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LOGISTICS ACTIVITIES IN THAILAND

—As the Hub of the Greater Mekong Subregion—

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ABSTRACT:

The Greater Mekong Subregion (GMS) is one of the rapid economic growth regions in the world. Within this important region a large logistics network has been created due to land infrastructure developments. Thailand with highly accumulated industry, including automobile manufacturing, is playing a role as the center of the logistics network in the GMS. The aim of this paper is to reveal the logistics activities as well as to identify their impact on future economic development in Thailand at both the macro and micro levels. In this paper we attempt to show that the logistics network being created in the region is more advanced and diversified compared with what existed in the past. We contend that this advanced network will further accelerate economic development of the GMS.

Keywords: Logistics, Thailand, Greater Mekong Subregion (GMS)

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1. INTRODUCTION

The Greater Mekong Subregion (GMS), or Indochina, is the region covered by Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and the Yunnan Province of China. It is currently one of the rapid economic growth regions in the world. Infrastructure developments for land freight transport such as the North–South and East–West corridor result in significant impacts that serve to induce more logistics activities in GMS countries. Consequently, the large logistics network has been created in the GMS region. Since the GMS logistics network is connected to both China and India, the expectation is that eventually a huge Asian logistics network will be created. Furthermore, the GMS region is expected to play an important role in connecting the two large markets of China and India by land, maritime, and air transport modes.

In this circumstance, Thailand with highly accumulated industry including automobiles is playing a role as the center of the logistics network in the GMS. The aim of this paper is to reveal the logistics activities as well as to identify their impact on future economic development in Thailand at both macro and micro levels. Section 2 reviews the current trade and transport infrastructure development in the GMS. Logistics activities in Thailand viewed from macro and micro perspectives are explained in parts 3 and 4, respectively. Section 5 explains the conclusions of this paper.

2. TRADE AND TRANSPORT INFRASTRUCTURE DEVELOPMENT IN THE GREATER MEKONG SUB-REGION

2.1 Trade among GMS Countries

The trade of most GMS countries is predominantly done with non-GMS countries in the regions of North America, Northeast Asia, and Europe (ADB, 2008). The exported goods are mainly agricultural products, wood, paper, textiles, apparel, etc. whereas manufactured products such as electrical goods and automobiles are imported (ADBI, 2009). On the other hand, according to the C2000 Database (Oct. 2007-Sep. 2008) of the Ministry of Finance in Lao PDR, Lao imports and exports among GMS countries in terms of tons are 95.0% and 98.9% of total trade, respectively, mainly due to the landlocked geographic circumstance. Thai goods dominate Lao imports and accounted for 1,442.8 million USD in 2007 (Table 1). It can also be observed that Thailand and China play a significant role in intra-GMS trade since the

Table 1 Trade Statistics in GMS in 2007 (unit: million USD)

	Cambodia	Lao PDR	Myanmar	Thailand	Vietnam	China
Cambodia		n/a	n/a	89.6	n/a	45.5
Lao PDR	n/a			130.8	431.5	74.8
Myanmar	n/a	n/a		n/a	2,104.9	325.1
Thailand	1,491.1	1,442.8	1054.6		4,183.1	14,834.0
Vietnam	322.2	112.3	n/a	n/a		2,850.5
China	915.4	175.6	1,834.1	12,383.5	16,382.0	

Source: ADB (2008)

volume of freight movements is outstanding among the GMS countries. According to the ABDI (2009) data, electrical goods are rare in intra-GMS trade. Instead, agricultural and wood products make up the bulk of intra-GMS trade. Although natural resources are not often traded between GMS countries, 843.83 million USD of coal, oil or gas were exported to Thailand from Myanmar in 2008 (ADBI, 2009).



Source: ADB (2009)

Fig. 1 Economic Corridor in the Greater Mekong Subregion

2.2 Transport Infrastructure in the GMS

Apart from the ASEAN framework, the GMS countries have been cooperating in a transport infrastructure development program since 1992. This program has major cross-border infrastructure investment, called an “Economic Corridor” (see Figure 1). In the 8th GMS Ministerial Meeting in 1998, three corridors were identified for investment in facilitating cross-border transport in GMS countries: the North–South Economic Corridor (NSEC), which has three sub-corridors running between Bangkok and Kunming, Haiphong and Kunming, and Nanning and Hanoi; the East–West Economic Corridor (EWEC), running between Mawlamyine in Myanmar and Da Nang; and the Southern Economic Corridor (SEC), linking the southern areas of Thailand, Cambodia, and Viet Nam. In 2007, the GMS ministers agreed to expand the program to a total of nine economic corridors. As a first step of this program, three countries’ (Thailand, Vietnam and Laos) trucks have been allowed to drive in the section of Khon Kaen - Savannakhet - Da Nang (on EWEC, opened in 2006) without any permission from 2008.

