CHAPTER 5

Production Network and Intermediate Goods Trade: Cases of Japan

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CHAPTER 5

PRODUCTION NETWORK AND INTERMEDIATE GOODS TRADE: CASES OF JAPAN

Minoru Makishima

INTRODUCTION

Intra-regional trade in East Asia has been rapidly increasing, indicating the progress of intra-regional division of labor. In particular, the growth in trade of intermediate parts and components is remarkable. There has been a dramatic increase in the parts and components imported and exported through China (including Hong Kong) to ASEAN countries and Japan. Japan's exports of intermediate goods have expanded, but the country's share of the world's intermediate goods exports to East Asia has decreased. Moreover, about 50 percent of the final goods from East Asia, especially China, are exported to the United States and the EU. Certainly, China's presence as a production base has been increasing. Japan has been expanding the establishment of local production in ASEAN and China. It is said that interdependence in the production activities among Mekong River Basin Countries (MRBCs)[1] and Japan has deepened.

This paper traces the change of intermediate goods trade between Japan and East Asia (especially China and the ASEAN 4[2]) and Japanese industries operating overseas.

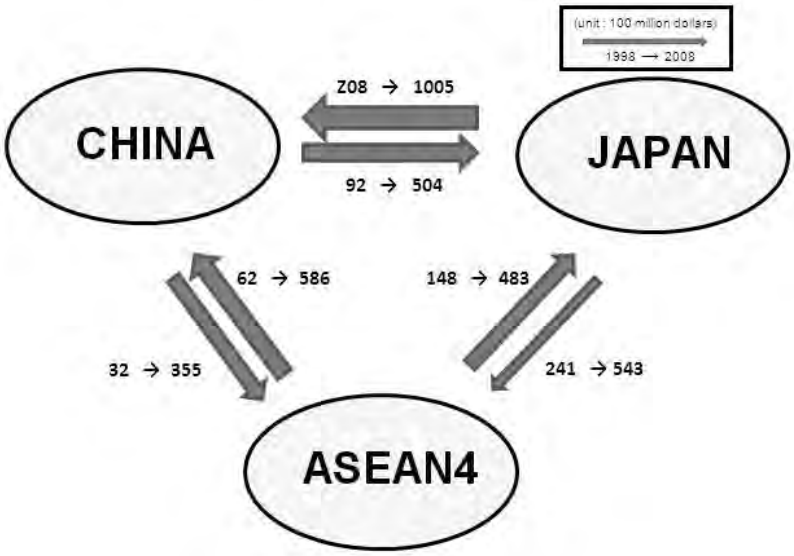
[1] MRBCs include Cambodia, Laos, Myanmar, Thailand, Vietnam and China's Yunnan Province.
[2] ASEAN4 include Thailand, Indonesia, Malaysia, and the Philippines.

In addition, procurement of intermediate goods and the production network of Japanese companies operating in East Asia, such as in the home appliance, electronics and cable, and toy industries, will be examined with case studies to learn the present situation. Then, it will be discussed as to how Japan should develop the industrial network and promote intermediate goods trade to cultivate emerging markets.

1. CHANGES IN INTERMEDIATE GOODS TRADE BETWEEN JAPAN AND EAST ASIA

There has been a rapid increase in the intra-regional trade in East Asia in the past decade, indicating the remarkable rise of intermediate goods trade. Looking back on the changes in intermediate goods trade over the 1998-2008 period, Japan's exports to the ASEAN 4 of Thailand, Malaysia, Indonesia and the Philippines have increased by 2.3 times, while its exports to China grew by 4.8 times. Exports from the ASEAN 4 to China increased by 9.5 times. On the other hand, exports from the ASEAN 4 to Japan increased by 3.1 times and exports from China to Japan grew by 5.5 times. Additionally, exports from China to the ASEAN 4 increased by 11 times. Every country and region expanded its exports and imports, led by China's growth (see Figure 1).

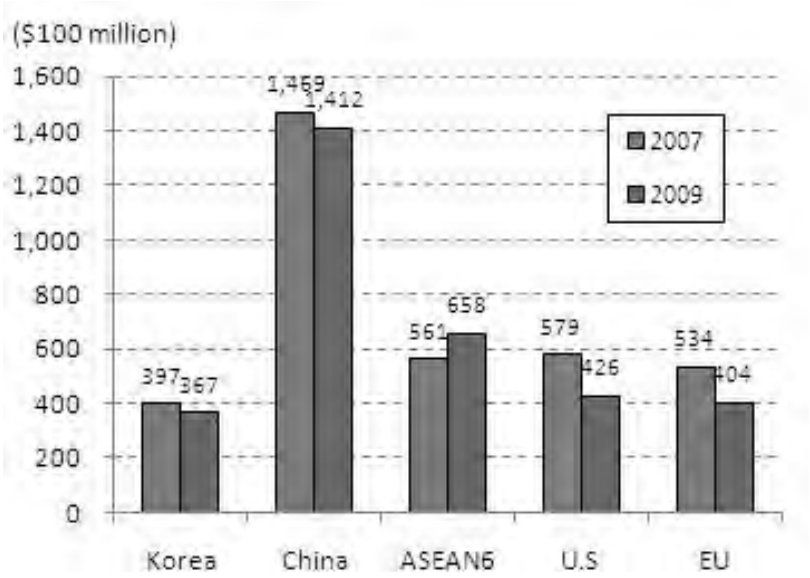
Figure 1: Change of Intermediate Goods Trade among Japan - China - ASEAN4



Source: 2010 White Paper on International Economy and Trade, Japan.

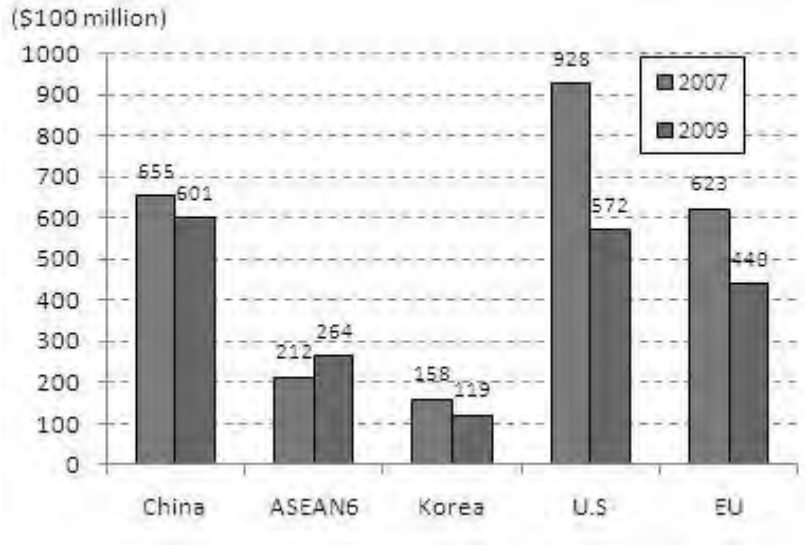
This proves that the production base in East Asia has been shifting to China instead of Japan, accompanied by the expansion of intra-regional trade. The recent "Lehman's fall" did not deal a severe blow to East Asia as compared to the United States and the EU. Consequently, East Asia enhanced its international presence. In fact, exports of intermediate goods and final goods from Japan to China did not change very much after the crisis (see Figure 2 and Figure 3).

Figure 2: Export of Intermediate Goods from Japan to Major Countries (in 2007 & 2009)



Note: ASEAN6 includes Indonesia, Philippines, Thailand, Malaysia, Singpore and Brunei.
Source: 2010 White Paper on International Economy and Trade, Japan.

