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Competitiveness and Cooperationof Logistics Industry in Northeast Asia

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목 차

Key Words: Logistics Industry, Competitiveness, Cooperation, Northeast Asia

Abstract

The purpose of this paper is to analyze the competitiveness of the logistics industry of three countries - Korea, China and Japan - by looking into their logistics industry structure and the related regulations. For this aim, the paper examined the modal distribution of transportation, transport infrastructure, freight cost structure and regulation in transport sector in these countries. Furthermore, this study suggests some proposals for the further cooperation to bring sustainable progress in the logistics sector across Northeast Asia.

The main suggestions of this paper are as follows: First, Korean government needs to strategize its options in the logistics industry, the most competitive in the country's service sector, in upcoming FTA negotiations with China and Japan. Second, Korea needs to foster Busan into a strategic point for the Rail Ferry System and Road Feeder System. Third, Korea should participate in establishing shuttle flight service in Northeast Asia amid exploding flight demand from active economic interchange and tourism industry development.

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Ⅰ. Introduction

The service sector displays the fastest growth in the global economy and accounts for two-thirds of global output, one-third of global employment, and almost 20% of global trade. However, several indicators show that the percentage shares of service trade among Northeast Asia countries-especially Korea, China and Japan-have remained relatively low, considering the countries' trade volume of goods, industrial structures and stages of economic development.

However, the recent rapid expansion of economic activities and mutual dependence among Northeast Asian countries is spurring regional cooperative projects in a variety of fields ranging from energy, environment, transportation, logistics, telecommunications and urban development. Nevertheless, there are diverse factors hindering the cooperation required for sustaining growth in the Northeast Asian region. In this respect, the smooth exchange of human resources, freight, and information, and streamlining detailed plans will be crucial not only for Northeast Asia but also for the entire East Asian region.

This paper aims to assess the competitiveness of the logistics industry of three countries - Korea, China and Japan - by looking into their logistics industry structure and the related regulations, and suggest some proposals for further cooperation to bring sustainable progress in the logistics sector across Northeast Asia.

This paper is organized as follows: Chapter Ⅱ provides a general analysis of industrial structure and regulatory issues of the logistics sectors in Korea, China and Japan. Chapter 3 suggests logistics cooperation for the seamless cargo and personal interchange among these countries in the standpoint of establishing efficient intermodal transport system, following which Chapter 4 summarizes the paper and presents conclusions.

Ⅱ. Structure and Competitiveness of Logistics Industry in Northeast Asia

1. Logistics Industry in Korea, China and Japan

This section will review the structure of the logistics industries in Korea, China and Japan, with a major focus on transportation. <Table 1> shows the economic scale and industrial structure of the logistics sector in three countries, the percentage of GDP represented by the

sector and employment in the sector. The portion of logistics industry in gross domestic product in Korea stands at 4.7 percent, while the figures for China and Japan are 2.9 percent and 4.7 percent, respectively. This means that China's logistics industry has lower portion of the national economy than it does in Korea and Japan. In the respective countries of Korea, China, and Japan, sectoral share of employment in the logistics industry account for 5.8 percent, 5.4 percent, and 4.9 percent of the entire workforce, indicating that Korea records the highest labor absorption among the three countries.

<Table 1> Portion of Logistics Industry in Korea, China and Japan(2004)

Items	Korea	China	Japan
GDP (millions of dollars)	679,675	1,649,369	4,588,171
Logistics Industry (transport and storage)	31,717(4.7%)	48,212(2.9%)	215,389 (4.7%)
Total number of employees (unit: 10,000 people)	1,482	10,282	6,343
Transport sector (unit: 10,000 people)	85.9(5.8%)	533.7(5.4%)	312.0 (4.9%)

Source: IMF, *International Financial Statistics Yearbook,* 2005.
NSO, *Korea Statistical Yearbook*, 2005. MOCT, *Yearbook of Construction & Transportation Statistics,* 2006.
Japan's Cabinet Office,*System of Nation Accounts;* 2005.
National Bureau of Statistics of China, *China Statistical Yearbook,* 2005.

1) Modal Distribution of Transportation

A review of the statistics for domestic and international freight traffic volume by type of transportation in Korea, China and Japan shows that China excels the other two countries in terms of freight volume and its growth pace. By tons, China's domestic freight transport is triple the size of Japan, 20 times that of Korea. By tons-kilometer, domestic freight transport scale in China was 10 times larger than that of Japan.

China marked growth in domestic freight transport volume, while Korea and Japan experienced a slowdown. The scale of domestic freight transport in China grew by an annual 10.6 percent by tons, while the annual growth rate in terms of tons-kilometer registered 21.5 percent. However, Korea and Japan saw the scale based on tons decrease by 10.4 percent and 2.9 percent, respectively, over the same period.

