CHAPTER 10

Complementary Manufacturing Relationships between Firms in China

Yasushi Ueki

This chapter should be cited as:

Yasushi Ueki, 2010. **"**Complementary Manufacturing Relationships between Firms in China".

In *Japan and Korea with the Mekong River Basin Countries*, edited by Mitsuhiro Kagami, BRC Research Report No.3, Bangkok Research Center, IDE-JETRO, Bangkok, Thailand.

Complementary Manufacturing Relationships between Firms in China and CLMV

Yasushi Ueki

INTRODUCTION

The rise of China in Asia has been considered as a threat and an opportunity in various debates. Lall and Albaladejo (2004) focus on major East Asian exporters, excluding those in Cambodia, Lao PDR, Myanmar and Vietnam (CLMV), to make out where and how close the threats are to reality. They conclude that these East Asian countries face threats from China's exported low- and medium-technology products, suggesting that complementarities exist in the high-tech products. Meanwhile, focusing on CLMV, Ueki (2009) raises concerns about the qualitative characteristics of China's foreign direct investment (FDI) concentration in primary sectors and its importation of low value-added natural resource-based products from CLMV. He also mentions that CLMV's perpetual and increasing trade deficits with China based on such current trade structure could inhibit CLMV's economic development in the medium and long term.

These controversies notwithstanding, it is a fact that China's trade and FDIs partly contribute to the division of labor among countries in the Mekong River Basin Region (MRBR), along with the progress from economic integration initiatives in the region. At the firm and personal level, intermediate and final goods imported from China are an indispensable part of the business and daily life in the CLMV. By its very nature, therefore, any regional economic integration brings both threats and competition to a greater or lesser extent. Therefore, a more practical option for CLMV is to realize that while taking advantage of opportunities, they also have to mitigate the pains that come

with integration.

Alternative development strategies potentially available to CLMV would be straightforward theoretically. Indigenous firms in these less developed countries can address the threats from China and other international competitions only by carving niches according to their comparative advantages. Their ability to develop new capabilities and learning is an important component of their strategic directions. In reality, however, all do not yet have sufficient experiences, skills, technologies, knowledge, management, and internally available capabilities and resources in creating new technologies and knowledge. Consequently, most have no other choice but to depend on external sources.

Trades and FDIs have been important external sources of technologies for developing countries. An open trade regime provides developing countries with advanced input at a lower price. Freer trades and investments lead to fiercer competition, which induce firms' innovative activities and collective efforts to upgrade. They also enable firms to achieve economies of scale. These effects of trades and FDIs promote diffusion of innovation. Economic integration is expected to reinforce the mechanism of technology transfer through trades and FDIs, enabling firms to intensively interact with more diversified potential partners (Onodera 2008; Lesher and Miroudot 2008).

The FDIs provide assembly workers and engineers in host countries with opportunities to learn from the knowhow of foreign firms and obtain skills through training exchange opportunities for personnel and training in FDIs' host or home countries. The FDIs can also extend and strengthen backward and forward linkages with customers and suppliers. They encourage firms to develop cross-industrial associations and collaborations with research institutes and universities, or learn technologies,

strategies, and management ideas from competitors. These spillover channels enhance possibilities for technology upgrade and innovation (Machikita and Ueki 2009a, b). There is no reason not to expect the same positive spillovers from FDIs in China, such as those from Chinese indigenous enterprises and multinational companies (MNCs).

Some firms contemplate the costs and benefits of locating in CLMV compared to China and other ASEAN member countries. For one, MNCs know there are costs involved in depending too much on China alone. Some of the issues of MNCs located in China are labor shortage and consequential inflation of wages, especially in the coastal industrial districts; revaluation of the Chinese Yuan; and institutional uncertainties.

To mitigate these risks while obtaining the benefits of having factories based in China, firms have adopted the so-called China Plus One strategy, where they establish factories not only in China but in one other country, too (Fujita and Hamaguchi 2006). Meanwhile, in 1999, the Government of China initiated the Go Global policy, which aims to promote investments abroad by Chinese firms. Such resulted in a flood of Chinese FDIs into developing countries, and subsequently posed competitive threats to firms in the host and third countries. Among the Chinese firms that set up production site in other countries, one of their reasons could be the increasing cost in China. Also, a part of their FDIs probably aim at preferential access to the third markets via the general system of tariff preferences (GSP) and free trade agreements (FTAs) that are not available in China.

In the case of FDIs in the manufacturing sector, investors that produce cheap and poor-quality goods cannot survive the international competition. Only firms producing cheap but good quality items can continue exporting, particularly low-end products. Therefore, such Chinese firms may have their own technologies and knowhow that

CLMV can learn from or acquire.

Although discussions on the economic integration in the Mekong River Basin Region center on how China's increasing presence in the region poses as a threat, the regional integration initiatives have potentials of bringing *both* economical threats and benefits from all countries involved, including Thailand and Vietnam, to the less developed nations in the region. In other words, the Mekong River Basin Countries (MRBCs) can benefit from trades and investments brought by the economic integration by taking advantage of the diversified economic conditions in the region.

This paper focuses on South-South trades and FDIs and their spillovers. Ueki (2009) discusses their macro or country-level characteristics. This paper includes case studies based on field researches to examine if the South-South economic integration would support technology transfers. Special focus is placed on the relationship between China and Vietnam, since Vietnam is at the forefront of the competition and cooperation with China. The study of this relationship between the two countries is helpful in considering the future direction of the integration in the Mekong River Basin Region.

The next section chronicles the intra-regional trades in the Mekong River Basin Region and how industrial corridors emerged from the cooperation for infrastructure development under the integration initiatives. The third section introduces literature and cases of industrial upgrade in the region. The fourth section discusses the implications of the economic integration in the ASEAN and East Asia. The fifth section summarizes the findings and draws conclusions.

1. INFRASTRUCTURE DEVELOPMENT AND INTEGRATION IN THE MRBR

This section first summarizes the interdependence in trade among CLMV countries. Specifically, focus is given on the parts-and-components exports and imports for 2003 and 2007 as an indicator or measure of how manufacturing processes have been deeply integrated among these countries. Then, the industrial development at the regional level is discussed to recognize backgrounds of the increasing intra-regional parts-and-components trades.

1.1. Trades in CLMV and Thailand

The United Nation Commodity Trade (UN Comtrade) database provides partial information on the intra-regional trade in the Mekong River Basin Region. Because Cambodia, Lao PDR, and Myanmar do not report recent statistics, their trades are estimated only from the statistics reported by their trade partners. Nonetheless, the database provides suggestive evidences.

Parts and components occupy around 17 percent to 19 percent of the world's trade values for 2003 and 2007. The CLMV's export of final goods accounts for 64.4 percent and 57.8 percent of its total export amounts for the same years, respectively.[1] In contrast, exports of parts and components are not significant for CLMV, accounting for only 4 percent of the total export for 2003. However, their share has increased to 4.8 percent in 2007. On the other hand, the share of parts and components in CLMV's total imports is stable at about 12 percent for both years.

[1] Following the definition by Gaulier et al. (2007), final goods are composed of "capital goods" (BEC codes 41 and 521) and "consumption goods" (BEC codes 112, 122, 51, 522, 61, 62 and 63). Parts and components are composed of parts and accessories of "capital goods" and "transport equipment" (BEC codes 42 and 53, respectively).