Figure 3: Export of Final Goods from Japan to Major Countries (in 2007 & 2009)



Source: 2010 White Paper on International Economy and Trade, Japan.

As for the shares of different sectors in the intermediate goods trade of East Asia in 2008, electronic machines accounted for about 70 percent, followed by general machinery and transportation machinery. The three sectors make up 90 percent of the intermediate goods trade in the region. Regarding electronic machines and general machinery made in East Asia, they procure intermediate goods in the region and export ordinarily to the United States and Europe. As for the transportation machinery, the intermediate goods are procured from local companies in each country or within the region, and the final goods are ordinarily sold in domestic or regional markets in East Asia. With regard to the transportation sector, Japan remains the place with the most suppliers in the world. However, the ASEAN 5 (Thailand, Singapore, Malaysia, Indonesia and the Philippines) replaced Japan in the electrical machinery sector, and China has replaced Japan in the general machinery sector. As for the export of final goods, China exceeds Japan in both the electrical machinery sector and the general machinery sector, except for transportation machinery.

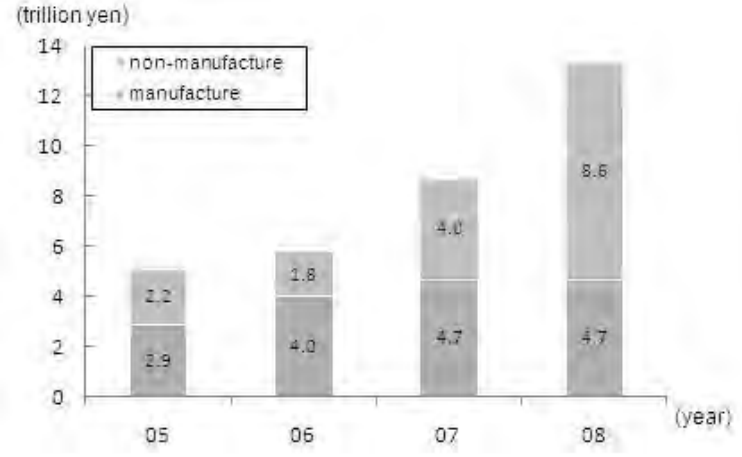
2. JAPANESE PRODUCTION NETWORK AND THE PROCUREMENT OF INTERMEDIATE GOODS IN EAST ASIA

So far, Japan has expanded its foreign direct investment (FDI), above all in East Asia, in order to cope with the yen's appreciation and to cut production costs. FDI from Japan in 2008 increased to thirteen trillion two hundred thirty-two billion yen or about US$128 billion, up by 52.8 percent from the previous year to a record high[3]. The amount of outward FDI in the manufacturing industry decreased by 0.4 percent, while FDI in the

[3] Based on the Balance of Payments Statistics by Japan's Ministry of Finance and the Bank of Japan.

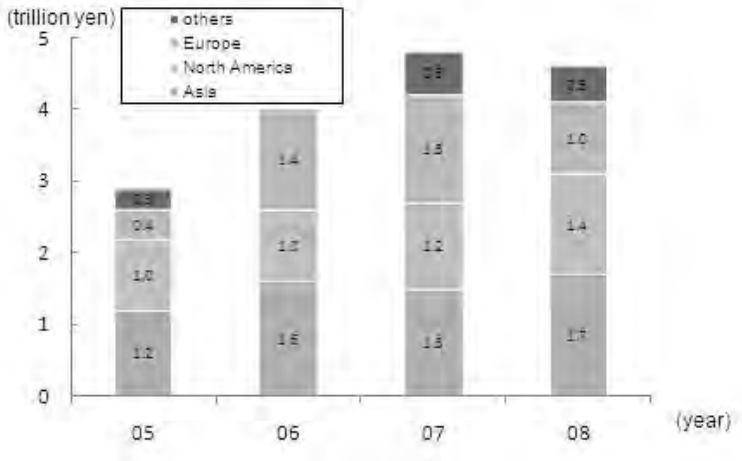
non-manufacturing industry increased more than doubled from the previous year. Regarding the non-manufacturing industry, the real estate and telecommunication sectors increased substantially. Investment in Asia steadily has risen, and Asia holds 37 percent of Japan's FDI in 2008 (see Figure 4 and Figure 5). Accompanied by the flow of FDI, the overseas production ratio of Japanese manufacturing companies increased.

Figure 4: Changes of Foreign Direct Investment of Japan



Source: Balance of Payments Statistics, Bank of Japan.

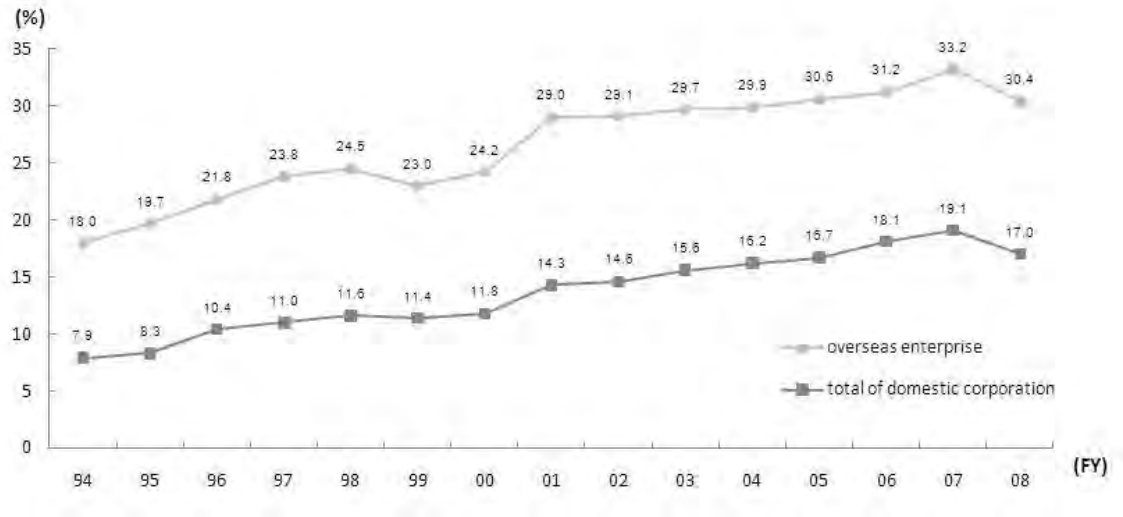
Figure 5: Changes of Regional Foreign Direct Investment of Japan



Source: Balance of Payments Statistics, Bank of Japan.

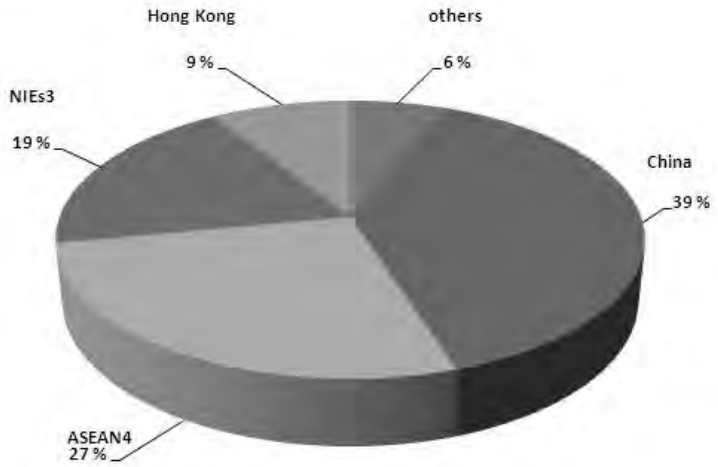
Figure 6 indicates that overseas production holds 30.4 percent, while the domestic one is 17 percent. According to a survey by the Ministry of Economy, Trade and Industry (METI) in 2008, 39 percent of Japanese companies operate in China and 27 percent in the ASEAN 4 (see Figure 7). The spreading of local subsidiaries in East Asia contributes to the increase of intermediate goods.

