The FORMATION OF INDUSTRIALCLUSTERS IN ASIA AND REGIONAL INTEGRATION
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Midterm Report

Chapter 6

Impediments to FTA Utilization and Industrial Clusters

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1. Introduction

Spatial economics, also known as the new economic geography explains the spatial consequences of transport cost reductions (Krugman 1991, Fujita, Krugman and Venables 1999). Spatial economics describes the interrelationship between agglomeration forces and dispersion forces, connecting increasing returns to scale in manufacturing sectors, movement of production factors across regions, immobile factor or some congestion effects, love for variety, and transport costs among regions. It is increasingly important to incorporate a view from spatial economics into industrial cluster policies (Fujita 2008). It is because that spatial economics suggests that competitive advantages of industrial clusters depend on the whole spatial structure linked with agglomeration forces and dispersion forces.

Lowering tariffs thanks to Free Trade Agreements (FTAs) is considered as a sort of decreasing transport costs in a broad sense. Spatial economics and this paper employ "broadly defined" transport costs. Broadly defined transport costs include not only transport costs in a narrow sense, such as loading, carrying, collecting, storing, transshipping, unloading, sorting, distributing and delivering, but also the costs for the movement of people and information, tariffs and non-tariff barriers, language and cultural differences and other costs related to selling to different sites. In Japan as well as in East Asia, many FTAs have taken effect and several other FTAs are now taken in consideration, negotiated and awaiting the entry into force. Spatial economics claimed that as transport costs decrease, dispersed production factors may prefer to agglomerate when firms can ship the products easily to other regions and agglomeration force overcomes dispersion force.

However, a few or no Japanese firms expressed they have changed their location in response to FTAs. In fact, FTAs or Economic Partnership Agreements (EPAs[1]) are not intensively utilized by Japanese firms (Hiratsuka *et al.* 2008). Low

1 Japan calls its FTAs Economic Partnership Agreements (EPAs). It is because Japan's government claims that its FTAs cover broad ranges which may include investments, services and some

utilization by Japanese firms is mainly attributed to three reasons. First, large number of firms has already operated in East Asia. Second, firms need not to utilize FTAs when they can make use of Information Technology Agreement (ITA) and other tariff exemptions. And third, firms do not know FTAs so well. We also have to note that Japanese firms are considering not only FTAs but also all their conditions around them.

It is also well known that Asian FTAs are marked by the 'Noodle Bowl Syndrome' due to different degree of protection (Baldwin 2007) and it takes time for FTAs to become prevalent. In 1992, ASEAN Member countries signed to establish the ASEAN Free Trade Area (AFTA) and ASEAN economic ministers signed the Agreement on the Common Effective Preferential Tariff Scheme (CEPT). The CEPT Scheme was established in which the member countries reduced intra-regional tariffs and remove non-tariff barriers for 15 years from January 1, 1993 and arrived at 0-5% by 2008. Ratio of export value under CEPT in total export value from Thailand to Indonesia, the Philippines and Vietnam were 32.1 %, 31.6% and 31.2% in 2003 and they increased to 50.7%, 40.9% and 45.1% in 2007, respectively (JETRO). Because most Japan's EPAs have taken effect since 2006, it will take time for these FTAs to become prevalent.

FTAs may have the power to alter the whole spatial structure. Therefore, before FTA utilization prevails, we need to find a sign of utilization and sign on interrelationship between FTA utilization and industrial clusters. Reviewing case studies on Japanese firms in Japan and East Asia, we examine main components including that influence on utilization of FTAs and location choice of factories. By suggestion of Melitz (2003) and Mori and Nishikimi (2002), we notice that difference in productivity and volume of production has a role in utilization. We also discover that industrial clusters may have a role in utilization when a firm attempts to utilize FTAs more efficiently.

In section 2, we review FTA utilization by Japanese firms in Japan and East Asia. In section 3, we summarize factors influencing the utilization and find what kinds of obstacles are involved in utilizing FTAs. In section 4, we introduce a 'best practice' to overcome the obstacles and explain that industrial clusters may have a role in utilization. Finally, we conclude with Section 5.

