

## **Chapter 3 Deepening of trade and investment in East Asia and Japan's contribution to the shift to a new growth model**

In this chapter, we analyze the deepening of the supply chain in East Asia in detail based on various data. We then review and summarize the results of the analyses we conducted so far in Part II, and discuss how Japan can contribute to the efforts for the shift to a new growth model, which is emerging in the East Asian countries (Section 3 and 4, Chapter 1).

### **Section 1 Trends in trade and investment in East Asia**

#### **1 . East Asia in world trade**

Overviewing the trade flow between East Asia and key regions around the world reveals increasing international specialization in production in East Asia, with intermediate goods comprising a large portion of trade within East Asia and a high ratio of final goods going to the United States and Europe (Figure II-3-1-1). This suggests that within East Asia, intermediate goods are being exported from Japan and ROK to China and ASEAN countries; intermediate goods are also being exported within ASEAN countries and between China and ASEAN countries; and assembled final goods are being exported from China and ASEAN countries to the United States and Europe. This fundamental structure was seen in both 2000 and 2012 and has been expanding its size in terms of trade value. Especially, the trade value of China has been significantly growing, increasing its presence in the region.

In the following paragraphs, we take a closer look at the trade structure in East Asia.<sup>235</sup>

#### **2 . Features of the trade structure in East Asia**

In analyzing the trade structure in East Asia, we first study the balance between trade within the region (intra-regional trade) and trade involving countries outside the region (inter-regional trade), as well as economic ties in East Asia, and then discuss the features of intra-regional and inter-regional trade. After that, we take a look at changes over a long term and recent changes after the collapse of Lehman Brothers. In this process, we also make a comparative study of East Asia and other major economies, including NAFTA and EU.

##### **(1) Ratio of intra-regional trade**

Below, we compare the ratio of intra-regional trade in East Asia and that in other major economies to reveal the features of East Asia (Figure II-3-1-2).<sup>236</sup>

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<sup>235</sup> Here, with international specialization of production in mind, we conduct analysis on trade by looking at the goods in each production process (specifically, primary goods, intermediate goods and final goods). As fundamental data for this analysis, we use RIETI-TID2012 of the Research Institute of Economy, Trade and Industry, which are organized according to such categories of goods. Refer to appended notes 1 and 2 for the concept of intermediate and final goods and RIETI-TID2012.

<sup>236</sup> Here, East Asia is defined according to the region classification by RIETI-TID2012, for the sake of convenience. Specifically, East Asia includes Japan, China, Hong Kong, ROK, Taiwan, Singapore, Indonesia, Malaysia, the Philippines, Thailand, Brunei Darussalam, Cambodia and Viet Nam. NAFTA includes the United States, Canada and Mexico. EU refers to the EU-27. ASEAN refers to the eight countries, namely, Brunei Darussalam, Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. However, due to the limitation on data, statistical data for some countries and years are not available. Hereinafter, this applies to all statistics using RIETI-TID data, except for those with specific notes.

Firstly, the ratio of intra-regional trade in EU is comparatively high (on the basis of the total of imports and exports). This means that trade partners of the EU member states are largely the countries within the EU region and the regional economic ties are strong. However, when looking at trends over a long term, although the ratio of intra-region trade was already high in 1992, the year in which the European Single Market was established, the ratio has been gradually decreasing after that. Meanwhile, in East Asia, the ratio of intra-regional trade has been increasing since the 1990s and economic ties within the region have been gradually strengthened, despite of the lack of an institutional framework that covers the whole East Asian region (a temporary decrease in the end of the 1990s is considered to be due to the effects of the Asian currency crisis). In the ASEAN region, which is a part of East Asia, the ratio of intra-regional trade has been moderately increasing since the establishment of AFTA in 1992. In NAFTA as well, the ratio of intra-regional trade was on an increasing trend after its establishment in 1994, which reinforced economic relationships in the region; however, the ratio moderately decreased from the beginning of 2000s and has remained flat since the collapse of Lehman Brothers.

Looking at the ratios of intra-regional trade in exports and imports, the former has been higher than the latter in East Asia. This trend is considered to be a result of the situation where the ratio of intra-regional trade was increasing in imports due to the rapid growth of trade of parts and components, while exports of parts and components to the countries within the region and exports of consumption goods to outside the region were growing simultaneously (further discussion will be given later regarding this point). In contrast, the ratio of intra-regional trade has been higher in exports than imports in EU and NAFTA. Especially, a remarkable increase of the ratio of intra-regional trade was seen in exports from NAFTA in the 1990s (the collapse of the IT bubble in the United States is considered to be one of the reasons why the ratio of intra-regional trade remains on the same level from early 2000s).

By the type of goods, the ratio of intra-regional trade in exports is generally high in the EU and the trends in each type of goods have been following a similar course (Figure II-3-1-3). Meanwhile, in East Asia, there is a significant difference among the types of goods. To be specific, the ratio of intra-regional trade is high in primary goods, parts and components and processed goods. Especially, the ratio for parts and components is showing a significant growth. On the other hand, the ratio of intra-regional trade becomes low concerning consumption and capital goods. Especially, the decline of the ratio in consumption goods is remarkable. This suggests that international specialization in production was developing in the industries centered on machine manufacturing in East Asia from 1990s to 2000s. However, there is an increasing trend in the ratio of intra-regional trade of consumption goods in East Asia since the collapse of Lehman Brothers.

Figure II-3-1-1 Trade flow between East Asia and key regions around the world

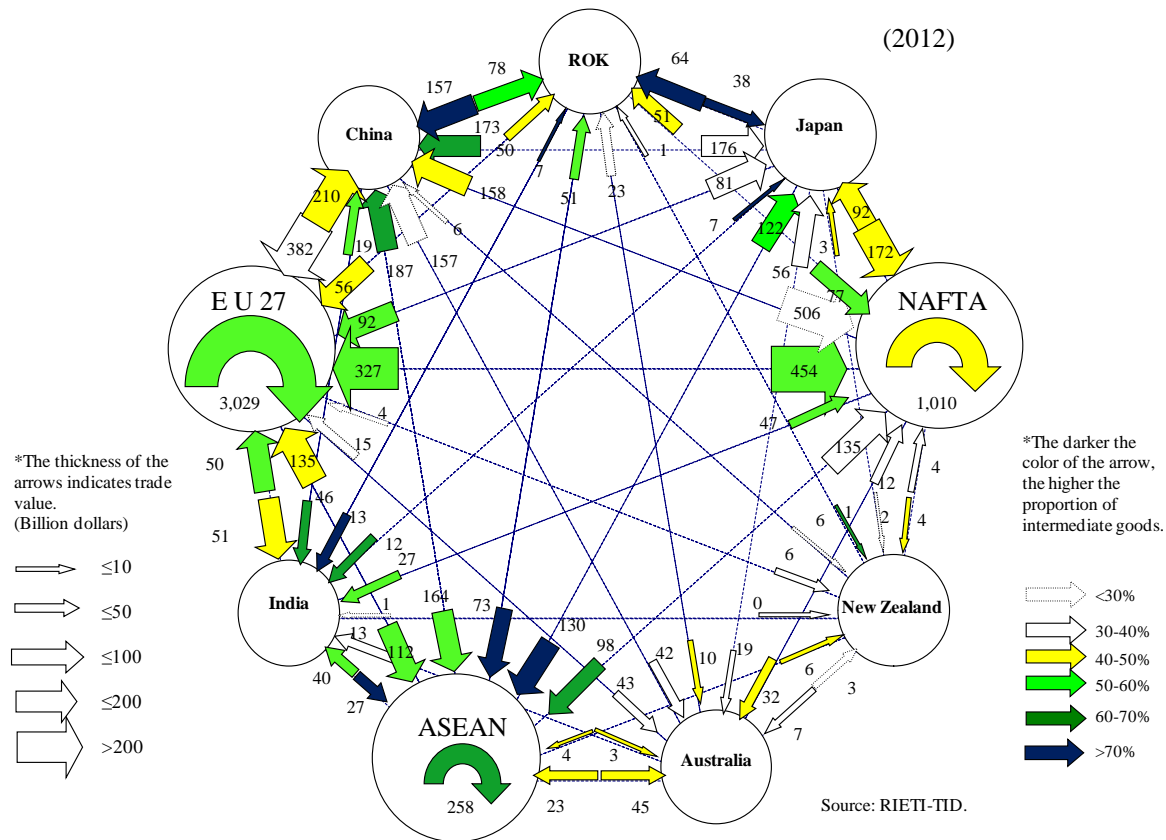
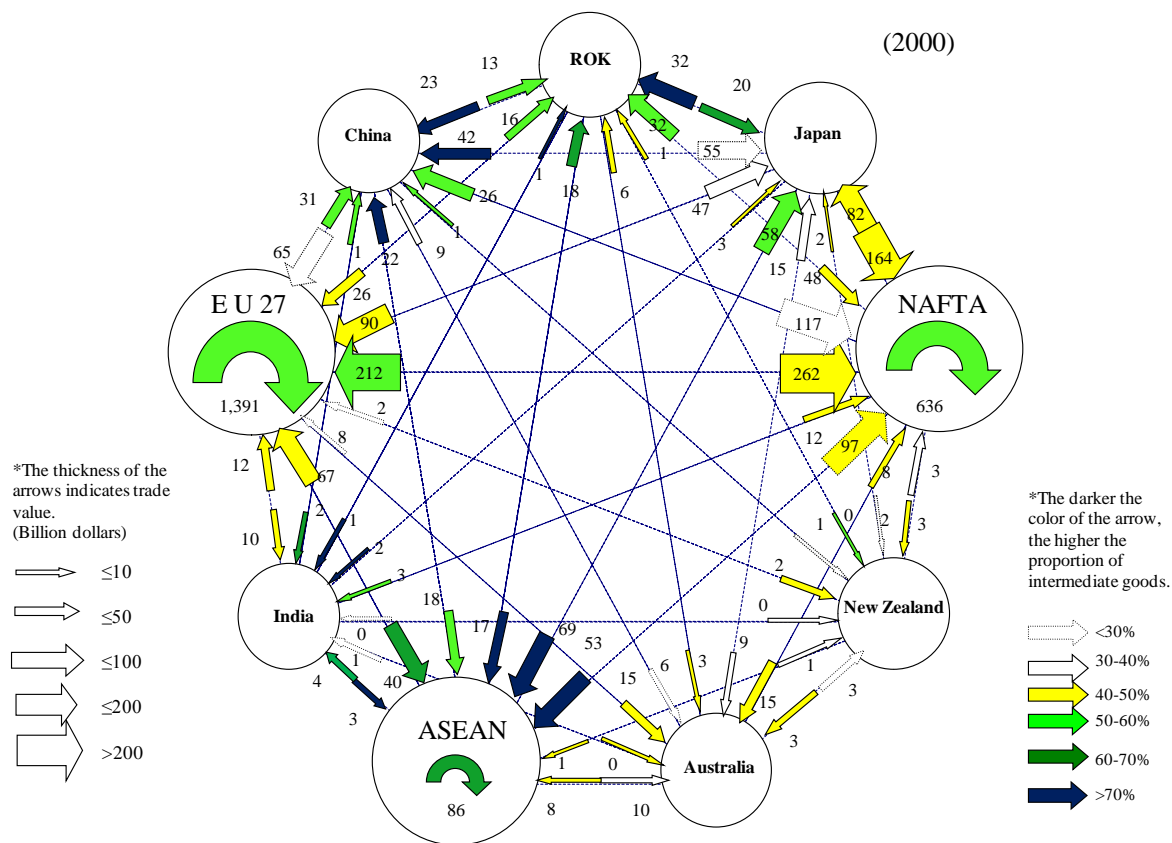
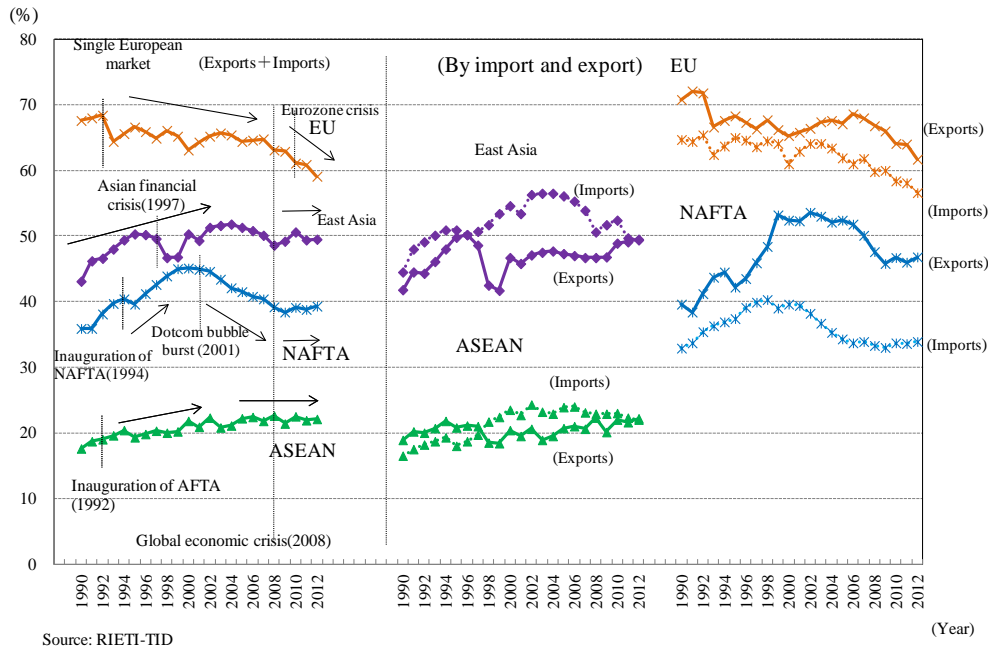
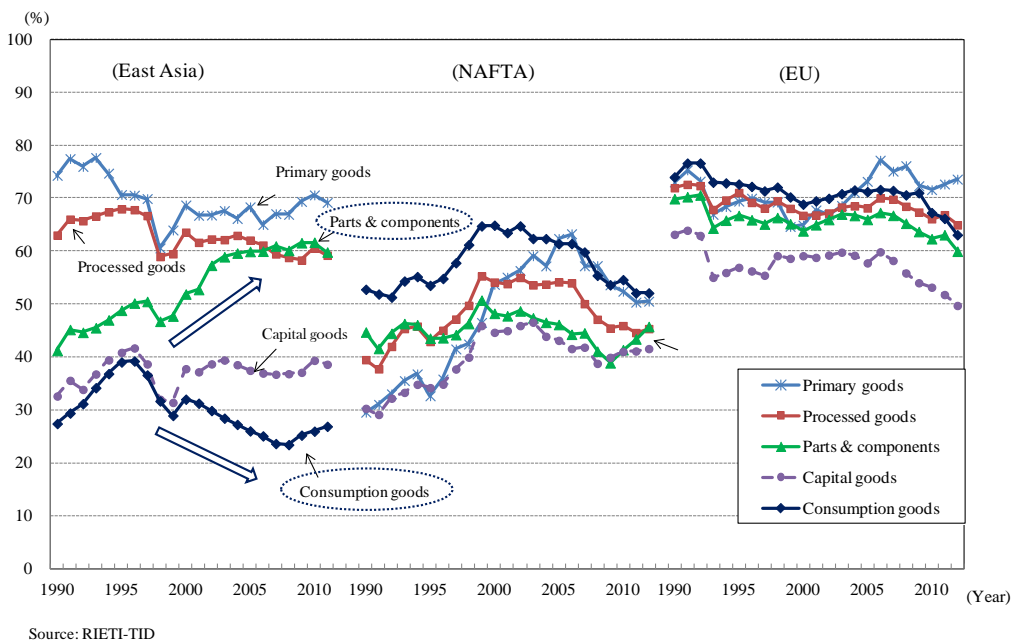


