country</b>	<b>Trade agreement</b>	<b>Title</b>	<b>Scope</b>	<b>Signed (year)</b>	<b>Status</b>
Australia-Thailand		Thailand-Australia Free Trade Agreement	Bilateral	2004	In force since 2005
BIMSTEC		Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation	Regional		In force since 2004
GSTP		Global System of Trade Preferences among Developing Countries	Global (developing countries)	1988	In force since 1989
India-Thailand		India-Thailand Framework Agreement for establishing a FTA	Bilateral	2003	In force since 2004
Japan-Thailand		Agreement between Japan and the Kingdom of Thailand for an Economic Partnership	Bilateral	2007	In force since 2007
Lao People's Democratic Republic-Thailand		Lao People's Democratic Republic-Thailand Preferential Trading Arrangement	Bilateral	1991	In force since 1991
New Zealand-Thailand		New Zealand-Thailand Closer Economic Partnership Agreement	Bilateral	2005	In force since 2005
Peru-Thailand		Protocol between the Republic of Peru and the Kingdom of Thailand to Accelerate the Liberalization of Trade in Goods and Trade Facilitation	Bilateral	2005	Pending country ratification
Thailand-Bahrain		Framework Agreement between the Kingdom of Thailand and the Kingdom of Bahrain on Closer Economic Partnership	Bilateral	2002	In force since 2002
Thailand-United States		Thailand-United States Free Trade Agreement	Bilateral		Under negotiation since 2004
United States-ASEAN		Trade and Investment Framework Arrangement between the United States of America and ASEAN	Country-Bloc	2006	In force since 2006

Source: Asia-Pacific Trade and Investment Agreement Database.