The major culprit for sluggish growth in Korea and Japan, despite sustainable economic growth, seems to lie in the fact that the two countries have adopted up-to-date, cost-effective

logistics systems such as cross-docking systems or supply chain management.

By type of transportation, the portion of road transport was the higher than that of other means in all three countries. But China distinguished itself from Korea and Japan in that the portion of road use in transporting domestic freight was 74 percent by tons in 2004, while marine transport, namely inland waterway, accounted for 59.7 percent, according to statistics based on tons-kilometer. The largely inland waterway network embracing canals and rivers is well developed in China and the recently formulated 10th five-year development plan specifies that the inland water infrastructure is to be improved. Inland waterway therefore recorded the highest growth rate on both a tonnage and a ton-km basis in 2004. In Japan road transport accounted for 91.1% of all transportation on a tonnage basis in 2004. One of the main reasons for the dominance of road transport is the fact that Japan has an excellent road density, as indicated by its extension per 1,000persons of 9.29 persons and extension per km of 2.96km/㎢(See <Table 4>).

<Table 2> Domestic Freight Volume in Korea, China and Japan in 2004

Country/ transport mode		tons (10,000 tons, %)			tons-kilometer(100 million tons-km, %)		
		Volume	Portion	Growth rate	Volume	Portion	Growth rate
Korea	Total	67,941	100	-10.4	-	-	-
	Rail	4,451	6.6	-5.5	106	-	-3.8
	Road	51,886	76.4	-8.2	125	-	-3.5
	Marine	11,564	17.0	-20.4	-	-	-
	Air	41	0.06	-3.3	2	-	-1.2
China	Total	1,681,300	100	10.6	69,445	100	21.5
	Rail	249,000	14.8	13.2	19,284	27.8	12.8
	Road	1,245,000	74.0	9.2	7,844	11.3	11.9
	Marine	187,000	11.1	16.9	41,429	59.7	28.4
	Air	300	0.02	50.0	71	0.1	22.4
Japan	Total	556,941	100	-2.9	5,700	100	1.1
	Rail	5,222	0.9	-2.6	225	3.9	-1.4
	Road	507,588	91.1	-3.0	3,276	57.5	1.8
	Marine	44,025	7.9	-1.2	2,188	38.4	0.3
	Air	106.5	0.02	3.4	11	0.19	5.8

Source: NSO, *Korea Statistical Yearbook*, 2005. MOCT, *Yearbook of Construction & Transportation Statistics,* 2006.
Japan's Ministry of Land, Infrastructure and Transport(www.mlit.go.jp).
National Bureau of Statistics of China, *China Statistical Yearbook,* 2005.

The distribution of modes of international transportation does not vary from country to country on a tonnage basis. For international freight shipments, marine transport accounted for 99 percent for the three countries. Unlike domestic freight carriage, international freight transport posted growth from 2003 to 2004, mainly due to an increase in exports and imports.

<Table 3> International Freight Volume in Korea, China and Japan in 2004

Country	2003년		2004년	
	1,000 tons (%)	Growth rate (%)	1,000 tons (%)	Growth rate (%)
Korea	675,537(100.0)	2.3	746,203(100.0)	10.5
Marine	673,328(99.7)	2.3	743,634(99.7)	10.4
Air	2,209(0.3)	6.4	2,569(0.3)	16.3
China	340,534(100.0)	13.7	395,395(100.0)	16.1
Marine	340,020(99.8)	13.7	394,690(99.8)	16.1
Air	514(0.2)	4.5	705(0.2)	37.2
Japan	773,270(100.0)	10.1	943,071(100.0)	21.9
Marine	772,057(99.8)	10.1	941,738(99.8)	21.9
Air	1,213(0.2)	2.3	1,333(0.2)	9.9

Source: *Ibid* <Table 2>.

2) Transport Infrastructure

Looking at the transportation infrastructure of Korea, China and Japan, China surpassed the two other countries in total length of roads as the country has the largest land area. But its dense population has dragged down road density and per-capita road space to the lowest level among the three countries. Of note is the pavement ratio, the gauge of a road's quality, which is higher in China than in Korea and Japan. Nearly 80% of the total road length in China is paved. And this in turn signals that China's growth potential in the road freight transport industry is huge.

<Table 4> Roads Situation in Korea, China and Japan (2005)

Country	Total Road Length (1,000 km)	Road Extension (km/1,000 people)	Road density (km/㎢)	Pavement ratio (%)
Korea	97.3	2.03	0.98	76.8
China	1,809.8	1.40	0.19	79.5
Japan	1,118.0	9.29	3.19	78.6

Source: *Ibid* <Table 2>.

Statistics on the world's top 100 container ports in 2004 showed that three Korean, 11 Chinese and five Japanese ports were among them. The list of top 10 global container ports included three Chinese (Hong Kong, Shanghai and Shenzhen) and one Korean (Busan). But the port in Tokyo, Japan's biggest, was ranked at 22nd.