Figure 6: Overseas Production Ratio of Japanese Manufactures



Source: Basic Survey of Overseas Business Activities, Ministry of Economy, Trade and Industry (METI), Japan.

Figure 7: Classification of Japanese Industries in Asia by Country and Region (in FY 2008)



Note: Answer of 10,712 companies.
NIEs3 (Singapore, Korea, Taiwan), ASEAN4 (Thailand, Malaysia, Indonesia, Philippines).
Source: Basic Survey of Overseas Business Activities, Ministry of Economy, Trade and Industry (METI), Japan.

In 2009, Japan's outward FDI declined 42.9 percent from the previous year to US$74.7 billion due mainly to shrinking reinvestment earnings, reflecting the falling profits of overseas subsidiaries[4]. Even so, FDI figures for 2009 still represent an increase over the 2007 figures, indicating that growth remains steady (see Table 1).

[4] JETRO estimates net flows based on the balance of payments from the Ministry of Finance and the Bank of Japan.

Table 1: Japan's Outward/Inward Foreign Direct Investment by Country and Region (net flows; balance-of-payments basis)

(Unit: US$ million, %)

Outward FDI					
Region/Year	**2007**	**2008**	**2009**	**Share**	**Growth rate**
Asia	19,388	23,348	20,636	27.6	Δ 11.6
China	6,218	6,496	6,899	9.2	6.2
Hong Kong	1,131	1,301	1,610	2.2	23.7
Taiwan	1,373	1,082	339	0.5	Δ 68.7
South Korea	1,302	2,369	1,077	1.4	Δ 54.5
ASEAN10	7,790	6,309	7,002	9.4	11
Thailand	2,608	2,016	1,632	2.2	Δ 19.1
Indonesia	1,030	731	483	0.6	Δ 33.9
Malaysia	325	591	616	0.8	4.2
Philippines	1,045	705	809	1.1	14.8
Singapore	2,233	1,089	2,881	3.9	164.5
Vietnam	475	1,098	563	0.8	Δ 48.7
India	1,506	5,551	3,664	4.9	Δ 34
Oceania	4,204	6,060	7,629	10.2	25.9
North America	17,385	46,046	10,889	14.6	Δ 76.4

Inward FDI					
Region/Year	**2007**	**2008**	**2009**	**Share**	**Growth rate**
Asia	1,605	3,381	1,093	9.2	Δ 67.7
China	15	37	Δ 137	n.a.	n.a.
Hong Kong	47	257	Δ 81	n.a.	n.a.
Taiwan	36	66	57	0.5	Δ 13.1
South Korea	221	279	255	2.2	Δ 8.7
ASEAN10	1,283	2,740	985	8.3	Δ 64.1
Thailand	1	6	24	0.2	325.4
Indonesia	2	0	0	0.0	Δ 28.6
Malaysia	Δ 1	13	203	1.7	1500.6
Philippines	1	3	-	n.a.	n.a.
Singapore	1,285	2,716	756	6.4	Δ 72.2
India	3	1	14	0.1	1520.9
Oceania	215	258	50	0.4	Δ 80.8
North America	12,709	12,005	1,712	14.5	Δ 85.7

Table 1: Japan's Outward/Inward Foreign Direct Investment by Country and Region (net flows; balance-of-payments basis)

(continued) (Unit: US$ million, %)

Outward FDI					
Region/Year	**2007**	**2008**	**2009**	**Share**	**Growth rate**
Central and South America	9,482	29,623	17,393	23.3	41.3
Western Europe	20,456	22,418	17,073	22.9	Δ 23.8
Eastern Europe, Russia, etc.	509	650	757	1.0	16.6
Middle East	958	1,138	575	0.8	Δ 49.4
Africa	1,101	1,518	Δ 301	n.a.	n.a.
World	73,483	130,801	74,650	100.0	Δ 42.9

Inward FDI					
Region/Year	**2007**	**2008**	**2009**	**Share**	**Growth rate**
Central and South America	2,831	4,020	690	5.8	Δ 82.8
Western Europe	4,785	4,861	8,210	69.3	68.9
Eastern Europe, Russia, etc.	1	5	1	0.0	Δ 87.0
Middle East	3	Δ 2	23	0.2	n.a.
Africa	33	21	61	0.5	195.8
World	22,181	24,550	11,839	100.0	Δ 51.8

Note: 1. Figures released in yen were converted to the US dollar at the average quarterly Bank of Japan interbank rate.

2. Negative figures indicate withdrawal.

3. "0" indicates an amount of less than one million US dollars; "-" indicates no investment recorded during the corresponding period.

4. Growth rates are year on year.

5. Oceania includes Australia, New Zealand, Guam Marshall Islands; North America: US, Canada; Central and South America: Mexico, Brazil, Panama, Peru, Argentina etc.; Western Europe: EU, Switzerland Norway, Turkey; Middle East: Saudi Arabia, United Arab Emirates, Egypt; and Africa: South Africa, Liberia, Mauritius.

6. "World" includes countries that are not classified into individual regions. Therefore, "World" figures are not necessarily equal to the sums of regional components.

Source: 2010 JETRO Global Trade and Investment Report.

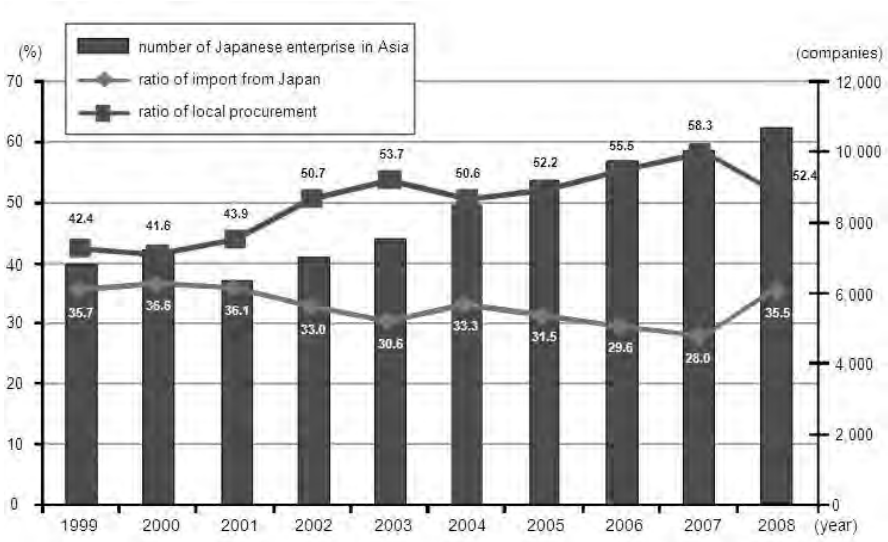
The economic impact on Asia was not large, compared to the United States and the EU. FDI to China decreased by only 3.1 percent. That to ASEAN slipped by just 1.1 percent. Among the sectors, general machinery such as machine tools increased in the region due to promotion of industrial production. Currently, Japanese industries are eager to expand FDI to emerging countries, above all China and India, to lessen the damage to exports owing to yen appreciation.[5]

The active overseas operations of Japanese industries and the development of local industries has brought the expansion of local procurement in the region, accompanied with an increase of intermediate goods trade in East Asia and Japan.