Figure II-3-1-2 Trends in the ratio of intra-regional trade in major economies



**Figure II-3-1-3 Trends in the ratio of intra-regional trade in major economies' exports by goods**

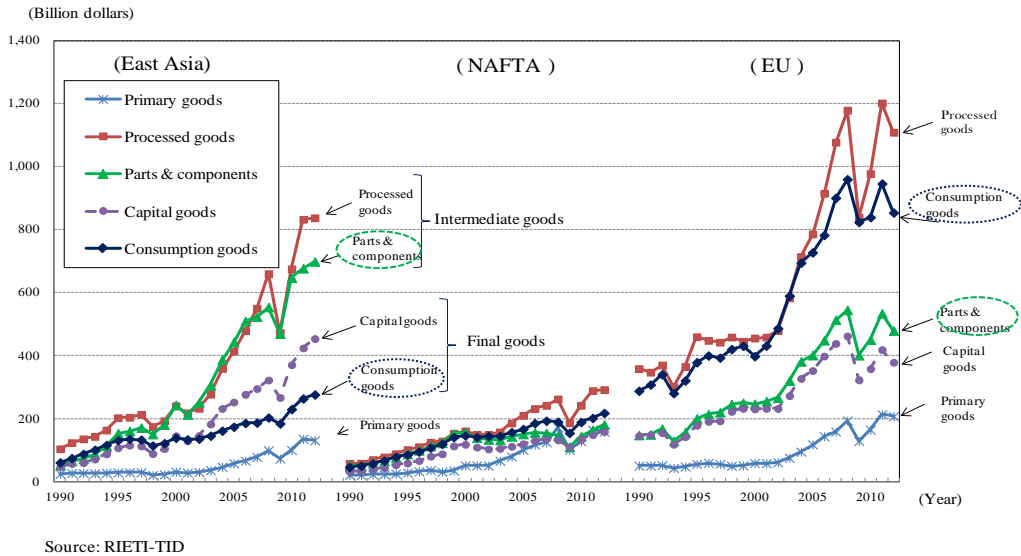


## (2) Features of intra-regional trade

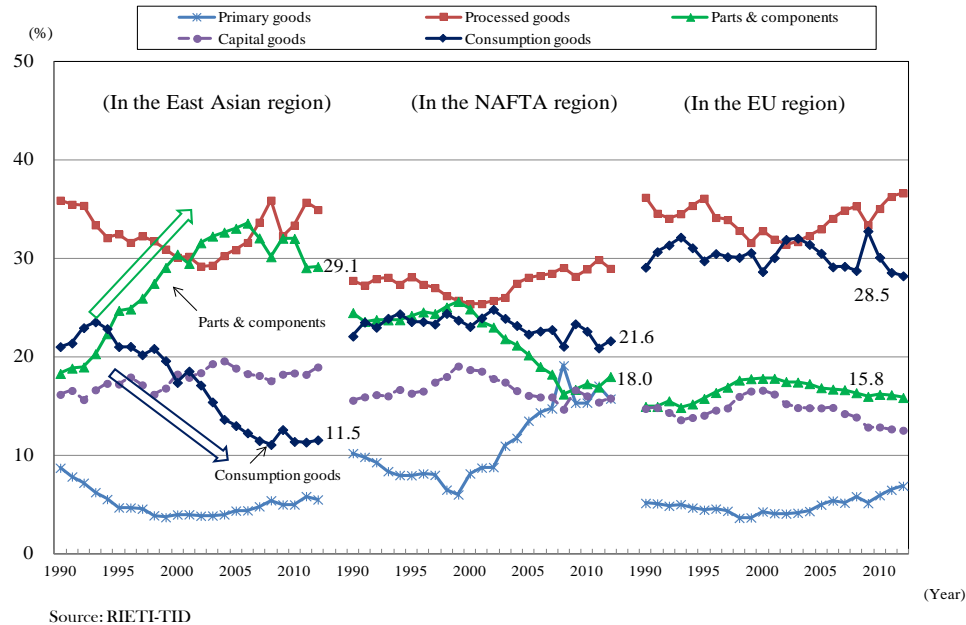
Next, we take a look at the features of intra-regional trade. Looking at the trends in value and share by types of goods, the increase of the trade value of parts and components stands out in East Asia, in contrast with the EU where the trade value of consumption goods is larger than that of parts and components (Figure II-3-1-4). As a result, the share of parts and component is increasing, while the share of consumption goods is decreasing, in trade within East Asia (Figure II-3-1-5). Compared with the recent data of the breakdown of trade within other major economies, the share of parts and component is extremely high in East Asia (in 2012, East Asia: 29.1%, NAFTA: 18.0%, and EU: 15.8%)

while the share of consumption goods is extremely low (East Asia: 11.5%, NAFTA: 21.6%, and EU: 28.5%).

**Figure II-3-1-4 Trends in the value of intra-regional trade in major economies (values by goods)**



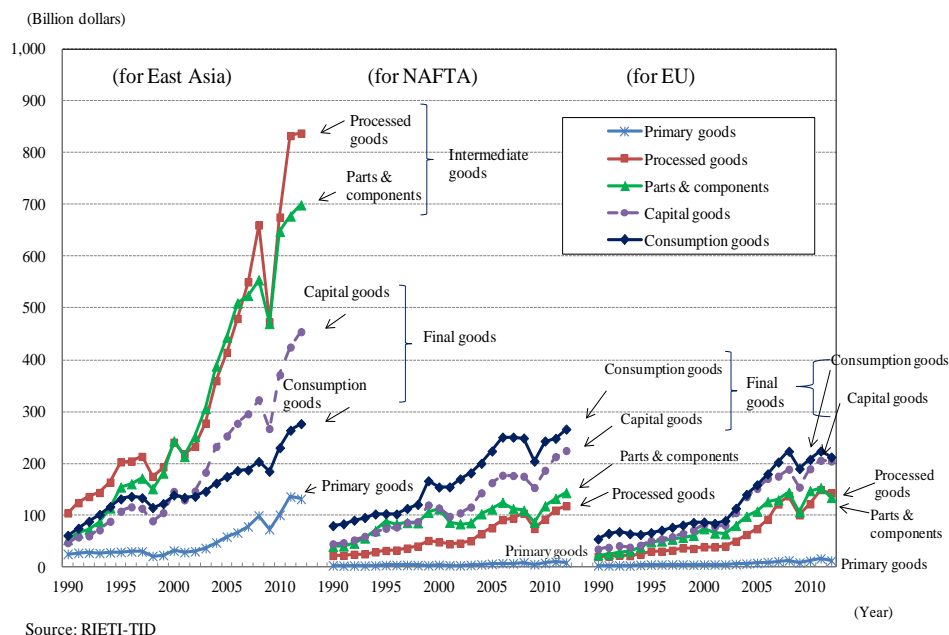
**Figure II-3-1-5 Trends in the value of intra-regional trade in major economies (composition of goods)**



### (3) Inter-regional trade of East Asia with other regions

With regard to exports from East Asia, the main goods for intra-regional export are intermediate goods. In contrast, final goods account for a large portion in the exports to outside the region (NAFTA and EU). This suggests that final goods assembled in the region are exported to the countries outside the region (Figure II-3-1-6).