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particular assistance for the developing countries.

2. FTA utilization by Japanese firms in East Asia

2.1 EPAs involving Japan

As of February 1, 2009, Japan has eight bilateral EPAs with Singapore, Mexico, Malaysia, Chile, Thailand, Indonesia, Brunei and the Philippines (Table 1). Most Japan's EPAs took effect after 2006. Japan also has the multilateral EPA with ASEAN that it started among Japan, Singapore, Laos, Vietnam and Myanmar[2] on December 1, 2008. Japan and Vietnam signed the EPA on December 25, 2008.

One of the features of Japan's EPA is that Japan's government seems not to treat EPAs with Japan's large trade partners as priorities. In 2007, top 10 large trade partners of Japan are China, USA, Korea, Taiwan, Australia, Thailand, Germany, Saudi Arabia, UAE and Hong Kong (Ministry of Finance, Japan). The share of top 10 countries in total trade volume amounts over 60%. However, in the top 10 countries, Japan has the EPA only with Thailand.

2 The coverage of countries will expand in order of notification by the other ASEAN countries after their completion of domestic procedures.

Table 1: Summary of FTAs involving Japan (as of February 1, 2009)

	Commencement of negotiation	Signed	Enforcement
Singapore	January, 2001	13 January, 2002	30 November, 2002
--- amending	April, 2006	19 March, 2007	2 September, 2007
Mexico	November 2002	17 September, 2004	1 April, 2005
Malaysia	January, 2004	13 December, 2005	13 July, 2006
Chile	February 2006	27 March, 2007	3 September, 2007
Brunei	June 2006	18 June, 2007	31 July, 2008
The Philippines	February 2005	9 September, 2006	11 December, 2008
Thailand	February 2005	3 April, 2007	1 November, 2007
ASEAN	1 April, 2005	14 April, 2008	1 December, 2008
Indonesia	July 2005	20 August, 2007	1 July, 2008
Vietnam	January 2007	25 December, 2008	
India	February 2007		
Australia	April 2007		
Switzerland	May 2007		
Korea	December 2003		

(Source) Compiled by the author from the Ministry of Foreign Affairs, Japan

2.2 FTA utilization by Japanese firms

Some Japanese manufacturing firms utilize Japan's FTAs and other FTAs like AFTA. Large number of Japanese firms has already operated in Southeast Asia as multinational firms. JETRO have been asking the utilization of FTAs and their problems in the survey of Japanese Firms' international operations. We find low utilization by Japanese firms. 37 out of 729 firms answered they utilized FTAs in 2006, and 87 out of 733 firms replied they made use of FTAs in 2007 (Table 2). More than half firms answered they undecided or did not plan to utilize.

Table 2: JETRO's Survey: FTAs utilization by Japanese firms (2006, 2007)

(#)

	2006	2007
Utilizing	37	87
Not utilizing but planning to utilize	60	80
Do not plan to utilize	311	274
Undecided	249	205
No answer	72	87
	729	733

(Source) Compiled by the author from JETRO (2007, 2008)

Table 3: JETRO's Survey:
Number of firms utilizing FTAs and planning to utilize (2007)

(#) (%)

	Number of firms	Ulitizing/ Planning to utilize	Utilizing	Not utilizing but planning to utilize
Total	733	22.8	11.9	10.9
Large	296	29.4	17.2	12.2
Small/Medium	437	18.3	8.2	10.1
Manufacturing	546	25.3	13.7	11.5
MNC	340	30.9	17.6	13.2
Domestic	203	16.3	7.4	8.9
Non-manufacturing	187	15.5	6.4	9.1

(Source) Compiled by the author from JETRO (2008)

Large firms have a greater tendency to utilize FTAs than small and medium firms. JETRO's survey reported 17.2% of large firms were utilizing FTAs while utilization ratio of small and medium firms was 8.2% in 2007 (Table 3). Multinational firms also have a greater tendency to utilize FTAs than domestic firms. 17.6% of multinational firms answered they utilized FTAs while 7.4% of domestic firms reported they utilized. 13.2% of multinational firms responded they were not utilizing but

planning to utilize FTAs and the ratio of domestic firms was 8.9%.