In 2008, the local procurement ratio in Asia was 52.4 percent (see Figure 8). According to a survey by JETRO, in most ASEAN countries the local companies procure more than 30 percent of the intermediate goods from Japanese industries. However, Vietnam and Myanmar are located in the lower position among Asian countries in the procurement of intermediate goods from Japanese industries. On the other hand, Thailand ranks high in procurement ratio (see Figure 9). This owes to the existence of industrial clusters composed of supporting industries. It is found that the procurement by Thai industries reaches 55 percent, but more than half of these companies come from Japan (see Figure 10). This proves that Japanese overseas enterprises are apt to have business relationships with Japanese supporting industries or related industries. The situation can be attributed to high quality and timely delivery. Currently, Japanese companies tend to leverage a business relationship with local companies to seek highly efficient procurement.

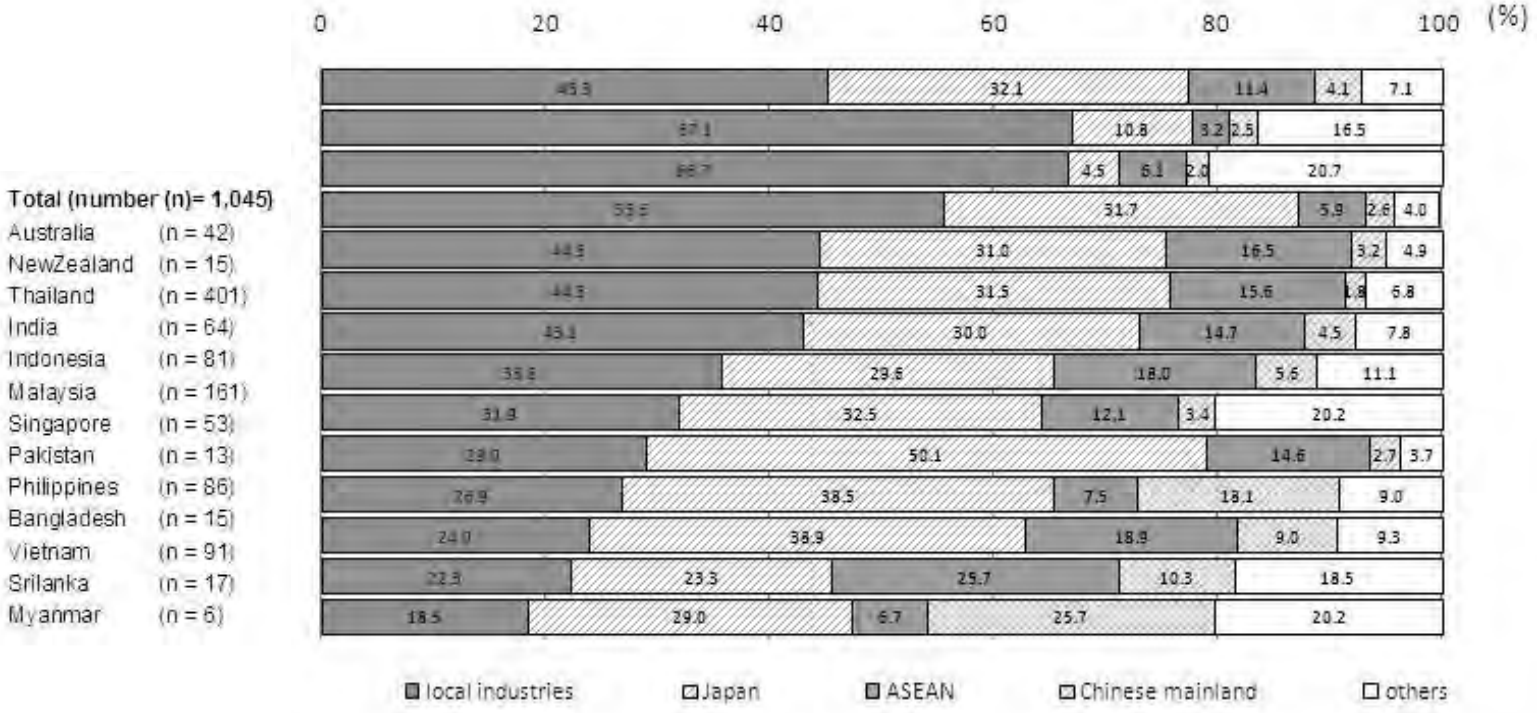
[5] Refer to the Nippon Keizai Newspaper of 27 November 2010.

Figure 8: Changes of the Procurement of Japanese Manufacturing Industries in Asia



Source: Basic Survey of Overseas Business Activities, Ministry of Economy, Trade and Industry (METI), Japan.

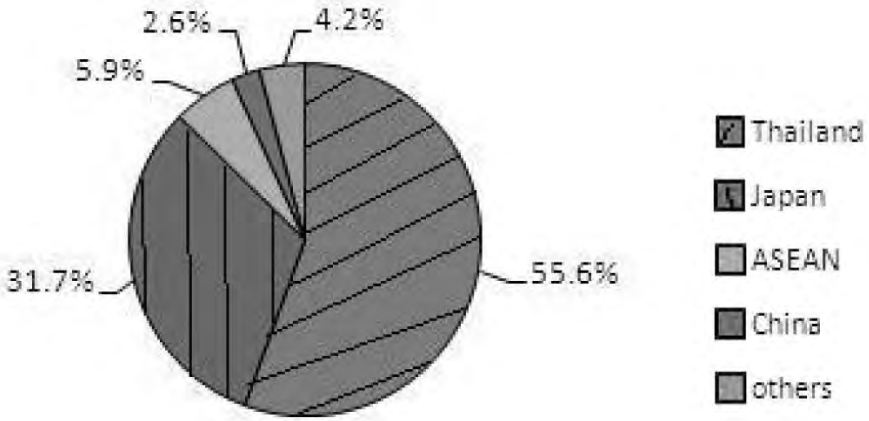
Figure 9: Procurement of Intermediate Goods of Japanese Industries in Asia – Pacific Countries



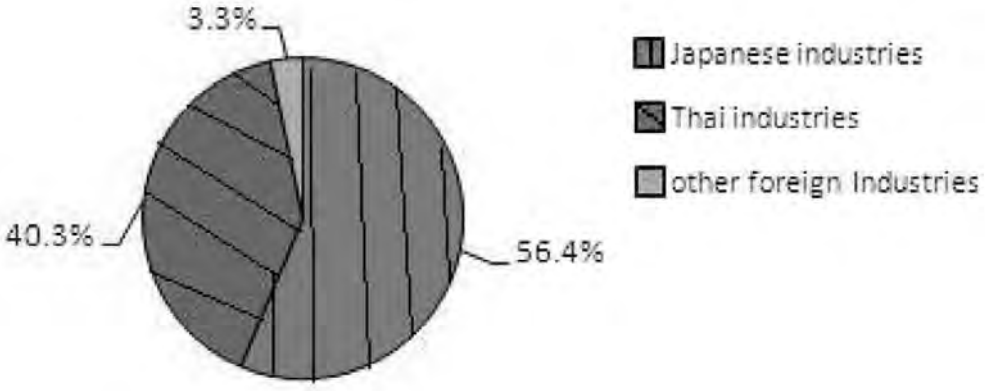
Source: Basic Survey of Overseas Business Activities, Ministry of Economy, Trade and Industry (METI), Japan.

Figure 10: Procurement of Intermediate Goods of Japanese Industries in Thailand (as of March)

(1) Classification by countries breakdown



(2) Breakdown of Thai industries for procurement



Note: 1. Answer of 401 Japanese companies.
2. Answer of 374 Japanese companies.
Source: Japanese Chamber of Commerce, Bangkok.