**Figure II-3-1-6 Trends in export value in East Asia by region and goods**



### **3 . Change in the trade structure in East Asia**

#### **(1) Change in export destination of East Asia**

The trade structure in East Asia that we have discussed so far was sensitive to the demand trends in the countries outside East Asia as most part of the demands for consumption goods are from the United States and European markets. Indeed, the collapse of Lehman Brothers had a great impact on trade in East Asia. In this context, expectations for an independent economy built on demand within the East Asian region increased after the collapse of Lehman Brothers. Below, we discuss if the trade structure has been really changed after the collapse of Lehman Brothers, by looking at the change in export destination of final goods.

Firstly, although the export values of consumption goods for export to East Asian countries, the United States and the EU, declined in 2009, immediately after the collapse of Lehman Brothers, the values have been recovering since 2010. Especially, exports to East Asian countries have been significantly increasing (Figure II-3-1-7). Meanwhile, the value of exports to the EU, which was affected by the debt crisis, declined again in 2012. As a result, the share of the East Asian region itself became larger in export destinations. Among East Asia, Japan and the ASEAN countries have a large portion.

Next, the value of capital goods exported to the East Asian countries exceeded the values of exports to the United States and the EU in most of the years, with its growth rate becoming larger and larger since 2000s (Figure II-3-1-8).<sup>237</sup> Especially, the values of exports to China and ASEAN countries are remarkably high. Although the export value decreased in 2009, it has again been on an increasing trend

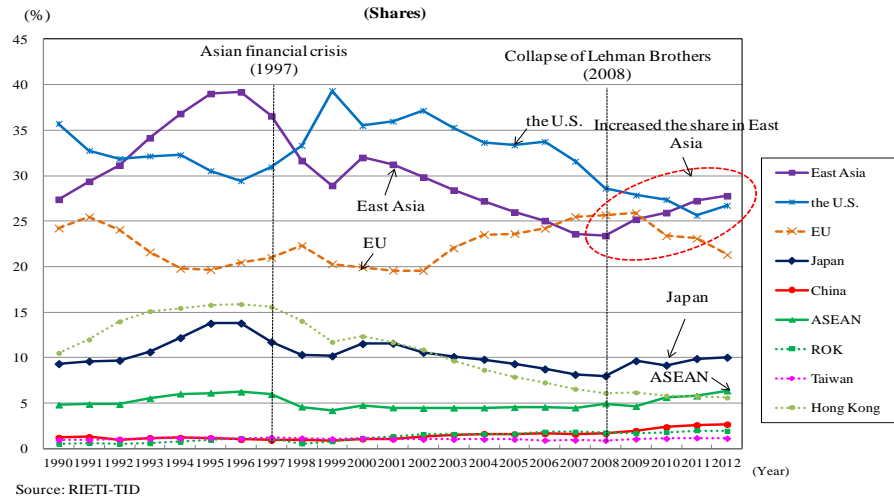
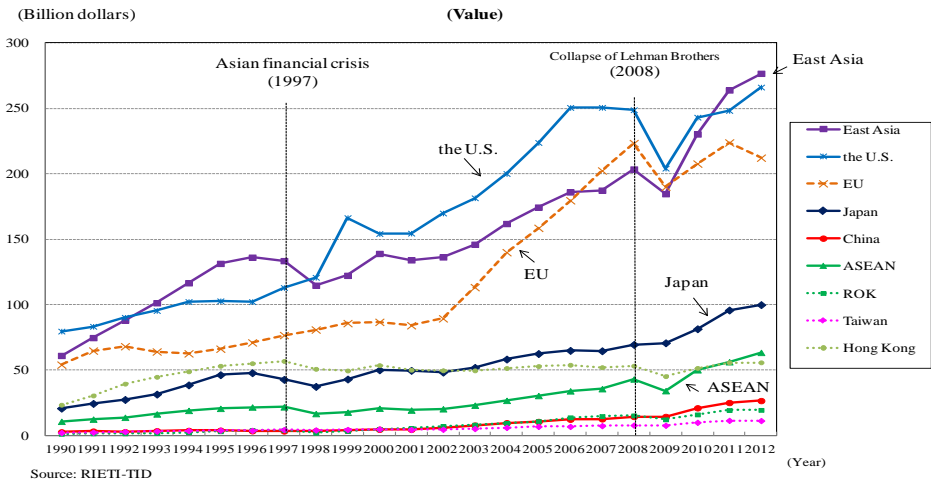
<sup>237</sup> Capital goods include industrial machinery related to capital investment and construction of infrastructure, such as machine tools and construction machinery. Strong investment demands are considered to be the factor for the large portion of capital goods in Asia.

since 2010. In terms of shares by regions of export destination, East Asia has been increasing its portion while the exports to the United States remain almost the same and exports to the EU are declining. In East Asia, China and the ASEAN countries account for a large portion.

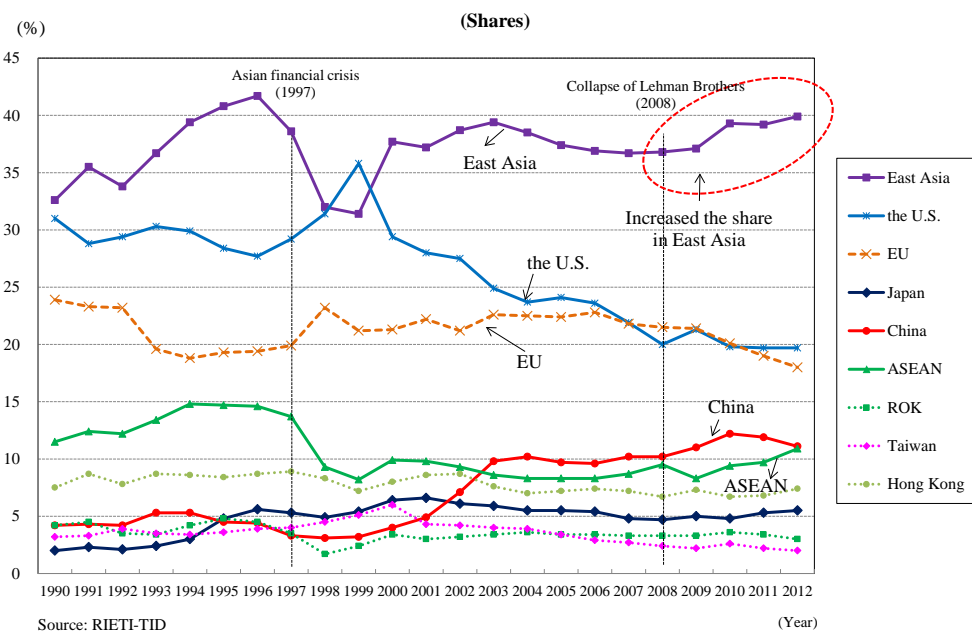
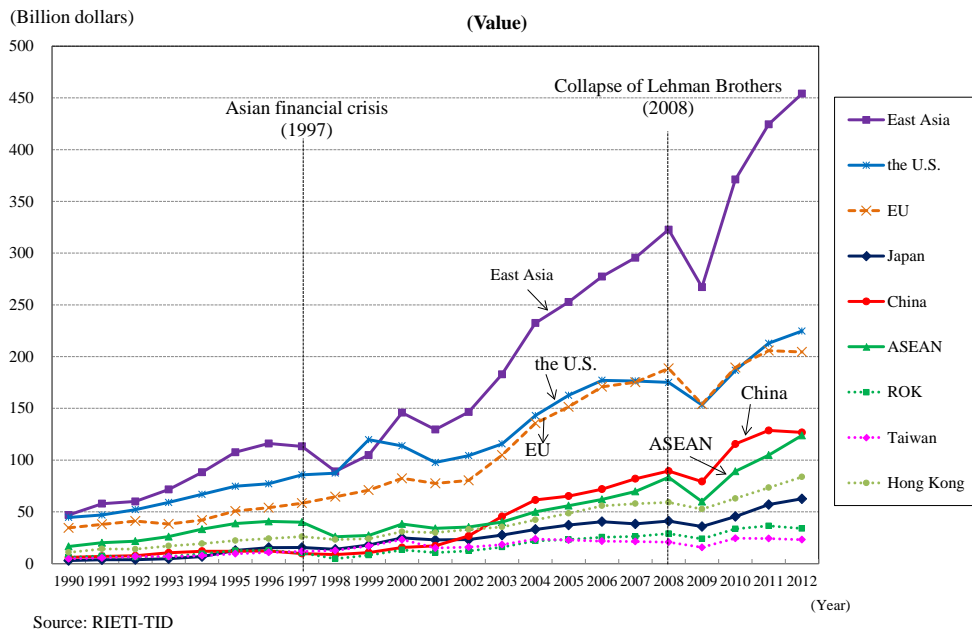
Looking at the breakdown of destinations for exports of intermediate goods, the portion of Japan is slightly decreasing while the portions of China and the ASEAN countries are moderately growing (Figure II-3-1-9). With regard to processed goods, the share of Japan stayed almost the same, while the share of ASEAN countries has been increasing after a temporary decline. In contrast, China's share has been declining after a temporary increase (Figure II-3-1-10).

As described above, East Asia has been moderately but steadily increasing its share in export destinations of final goods, showing signs of shifting to an economy based on intra-regional demands.

**Figure II-3-1-7 Trends in export value in East Asia by export destination (consumer goods)**

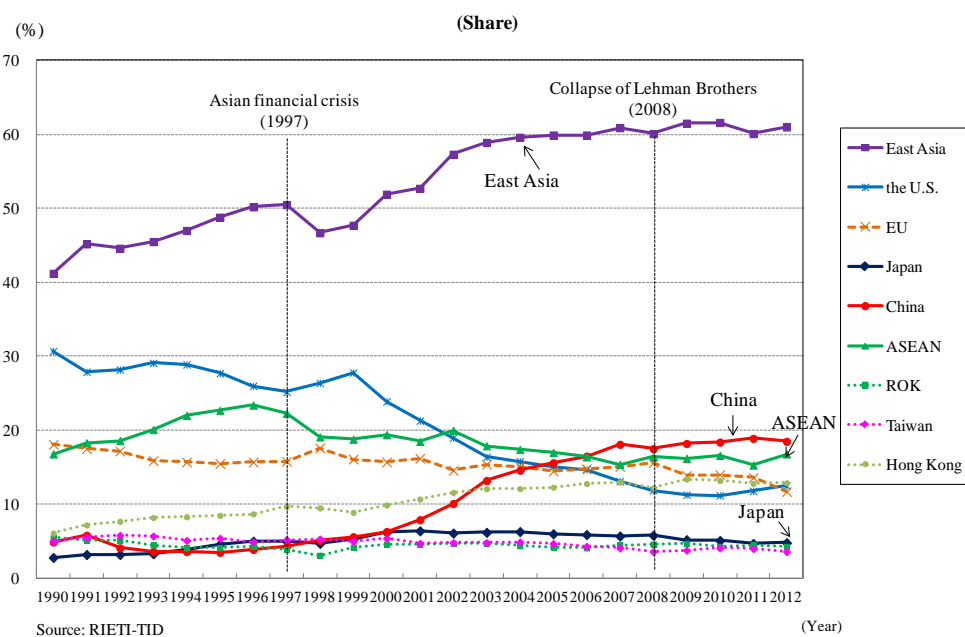
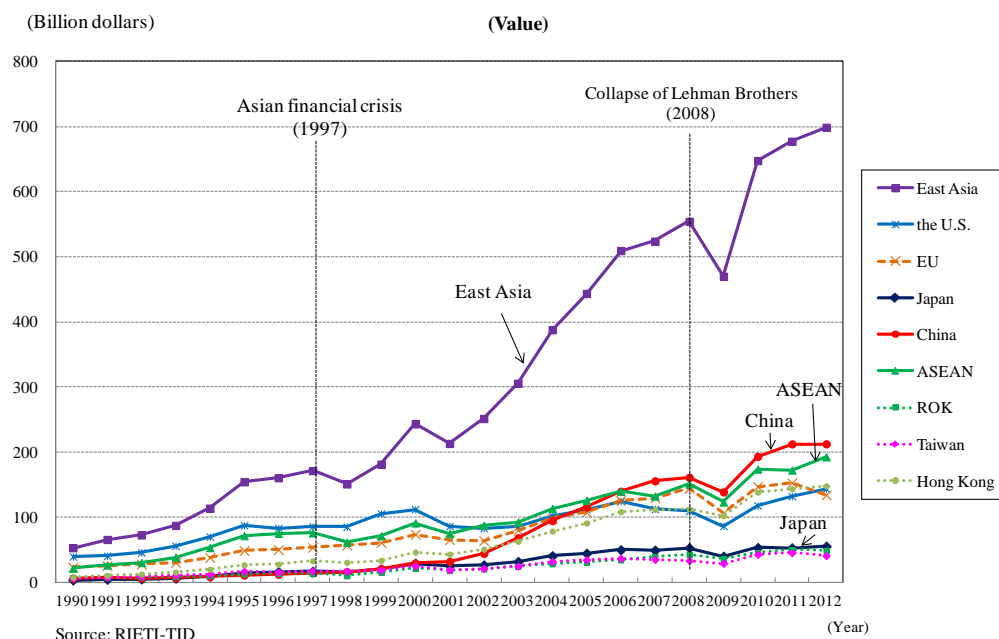