Several road development projects are ongoing in the GMS as shown in Figure 1. For example, in January 2007, the 2nd Friendship Bridge linking Mukdahan and Savannakhet was opened. By the completion of this bridge, EWEC were fully completed and further activation of movement of people and goods are expected. Furthermore, the recent completion of more than 200km of road between Houayxay and Boten in Lao PDR, together with the scheduled completion of a bridge over the Mekong River between Chiang Khong in Thailand and Houayxay in Lao PDR in 2011, is expected to allow freight to be transported by road from Bangkok to Kunming in 30 hours (ADB, 2008).

Road conditions in the GMS countries are fairly poor except in Thailand. Least Developed Countries, such as Cambodia, Lao PDR, and Myanmar all have limited road networks with less than 15% of roads paved. Movement by rail in the region is also fairly limited. At the domestic level, some cargo is moved by rail transport in Thailand. Road conditions in Thailand are extraordinarily good compared to those of other GMS countries. Nearly 100% of Thai roads are paved (ADBI, 2009). In 2008, the road standard status of Asian Highways in Thailand were dominated by “Class-I”, followed by “Class-II” and “Primary”, which is the highest standard (ASTP, 2010). In fact, Lao PDR, Cambodia, Myanmar, the Philippines and Viet Nam did not have any Primary standard roads. In Lao PDR and Cambodia, there is no Class-I standard and roadways are mainly Class-III standard.

3. THAILAND AS A VITAL PLATFORM FOR GLOBAL SUPPLY CHAIN

3.1 Development of the Laem Chabang Port

Since the early 1990s, port facilities within the GMS have been significantly improved due to investments of the governments and assistance from international organizations in the area.

Laem Chabang Port (LCP), Thailand is a good example of the development of transport infrastructure. First launched in 1991, it now consists of seven container terminals, ranked as one of the world’s top 20 container ports, as well as general cargo and passenger terminals. The geographical location is advantageous for LCP because it is closely linked with other ASEAN countries including its

neighbors Vietnam, Lao PDR and Cambodia. As the gateway for the GMS, prime access to steadily growing China and India gives the port a high potential for further growth.

Intra-Asia trade is the second largest flow of trade in the global economy. The volume of container cargo moved in the East Asia region in 2007 was 15.0 million TEU while the statistics of three major trunk line services were Asia/ North America 21.4 million TEU, Asia/Europe 17.6 million TEU and Transatlantic trade 5.6 million TEU respectively. Besides China and South Korea, Thailand is the second largest exporting country in terms of numbers of containers in intra-Asia trade after Japan. As shown in Table 2, the fact that a quarter of container cargo exported from Thailand is discharged in Japan indicates that there are close ties between two countries.

LCP and the traditional Bangkok Port are two major container ports in Thailand. The latter is located on the side of Chao Phraya River in Bangkok and handled 1.3 million TEU in 2009

Most regional liner services include LCP calling, direct service to North America and Europe are limited. Only Grand Alliance Group has a twice-a-week service to the Pacific Coast of North America and container ships in a joint operation with Hapag Lloyd, NYK Line, OOCL and P&OCL are operated weekly between LCP and European ports. Consequently, container cargo from LCP is destined to ports in Asia for direct transport or for transshipment at major hub ports to some final destination.

3.2 Automobile Industry and its Trade in Thailand

Thailand is embedded in the global supply chain of automobile manufacturing and other industries to supply both finished goods and parts. The leading export items from Table 3 shows Thailand exports many computer/peripherals/parts and automobile/parts and the share of these top two items is almost 20 per cent in terms of the total value of all exported goods.

Table 2 Cargo Movement of Intra-Asia Trade in 2009 (unit: TEU)