Japanese manufacturing firms utilize other FTAs as well as Japan's EPAs. Table 4 shows FTAs which Japanese firms utilize in JETRO's survey. In 2006, AFTA tops the rank with 24 firms, followed by Japan-Malaysia EPA and Thailand-Australia FTA. In 2007, Japan-Malaysia EPA and Japan-Thailand EPA top the rank with 31 firms, followed by AFTA and Japan-Mexico EPA.

Table 4: JETRO's Survey: FTAs which Japanese firms utilize (2006, 2007)

(#)

	2006	2007
ASEAN Free Trade Area (AFTA)	24	25
Japan-Malaysia	15	31
Japan-Thailand		31
Japan-Mexico	*	25
Japan-Chile		11
Thailand-India	6	8
Thailand-Australia	8	7
Japan-Singapore		5
China-ASEAN	4	5
China-Hong Kong	7	1
Thailand-New Zealand	2	1

(Note) In 2006, the survey did not ask Japan-Mexico EPA although Japan-Mexico EPA has enforced on April 1, 2005.

(Source) Compiled by the author from JETRO (2007, 2008)

In the survey in 2006, JETRO asked 93 firms currently utilizing and planning to utilize FTAs about the problems caused by the multiple Rules of Origins (ROOs). 33 out of 93 firms replied there was no problem but some might occur in future. 27 firms reported different rules lead to increase costs. Only 14 firms replied there was no problem.

IDE-JETRO conducted FTA interview survey with 38 firms from mid 2007 to early 2008. 2 out of 16 electronics and electrical appliances firms, 4 out of 13 automobile firms and 5 out of 9 garment and textile firms answered they are utilizing FTAs (Table 5 and Hiratsuka *et al.* 2008). 8 firms utilized AFTA, 5 firms utilized

Japan-Mexico EPA and 4 firms made use of Thailand-India FTA. IDE-JETRO's survey also revealed that FTAs were not intensively utilized by Japanese firms.

Table 5: IDE-JETRO's Survey: FTAs utilization by Japanese firms

(#)

	All	Now utilizing	Not utilizing but planning to utilize
Electronics & electrical appliances	16	2	1
Automobile	13	4	3
Garments and textiles	9	5	3
Total	38	11	7

(Source) Compiled by the author from Hiratsuka *et al.* (2008)

The survey concluded that low utilization by Japanese firms was mainly attributed to three reasons. First, large number of firms has already operated in East Asia. Second, some firms need not to utilize FTAs because there are Information Technology Agreement (ITA) and other tariff exemptions. And third, many firms do not know FTAs so well.

IDE-JETRO's survey asked the perceptions on FTAs. Many firms answered increase in exports and easier import of intermediate goods and raw material were beneficial. Some firms told that preparing documents would increase costs. Some firms complained precursive FTAs like Korea-EU FTA, which was under negotiation in 2008, might bring disadvantages to Japanese firms.

There are a lot of impediments to the implementation of the FTAs. The survey asked the factors of impediments to the implementation of the FTAs. 5 out of 38 firms replied that tariffs margin between MFN (Most Favored Nation) tariffs and FTA preferential tariffs were low or MFN tariffs were even lower than the preferential tariffs of FTAs. 5 firms reported they had no idea on how to use. And, 8 firms claimed administration costs harmed profitability.

3. Factors influencing the utilization

We found firms incurred administration costs to utilize FTAs. It is attributed to the existence of ROOs. ROOs are the criteria where the products are made. To avoid illegal re-export, firms have to prepare the documents and get Certificate of Origin to prove the products are made in the country and eligible for the preferential tariffs. As of 2008,

Japan Chamber of Commerce and Industry (JCCI) issued the Certificate of Origin for Japanese products. Before getting Certificate of Origin, firms had to register to JCCI. It took 5.7 days on average[3]. After registration, firms submitted the evidences to prove the products are made in the country. It took 0.3 days to verify the evidences. And firms applied the issuance. It took additional 0.3 days to issue the Certificate of Origin. Firms had to pay fees for issuance.