**Figure II-3-1-8 Trends in export value in East Asia by export destination (capital goods)**

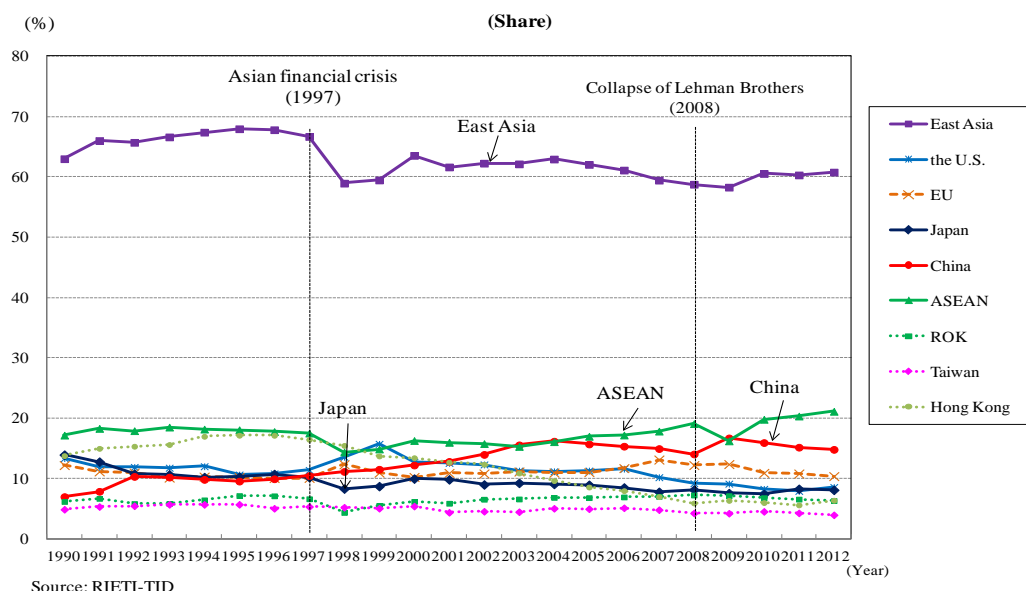
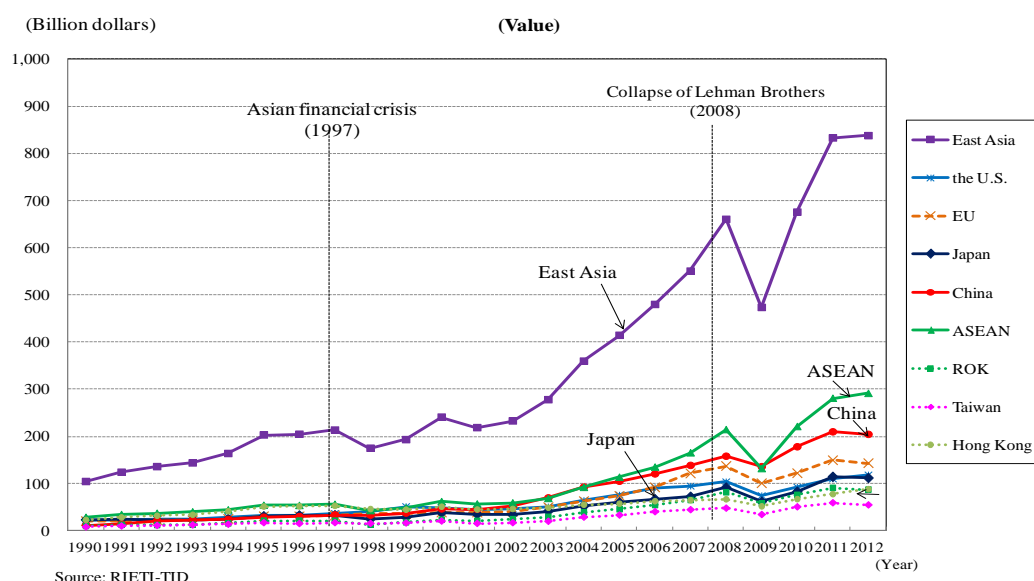




**Figure II-3-1-9 Trends in export value in East Asia by export destination (parts and components)**



**Figure II-3-1-10 Trends in export value in East Asia by export destination (processed goods)**



## (2) Change in exporting countries in East Asia

Next, we take a look at which countries or regions in East Asia are expanding the size of exports.

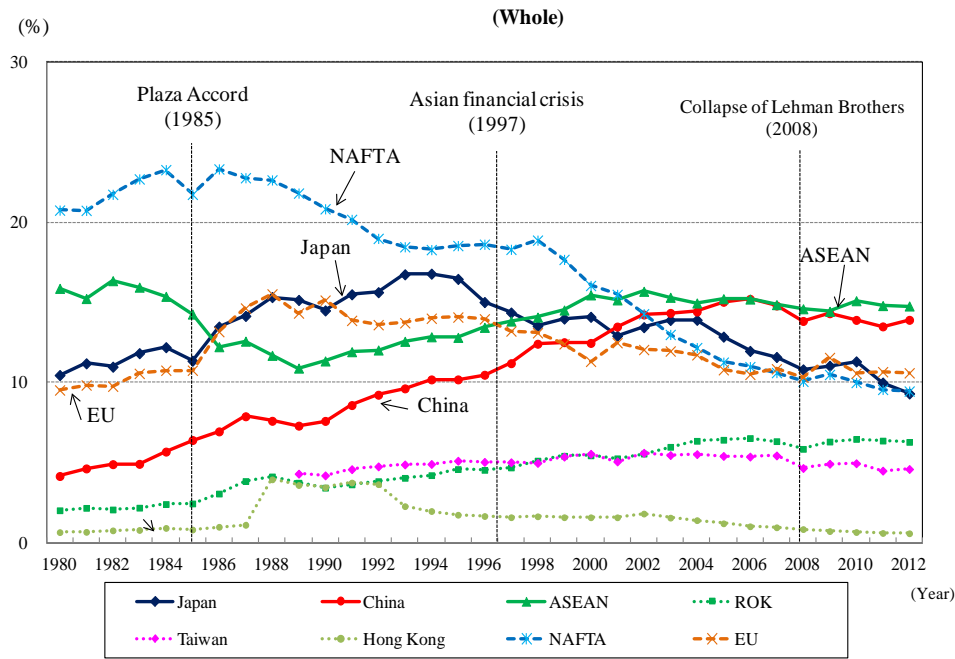
### (A) Within the East Asian region

NAFTA used to account for a large portion in imports by East Asia in the 1980s, but the portion has been gradually declining since then. Instead, East Asian countries have been increasing their portion (Figure II-3-1-11). Japan's share hit its peak in the mid-1990s, but after has been on a downtrend since. Shares of the ASEAN countries and China increased in the 1990s, and have stayed flat since 2000.

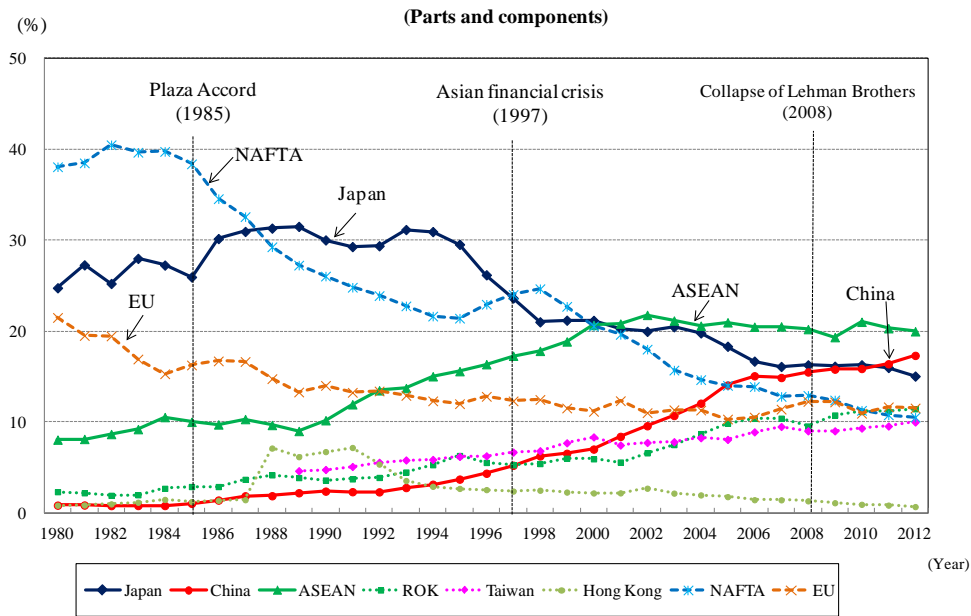
By goods, Japan increased its share in East Asia's import of parts and components, for which the trade value is high in East Asia, until mid 1990s, but it has been decreasing since then. Shares of the ASEAN countries and China have been growing instead, exceeding Japan's share. Japan also used to comprise a large share in East Asia's import of processed goods until the mid-1990s, but after that,

shares of the ASEAN countries and China outstripped Japan's share. China's share is extremely large in East Asia's import of consumption goods, despite of a downtrend in recent years. Japan grew its share in imports of capital goods until the early 1990s. Since then, however, Japan's share has been on a downtrend. Instead, China has been growing its share significantly.