Also, there are considerable differences in the importance of trade in parts and components among these nations. The export value accounts for less than 1 percent of the total amount of export for these nations, except Vietnam, where the commodity accounts for more than 5 percent in 2007. On the other hand, these items are more important as imports. They account for about 6 percent to 8 percent of the total imports for Cambodia and Lao PDR, and 12 percent to 13 percent for Myanmar and Vietnam in 2007.

Table 1 presents geographical distributions of parts-and-components exports and imports for CLMV and Thailand. Here, it is necessary to take extra care when interpreting the figures from the table. The figures for CLMV are those reported by the countries in the first column. For instance, for Cambodia in 2003, exports were shipped mainly to Vietnam (12.6% of Cambodia's total parts and components export), East Asia (10.7%), ASEAN4 (Indonesia, Malaysia, Philippines and Singapore) (43.7%) and the European Union's 15 countries (13.8%). Cambodia's main sources of parts and components are Thailand (37.6%), East Asia (15.1%) and ASEAN4 (30.2%). By 2007, considerable changes in Cambodia's trade structures were noted. The percentage of the United States as a destination of parts and components made in Cambodia increased from 1.0 percent to 13.2 percent, whereas Thailand and China gained importance as sources of parts and components, enhancing the percentages from 37.6 percent to 45.0 percent and 4.7 percent to 10.8 percent, respectively.

Table 1: CLMV & Thailand's parts and components export and import by country and region, 2003 and 2007 (% of the Total)

	Partner									
	Cambodia		Lao PDR		Myanmar		Vietnam		Thailand	
Reporter	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
Year: 2003										
Vietnam	12.6	1.6	1.9	1.2		0.4			0.9	0.6
Thailand	4.0	37.6	77.4	59.4	9.2	12.2	11.9	6.8	2.5	
East Asia	10.7	15.1	0.5	17.6	43.9	49.8	56.0	39.6	31.6	43.4
China	0.1	4.7	0.0	9.3	0.0	38.8	2.7	11.3	14.6	5.6
Japan	6.0	4.9	0.5	5.9	37.3	8.3	50.4	20.4	14.2	34.3
Korea	4.6	5.5		2.4	6.6	2.7	2.9	7.9	2.8	3.5
Hong Kong	0.8	2.2	0.7	0.1		0.3	2.0	4.2	8.0	5.5
ASEAN4	43.7	30.2	3.7	5.5	35.7	26.4	17.6	19.3	25.5	30.4
E.U.15	13.8	6.8	12.5	11.0	4.4	5.1	5.4	20.9	10.2	7.3
U.S.	1.0	4.1	0.2	1.6	0.6	0.6	2.2	4.0	11.0	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Year: 2007										
Vietnam	11.3	8.9	6.2	4.9	3.8	0.2			1.8	1.3
Thailand	1.4	45.0	68.4	51.3	2.2	14.1	13.7	8.3		
East Asia	0.7	16.8	0.1	26.1	36.1	38.6	52.2	42.3	33.4	42.8
China	0.1	10.8	0.1	20.2	29.7	34.5	4.6	16.5	18.8	7.7
Japan	0.5	2.2	0.1	2.5	6.4	3.0	47.0	20.2	11.5	31.7
Korea	0.2	3.8		3.4	0.0	1.1	0.6	5.7	3.2	3.4
Hong Kong	0.8	1.5	0.6	0.4	33.6	0.2	4.6	7.4	7.3	5.4
ASEAN4	27.4	20.0	1.6	2.4	20.9	23.8	11.5	21.8	21.9	30.7
E.U.15	13.1	5.5	17.2	8.1	1.3	17.7	5.0	13.9	11.0	7.6
U.S.	13.2	1.4		1.2		0.2	6.7	2.4	11.0	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Parts & components are composed of parts and accessories of "capital goods" and "transport equipment" (BEC codes 42 and 53 respectively), following the definition by Gaulier et al. (2007).

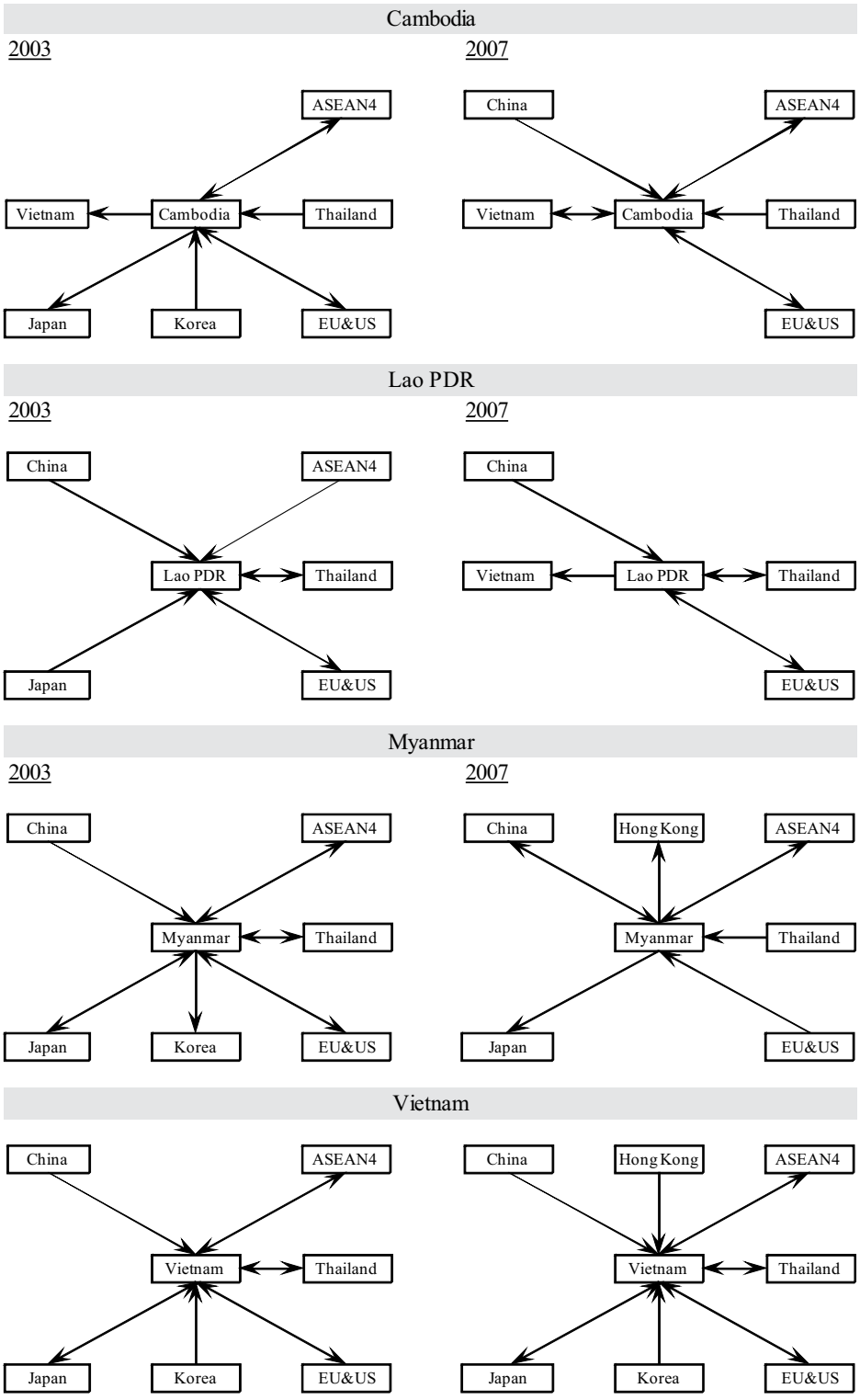
Source: UN Comtrade (downloaded on December 3, 2009).