Studying FTAs at the first stage must be more expensive for firms than only preparing documents. Firms have to investigate whether their products are eligible for FTAs or not. Before July 2008, forms and manuals of Japan's EPAs varied by destination countries. Firms had to study EPAs one by one. Although JCCI has unified the forms and manuals since July 2008[4], the new manual has 106 pages. Firms have to study and understand 106 pages of manual as well as documents of agreements, tables of tariff schedules and other appendices.

We can consider these administration costs are a sort of fixed costs, because the costs are not dependent on the production volume. Therefore, FTAs requiring ROOs raise fixed costs of firms. The existence of fixed costs means there is a sort of economies of scale because unit production costs will decrease as volume of production increases.

By suggestion of Melitz (2003), we can analyze the relationship between fixed costs and FTA utilization. We introduce differences in productivity among firms as Melitz (2003) and in trade volume within a firm, and clarify the factors influencing utilization of FTAs. Melitz (2003) assumed firms will incur large fixed costs to trade to other countries. It claimed that firms with higher productivity would bear larger fixed costs, product larger amount, sell to domestic and other countries and earn bigger profits. Firms with lower productivity would pay smaller fixed costs, product smaller volume and sell only to their domestic markets.

3.1 Productivity

First, we can consider that firms with higher productivity will bear larger fixed costs, product larger volume and utilize FTAs. They can pay higher costs to study FTAs and prepare documents. Firms with lower productivity will pay smaller fixed costs, product

3 Figures are based on our interviews to JCCI.

4 The form and manual for Mexico were excluded and planned to be unified later.

smaller volume and will not utilize FTAs. Accepting an assumption that small firms with smaller product volume reflect their lower capacity compared to large firms, we make out that smaller firms will not bear higher costs to study FTAs and prepare documents, as we saw in Table 3.

3.2 Tariff margin

Second, products with higher margins between FTA preferential tariff rate and MFN tariff rate will be worth paying larger fixed costs. On the other hand, when the margins are low, firms can not incur large fixed costs for preparing documents. Kohpaiboon (2008) confirmed that higher tariff margins significantly lead to higher utilization of FTAs, using the data of Thai manufacturing firms. In Japan-Thailand EPA, garment firms in Thailand had a tendency to utilize just after effectuation, while not many Japanese auto parts manufactures utilized immediately. The difference in utilization is partly because that import tariffs for clothes of Japan were eliminated promptly from 10.9% to zero while import tariffs for many auto parts of Thailand were planned to decrease over several years or be excluded from reduction.

We can find several tariff exemption schemes other than FTAs. In Information Technology Agreement (ITA), member countries totally eliminate duties on IT products, such as personal computers, internet appliances, mobile phones and digital cameras. It requires all products in the list of declaration must be covered and reduced their tariffs to 0%. Many countries have import tariff exemption scheme in free trade zones (FTZ) or export processing zones (EPZ). Firms compare the documenting costs for FTAs and other tariff exemption schemes because both require the documents to prove the products are eligible for the scheme.

The existence of phase-out tariff schedule in FTAs itself raises fixed costs of firms. In fact, we sometimes find a reversal in which MFN tariff rate becomes lower than FTA preferential tariff rate due to phase-out tariff schedules. It is because that FTA preferential tariffs and tariff schedules had been decided based on MFN tariffs at negotiation time while governments reduced MFN tariff rates for some specific products voluntary after the negotiation for the goods concluded. For example, in the tariff schedule of Japan-Thailand EPA, import tariff rate of Thailand for oil filters for motor vehicles was planned to start from 12.5%. The tariff rate was planned to fall to 10% from April 2008, 7.5% from April 2009, 5% from April 2010, 2.5% from April 2011 and zero from April 2012. However, Thai government reduced MFN tariff rate for

the goods to 10% from January 1, 2007. Therefore, from November 1 in 2007 when Japan-Thailand EPA took effect to December 31 in 2007, MFN tariff rate for oil filters for motor vehicles was lower than the FTA preferential tariff rate. Some firms may think they cannot accept the costs to comprehend tariff schedule as well as tariff reversal.