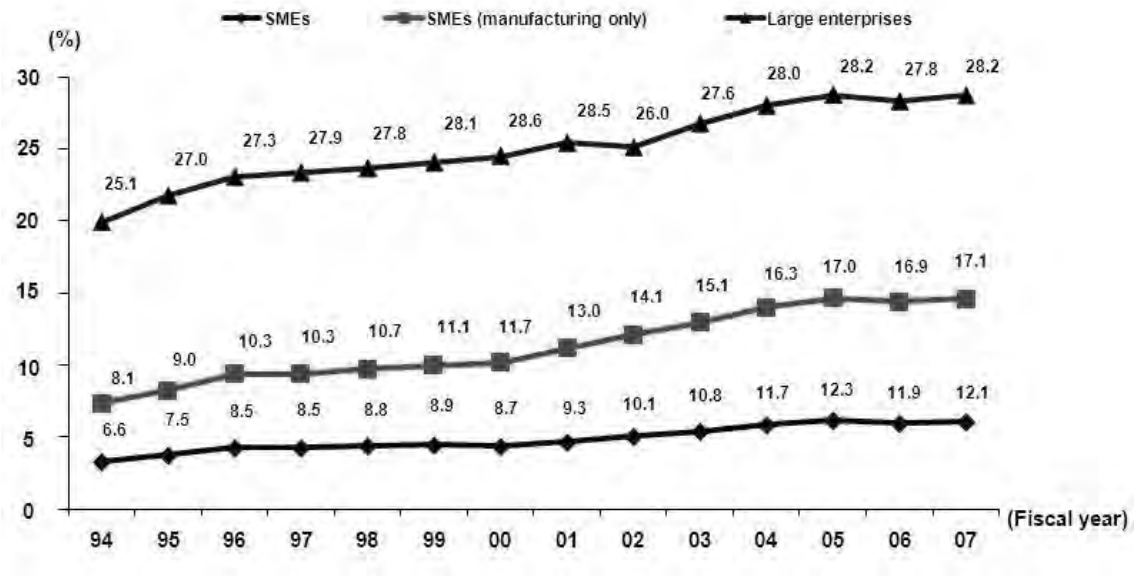
3. SMES OVERSEAS EXPANSION IN EAST ASIA

According to the Small and Medium Enterprise Agency, there are an estimated 4.30 million small and medium enterprises (SMEs) in Japan, constituting 99.7 percent of all businesses and accounting for about 70 percent of all employment[6]. About 60 percent of the SMEs depend on direct or indirect transactions with large enterprises in the manufacturing industry.

Until the 1970s, Japanese overseas operations were mostly occupied by large enterprises, with limited overseas advancement by SMEs. However, local supporting industries such as mold-making, casting, planting, pressing and polishing companies were left behind in East Asia. Moreover, the domestic procurement of a certain proportion of product parts was required by each government in order to protect and develop domestic industries. Fueled by the strong need for local procurement of parts, subcontract SMEs with a certain size were requested to establish operations abroad, and this began in earnest in the early 1980s. In the 1990s, the triple difficulty of the bubble economy's collapse, the recession and the yen's appreciation accelerated overseas operation by large enterprises under efforts to cut production costs and seek new markets. This changing business environment brought about a decline of business within Japan and forced some SMEs to set up operations overseas by their own decisions, as they stepped out from following parent companies. As Figure 11 shows, the overseas presence of SMEs further increased in the 2000s amid the prolonged recession in Japan.

[6] SMEs such as manufacturing, construction and transport companies are defined as having 300 or fewer employees or a registered capital of ¥300 million or less. In the case of wholesale, 100 or fewer employees or a registered capital of ¥100 million or less is required, and for services it is 50 employees or a registered capital of ¥50 million or less.

Figure 11: Proportion of Enterprises with Overseas Subsidiaries



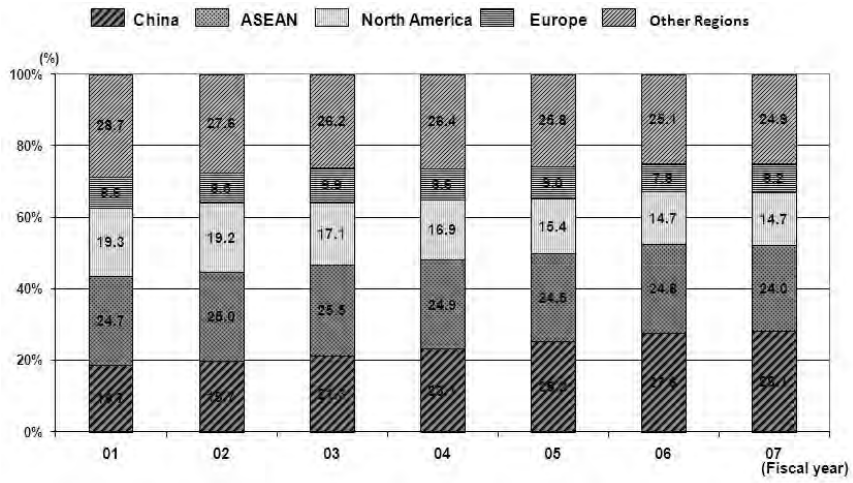
Source: Recompiled from METI, Basic Survey of Japanese Business Structure and Activities.

Note: 1. Enterprises with overseas subsidiaries are here defined as enterprises that had one or more overseas subsidiary or affiliate at the end of the fiscal year concerned.

2. Subsidiaries are defined as companies in which the company concerned owns more than 50% of the voting rights. This includes companies that own more than 50% of the voting rights aggregating the rights owned by subsidiaries of the company and its subsidiaries. Affiliates are defined as companies in which the company concerned directly owns at least 20% and not more than 50% of the voting rights.

From a regional perspective, as seen in Figure 12, a number of overseas subsidiaries of SMEs have shifted to China from the United States, with ASEAN countries keeping the major proportion. Regarding the overseas sales of exporting SMEs, we can find a high proportion of intermediate goods in China and ASEAN, and the same goes for consumer goods in the EU (see Figure 13). It is said that SMEs contribute to the production and export of intermediate goods as a supply chain in East Asia.

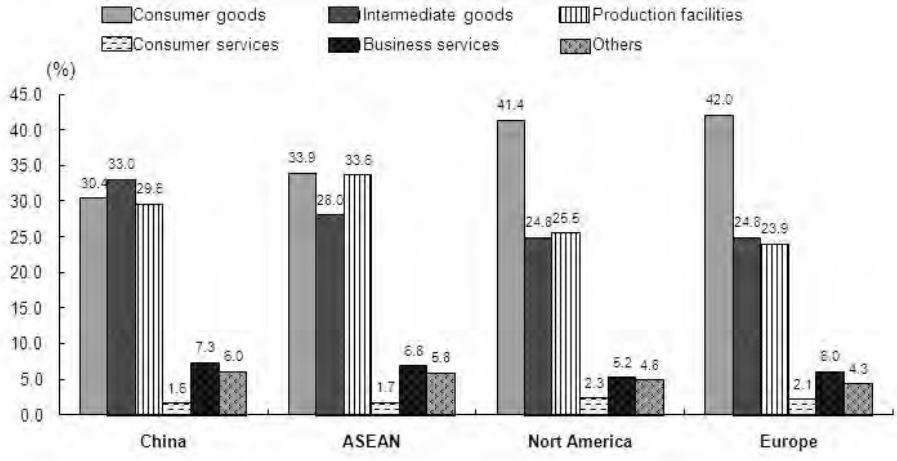
Figure 12: Breakdown of Numbers of Overseas Subsidiaries by Region (SMEs)



Source: Recompiled from METI, Basic Survey of Overseas Business Activities.