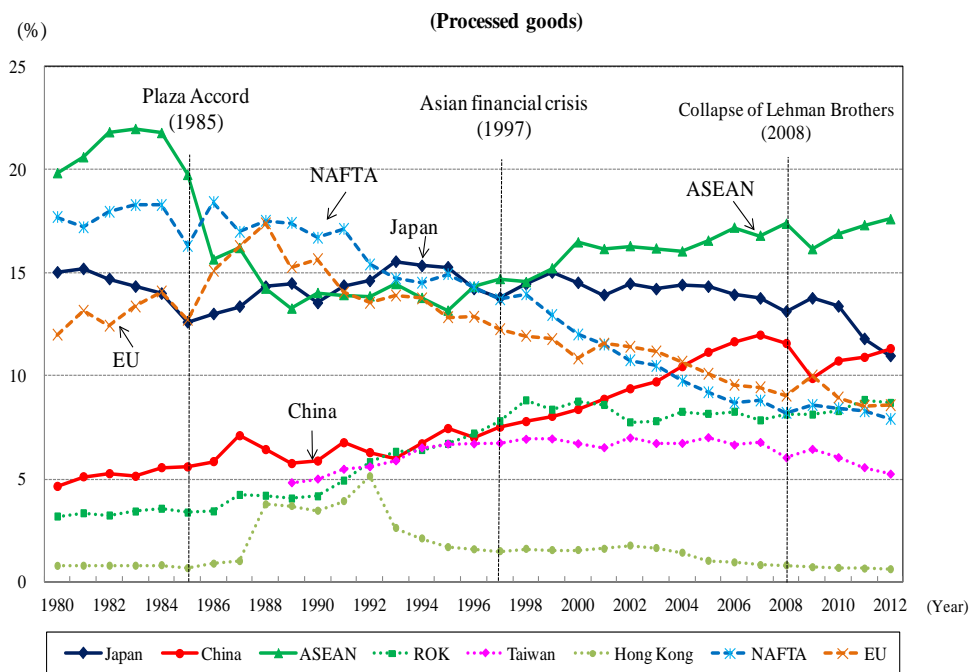
Figure II-3-1-11 Trends in shares by country and region in imports by East Asia



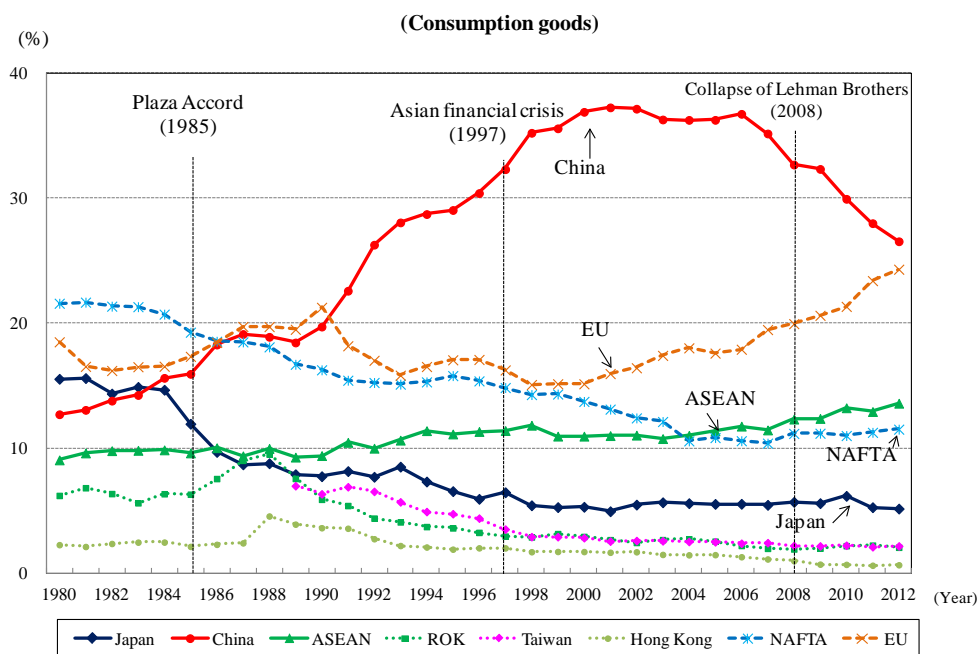
Source: RIETI-TID



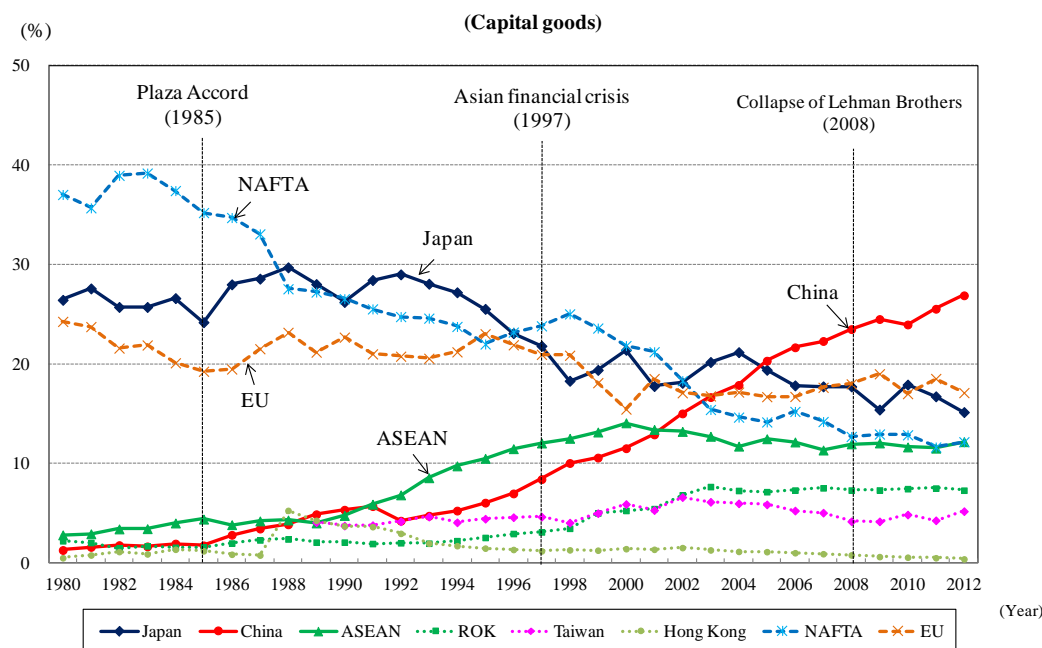
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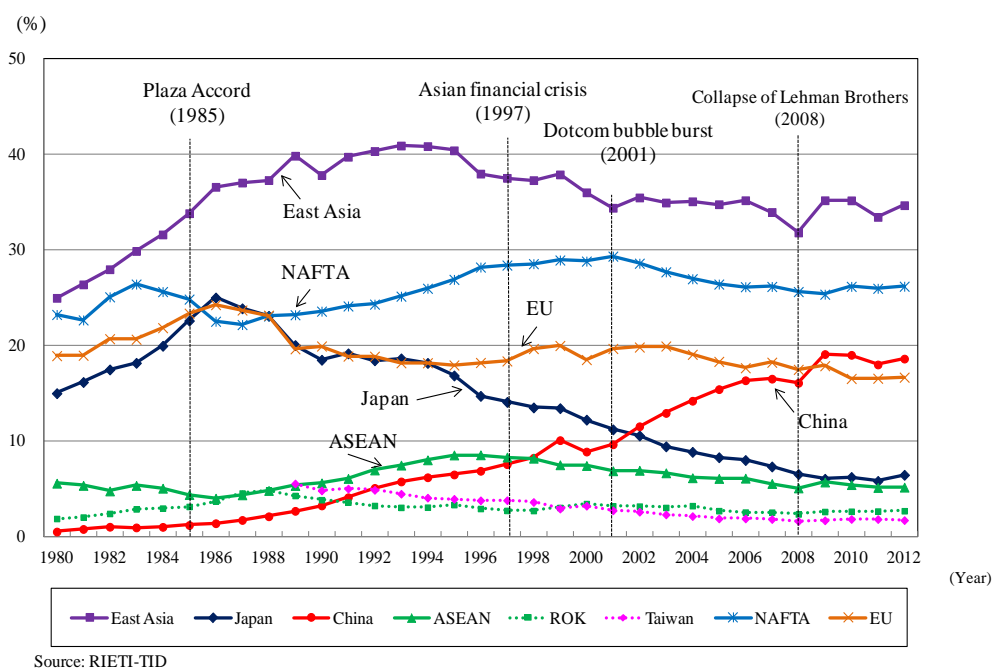
## (B) Exports to the United States

Looking at exports to the United States as an example, we look at inter-regional exports below. A look at the breakdown of the import partners of the United States shows that Japan's share has been significantly declining since it hit the peak immediately after the signing of the Plaza Accord (Figure II-3-1-12). In contrast, China's share in imports by the United States rose greatly. The ASEAN countries' share increased until the mid-1990s but has been moderately decreasing after that.

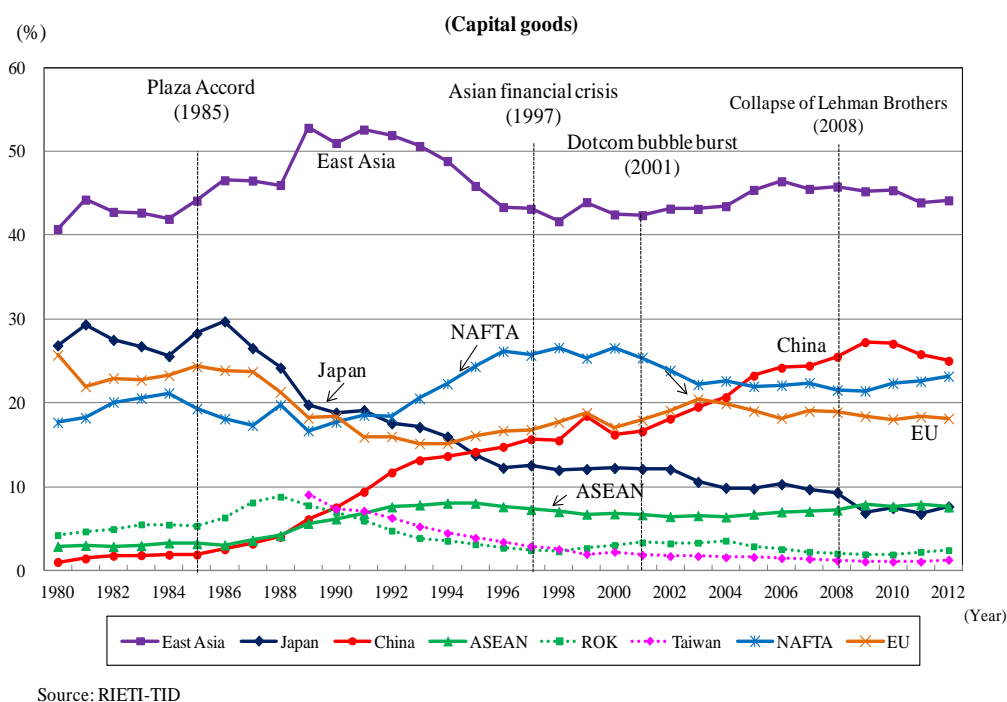
As we have already noted in this paper, the share of final goods, including consumption and capital goods, is high in exports from East Asia to the United States. Taking a look at the trends in those goods, Japan's share in the import of consumption goods by the United States has been decreasing since its peak which came immediately after the signing of the Plaza Accord, in contrast to China whose share has been showing a rapid growth (Figure II-3-1-13). ASEAN countries' share increased until the mid-1990s, but it remained almost the same after that. Among consumption goods, Japan's share significantly dropped in home appliances, while Japan's share in transport equipment has been flat or slightly decreasing since the end of the 1990s. Meanwhile, the share of China has been dramatically growing in home appliances. ASEAN's share in the United States' imports of home appliances was increasing until the mid-1990, but it has been decreasing since then. ROK has increased its share in the United States' imports of transport equipment.