Lao PDR exchanges parts and components mostly with Thailand. Meanwhile, the interdependence with Vietnam has deepened. China increased its share in Lao PDR from 9.3 percent to 20.2 percent. In the case of Myanmar, parts and components were exported mainly to Japan and ASEAN4 and imported from China in 2003. In 2007, China (including Hong Kong) became a significant trade partner for Myanmar. Some 29.7 percent and 33.6 percent of parts and components from Myanmar were shipped to China and Hong Kong, respectively.

In Vietnam, changes were not as considerable as those experienced in other countries, but the importance of China (including Hong Kong) has increased. Interdependence with Thailand has also grown.

Figure 1 depicts the changes in the sources and destinations of parts and components for CLMV. In sum, while Thailand has been a major supplier of these items to CLMV, China has increased its importance as a source of parts and components for CLMV. Although Thailand may face a competition with China, its shares in the markets in Cambodia, Myanmar, and Vietnam increased between 2003 and 2007. Vietnam is enhancing its importance as an exporter of parts and components to Cambodia, Lao PDR, and Myanmar. These items' two-way flows can be observed between Cambodia and Vietnam, between Lao PDR and Thailand, and between Thailand and Vietnam. While parts and components are not major trade items, these phenomena illustrate deepening manufacturing complementary relationships in the Mekong River Basin Region.

Figure 1: Major flows of parts and components in CLMV



Note: Arrow lines expresses that the counterparts account for more than 5 percent of the total trade values for CLMV.

Source: UN Comtrade.

1.2. China-Vietnam-Cambodia industrial corridor

Behind the recent trend in these trade flows are the growth of industrial districts and development of transportation and institutional infrastructure to facilitate trades and FDIs. Under the framework of the Greater Mekong Sub-region (GMS), international cooperation helped develop international ports and road networks that interconnect major industrial districts. Along these roads or behind ports, the public and private sectors have been developing special economic zones (SEZs) and industrial parks. As a result, an industrial corridor is emerging between Guangdong to Bangkok. The following sections revisit the recent situations on two sub-industrial corridors centered on Vietnam.

1.2.1. Guangdong-Hanoi sub-corridor

The development of deepwater ports is a key driving force of industrial agglomeration. One of the success stories is the industrial agglomeration between Hanoi and the Haiphong Port along the National Road No. 5. The improved transportation infrastructure helps Hanoi to accept FDIs under the China Plus One strategy, where firms establish factories not only in China but also one other country. Rapid growth of the industrial district in the Northern Vietnam necessitates imported materials and parts, and processes them to ship products overseas. This input-output structure has deepened the connection with the world factory in Guangdong via Hong Kong. Therefore, logistics is a lifeline for Hanoi to maintain its industrial development, whereas it is said that the rapid growth of Hanoi causes shortages in the capability of Haiphong port and transshipping vessels between the port and Hong Kong.

Logistics firms have began promoting more land transportation between Guangdong

and Hanoi---where road infrastructure and boarder arrangements between China and Vietnam are being improved---as an alternative to fleet and air services. Presently, some logistics firms operate scheduled trucks between the two regions. Although the traffic volume is increasing, cargos are traveling only in one direction. Trucks are almost empty of cargo, causing an increase in the transportation cost. Such land transportation costs are around 20 percent to 30 percent higher than that of marine transportation. But land transportation enables consigners and consignees to reduce the lead time for door-to-door delivery from about 10 days to two nights and three days, and is still cheaper compared to air transportation. Logistics firms therefore insist that further facilitation measures at the border would decrease the costs of land transportation and promote a modal shift. It is also expected that the initiatives to develop the Beibu Gulf (Tonkin Gulf) in Guanxi Zhuang Autonomous Region in China would boost demands for land transportation.

1.2.2. Ho Chi Minh-Sihanoukville sub-corridor

Industries are concentrated in two regions in Vietnam: The Southeast region and the Red River Delta. The Southeast region, including Ho Chi Minh City, has been a center of industrial activities in Vietnam. The region makes up 53.2 percent of the national gross output of industry in 2007. Of this, Ho Chi Minh City accounts for 22.3 percent. During the period 2000-2007, the real gross output of industry has more than doubled in the Southeast region. Such rapid growth has caused heavy congestions. In contrast, the percentages for Hanoi and Red River Delta (where there are industrial districts in the Northern region) are 8.1 percent and 24.5 percent, respectively.

The manufacturing sector in Ho Chi Minh City and surrounding regions had exclusively utilized shallow river ports in the urban area. The limited capacity of the port was recognized as a serious bottleneck in the region's development. In addition, problems caused by the rapid urbanization such as traffic jams and environmental deterioration added to the predicament. To deal with these problems, Cai Mep-Thi Vai International Port, a new deepwater port has been constructed in Ba Ria-Vung Tau province with the support of Japan's official development assistance (ODA). Extensive industrial parks are also developed in the areas adjacent to the container terminals. This new port development project enables mega container vessels to make their calls in Ho Chi Minh City. Two pioneering terminal operators, Tan Cang Cai Mep Terminal and SP-PSA International Port that are located approximately 50km Southeast of Ho Chi Minh City, have been receiving the container liners that directly link Vietnam with the United Sates starting from the first half of 2009. Such services new to Ho Chi Minh City allow firms to decrease costs and time for transshipment in Singapore.

These ports and direct links with major overseas markets provide new alternatives not only to Vietnamese firms but also to others in the neighboring countries, particularly Cambodia. In Cambodia, firms have utilized Phnom Penh Port and Sihanoukville Port. The former is a shallow port on the side of the Mekong River. The latter is a deep seaport developed with the help of Japan's ODA but is not necessarily convenient for users. That is, Sihanoukville Port is more than 200km away from the capital. Containers for Cambodian products, mainly garments, need to be transshipped in Singapore to reach major markets.

Tan Cang Cai Mep Terminal has cabotages plying to the Phnom Penh Port to collect containers shipped from factories agglomerated around Phnom Penh. It is said that for

these factories located in the largest industrial district in Cambodia, there is no substantial difference in the costs between shipping via Sihanoukville Port and via Cai Mep-Thi Vai Port, even though the latter enables firms to reduce delivery lead time to the United States and the burden associated with inventory. Therefore, firms in Cambodia are major potential beneficiaries from the new port development projects in Ho Chi Minh City. On the other hand, this also means fiercer competition between port authorities and terminal operators in the two countries.