Loading Port ↓	Discharging Port →										TOTAL
	Japan	Hong Kong	Taiwan	Philippines	Cambodia	Vietnam	Thailand	Malaysia	Singapore	Indonesia	
Japan	-	257,000	215,000	81,000	4,000	112,000	246,000	117,000	78,000	107,000	1,217,000
Hong Kong	186,000	-	43,000	21,000	6,000	111,000	43,000	29,000	35,000	29,000	503,000
Taiwan	174,000	156,000	-	51,000	7,000	134,000	66,000	55,000	36,000	49,000	728,000
Philippines	78,000	13,000	15,000	-	-	10,000	21,000	10,000	8,000	12,000	167,000
Cambodia	2,000	-	-	-	-	-	-	-	1,000	-	3,000
Vietnam	126,000	66,000	75,000	31,000	2,000	-	33,000	22,000	70,000	17,000	442,000
Thailand	320,000	134,000	78,000	79,000	1,000	130,000	-	50,000	81,000	110,000	983,000
Malaysia	111,000	48,000	35,000	27,000	5,000	49,000	48,000	21,000	14,000	59,000	417,000
Singapore	59,000	50,000	36,000	23,000	3,000	89,000	63,000	58,000	-	83,000	464,000
Indonesia	166,000	28,000	39,000	46,000	4,000	41,000	47,000	-	31,000	-	402,000
TOTAL	1,222,000	752,000	536,000	359,000	32,000	676,000	567,000	362,000	354,000	466,000	5,326,000

(source: Compiled from *International Transportation Handbook*, Ocean Commerce, 2010)

Table 3 Exports From Thailand (unit: Million USD)

	2008	2009
Computer accessories, peripherals & parts	18,384.2	16,018.9
Car parts & accessories	15,585.5	11,121.4
Jewellery	8,270.1	9,761.9
Semiconductors & related devices	7,241.3	6,444.6
Crude oil	7,913.2	5,429.9
TOTAL	177,775.2	152,502.4

(source, Ministry of Commerce, Thailand)

According to the statistics of the International Organization of Motor Vehicle Manufacturers (OICA), automobile production in Thailand quadrupled from 325,888 units in 2000 to 1,238,460 units in 2007. After the economic downturn, automobile production in Thailand reached a record 1.65 million units in 2010. Thai automobile exports are expected to exceed 1 million units for the first time in 2011. Thailand has achieved the status of the regions' largest automobile assembler and market. It is now the 13th largest automobile producer in the world. Thailand is the world's second largest pick-up truck market and producing country after the United States. LCP handled over 861.8 thousand cars for export in 2008.

Automobile production in Thailand can be traced back to 1962 when Toyota established an assembly plant, Toyota Motor Thailand. Toyota has been the largest producer of automobiles among a dozen foreign automobile manufacturers and its capacity of production is approximately 640 thousand units per year from four plants. The extensive supporting network of parts suppliers as part of an automobile cluster is contributing to the competitive advantage of the automobile industry in Thailand.

Toyota regards Thailand as one of its core platforms supplying both vehicles and auto-parts to the global market. Toyota is developing the IMV (Innovative International Multipurpose Vehicle) Project to provide Global Strategic Vehicles such as the Toyota Fortuner, which is a medium-sized SUV based on the Toyota Hilux, to Asia, Africa, Europe, Oceania and Middle East countries. While transmission parts are produced in India and gasoline engines in Indonesia, diesel engines are made in Thailand and other parts in neighbor countries. The IMV are assembled in Thailand. Parts supply to other Toyota plants includes shipment to South Africa, Indonesia, Pakistan and other locations from LCP.

Nissan Motor's production in Thailand was around 200 thousand units in 2009, a much smaller scale in comparison with Toyota's. However, Nissan's Thai subsidiary NMT started to produce the new March, the global compact car, and since 2010 exported the March to Japan rather than depend on domestic production.

In the first half of 2010, exports of automobiles for other ASEAN countries were the second largest at US\$ 1,489 million after US\$ 1,670 million for Oceania. Intra-Asia trade of vehicle and auto-parts has been significantly increasing. As Thailand is becoming a platform for supply of automobiles and auto parts to Asia and the world, it plays a vital role in both regional and global supply chains of manufactured and electronic goods.

4. DIVERSIFICATION OF LOGISTICS IN THAILAND

4.1 International Transport

The GMS has played an historic role in linking the contemporary markets of India and China. As explained in Section 2, the North–South Economic Corridor and the East–West Economic Corridor is being developed in the GMS at present. Those arteries are connected to India in the west and China in the north. This represents the formation of a major international transport network in Asia. Singapore’s status as a major Asian hub of sea traffic is unquestioned. However, Thailand should be thought of as the center of the logistics network of Asian trade based upon the high industrial gate densities of auto traffic and the geographical predominance of the land corridor.

In the coming age, two or more transport modes will be necessary (i.e., combinations of land, sea, and air transport) in the GMS, as the expansion of cargo volume is expected in the future. In other words, the international transport of the GMS will be diversified from sea transport to land transport and multi-modal transport. Thailand will be the center of international transport in the GMS when this shift is realized. Below we outline the change in the logistics as it has progressed in the current GMS.