3.3 Volume

Third, products with larger volume will be worth paying larger fixed costs. If firms trade larger volume for a good, unit cost for studying FTAs and preparing documents will become lower. It is related to economies of density in logistics industry. Mori and Nishikimi (2002) reported that the transport cost per container decreased by 0.31% given a 1% increase in ship size in maritime transportation. Hummels (1999) stated that containerization would lead to transport savings of as much as 50-60% relative to conventional cargo ships.

We have to consider the share of a product within a firm's total production volume, as well as the share of a destination country in total export of a firm. Each firm has to prepare different documents for different products. Each firm has to prepare different documents for different destination countries even if the firm produces the identical products. In the case of Japan's EPAs, Japan has EPA only with Thailand in the top 10 trade partner countries of Japan in 2007, as we saw in the last section.

We show an anecdote concerning the production volume and FTA utilization. An auto parts maker in Japan exported about 2,000 kinds of items from Japan to Malaysia in 2007. They planned to utilize Japan-Malaysia EPA. In July 2007, they applied 4 out of 2,000 items to the EPA as a trial. And they expanded to 10 items in October. At that time, the company planned to expand applied items to 100 in the long run. They would not expand to all items. It was because top 100 items accounted for 80 or 90 percent of the firm's exported value from Japan to Malaysia and these deserve to be applied to the Japan-Malaysia EPA. They did not attempt to apply other 1,900 items because it will not pay for preparing documentations.

3.4 Other impediments

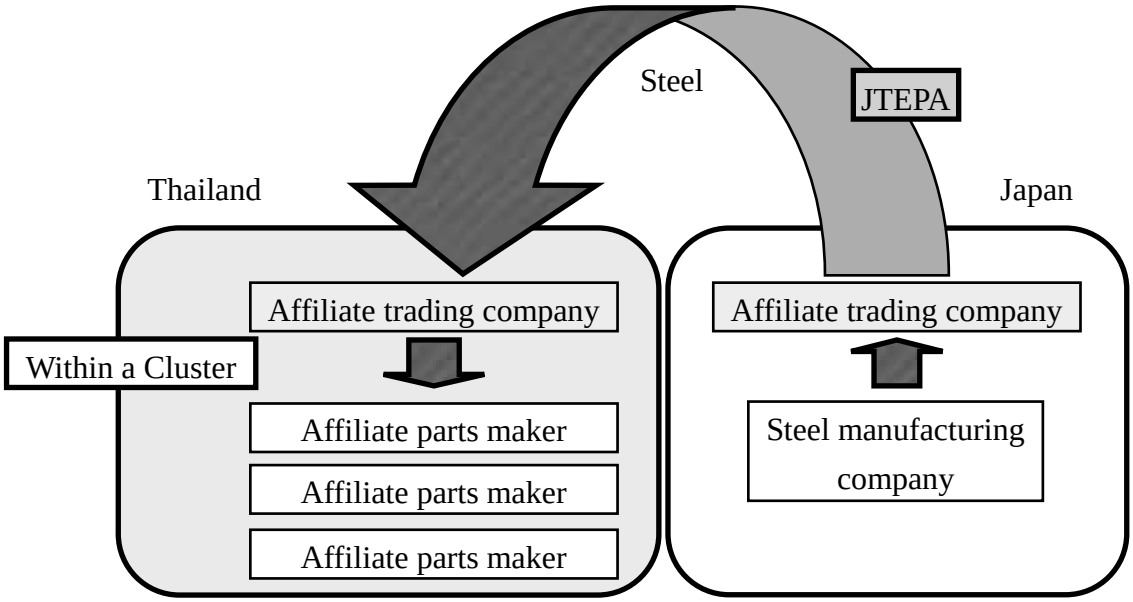
There are other impediments. Sometimes important products were written in sensitive list and excluded from tariff reduction. Exporters have to prepare documents while a part of the benefits goes to importers. Moreover, it takes two or three days to get new Certificate of Origin and it disrupts frequent switch of materials and material sources

when they conduct just-in-time (JIT) operations. They diminish or eliminate incentives for the firms to study FTAs.