Note: Here, ASEAN consists of 10 countries (Malaysia, Thailand, Phillppines, Indonesia, Vietnam, Cambodia, Singapore, Laos, Myanmar, and Brunei) and Europe consists of 15 EU member states (United Kingdom, Germany, France, Italy, Netherlands, Belgium, Greece, Luxembourg, Denmark, Spain, Portugal, Austria, Finland, Sweden, and Ireland).

Figure 13: Goods and Services Sold in Destination Markets by Exporting Enterprises (by region)



Source: Mitsubishi UFJ Research & Consulting Co., Ltd., Questionnaire Survey of Globalization and Business Activities (November 2009), commissioned by SME Agency.

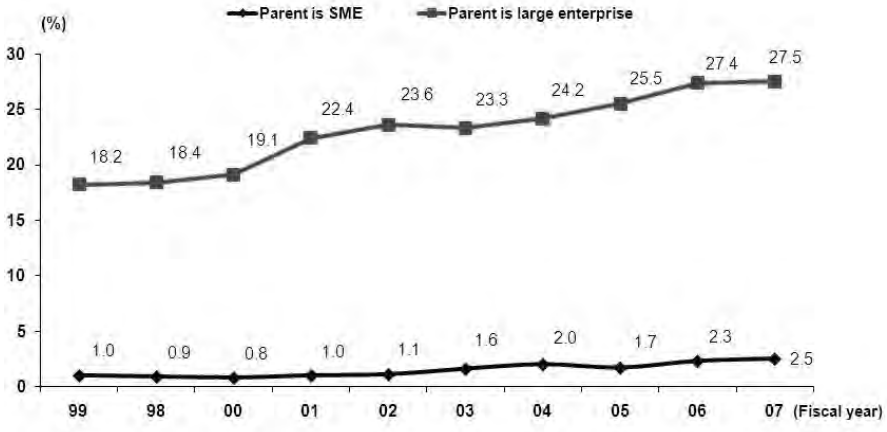
Note: 1. Only SMEs that responded that they were "presently engaged" in export transactions are included.

2. Totals do not necessarily sum to 100 due to multiple responses.

At present, many large enterprises have developed end-to-end production systems in East Asia. These tackle the manufacturing process from development to parts procurement to consumer goods production in the region in order to cut procurement costs, increasing the proportion of parts and components in the region. In this situation, SMEs operating abroad also have to accommodate changes in the global and regional economies.

However, the overseas production ratio of SMEs' overseas subsidiaries is much lower than for the overseas subsidiaries of large enterprises (see Figure 14). The improvement of SMEs' labor productivity is critical to attaining overseas development. SMEs are required to raise their productivity to overcome various issues, including rationalization, business efficiency and quality management in order to expand the global supply chain in East Asia.

Figure 14: Overseas Production Ratio by Enterprise Size in Manufacturing



Source: METI, Basic Survey of Overseas Business Activities (recompiled); MOF, Financial Statements Statistics of Corporations by Industry, Annually.
Note: Overseas production ratio = sales of overseas affiliates (manufacturing) / (sales of overseas affiliates (manufacturing) + sales of domestic corporations (manufacturing)).

4. CASE STUDIES OF JAPANESE COMPANIES

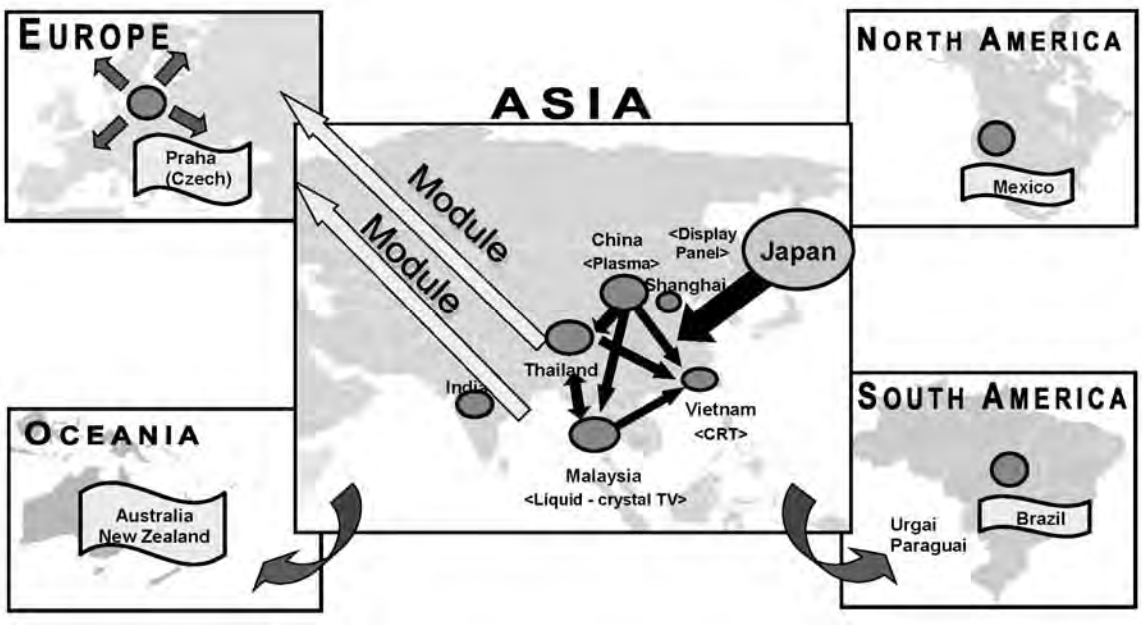
In order to grasp and analyze the current situation of intermediate goods trade in the region, several case studies of Japanese companies operating in East Asia are examined as follows.

Company A, one of the world's leading home appliance companies, shifted production from Japan to overseas in the late-1990s. Currently, its foreign sales have reached 52 percent and its number of employees operating overseas is 2.6 times its domestic staff. In the field of flat-screen TVs, Company A ranks No. 4 behind Samsung, Sony and LG in sales volume around the world, and it aims to increase market share. Thailand is a production base of plasma TVs, and Malaysia functions as a base for liquid-crystal TVs. The company withdrew from producing CRT TVs, except for in Vietnam and a few other areas. Regarding procurement in Thailand, all of the display panels (which make up 60 percent of the cost of plasma TVs) are imported from Japan. Moreover, specific electronic parts such as LSI (large scale integration) are imported from Japan. Thailand accounts for 14.5 percent of the general parts and components. In addition, electronic parts and general parts are imported from China (10 percent), Singapore (3 percent) and Malaysia (2.5 percent). In Malaysia, the display panels for liquid-crystal TVs are imported from Japan. The following are the reasons for importing the display panels from Japan: (1) It is beneficial to intensively produce display panels from consolidating the facilities, (2) As models change rapidly, it is beneficial to be able to quickly access the factory floor and superior engineers, and (3) Japan has reliable parts suppliers in various fields. As for the merits of assembling in Asia, they include: (1) cheaper labor costs, (2) avoiding the yen's appreciation, (3)

proximity to the consumption market, and (4) no carrying of an inventory in Japan. It should be mentioned that the module assemblies are exported to the factory of Praha in the Czech Republic to be made into final products. The main destination for exports at the factories in Thailand and Malaysia are European countries, which account for about 85 percent (see Figure 15). As for China, it is expected to be a consumption market as well as a production base. Company A is also interested in the potential of India and Vietnam as production bases and consumption markets.