Industrial integration has developed rapidly in Thailand. The auto sector was especially remarkable, and Thailand came to be called the “Detroit of the Orient”. For instance, all parts of the Toyota pickup truck assembled in Thailand are procured from ASEAN countries, and exported to Asian countries. There are parts procured in Thailand for automobile manufacture as well. Imported parts from the Philippines and Indonesia are carried by ship, however, procurement parts from Malaysia and Vietnam for instance, are now being transported by truck.

Thailand international trade traffic is about 20 billion tons (2009), 89% by sea, 11% by truck, while railway and air transport make up 1% or less of the shipping volume (Thailand Ministry of Transport, n.d.). More than 90% of the truck transport moves between Thailand and Malaysia and transport by truck with other neighbours such as Laos, Cambodia and Vietnam is increasing. For example, a new fixed period transport service from Bangkok using the East West Corridor to Hanoi has been started by SGL (Sumitomo Global Logistics). SGL transports 40-foot containers transshipped at Savannakhet, the border of Laos, and delivers it to Hanoi within three days. Japanese-affiliated firms are the main customers for the moment of the weekly service.

As stated above, most international transport by truck was originally between Thailand and Malaysia. Demand for transport was diversified as a result of the construction of land infrastructure like the East-West Corridor and the diversification of industrial-parts procurement due to the concentration of industry in Thailand. Shippers, for example, have demanded new liner services. To fill the demand the Laem Chabang/Singapore/Port Klang/Chennai Line was started by Mitsui O.S.K. Lines, and the Thai/Vietnam/Singapore Line by NYK Lines opened. In addition to the new international truck service between Bangkok and Hanoi by SGL, there is now an international multi-modal combined service from Bangkok to Chennai via Port Klan operated by Nittsu. The table below illustrates the diversification of transport systems due to the rapid expansion of transport volume in the region (see Table 4).

Table 4 Examples of Recent New Transport Services by Japanese Logistics Companies

company	Service
Yamato Transport	Home Delivery Services in Asia
Nippon Express (Nittsu)	Mekong-India Express Service (Bangkok/Chennai Intermodal transport) Oriental land-Bridge Service (Singapore/Malaysia Truck Transport) Star Night Express Service (Hanoi/South China Truck Transport)
Sumitomo Global Logistics (SGL)	Surf-Land Express Service (Bangkok/Hanoi Truck transport) Super Land Express Service (Vietnam/South China Truck Transport)
Mitsui OSK Lines (MOL)	Laem Chabang/Singapore/Port Klang/Chennai Line
Nippon Yusen Kaisha (NYK)	Thai/Vietnam/Singapore Line

Source: Nihon Kaiji Shimbun, Nihon Keizai Shimbun etc.,

4.2 Stock Control and Domestic Distribution

Industrialization has progressed rapidly in not only the auto sector but also all manufacturing sectors in Thailand. For instance, Japanese camera maker Nikon produces 95% of its single lens reflex cameras in Thailand. Logistic needs of manufacturers that establish factories in Thailand are not limited to transport, but reach into stock/inventory control, and distribution.

European retailers such as TESCO, BIG-C, and METRO, entered the Thai market because of the increase of Thai people's income. The logistics of the retail sector is so complex because of the number of items they deal with, including many for which temperature control is necessary. It is needless to say that delivery time management is strictly required by such businesses. However, there are not a lot of logistics companies that can supply such an advanced logistics service. Currently, few logistics providers like DHL supply logistics services to the Thailand retail industry. The demand in Thailand for logistics is increasing and becoming more sophisticated because of expanded tastes amongst consumers as the result of the increase in income following the economic growth of Thailand.

This shift in needs is evident not only in the business sector, but also at the personal level. Following this trend, Yamato Transport decided to start domestic parcel service in ASEAN expecting the need for consumer logistics to increase. This service was started at Singapore in 2010 and is planned to start in Thailand and Malaysia.