Competition among these national gateways in the coastal areas influences Cambodia's industrial development strategy, which is centered on establishing SEZs. There are mainly three areas: Sihanoukville, Phnom Penh, and Cambodia-Vietnam borders, where SEZs are actually under development or in operation. There are two major SEZ projects in Sihanoukville. One is the Sihanoukville Port SEZ, which is being developed by the Port Authority of Sihanoukville with Japan's ODA and is located adjacent to the Sihanoukville Port. This publicly supported SEZ is planned to open in 2011. The other is the Sihanoukville Special Economic Zone (SSEZ), a joint project with Cambodian and Chinese funding: the Cambodia International Investment Group and the Hongdou Group from Jiangsu Province. The Chinese partner is expected to bring Chinese FDIs into the economic zone. The Government of Cambodia promotes Sihanoukville with its transportation infrastructure as the driving force for its development. In addition to the above-mentioned seaport development, the Asian Development Bank (ADB) supports the rehabilitation of the national railway, including the Southern Line (254 km), linking Sihanoukville with Phnom Penh. It can be said that integrating the SEZ projects with the infrastructure development will expand the user base for Sihanoukville Port, consequently improving its competitiveness.

The Phnom Penh SEZ (PPSEZ) was licensed in 2006 and considered as one of the flagship projects of Cambodia. Its very location is strategic for the country. It is in the transportation hub, only 8 km west of the Phnom Penh International Airport, and situated along the national road and railway linking Sihanoukville and the center of the capital. In addition, its tenant factories can make use of two international ports in Sihanoukville and Cai Mep-Thi Vai. As of August 2009, the PPSEZ's first phase of construction has been completed. There are five factories in operation and an additional six factories are under construction or in the planning stage, including Yamaha Motor's factory for assembling motorcycles. It can be said that the PPSEZ has advantages compared with other SEZs in Cambodia, but faces severe competitions with industrial parks in Ho Chi Minh and its surrounding areas. Further efforts for capacity building to enhance Cambodia's business environment are needed to ensure the prosperity of the PPSEZ.

The Cambodia-Vietnam in-land borders are the other hot spots of SEZ development. One of these is the Manhattan SEZ (MSEZ). This SEZ is located about 6 km away from the Bavet (Cambodia)-Moc Bai (Vietnam) border point, but 160 km away from Phnom Penh. It is convenient for firms in the SEZ to utilize the transportation infrastructure in Ho Chi Minh City within 100 km from the SEZ, where trucks transfer goods at the borders of Vietnam and Cambodia. Developed by the Taiwanese, the SEZ was approved in 2005 and saw its first factory's operation in 2006. As of August 2009, seven factories, mostly through Taiwanese and Chinese capital, went into production. The MSEZ allows its tenant-factories to make use of GSP and other preferential treatments in the access to overseas markets that are not available in Vietnam and other countries, while enabling them to utilize inputs and technical support from Vietnam and other neighboring

countries. The MSEZ's case is an example of how geographical advantages present in border zones are properly utilized.

2. INDUSTRIAL UPGRADE IN CLMV

The development of South-South trades and industrial corridors implies deepening complementary relationships within the Mekong River Basin Region. In general, rapid increases in inflows of goods, FDIs, and people from abroad often pose threats to the people in less developed countries. Nonetheless, there have been a number of studies that report such phenomena's positive effects: e.g., industrial upgrade, diversification of industrial activities and customer bases, and technological upgrade of the existing industrial capabilities in developing countries. The CLMV can also take advantage of such benefits from the economic integration.

2.1. Linkages and upgrade in CLMV

Literatures on commodity value chains, especially of apparel and footwear (the main manufacturing activities in CLMV), emphasize the importance of buyers' and middlemen's roles in technology transfer to developing countries through buyer-driven value chains. In the apparel commodity chains, retailers and branded marketers, mostly from Europe and the United States, have played leading roles. They have established buyer-supplier linkages and provided everything except labor forces necessary for assembly. Such information flows and collective learning based on the linkages have helped upgrade apparel commodity chains in East and Southeast Asia (Gereffi 1999).

The migration of apparel manufacturing is not new to Asia. Availabilities of quotas and low-wage workers are factors that drove this industry within Asia. Its first wave

occurred from the West to Japan, followed by the second wave to Hong Kong, South Korea, and Taiwan in the 1960s. From the 1980s, the industry has been dispersed into China and Southeast Asia (including CLMV and South Asia). In the transition process, these Asian newly industrialized economies (NIEs) such as Hong Kong, Korea, and Taiwan transformed their roles in the whole chain from that of being manufacturers into being middlemen linking European and US buyers to manufacturers in lower-cost countries. On the one hand, the NIEs fill orders from these buyers; they arrange for the supply of intermediate materials and logistics, or provide manufacturers with assistance in production, quality control, and trade financing (Gereffi 1999).

Kudo (2009) observes such industrial transition and upgrade, and the mechanism of value chain governance in his case study of Myanmar, where an FDI boom in the garment industry happened in the 1990s. The boom was pioneered by Hong Kong and South Korean firms. They created joint ventures with state and military-owned firms and provided technologies and knowhow. Fully foreign-owned firms followed the two. The Taiwanese chose not to establish their own factories, but instead found local private partners and provided assistances by funding, leasing equipment, sending engineers, and placing orders. By the end of 1990s**,** the Asian financial crisis had disastrous effects on the Myanmar-Korea joint ventures. Nevertheless, some Korean businessmen and engineers remained in Myanmar to establish spin-off companies.

Keola (2010) chronicles how the migration of garment factories from Thailand and China to Lao PDR in the 1990s was driven by preferential trade arrangements. These FDIs were followed by the rise of local subcontractors indirectly involved in the export and import industries by providing parts to foreign-owned garment factories in Laos. These supporting factories are managed not only by local entrepreneurs but by former

workers at foreign affiliates and civil servants as well. Lao PDR has also started to diversify its industrial sectors mainly from Thailand by attracting FDIs into the machinery sector. This emerging trend is considerably different from Myanmar's, even though its machinery sector is still small. The new sector is significantly dependent on Japanese affiliates in Thailand as suppliers of raw materials and parts as well as customers. Technologies are also transferred from affiliates or mother factories in Thailand. Foreign firms that invest in Lao PDR but are based in Thailand would dispatch Thai engineers and managers to take care of these satellite factories in Lao PDR. Geographical, cultural, and linguistic proximities enable firms from Thailand that invest in Lao PDR to decrease communication and operational costs. Such lowering of transportation costs justifies this division of labor between Lao PDR and Thailand.

Technological upgrade is also happening. Fiercer competition with neighboring countries, especially with China, encouraged a Japanese motorcycle assembler to enhance local contents, shifting from complete knock down (CKD) parts imported from Thailand to semi-complete knock down (SKD). The firm also embarked on selling motorcycle parts whose raw materials were imported from Thailand, to assemblers in Cambodia and Vietnam.

The author of this paper encountered in September 2009 an example of a similar buyer-supplier network in the apparel industry in the case of a Vietnamese footwear manufacturer located in Binh Duong, near Ho Chi Minh City. The firm used to enter the European and the US markets via the intermediation of a Taiwanese buyer. Now, the firm deals directly with the customers in these developed countries---for example, Marks and Spencer in the United Kingdom. This direct transaction was made possible when the Taiwanese buyer changed its business strategy: Instead of using Vietnamese

subcontractors, it decided to produce the goods by itself by setting up in Vietnam. Meanwhile, this Vietnamese firm now produces footwear according to specifications of its customers, as well as designs certain models based on the requirements of its American customer selling the Ed Hardy brand.

2.2. China's influence in Cambodia and Vietnam in the China Plus One strategy

Similar to the cases described above, where Asian NIEs played key roles in helping developing countries enter global commodity chains, closer ties with China also supported the business development in Cambodia and Vietnam.