In order to meet market needs, R&D centers are located in Thailand, Malaysia and China. This shows that local engineers have been growing up in the region. They have been developing the products for daily living under different cultures. For example, high sound effect TVs is designed for customers in India who like music.

Figure 15: Production Network and Market in TV in Company A



Source: Hearing survey by the author.

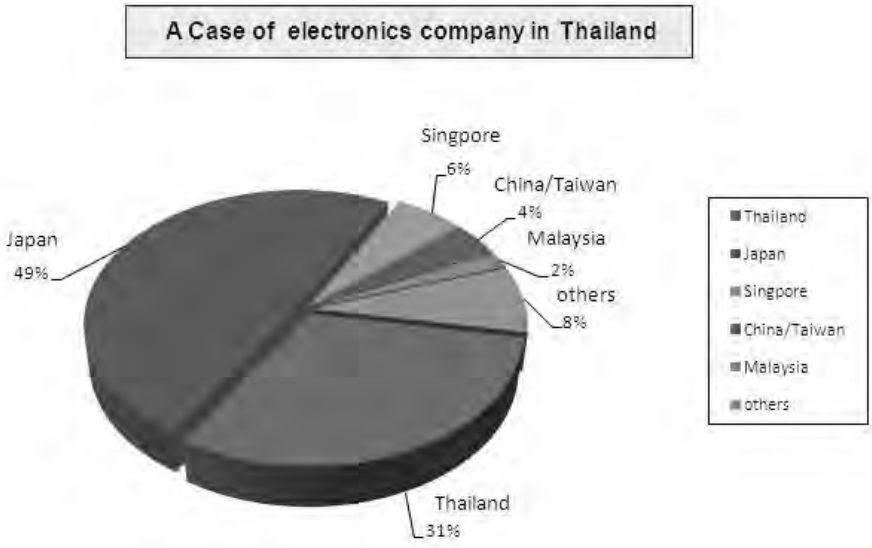
Company B, a manufacturer of motors for conditioners and refrigerators, belongs to same group as Company A. The refrigerator motors line covers 80 percent of the factory as the sole production base of the group. As for procurement, specific electronic parts and materials compose 30 percent of the intermediate goods imported from Japan, while 60 percent is purchased locally in Thailand. Japanese firms overseas occupy 40 percent of the amount and pure local industries hold a 60 percent share. Among the local companies, there are a few Korean and Taiwanese enterprises. As for the import of general parts and components, these are procured from China, Singapore, Malaysia and Vietnam.

Of the company's refrigerator motor exports, 77 percent go to the United States and 6 percent to China. As for its air-conditioner motors, 65 percent of output is for domestic use in Thailand and 30 percent is exported to Malaysia, the Czech Republic and Japan.

Procurements by both Company A and Company B are decided by the global procurement center of their head offices in Japan. Paying attention to exchange fluctuation, forward buying is considered by the head offices.

Electronics and cable Company C established its initial factory in 1984 and has now expanded to a total of nine factories and two management offices. Its products are used for digital cameras, car sensors, printers, switches and HDDs. In that the company requires high and customized quality, 49 percent of its parts and components are imported from Japan. About 31 percent is procured locally in Thailand, with half coming from Japanese companies operating there. Other procurement is as follows: Singapore with 6 percent, China at 4 percent, Malaysia at 2 percent and additional countries together with 10 percent (see Figure 16).

Figure 16: Procurement Ratio by Country



Source: Hearing survey by the author.

The reasons for comparatively high domestic procurement are: (1) lead time is short, (2) transportation is cheaper, (3) cost is relatively cheap, (4) proximity to a lot of Japanese suppliers, and (5) easy communication through local staff. The directions and decisions in procurement are directed by the head office in Japan, although the purchase of simple items such as carton cases can be decided by Company C. With regard to exports, 40 percent go to China and 40 percent to the United States and the EU. Some goods are also exported to Taiwan and Singapore. Domestic sales in Thailand account for about 20 percent of output. It seems that Company C is successful in making the most of the suppliers in Thailand as an extension of Japan.

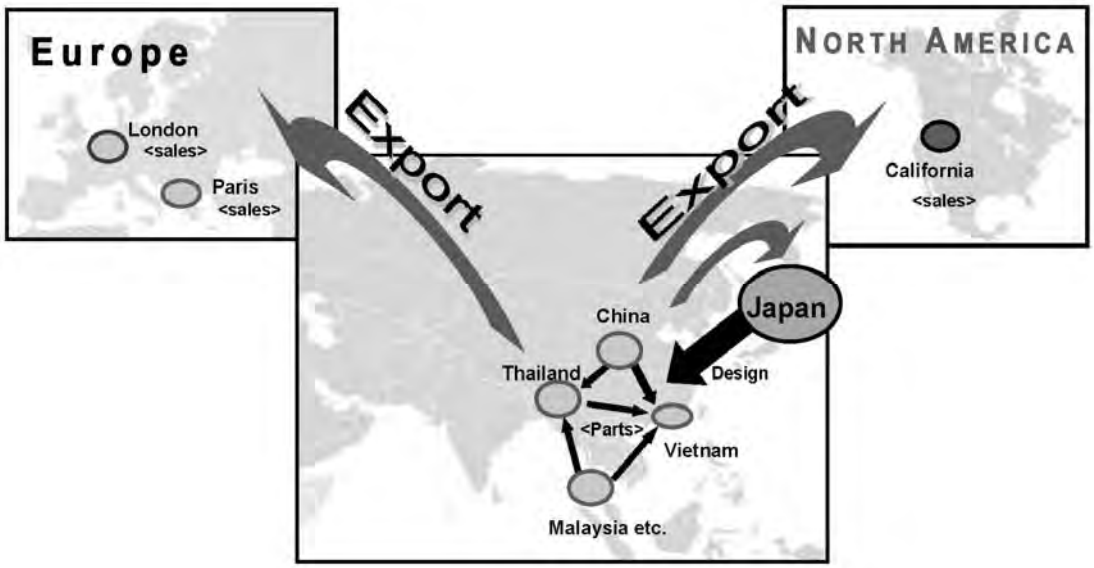
Company D is the leading toy company in Japan and it ranks in the top three worldwide for sales volume along with Mattel and Hasbro of the United States. It set up overseas operations in the 1960s, shifting to Bangkok from Singapore in 1987.

Company D does not have a factory in Japan. The head office in Tokyo is in charge of making the design and character decisions for the toys, conducting market research and management. The Bangkok factory is the only plant that it owns. However, most of its toys are produced in China on a consignment contract, even with the shift of a part of consignment production to Vietnam. Recently, the wages in China, particularly in the coastal region, have been rising remarkably. Inland transportation costs are also higher. It should be pointed out that the toy business is typically labor-intensive and as such seeks cheaper production. Consequently, the company expanded its consignment production in Vietnam, establishing five factories in the suburbs of Hanoi. Currently, 80 percent of the toys are produced in China, with 10 percent or more made in Vietnam and 10 percent or less produced in Thailand.

As for the Thai factory, 60-70 percent of parts and components are procured in Thailand. Customized IC tips are sourced from Korea and Taiwan and plastic materials are imported from Malaysia. Concerning the vinyl chloride material, it is imported from a European country from the standpoint of safety. General parts and components are mainly imported from China. All of the items are imported through a Japanese trading company for secure and cheaper procurement, and at present it does not import from Japan. In the case of Vietnam production, as it is difficult to procure complicated parts and materials domestically, most of them are imported from China. Regarding the procurement decisions, the discretion is higher than at Companies A, B and C.