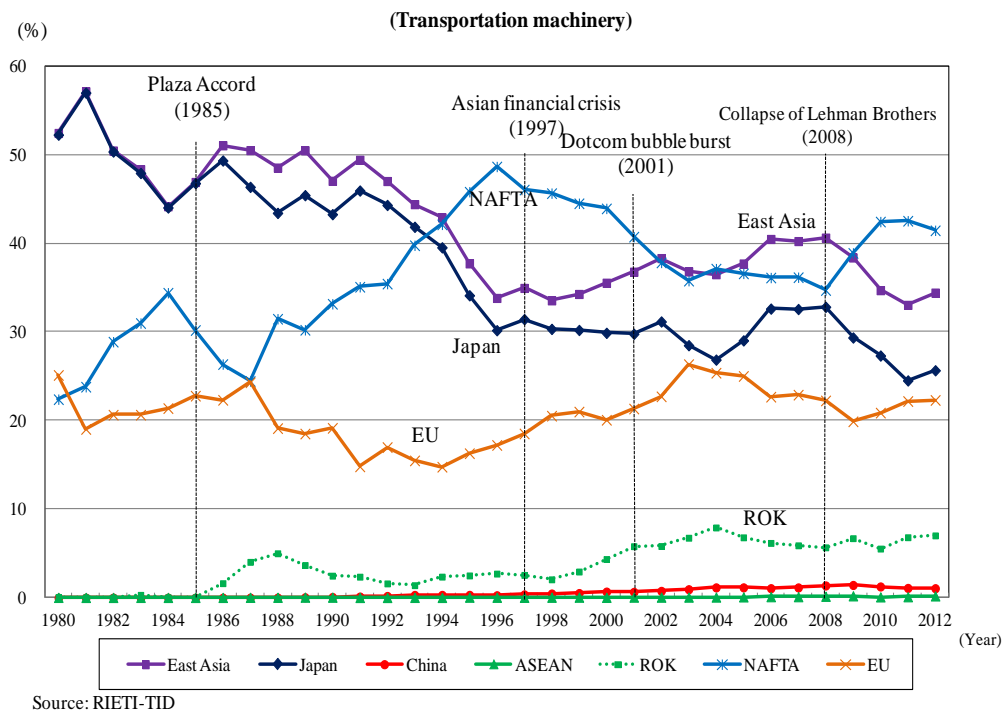
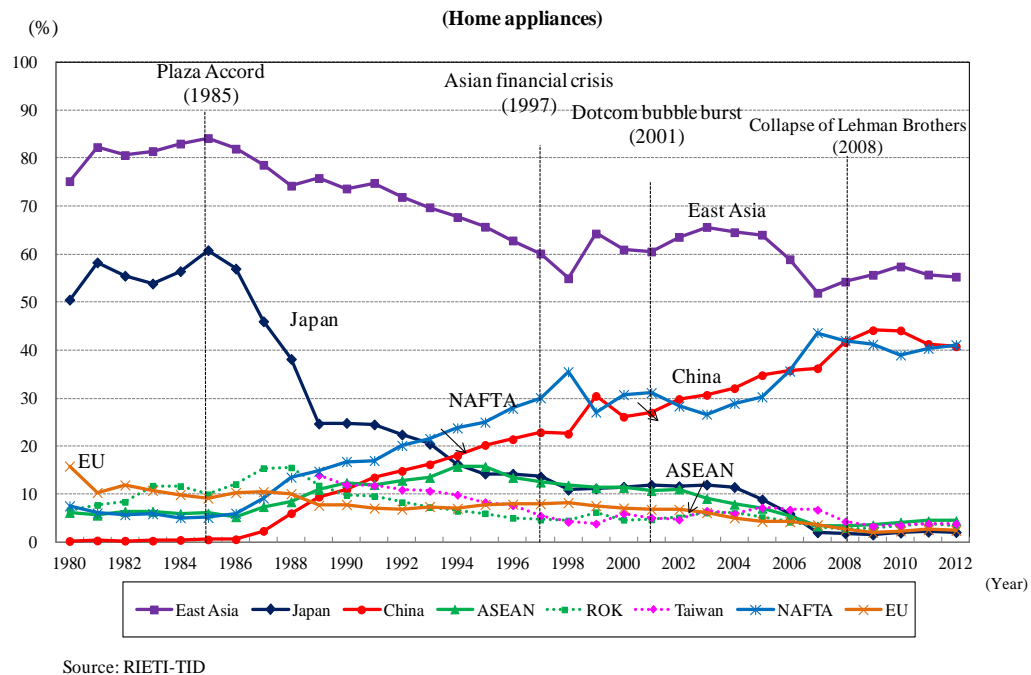
Japan's share in the United States' imports of capital goods has been significantly decreasing since it reached the peak immediately after the signing of the Plaza Accord (Figure II-3-1-14). Meanwhile, China's share has been growing remarkably. Its growth rate has particularly accelerated since the 2000s.

**Figure II-3-1-12 Trends in shares by country and region in imports by the United States**

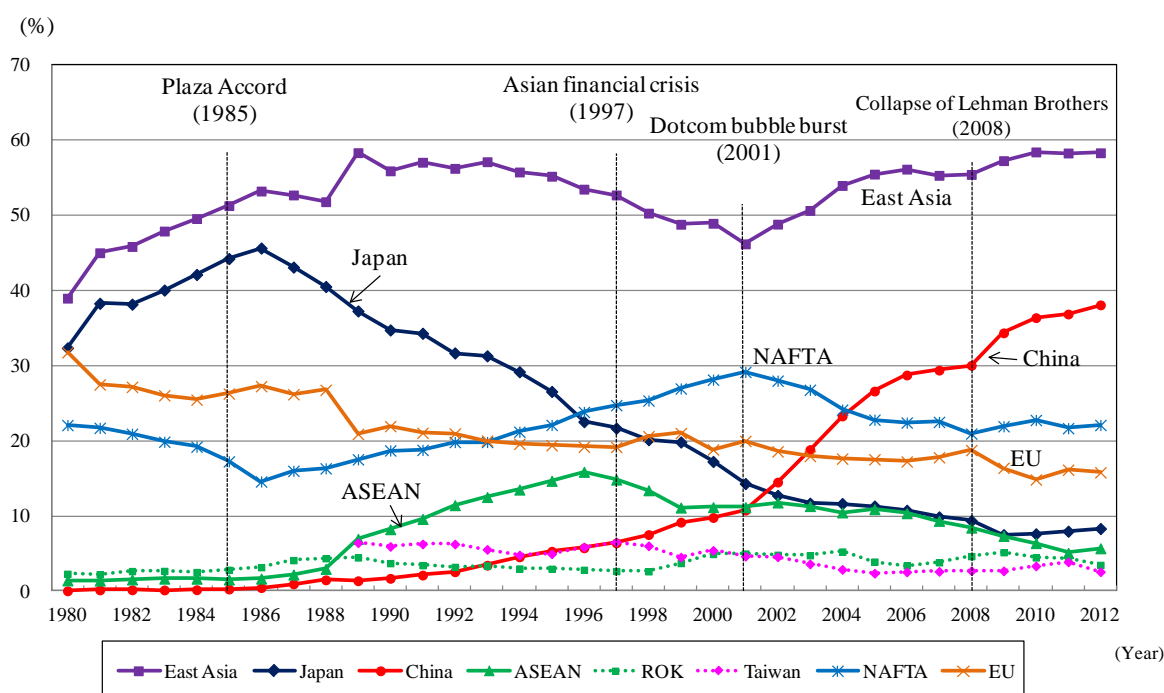


**Figure II-3-1-13 Trends in shares by country and region in imports by the United States (consumer goods)**





**Figure II-3-1-14 Trends in shares by country and region in imports by the United States (capital goods)**



Source: RIETI-TID

#### **4 . Intra-regional trade in ASEAN**

Above, we viewed ASEAN countries as a region. Finally, we look at the trends of inter-regional trade in ASEAN countries below.

As we have seen in Figure II-3-1-1, intermediate goods account for a large portion in ASEAN countries' imports from the countries outside the region, and final goods have a larger portion in export to outside the ASEAN region than imports to the ASEAN region. These findings suggest that the final goods assembled in the ASEAN region are exported to the western countries.

In the ASEAN region also, the trade value of intermediate goods for processed goods is high (Figure II-3-1-15). The trade value of parts and components increased in the 1990s and that of processed goods also expanded in the 2000s.

A breakdown of processed goods shows that oil and coal account for a large portion in terms of trade value, suggesting that trade of refined petroleum products are ongoing (Figure II-3-1-16). By countries, export values of Singapore and Malaysia are high (Figure II-3-1-17).

As for parts and components, parts for electrical machinery, general machinery and transport equipment, are traded within the region. This means that ASEAN member states do not just import parts and components from outside the region but also manufacture by themselves within the region.

Below, we review the changes in the trade value of parts and components in the ASEAN region from 2000 to 2012.<sup>238</sup> Figure II-3-1-18 shows the values of parts and components traded among the ASEAN

<sup>238</sup> Based on data on intermediate goods (parts and components) in RIETI-TID2012. The subject countries



member states in 2000 and 2012 (the width of the arrows shows the size of trade value). Figure II-3-1-19 is matrices showing the trade values and ratio of the value in 2012 to the value in 2000 (times) (hereinafter referred to as the "change ratio").

Firstly, those Figures show that Singapore marks the highest import value, namely 23.4 billion dollars, in 2012, remaining at the top as in 2000. However, the change ratio of the import value is 1.2 times, which is the smallest in the ASEAN region. Similarly, the change ratio of Malaysia, which marked the second-top import value in both 2000 and 2012, also remained at a low level equivalent to 1.3 times, the second-lowest next to Singapore. The highest export value was Malaysia's 18.3 billion dollars, and the second-highest was Singapore's 14.3 billion dollars. The change ratios of these countries were 1.3 times and 1.7 times respectively, which are comparatively small increases in the ASEAN region.

Secondly, the import value of Indonesia was fourth highest, namely 6.5 billion dollars in 2012. However, its change ratio is 10.7 times, which is the highest in the region. A great increase in the values of imports from Singapore and Thailand contributed to this high change ratio. Electrical machinery and general machinery account for 86% of the whole imports from Singapore, and transport equipment and general machinery account for 77% of the whole imports from Thailand. In addition, the export value of Thailand is the third largest amount in 2012, namely 10.1 billion dollars, showing a comparatively large increase among major ASEAN member states, with the change ratio of 2.2 times. In conclusion, the change ratios of the export values of Indonesia and Thailand are larger than that of Singapore and Malaysia (Indonesia: 1.8 times in exports and 10.7 times in imports; Thailand: 2.2 times in exports and 1.9 times in imports; Singapore: 1.7 times in exports and 1.2 times in imports; Malaysia: 1.3 times in exports and 1.3 times in imports).

Thirdly, Viet Nam increased its trade value with many countries in the region in both imports and exports. Viet Nam's change ratios reach two digits in imports and exports with most of the countries; and the change ratio was especially high in trade with the Philippines (5690% in exports and 6840% in imports).