Among the firms the author visited in Cambodia is a Japanese footwear manufacturer that is based in Cambodia but also has a plant in China. The factory manager in Cambodia is Japanese but speaks Chinese, and his key engineers are from China. Some workers in the production line can understand Chinese, too. They translate Chinese into Khmer to facilitate communication within the factory. Meanwhile, the footwear industry in Cambodia is dominated by Taiwanese firms. Taiwanese suppliers for the said industry also have a foothold in Cambodia. It is no wonder that the common language among key persons in the industry and in this Japanese factory is Chinese.

Vietnam is the most important destination for factories from China under the China Plus One strategy. One of the firms the author interviewed is a Japanese printer manufacturer whose black-and-white printer assembly line was transferred from Guangdong to Hanoi so as the plant in Guangdong can concentrate its resources on higher value-added color printer production. Engineers in Guangdong support the procurement process for the newly constructed factory in Hanoi. The low-end printers produced in Hanoi are transported by truck to Guangdong and distributed to the rapidly

growing domestic market in China.

Another example is a Japanese firm that produces domestic sewing machines in Guangdong and in the outskirt of Hanoi. The firm decided to establish the factory in Vietnam in 2006 to avoid the expected appreciation of the Chinese Yuan, shortage of workers, and inflation of wages in China. The firm also aimed to take advantage of preferential tariff rates provided by Europe to developing countries but not to China. These factories are strategically important for this Japanese firm. The headquarters in Japan is responsible for planning, designing higher-end models, and marketing. The factory in Guangdong is a main production base for developing lower-end models. To make the two factories in China and Vietnam complementary, the firm assigned the former to produce mechanically-controlled domestic sewing machines that necessitate skilled workers; and the latter, to assemble electronically-controlled ones that require workers to put modular units together. In addition, the base in China is expected to be a kind of mother factory, where new models are developed and production testing done. Its Chinese engineers were trained in Japan. Meanwhile, its Chinese staff provided the new site in Vietnam with significant supports: Chinese engineers were sent to Hanoi as technical trainer, and Chinese skilled workers were dispatched to assist the factory in Hanoi. On the other hand, a group of Vietnamese workers was also sent to Guangdong for training.

These labor movements were achieved by using buses as an inexpensive means of transport. Geographical proximity allows intra-firm technology and knowledge transfer from China to Vietnam at a low transportation cost. In addition, the factory in Vietnam uses manuals written in Chinese and Vietnamese. Chinese engineers can speak Chinese when training Vietnamese workers. About 10 Vietnamese can understand Chinese even

though they are not ethnic Chinese. Thus, less language barrier promotes technology transfer. In addition, the factory in Vietnam relies on materials and parts made in China and Taiwan although about 60 percent of the raw materials and parts are procured from suppliers in Vietnam.

Such spillover effect of FDIs from China---i.e., on the technology upgrade in Vietnam---is not limited to intra-firm technology transfer under the China Plus One strategy. Competition is the other spillover effect on firms in Vietnam. From the viewpoint of Vietnam, FDIs from China mean more competitors will come into the market, although such should instigate Vietnamese firms to take the effort to improve their competencies. These FDIs also provide them with opportunities to engage in partnerships with firms that have better technologies than do the locals/Vietnamese. Intarakumnerd and Fujita (2008) have a study that looked at sources of new technologies for the Vietnamese motorcycle-related firms and their positive effects on the industry. One of their key findings is that the threat from China has strengthened inter-firm linkages. Reflecting characteristics of the producer-driven value chain, there are backward linkage effects in the production networks governed by Japanese motorcycle assemblers and first-tier suppliers. These regularly provide technical assistances to second-tier local suppliers. On the other hand, Vietnamese local motorcycle firms heavily rely on parts imported from China or Chinese engineers dispatched from China by Chinese partners in the parts-and-motorcycles production.

3. DISCUSSIONS

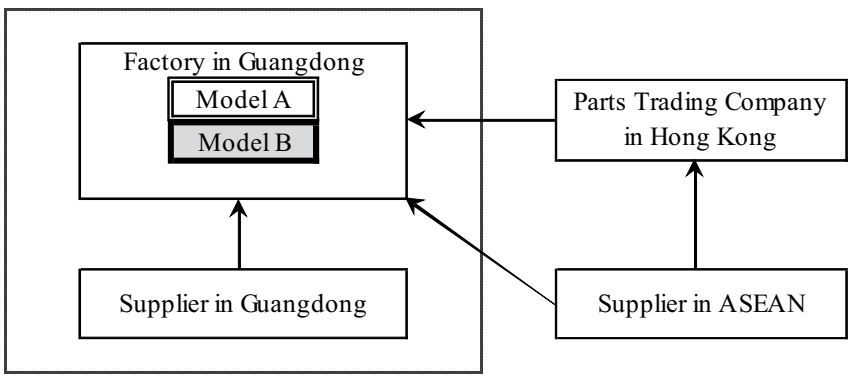
This discussion above looks at how the driving forces behind the development of complementary manufacturing relationships between China and CLMV bring to fore

two main implications. First, as shown in the cases of the printer and sewing machine firms, unskilled labor-intensive assembling processes for specific "models" of a final product can be relocated to Vietnam from China. This observation differs from the simplest case of the cross-border fragmentation of vertically integrated production processes between the United States and Mexico (Figure 1 in Ando and Kimura 2009). Nevertheless, such relocation can also result in more parts trades, as the fragmentation theory predicts.

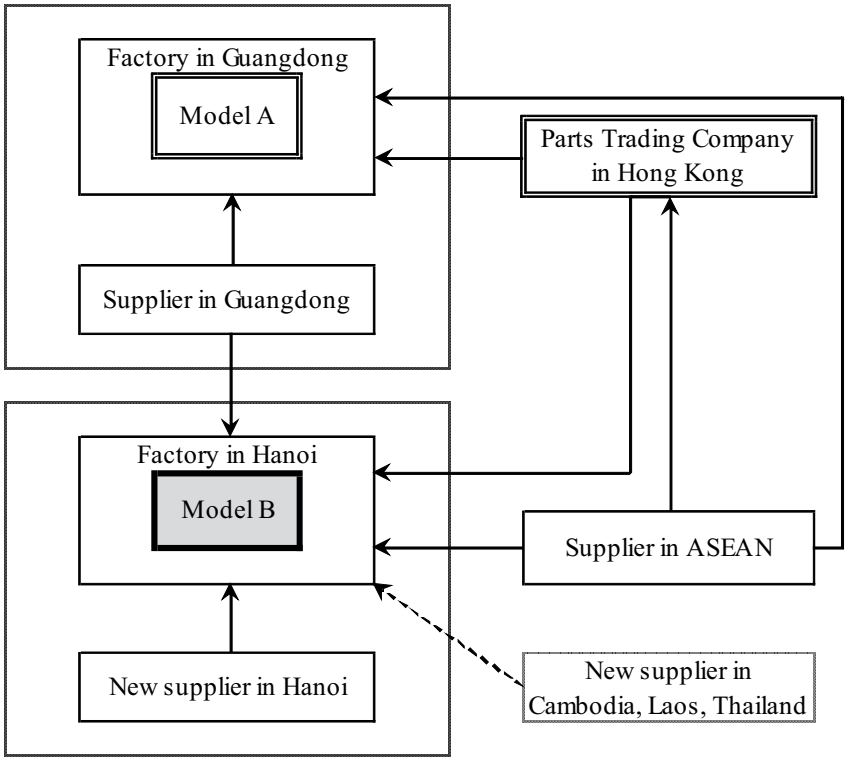
In practice, raw materials and parts can be supplied from China and Hong Kong. The relocation to Vietnam provides firms in the surrounding countries such as Lao PDR and Thailand with opportunities to export intermediate goods to Vietnam. Here, lower transportation costs will increase alternative sources of intermediate goods necessary for factories in Hanoi. On the other hand, the relocation of the assembly process induces FDIs by their suppliers and agglomeration (Kuchiki and Tsuji 2008). This enables the assembly plants to increase local procurements (Figure 2).