4. Industrial clusters may have a role in utilization

We noticed there were impediments to FTA utilization. First, due to lower capacity, small firms tend to not bear higher costs to study FTAs and prepare documents. In fact, in our interview, many top executives in small and medium-sized enterprises (SMEs) did not know about FTAs at all. Second, intra-firm trade has an advantage in utilization rather than inter-firm trade. It is because exporters have to prepare documents while a part of the benefits goes to importers. In other words, multinational firms have a greater tendency to utilize FTAs than domestic firms, as we saw in Table 3. Third, Japanese auto parts manufacturers have a difficulty in utilizing FTAs. It is because auto parts makers handle a lot of items, they have many products in sensitive lists, and auto parts manufacturers tend to relocate their production bases near car assemblers' factories rather than export from other countries.

Figure 1: Industrial cluster and FTA utilization in procurement

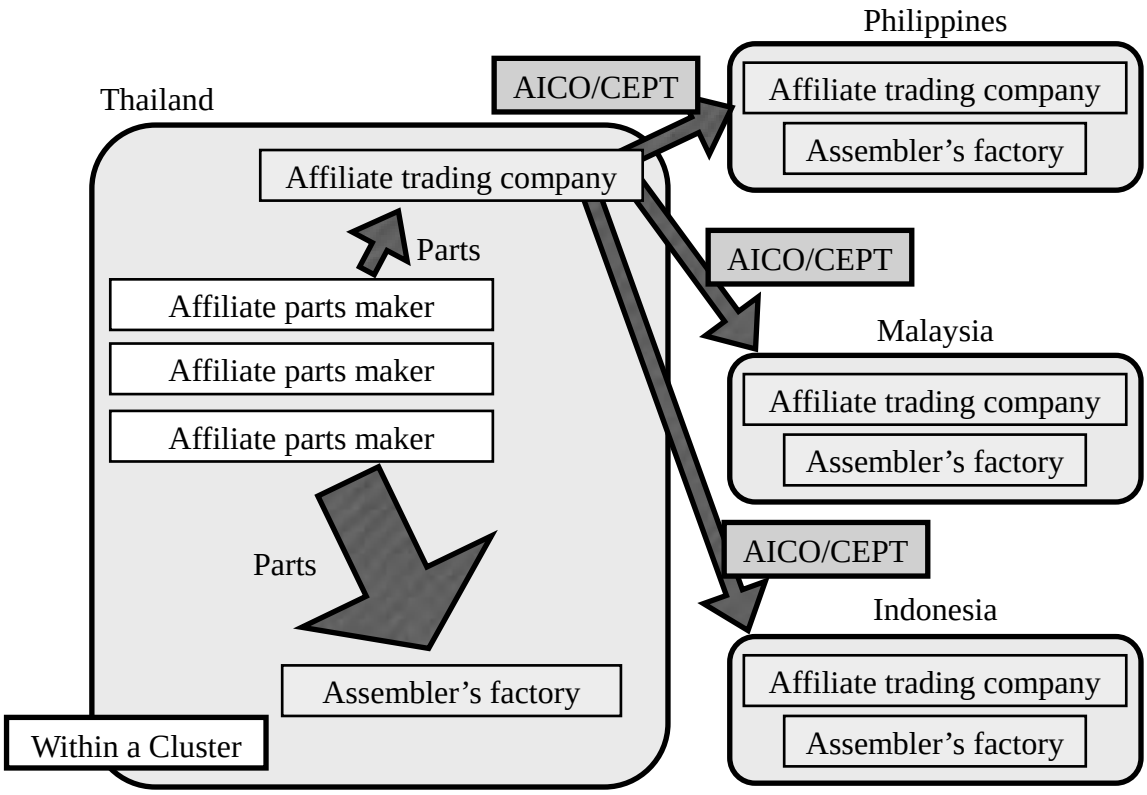


(Source) Author

A Japanese auto manufacturer group has been attempted to overcome these impediments and succeeded in utilizing FTAs using "Centralized purchasing system".