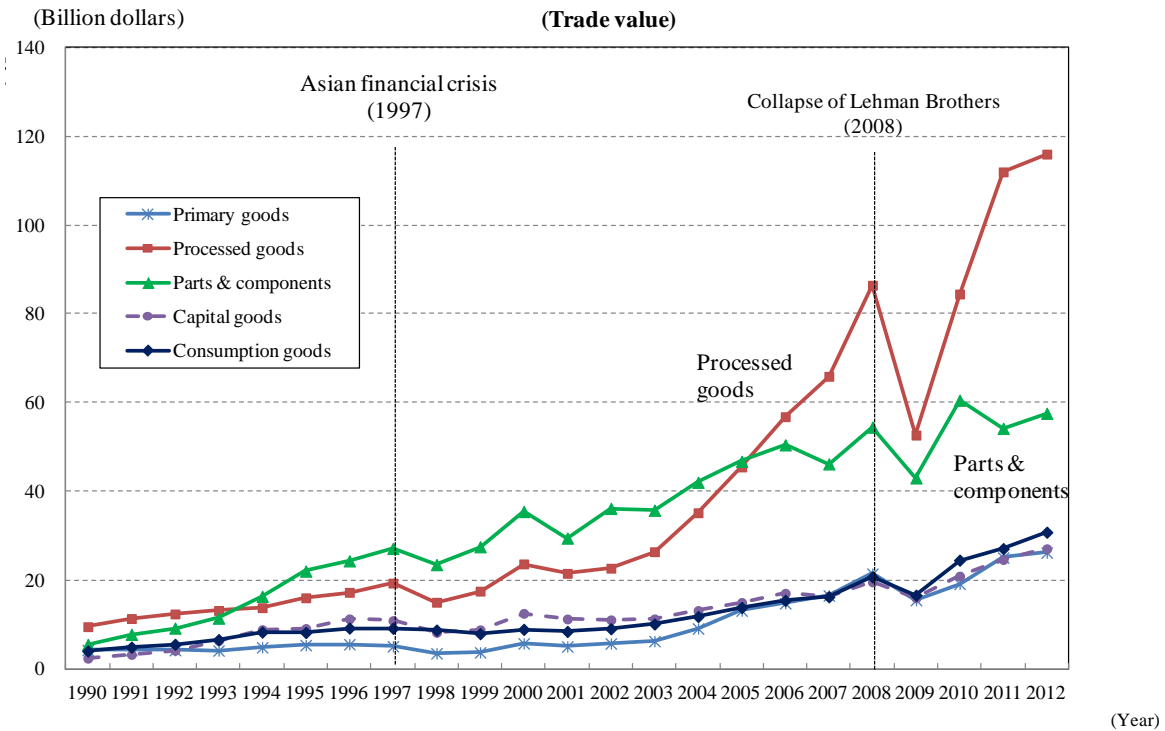
Finally, although the trade value of Cambodia is much lower than other countries, the value of exports to Thailand in 2012 showed a dramatic growth, reaching 300 times higher than that of the value of 2000, namely 24.8 million dollars. Looking by industry, 99% of the exports to Thailand are electric machinery-related goods.

Based on above, we can derive the following findings concerning the trade of parts and components within the ASEAN region in 2012 in comparison with 2000: (i) trade values of Singapore and Malaysia remain at high values; (ii) at the same time, trade values of Thailand and Indonesia are growing at a rate exceeding that of Singapore and Malaysia; (iii) Viet Nam is deepening its trade relationship with the ASEAN member states; and (iv) Cambodia is increasing its trade value as a supplier of parts and components for electric machinery produced in Thailand.

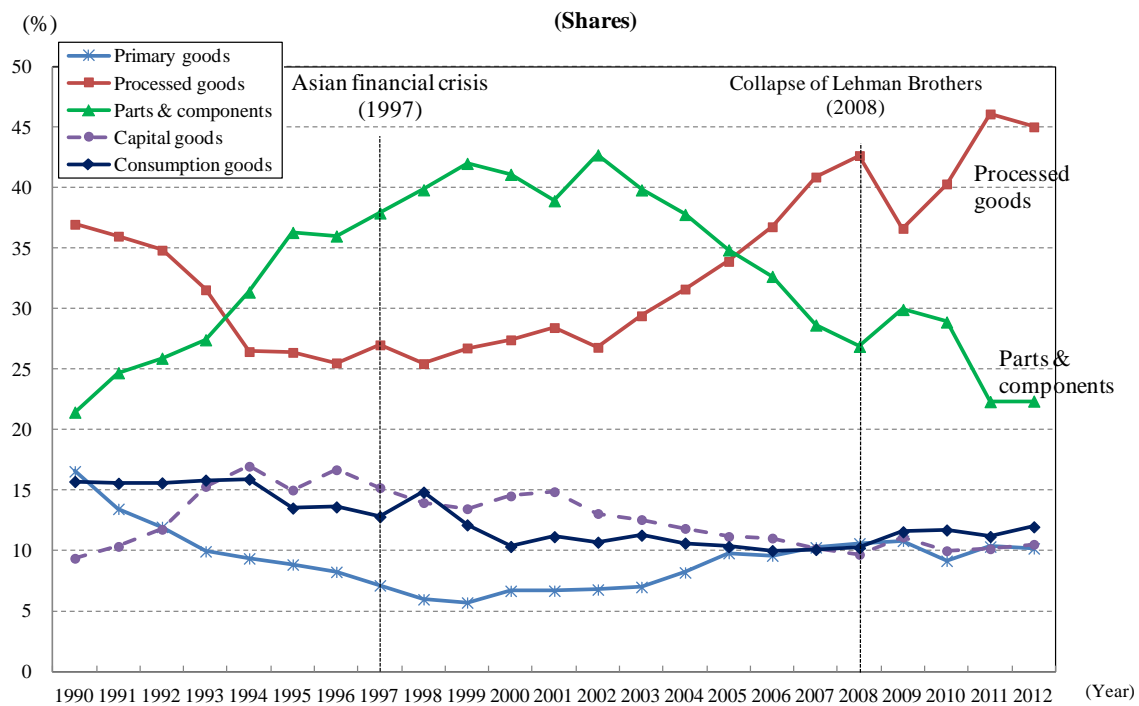
#### **Figure II-3-1-15 Trends in the values of intra-regional trades in the ASEAN region by goods**

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were seven countries for which data on intermediate goods were available, namely Indonesia, the Philippines, Singapore, Malaysia, Thailand, Viet Nam and Cambodia.

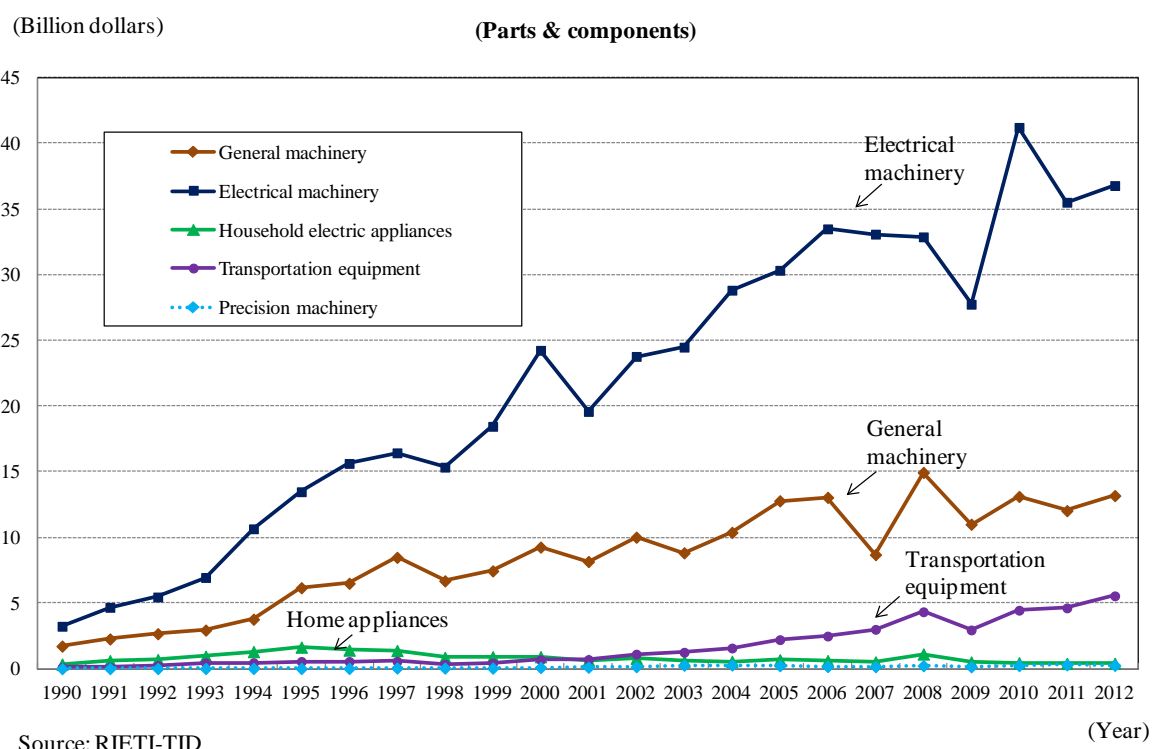
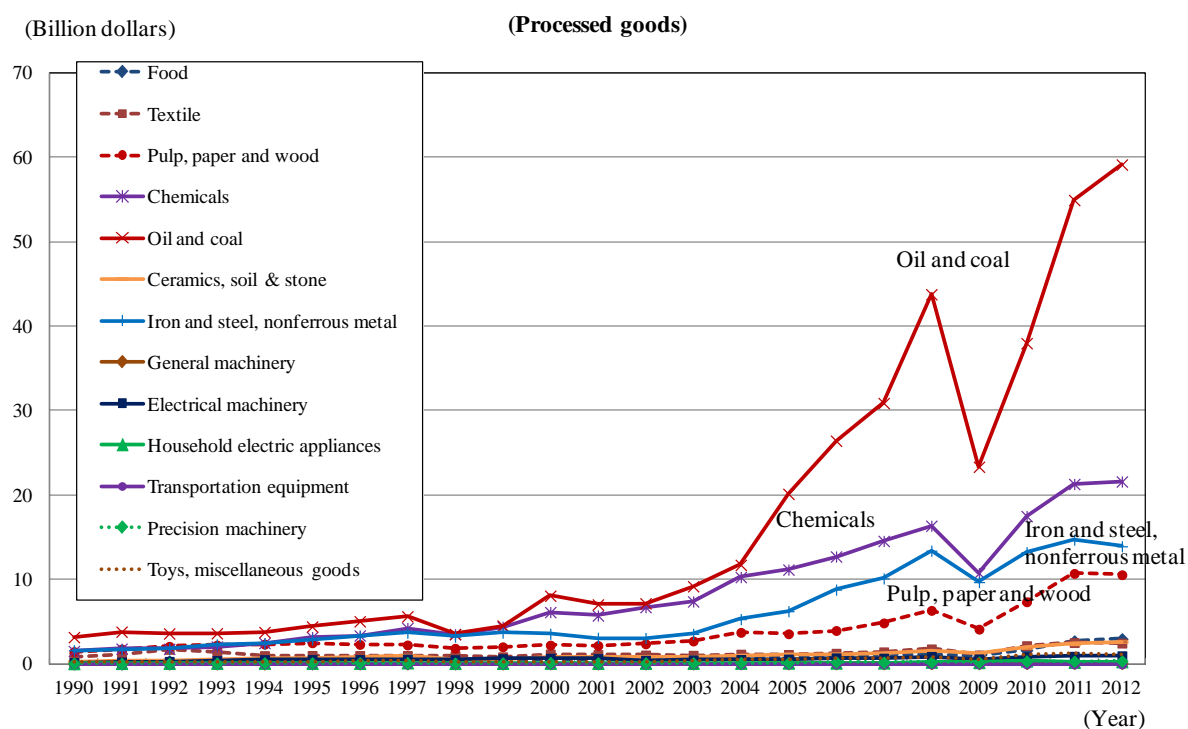