Figure 2: Flows of intermediate goods before and after China Plus One (Example)

(a) Before China Plus One



(b) After China Plus One



Source: Depicted by Author.

The second implication derived from the observations above is related to spillover effects. There are literatures supporting FDI spillover effects in CLMV and other developing countries (Pham 2009). These FDIs provide assembly workers and engineers in host countries with opportunities to learn from the knowhow of foreign firms and obtain skills through exchange of personnel and training in FDI's host or home countries. These FDIs can likewise extend and strengthen backward and forward linkages with customers and suppliers. After all, they encourage firms to develop cross-industrial associations and collaborations with research institutes and universities, or learn from technologies, strategies, and management of competitors. These

opportunities for training exchanges for engineers and diversified linkages further enhance technology upgrade and innovation (Machikita and Ueki 2009a, b).

The key issue most important from the perspectives of industrial and economic development and integration policies is that these spillover channels are not necessarily accessible to all firms and countries most in need of them. The linkages among indigenous firms and SMEs in a host country of FDIs tend to be insufficiently integrated with linkages or global supply chains among MNCs (Machikita and Ueki, 2008, 2009c). Therefore, either of these following factors would determine whether and through which technology transfer channel a particular indigenous/local firm would be able to seize the potential benefits from MNCs: (1) firm-level strategies for location choice and customer/supplier development, in particular of MNCs that are main sources of technology transfer; and (2) firm- and country-level absorptive capabilities of technology recipients.

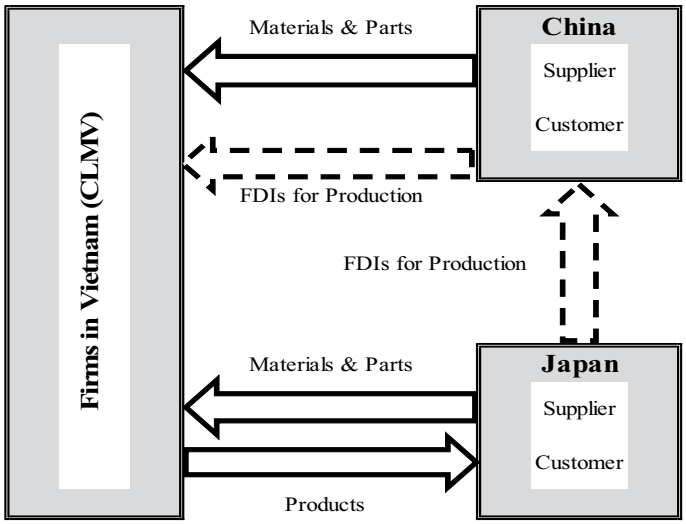
Economic integration initiatives promote the improvement of infrastructure and of institutions that oversee economic development, including cross-border initiatives. These are expected to facilitate the movement of goods, personnel, and information, and consequently, to enhance absorptive capabilities. On the other hand, MNCs have led to the formation of global supply chains. A significant part of the exports from countries in Asia are handled by MNCs. Even in China, foreign-funded enterprises account for 57.1 percent and 58.6 percent of China's total value of export and import, respectively, in 2007. It is said that beneficiaries of the rising China are mostly enterprises not only from the European Union, Japan and the United States but also from Asian NIEs such as Hong Kong, Korea, Singapore, and Taiwan that occupy important positions in governance systems of the commodity chains (Lall and Albaladejo 2004). Therefore, MNCs'

strategic behaviors influence the industrial development in developing countries. CLMV need to compete with China for FDIs of MNCs. Other than preferential treatments, it is the low-wage workforce that is the main comparative advantage CLMV can offer to foreign investors.

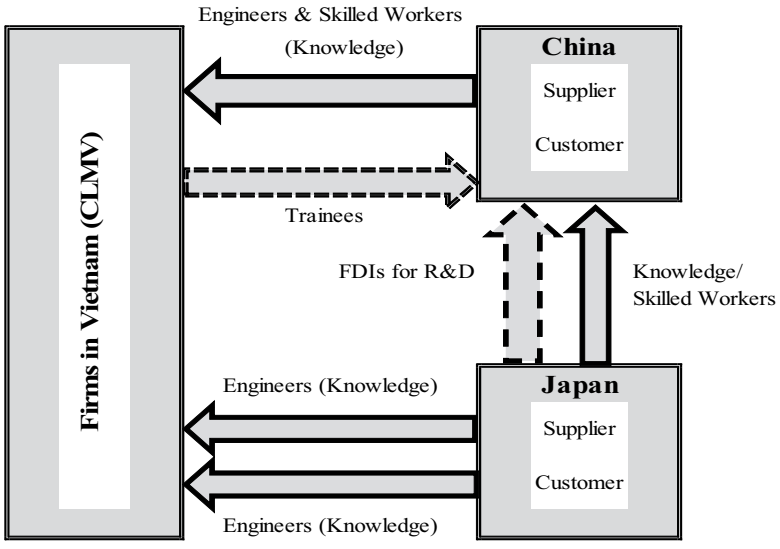
Multinational companies weigh the costs and benefits of locating in CLMV compared to China and other ASEAN member countries. In reality, MNCs are also considering the cost of overdependence on China alone. Here, taking advantage of the China Plus One strategy is one of the practical ways for MNCs to deal with these concerns. By earlier investing in China, MNCs (including Japanese and Taiwanese firms) have developed Chinese engineers and accumulated their knowhow and experiences on production control and managements in China. Recently, more MNCs are developing design and R&D centers in China and in the ASEAN countries such as Singapore and Thailand. These strong production networks enable firms to develop cooperative relationships between their headquarters in home countries such as Japan and Taiwan and their affiliates in China for supporting infant production bases in CLMV. For example, firms with plants both in China and Vietnam can dispatch Chinese engineers and skilled workers to improve factory operations in Vietnam. The dispatched engineers can communicate with key Vietnamese workers, which makes technology transfer from China to Vietnam easier. The firms can also move workers from CLMV to China by using buses as means of transportation for these trainings. This makes such trainings in China cheaper than those trainings in overseas countries such as Japan and Korea. The ASEAN Plus One FTAs such as the ASEAN-China FTA and the ASEAN-Japan Comprehensive Economic Partnership Agreement (EPA) will help firms build such regional cooperation system (Figure 3).