Sixty percent of the final goods are exported to Japan, and 25 percent go to Europe and the United States, where sales offices are located. The rest of output is distributed to Thailand and other ASEAN countries (see Figure 17).

Figure 17: Production Network and Market in Company D



Source: Hearing survey by the author.

The head office in Tokyo is in charge of conducting market research and making the designs. In addition to basic items, about 2,000 kinds of designs are created every year, with two-thirds targeting hot trends to take advantage of a boom.

In terms of sales volume in Company D, domestic sales account for about 80 percent and the overseas markets only 20 percent. As for the overseas sales volume, the United States and Europe make up 82 percent and Asia just 18 percent. Offering new products at lower prices is required to expand sales in China and ASEAN countries.

Several toy SMEs do business without factories or by fabless.[7] They commission their designs to a factory on an OEM basis and sell the final goods under their own

[7] Fabless refers to the business model of outsourcing the manufacturing. It is popular in the ICT industry such as with semiconductors in the United States and recently has spread to Taiwan.

brand. Such a business model may be much utilized even in Japan.

Company E established a car factory in Thailand, targeting exports at Japan. The procurement ratio in Thailand covers about 87 percent of the wheel parts. Imports from Japan make up about 5 percent of electric parts such as airbag censors and body control modules. About 8 percent of general parts and components are procured from India and China.[8] Even though producing at low cost, the local companies, including the Japanese ones, are requested to have good performance in quality and delivery.

Along with the establishment of the ASEAN Free Trade Agreement (AFTA)[9] in 2010 and the progress of the ASEAN Economic Community (AEC),[10] the supply chain of parts and components may expand to surrounding countries. In addition, the ASEAN-China Free Trade Agreement became effective in January 2010, although many exceptional items linger. This will promote international specialization and intermediate goods trade with the reduction and elimination of tariffs.

5. CONCLUSION AND IMPLICATIONS

Along with the increasing number of Japanese companies that have established local affiliates in East Asia, the amount of local procurement has also gradually increased. Consequently, this has brought an increase of intermediate goods trade among Japan-China-ASEAN 4. Production networks between Japan and East Asia will be

[8] A survey of Company E was conducted by JETRO Bangkok.

[9] Almost all imported duties were to be eliminated among the six original countries (Thailand, Singapore, Malaysia, Indonesia, the Philippines and Brunei) in January 2010 and latter among the four latecomer countries (Cambodia, Laos, Myanmar and Vietnam) by 2015.

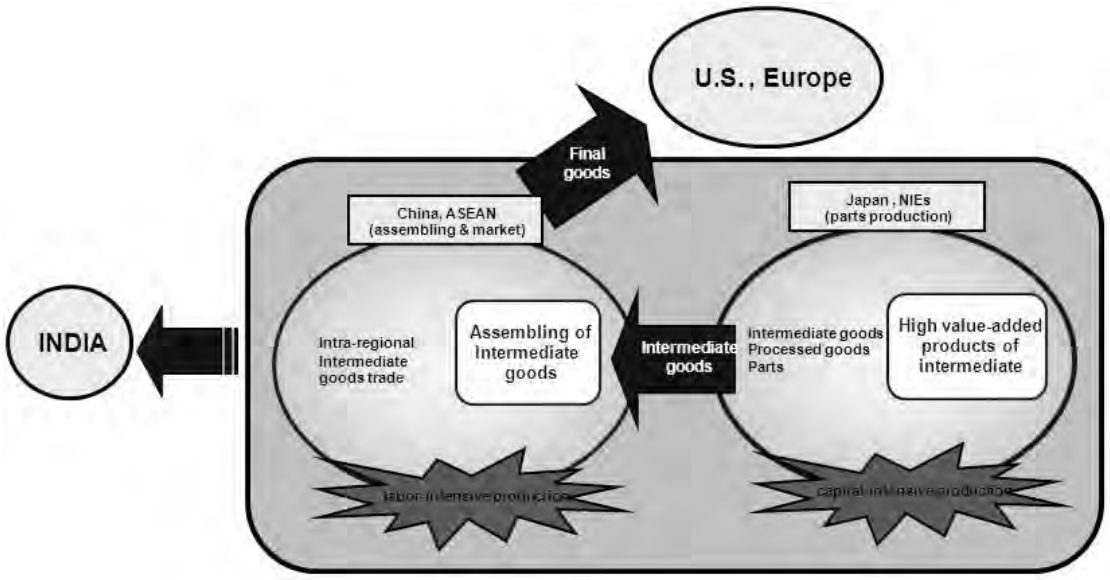
[10] In the AEC, substantial progress such as liberalization of trade in services, the free flow of capital and creation of a single aviation market is expected by 2015.

drawn as in Figure 18. It shows that high-value-added intermediate goods are exported to China and ASEAN countries, where intra-regional goods trade is very active. After being assembled there, the final goods are exported to the world, mostly to the United States and Europe.

As the case studies show, Company A imports key parts and components such as display panels and customized electronic parts from Japan to produce flat-screen TVs by way of "vertical integration." It should be noted that the factory could adjust its panel volume (output) as needed, but this would require enough facilities. Recently, however, Company A has established a panel factory in Shanghai to cope with demand in China. In Japan, display panels are presently produced in only two companies including Company A. In the international marketplace, Samsun and LG as the leading home appliance makers have a combined share of 52 percent, Taiwan companies follow with a 30 percent share, and Japanese companies have fallen behind in third place.[11] Cost competitiveness depends on the scale of production. In addition to lower price, Korea and Taiwan have the advantage of flexible supply to meet individual requests. Japan may follow a course of decline in display panels and flat-screen TVs.

[11] Survey during July to September 2010 by Display Search of the U.S.

Figure 18: Production Network in East Asia



Source: By the author based on METI papers.

Moreover, Company A established an R&D center for further development in China in cooperation with some universities. Such a situation is also being seen in Malaysia, Singapore and Thailand. Several Japanese companies shifted one of the functions of their headquarters to East Asia, such as to China, Singapore and Thailand.[12] A part of production of high-value-added goods also may move to East Asia.

In the cases of Companies B and C, a lot of the parts and components are procured locally in the country or region, but they are most apt to make use of the local subsidiaries of Japan due to reliability. However, the share of pure local companies will increase, in accordance with the improvement of quality and point-of-cost performance.

[12] Refer to Nippon Keizai Newspaper on 3 December 2010.

Company D is a case of the ultimate level of advancing overseas. It has no factory in Japan, and the function of the head office in Japan is design work, market research and management. The company has only one factory of its own, that being in Thailand. It works with other factories in China and Vietnam by consignment contract. Most of the parts and components are procured in the region and not imported from Japan. Such toy manufacturing is typically labor-intensive, making it difficult to produce toys in countries where production costs are high. Inevitably, this relies on overseas production, and intermediate goods trade will much increase in East Asia.

At present, domestic exporters, especially SMEs, are suffering serious damage from the yen's appreciation. High technology will be accelerated into East Asia. There is the fear that skilled workers and engineers may flow out of Japan, along with the hollowing out of domestic industries. Moreover, newly advanced companies have to compete with local industries and advanced economies in the region such as Korea, Taiwan and Hong Kong.

Japanese manufacturing companies should now give heed to retaining R&D in Japan and enriching quality to meet specifications and demand in each country. This will be beneficial in cultivating emerging markets and maintaining competitiveness in intermediate goods trade in the region. Enhancement of the so-called "mother plant system" where a Japanese factory gives technical support to overseas factories may be effective. The mother plants are expected to make the pre-production (prototype) sample to meet the specifications and do amendments to cope with the demand in each country.

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