4.3 Example of Logistics Services in Thailand

Hitachi Transport System (Thailand), Ltd. (TST) began operations in April 1989. It is a subsidiary established by Hitachi Transport System Japan. TST's main services are: third-party logistics (logistics system), transport, international forwarding, proxy service, heavy machinery and plant logistics, and relocation service (moving). TST has eight sites in Thailand. Its total warehouse capacity is 36,500 square meters. The number of TST employees is 480, of which eight are Japanese. TST's main customers are

Hitachi company group, Nikon Thailand, Unicharm Thailand, and other Japanese companies operating in the country. TST logistics service features the following:

- 1) TST operates cross-border transport service between Bangkok, Thailand and Kuala Lumpur, Malaysia every day by 40ft tractor-trailer truck. The time required for one-way transit is between 37 and 40 hours. This “Peninsula Express” transport service is advantageous compared with sea and air modes.
- 2) TST provides typical 3rd party logistics service at the Ayutthaya site for Nikon (Thailand) Co., Ltd. (NTC). At the Ayutthaya site, they receive and store products materials, parts and supply them to NTC. This supply operation is controlled by a Just in Time system. Digital single lens reflex camera bodies and lenses that have completed NTC’s manufacturing process, are returned by TST to the Ayutthaya site. TST also operates shipping activities. The shipping activities consist of picking up camera bodies, lenses and accessories, kitting them, arranging value added services, packing and shipping. Value added services are installing the control program on the digital camera body described in the language of the shipping region (e.g., English, Chinese, French, Japanese) and certification labeling. NTC requires that a high service level be maintained for quality, quantity, and delivery lead time. The Ayutthaya site is operated 24 hours by a staff of 350 (one Japanese). Given this situation, Third-Party Logistics is controlled locally.

NTC began operations in 1990. Now it produces 4 million digital single lens reflex cameras and 6 million lenses per year. To repeat, the Nikon Thailand factory is producing 95% of the Nikon’s total digital single lens reflex camera world production. In 2009, they consigned the logistics activities to Hitachi Transport System Thailand, in order to concentrate on manufacturing. Hitachi Transport System Thailand was judged to have the in-depth understanding in the culture and knowledge of the manufacturing process.

4.4 Diversifications of Logistics Needs in Thailand

There are two aspects to the recent diversification of logistics in Thailand. One is diversification of international transport. The other is stock control and domestic distribution.

Japanese companies are increasingly entering the Vietnam market in addition to Thailand, Singapore, and Malaysia in the GMS. Japanese logistics suppliers offer new logistics services in this area when following Japanese companies into these markets. The remarkable point is that new services of logistics are not only focused on sea transport but also land transport and combined transport. These services became possible because of the development of technology, but the biggest factor is the construction of transport infrastructure through GMS programs, such as the East-West Corridor road network.

Regarding stock control and domestic distribution, most Japanese retailers have decided to expand activity in Asian countries to counteract the downturn in domestic Japanese demand, therefore, logistics needs for retailers in the GMS will increase. As a result, the logistics needs will become more advanced and complicated.

Finally, Thailand's strategic importance in the GMS will rise along with economic growth in China and India. In other words, Thailand will become the second major logistics hub along with Singapore in the GMS; Singapore as a sea hub and Thailand as a land hub.

5. CONCLUSION

A new logistics network is being created in the GMS for which Thailand will be the hub, based upon its highly accumulated automobile industry and the development of land infrastructure in the GMS. The logistics network in the GMS is now expanding to India and China, and is expected to create a larger network. In addition, the logistics network in the GMS is changing. It was formerly made up mainly of sea transportation links, however, now land transportation is more important. A result of this shift is that new logistics services are being created that are not only sea transportation systems, but also combined multi-mode transportation. The features of the new logistics network are advanced, complex and more diversified. The new logistics network will have a strong effect on economic growth in the GMS.

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REFERENCES

- Asian Development Bank (2008) Logistics Development Study of the Greater Mekong Subregion North-South Economic Corridor.
- Asian Development Bank (2009) Sharing Growth and Prosperity: A Strategy and Action Plan for the Southern Economic Corridor. Background document for Governor Forum in the 2nd GMS Economic Corridors Forum.
- Asian Development Bank Institute (2009) Transport Infrastructure and Trade Facilitation in the Greater Mekong Subregion. ADBI Working Paper Series 130, January 2009.
- Buurman, J. and Rietveld, P. (1999) Transport infrastructure and industry location: The case of Thailand, *Review of Urban & Regional Development Studies*, Vol.11, No.1: 45-62.
- Economic Research Institute for ASEAN and East Asia (ERIA) Study Team (2010) The ASEAN Strategic Transport Plan 2011-2015 Final Report.
- Peridy, N. J. and Abedini, J. (2008) The growing influence of emerging countries in the world car industry: An estimation of export potentials in a world trade model, *Global Economy Journal*, Vol. 8, Issue 3.
- Thailand Ministry of Transport (n.d.). (www.mot.go.th)
- Wad, P. (2009) The automobile industry of southeast Asia: Malaysia and Thailand, *Journal of the Asia Pacific Economy*, Vol.14, No. 2: 172-193.