Figure 3: Flows of goods and knowledge in the China Plus One strategy based on East Asian De facto integration and ASEAN+ONE FTAs

(a) Flows of FDI for Production and Goods



(b) Flows of FDI for R&D and Knowledge

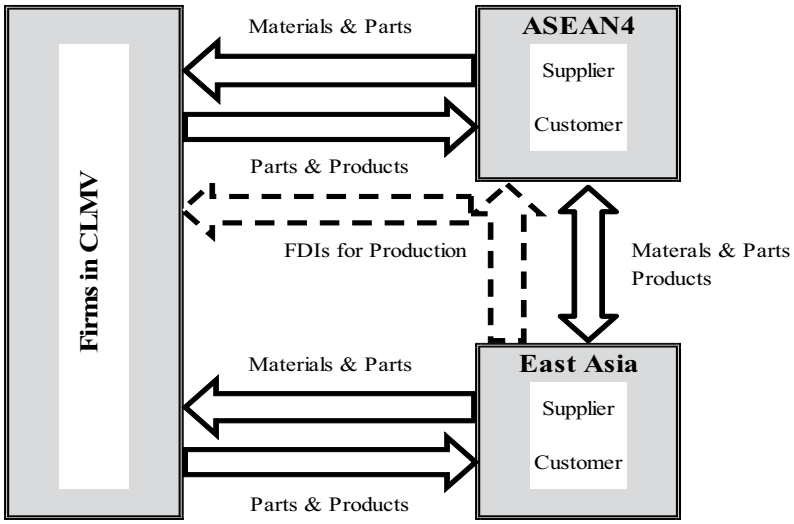


Source: Depicted by Author.

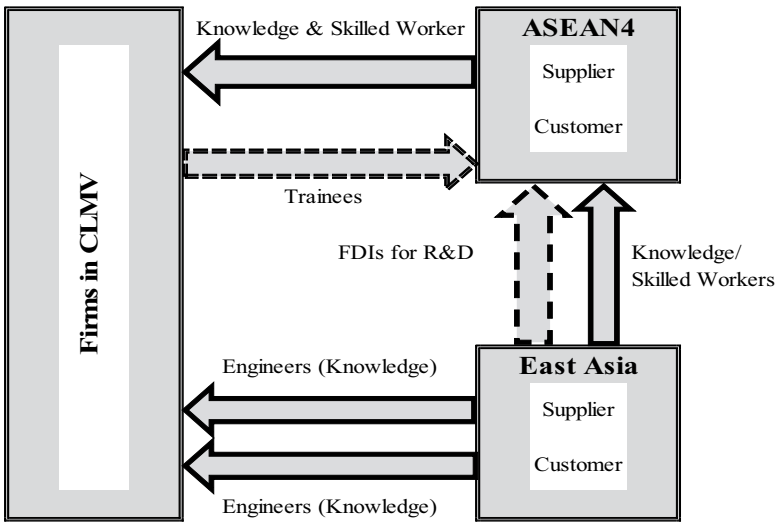
There is no reason not to expect the same positive knowledge transfer system within ASEAN and between East Asia and ASEAN, based on the ASEAN Free Trade Area (AFTA) and ASEAN Plus One FTAs. In recent years, developing countries are increasingly becoming important as sources of FDIs (Aykut and Goldstein 2006). In CLMV, South-South trades and FDIs are handled not only by non-Chinese firms from East Asia, Malaysia, and Singapore but also by firms from Thailand and Vietnam. More MNCs establish design and R&D centers in Singapore and Thailand. If the diversified development level in CLMV is considered, CLMV can assume a part of the functions within the Thailand Plus One or Vietnam Plus One strategies. Deepening economic integration within the Mekong River Basin Region supports them and facilitates industrial upgrade in the region (Figure 4). China Plus One or ASEAN Plus One will provide CLMV with more diversified opportunities for technology transfer and learning.

Figure 4: Conceptual flows of goods and knowledge in the ASEAN Plus One Strategy based on AFTA and ASEAN+ONE FTAs

(a) Flows of FDI for Production and Goods



(b) Flows of FDI for R&D and Knowledge



Source: Depicted by Author.

4. SUMMARY AND CONCLUSIONS

The rise of China in Asia has been considered as both a threat and an opportunity. Discussions on this issue usually stress the threats, although these were sometimes based neither on evidences nor on rigorous analysis. In reality, China encourages its firms to drive exports and FDIs to Asia and the rest of the world, but the phenomena are composed of various elements. Exports of high-tech products from China are led by non-Chinese MNCs. Outward FDIs from China to CLMV include those from MNCs that support the China Plus One strategy. It can be said that China has become capable of exporting and investing abroad because it has accumulated technologies, knowhow, and experiences from MNCs and developed skilled workers who were trained by MNCs. As a significant portion of the FDIs into China were done by firms from East Asia and Asian NIEs, the scope of the research on impacts of China on CLMV development should not be limited to China-ASEAN *de-jure* integration. It should be broadened to take into account deepening *de-facto* economic integration in East Asia and its association with the emerging partnership between CLMV and East Asia, especially China. The same discussion is applicable to intra-regional economic relation in the Mekong River Basin Region.

This paper assessed first the interdependence of the manufacturing sector within the Mekong River Basin Region, using statistics on trades of parts and components. Statistics for 2003 and 2007 illustrate how China has increased its importance as a source of parts and components for all CLMV. Two-way flows of these items are observed between Cambodia and Vietnam, between Lao PDR and Thailand, and between Thailand and Vietnam. Even though parts and components are not major trade items, these can be considered as evidence of deepening

manufacturing complementary relationships in the Mekong Region.

Behind the recent trend in these trade flows are the development of industrial districts and the progress of international cooperation for infrastructure development and facilitation of trades, FDIs, and cross-border movements of people under the Greater Mekong Sub-region initiatives. As a result, an industrial corridor is emerging between Guangdong to Bangkok.

This paper introduced two cases of sub-regional industrial corridors along the Guangdong-Hanoi and Ho Chi Minh-Sihanoukville areas. Such economic integration initiatives make competition among countries in the Mekong River Basin Region fiercer, encouraging firms to upgrade their businesses. Geographical proximity, availability of low-cost land transportation services, facilitation measures, and relatively low linguistic barrier promote technology transfers. In addition to historical relationship with and geographical proximity to China, high dependence on buyer-driven apparel and footwear industries, where Taiwanese have established roles, promote the use of the Chinese language in factories, especially in Cambodia and Vietnam.

It seems that the China Plus One strategy is facilitated by the technical assistance provided by Chinese engineers from China or opportunities for workers to be trained in China. The industrial district in Hanoi is utilized mainly as a base for processing raw materials and assembling parts imported mainly from China, Hong Kong, and Japan and for exporting products, where the main destinations are not necessarily always to China. Based on such division of labor, the linkages with suppliers are main channels of technology transfer from China to Vietnam.

These findings provide important implications on the direction of CLMV's economic integration policy. Closer economic relationship with East Asia will increase

potential channels of technology transfer to CLMV from East Asian countries: (1) Through traditional direct connection with East Asia such as Japan, Korea, and Taiwan; and (2) Through newly emerging channels via China. That is, Japanese and Taiwanese firms have been expanding the scope of manufacturing activities centered in China and in the process, developed skilled labors and accumulated technologies, knowhow and experiences.

Other non-Chinese big businesses open R&D and design centers in China. In addition, recently the Government of China promotes knowledge and science-based industries. All of these will enhance China's capabilities of technology transfer to CLMV. The similar effects of CLMV-East Asian integration will be expected from the deepening economic integration within the Mekong River Basin Region, especially through "Thailand Plus One" and "Vietnam Plus One" strategies by the private sector.