We see the case of iron and steel (Figure 1). A Japanese auto manufactures has a production base in Thailand. As of 2008, they had to purchase hot strip from Japan. As for iron and steel, tariff rates of Thailand were planned to eliminate within 10 years after effectuation or eliminated promptly for the half of total export of iron and steel from Japan, under the Japan-Thailand EPA[5]. As for each small parts maker, because of the lower capacity, it was difficult to utilize Japan-Thailand EPA. To deal with the problem, auto manufacturer group made affiliate trading company buy iron and steel in Japan in bulk, export them to the same trading company in Thailand under Japan-Thailand EPA and sell iron and steel to parts makers in the group. The amount was more than 80% of total use of irons for all affiliate parts companies in Thailand.

Figure 2: Industrial clusters and FTA utilization in distribution of parts



(Source) Author

5 It includes free-tariff quota.

The system has two benefits. First, parts-makers need not be concerned about cumbersome international transactions including ROOs. The trading company is trained in the use of FTAs. The company centralizes the procurements, documentation procedures and risks including foreign exchange risk. Second, the benefit of FTAs will remain within the group. The trade was an intra-firm trade within the affiliate trade company.

They also utilized the centralized purchasing system for their parts (Figure 2). In Thailand, most produced parts were sent to the assembler's factory within the country. Some parts were exported to other countries, such as Malaysia, Indonesia and the Philippines. The affiliate trading company also played a role. They bought parts from affiliate parts makers, exported parts to the same trading company in other countries under AFTA and sold them to parts makers in the group. The trading company is trained in trading various items. In fact, the branches of affiliate trading company in Thailand, Malaysia, Indonesia and the Philippines export the parts with each other under AFTA and AICO (ASEAN Industrial Cooperation Scheme). Thanks to centralized purchasing system, they fully enjoy the benefits of FTAs.

Industrial clusters may have a role when firms attempt to utilize FTAs, fully enjoy the benefit, and minimize transaction costs. The distance between each affiliate parts maker and affiliate trading company within the country determines the feasibility of centralized purchasing system. If they are in the same auto cluster, they can utilize centralized purchasing system. Therefore, they will gain an advantage over competitors.

In 2008, the auto manufacture group expanded the capacity of car production in Thailand from 120,000 to 240,000. The Thailand factory has stood out in ASEAN countries because the capacities of Indonesia, Malaysia, the Philippines and Vietnam were 50,000, 30,000, 15,000 and 10,000, respectively. They utilized FTAs, reduced transaction costs, and concentrated the production in Thailand. It is almost the same story as the spatial economics explains.

As in the case that concentration in production leads to core-periphery type of spatial structure, concentration in logistics leads to the development of hub and spoke system within the production networks. Affiliate trade company play a role as a hub and minimize the transport costs including transaction costs. FTAs and economies of density drive the development of hub in production networks. It share a similar feature with Hendricks et al. (1997), which claimed that deregulation in the airline industry and economies of density can explain the emergence of hub and spoke networks.

5. Conclusion

Japanese firms, in particular small and medium size firms, are lack of information of FTAs. It is partly because of cumbersome ROOs. Owing to the rising fixed cost, larger and more productive firms have advantage in utilization. And industrial clusters may have a role when firms attempt to utilize FTAs, fully enjoy the benefit, and minimize transaction costs.

Low utilization suggests that both the effect of FTAs by several CGE (Computable General Equilibrium) models and Spaghetti Bowl/Noodle Bowl Syndrome might be exaggerated or overestimated. Not all firms benefit from utilization. Some firms are eligible for ITA or other tariff exemption schemes and thus need not to utilize FTAs. Some firms have difficulty in utilizing even one FTA. And some giant firms command FTAs.

We noticed that dissemination and assistance especially for small firms were crucial. As we saw in the last sections, larger firms can utilize FTAs in lower costs and more efficiently. Prevalence of utilization may drive widening gaps between large firms and small firms and force small firms off the market. JETRO or other public institutions may play a part in preventing the widening gaps. They need to target small and medium firms and remove obstacles that impede utilization of FTAs.

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