Source: RIETI-TID



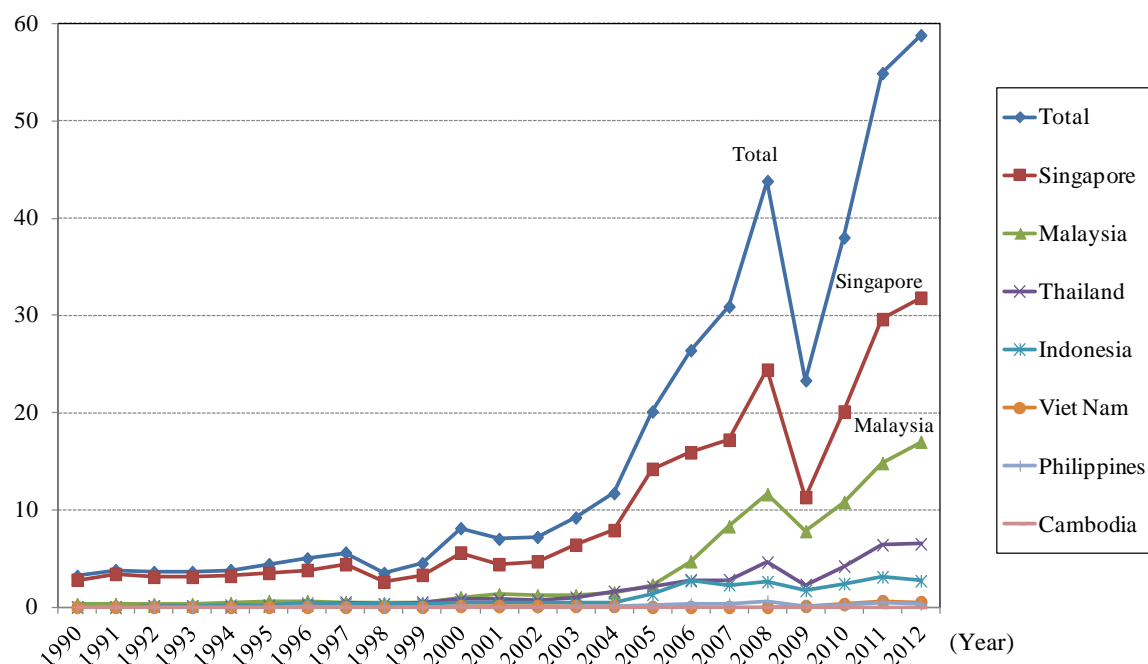
Source: RIETI-TID

**Figure II-3-1-16 Trends in the values of intra-regional trade of intermediate goods in the ASEAN region**



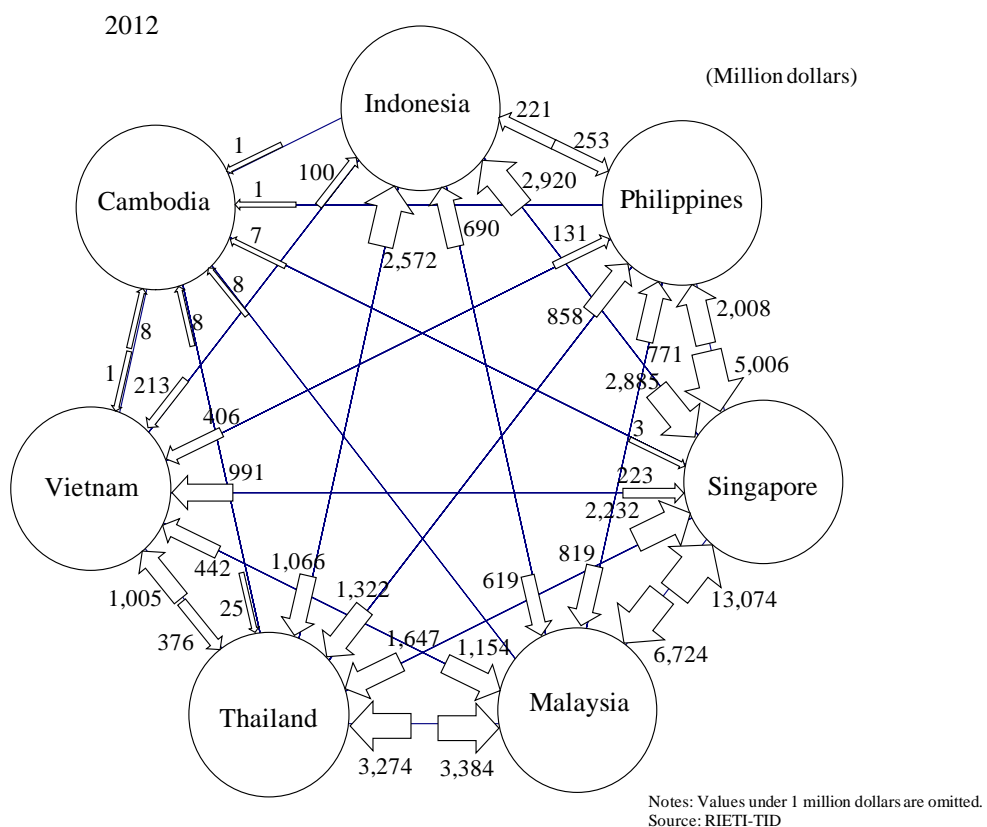
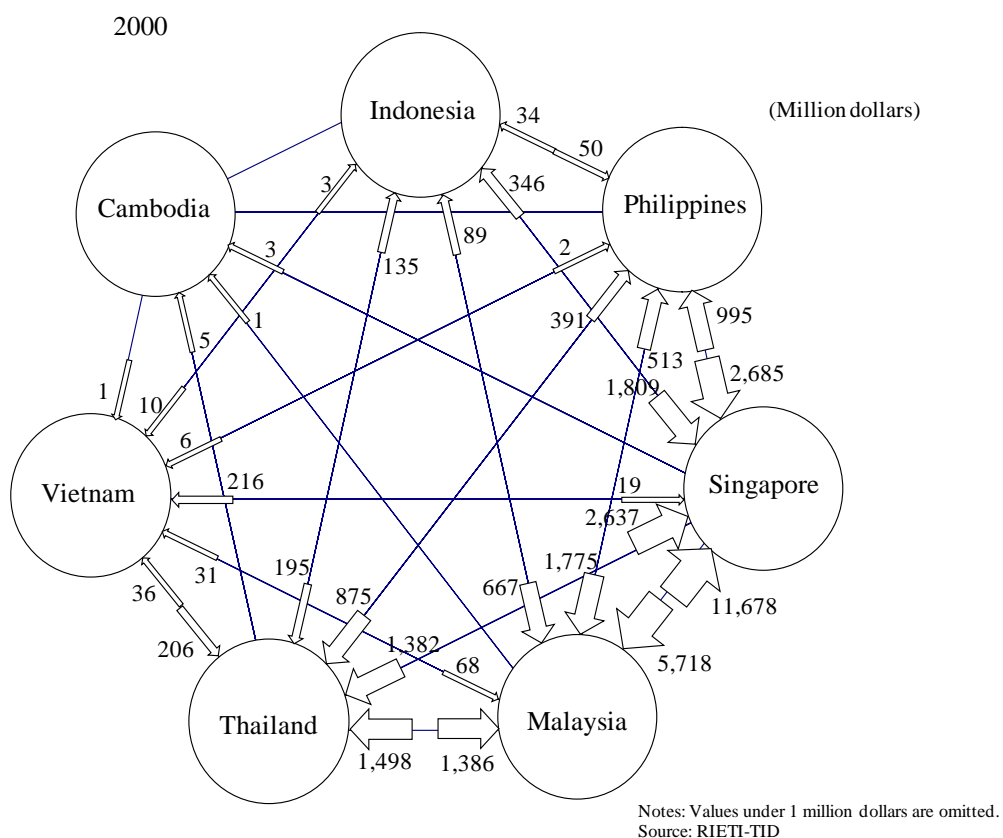
**Figure II-3-1-17 Trends in the value of intra-regional exports of processed goods (oil and coal) in the ASEAN region by country**

(Billion dollars)



Source: RIETI-TID

**Figure II-3-1-18 Intra-regional trade of parts and components in the ASEAN region (2000 and 2012)**



**Table II-3-1-19 Intra-regional trade of parts and components in the ASEAN region (2000 and 2012)**

2000

		(Million dollars)						
		Importing country						
		Indonesia	Philippines	Singapore	Malaysia	Thailand	Vietnam	Cambodia
Exporting country	Indonesia		50.4	1,809.3	666.6	195.2	10.0	0.2
	Philippines	33.9		2,685.0	1,775.3	875.4	5.9	0.1
	Singapore	345.9	994.6		5,718.4	1,382.2	215.7	3.4
	Malaysia	89.1	512.7	11,677.7		1,497.6	30.6	1.2
	Thailand	134.6	390.7	2,636.9	1,386.1		36.4	4.5
	Viet Nam	2.9	2.3	19.3	67.8	206.2		0.1
	Cambodia	0.0	0.2	0.3	0.2	0.1	0.6	
	Total	606.4	1,950.9	18,828.5	9,614.4	4,156.6	299.2	9.5
		Total						

Notes: 1. The value of exports from Cambodia to Indonesia is as of 2005.

2. Colored cells indicate bilateral trades worth 2 billion dollars or more.

2012

		(Million dollars)						
		Importing country						
		Indonesia	Philippines	Singapore	Malaysia	Thailand	Vietnam	Cambodia
Exporting country	Indonesia		252.6	2,885.4	619.2	1,066.1	213.0	0.8
	Philippines	220.8		5,005.8	819.2	1,322.0	405.7	1.4
	Singapore	2,919.7	2,008.4		6,724.2	1,646.9	991.3	7.3
	Malaysia	690.1	771.1	13,074.2		3,274.0	442.3	7.6
	Thailand	2,572.2	857.9	2,232.5	3,384.3		1,004.5	7.9
	Viet Nam	100.0	130.7	222.9	1,154.4	375.6		7.6
	Cambodia	0.0	0.4	2.7	0.2	24.8	0.9	
	Total	6,502.8	4,021.1	23,423.4	12,701.6	7,709.5	3,057.6	32.5
		Total						

Notes: Colored cells indicate bilateral trades worth 2 billion dollars or more.

Changes from 2000 to 2012

		(Times)						
		Importing country						
		Indonesia	Philippines	Singapore	Malaysia	Thailand	Vietnam	Cambodia
Exporting country	Indonesia		5.0	1.6	0.9	5.5	21.3	3.7
	Philippines	6.5		1.9	0.5	1.5	68.4	21.6
	Singapore	8.4	2.0		1.2	1.2	4.6	2.2
	Malaysia	7.7	1.5	1.1		2.2	14.5	6.4
	Thailand	19.1	2.2	0.8	2.4		27.6	1.7
	Viet Nam	34.4	56.9	11.6	17.0	1.8		61.2
	Cambodia	2.0	2.4	9.9	1.0	315.8	1.5	
	Total	10.7	2.1	1.2	1.3	1.9	10.2	3.4
		Total						

Notes: Colored cells indicate change ratios of 10 times or more.

Source: RIETI-TID