There are several patterns in the competition between CLMV and China: competition with middle or higher grade products made by MNCs in China mainly for the international market; competition with middle or higher grade products made by foreign-owned firms invested from China to Vietnam, including Chinese indigenous firms; competition with low-end products made in China for the domestic market; to name three. Although the cases presented in this paper do not provide fruitful implications to the issue of threats from the competition with China for the low-end products markets, it can be said that the positive effects of such competition as well as of FDIs on industrial upgrade are important for CLMV's mid- and long-term industrial development strategies.

ACKNOWLEDGEMENTS

This paper uses information obtained from interviews with firms and organizations in Hanoi in January 2009, Phnom Penh, and Ho Chi Minh City in September 2009, and in Guangdong, China in October 2009. The author appreciates the help of all those who participated in the interviews. Deep thanks also goes to Shozo Sakata, Naomi Hatsukano, and Souknilanh Keola for helping arrange the field researches in Phnom Penh and Ho Chi Minh City, and to Ryo Ikebe for coordinating the interviews in Guangdong. The views expressed in this paper are those of the author and do not necessarily reflect the views of the organization.

REFERENCES

Ando, M. and Kimura, F. 2009. "Fragmentation in East Asia: Further Evidence." ERIA Discussion Paper No.2009-20. Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA). October 2009.

Ariff, M. (ed.). 2008. *Analyses of Industrial Agglomeration, Production Networks and FDI Promotion*. ERIA Research Project Report 2007 No.3, Chiba: Institute of Developing Economies (IDE-JETRO). March.

Aykut, D. and Goldstein, A. 2006. "Developing Country Multinationals: South-South Investment Comes of Age." OECD Development Centre Working Paper No.257, Paris: Organisation for Economic Co-operation and Development (OECD). December 2006.

Corbett, J. and Umezaki, S. (eds.) 2008. *Deepening East Asian Economic Integration*. ERIA Research Project Report 2008, No.1. Jakarta: Economic Research institute for ASEAN and East Asia (ERIA). March 2008.

Fujita, M. and Hamaguchi, N. 2006. "The Coming Age of China-Plus-One: The Japanese Perspective on East Asian Production Networks." Background paper for *Dancing with Giants: China, India and the Global Economy*, Washington D.C.: World Bank. February 2006.

Gaulier, G., Lemoine, F. and D. Ünal-Kesenci. 2007. "China's Integration in East Asia: Production Sharing, FDI & High-Tech Trade." *Economic Change and Restructuring* 40(1-2): 27-63.

General Statistics Office (GSO). 2009. *Statistical Yearbook of Vietnam 2008*. Hanoi: Statistical Publishing House.

Gereffi, G.. 1999. “International Trade and Industrial Upgrading in the Apparel Commodity Chain.” *Journal of International Economics* 48(1): 37-70.

Giroud, A. 2007. “MNEs Vertical Linkages: The Experience of Vietnam after Malaysia.” *International Business Review* 16(2): 159-176.

Giroud, A. and Mirza, H. 2006. “Factors Determining Supply Linkages between Transnational Corporations and Local Suppliers in ASEAN.” *Transnational Corporations* 15(3): 1-34.

Intarakumnerd, P. and Fujita, M. 2008. “Coping with a Giant: Challenges and Opportunities for Thai and Vietnamese Motorcycle Industry from China.” *Science, Technology & Society* 13(1): 35-60.

Keola, Souknilanh. 2010. “International Fragmentation in Laos: Patterns, Progress and Prospects.” In Hiratsuka, D., Uchida, Y. (eds.) *Input Trade and Production Networks in East Asia*. Cheltenham: Edward Elgar, forthcoming.

Kitti, L. (ed.). 2009. *Development of Regional Production and Logistics Networks in East Asia*. ERIA Research Project Report 2008 No.4-1. Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA). March 2009.

Knutsen, H.M. 2004. “Industrial development in buyer-driven networks: the garment industry in Vietnam and Sri Lanka.” *Journal of Economic Geography* 4(5): 545-564.

Kuchiki, A. and Tsuji, M. (eds.). 2008. *The Flowchart Approach to Industrial Cluster Policy*. Basingstoke: Palgrave Macmillan.

Kudo, T. 2009. "Growth and Decline of the Garment Industry in Myanmar: Market, Firms and Policy." Mimeo. Chiba: IDE/JETRO. December 2009.

Lall, S. and Albaladejo, M. 2004. "China's Competitive Performance: A Threat to East Asian Manufactured Exports?" *World Development* 32:1441-1466.

Lesher, M. and Miroudot, S. 2008. "FDI Spillovers and their Interrelationships with Trade," OECD Trade Policy Working Papers No. 80, Paris: Organisation for Economic Co-operation and Development (OECD), October 2008.

Machikita, T., Tsuji, M. and Y. Ueki. 2008. "An Empirical Study on Industrial Upgrading and Sourcing of New Technologies: Firm-level Evidences in Indonesia, Thailand and Viet Nam." In Proceedings of the 4th IEEE International Conference on Management of Innovation and Technology (ICMIT 2008).

Machikita, M. and Ueki, Y. 2009a. "Linked versus Non-Linked Firms in Innovation: Effects of Variety of Linkages Effect of Economies of Network in East Asia." Mimeo. Chiba: IDE/JETRO, December 2009.

Machikita, M. and Ueki, Y. 2009b. "The Impact of Face-to-face and Frequent Communications on Innovation: Evidence from Upstream-Downstream Relations." Mimeo. Chiba: IDE/JETRO. December 2009.

Machikita, M. and Ueki, Y. 2009c. "Spatial Architecture of the Production Networks in

Southeast Asia." Mimeo. Chiba: IDE/JETRO. December 2009.

Mirza, H. and Giroud, A. 2004. "Regional Integration and Benefits from Foreign Direct Investment in ASEAN Economies: The Case of Viet Nam." *Asian Development Review* 21(1): 66-98.

Onodera, O. 2008. "Trade and Innovation Project: A Synthesis Paper." OECD Trade Policy Working Papers No. 72, Paris: Organisation for Economic Co-operation and Development (OECD). August 2008.

Pham, T.H. 2009. "Assessment of FDI Spillover Effects for the Case of Vietnam: A Survey of Micro-data Analyses." In Corbett, J., Umezaki, S. (eds.) (2009): 473-495.

Phan, M.N., and Ramstetter, E.D. 2004. "Foreign Multinationals and Local Firms in Vietnam's Economic Transition." *Asian Economic Journal* 18(4):371-404.

Truong, H.P., Shusa, S. 2006. "Supplier-assembler Network Structure and Capability Improvement of Suppliers in Newly Emerging Vietnam's Motorcycle Industry." *Asian Journal of Technology Innovation* 14(2):143-165.

Truong, B. 2008. "Factors of Agglomeration in Vietnam and Recommendations." In Ariff (ed.) (2008):155-189.

Truong, B. 2009. "Development of Regional Production and Logistic Networks in East Asia-Vietnam: Upgrading of Firms in Vietnam through Linkages with Customers and Suppliers." In Kitti (ed.) (2009):215-260.

Ueki, Y. 2009. "Japan's International Trade and FDIs to MRB Countries: Recent Trends

in Comparison with China." In Kagami, M. (ed.), *A China-Japan Comparison of Economic Relationships with the Mekong River Basin Countries*, BRC Research Report No.1. Bangkok: Bangkok Research Center, Institute of Developing Economies (IDE/JETRO). March 2009.