By contrast, the majority of Chinese ports have showed galloping growth in terms of port throughput volume in recent years, recording a more than 20 percent annual growth rate.

<Table 5> Rankings for Container Ports in Korea, China and Japan (in 2004)

Ranking	Port	Throughput (1,000 TEU)	Growth rate(%)	Country
1	Hong Kong	21,984	7.5	China
3	Shanghai	14,557	29.0	China
4	Shenzhen	13,650	28.6	China
5	Busan	11,430	9.8	Korea
14	Qingdao	5,140	21.2	China
17	Ningbo	4,006	44.5	China
18	Tianjin	3,814	26.5	China
22	Tokyo	3,358	1.3	Japan
23	Guangzhou	3,308	19.8	China
26	Xiamen	2,872	23.2	China
27	Yokohama	2,718	8.5	Japan
34	Dalian	2,211	32.4	China
35	Kobe	2,177	6.4	Japan
36	Nagoya	2,155	3.9	Japan
41	Oksaka	2,009	7.8	Japan
64	Gwangyang	1,320	11.4	Korea
77	Incheon	935	13.9	Korea
78	Zhongshan	922	22.1	China
90	Fuzhou	708	20.0	China

Source: *Containerization International Yearbook,* 2006.

<Table 6> Passenger and Freight Volume at Major Airports in Korea, China and Japan

City / Airport		Runways (planned)	Passengers (10,000)	Freight volume (10,000 tons)	No of arrivals/ departures (10,000 times)
Korea	Incheon	3750×2 (4000×1)	2,605	234 (world's 4th)	16.1
China	Beijing	3800×1, 3200×1 (3800×1)	4,101	103	34.2
	Shanghai (Pudong)	4000×1, 3800×1 (3400×1)	2,355	217 (world's 6th)	20.2
	Guangzhou	3800×1, 3600×1 (3800×1)	2,340	82	21.0
	Hong Kong	3800×2	3,980	361 (world's 2nd)	25.9
Japan	Narita	4000×1, 2180×1	2,817	228 (world's 5th)	18.5
	Kansai	3500×1 (4000×1)	1,558	-	10.8
	Chubu	3500×1	1,058	-	9.0

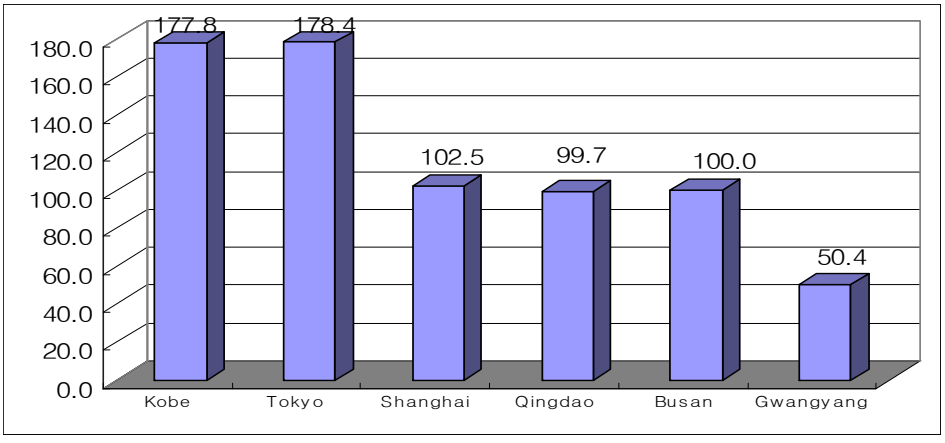
Note: The number of passengers and their arrivals and departures is based on the year 2005. Freight volume is based on 2006. What is written in the parentheses are in plan.
Source: ICAO, *Airports Council International and the web pages of each airport.*

Looking at the international airports of the three countries, China has four core airports in Hong Kong, Beijing, Pudong and Guangzhou. Beijing's Beijing Capital International Airport and Shanghai's Pudong International Airport, in particular, are undergoing rapid facilities expansion fueled by an exploding demand for air transport, posing a threat to Incheon International Airport, which has made a name for itself on the global scene for its advanced facilities. Chinese airports have been registering double-digit growth in the number of passengers and freight volume in the past few years and are showing signs of surpassing Japan and Korea in terms of competitiveness.

3) Cost Structure

A comparison of logistics price competitiveness in Korea, China and Japan requires looking into the fees for a variety of facilities and services charges in each country. While charges for using major container terminals[1] at China's Shanghai and Qingdao ports were ranged at a similar level as that of Busan port, Japan's Yokohama and Tokyo ports charge double the price. Accordingly, Korean ports, including those at Busan and Gwangyang, are considered to have a competitive edge over their Chinese and Japanese counterparts.

<Figure 1> Container Terminal Fees in Korea, China and Japan (Busan=100)

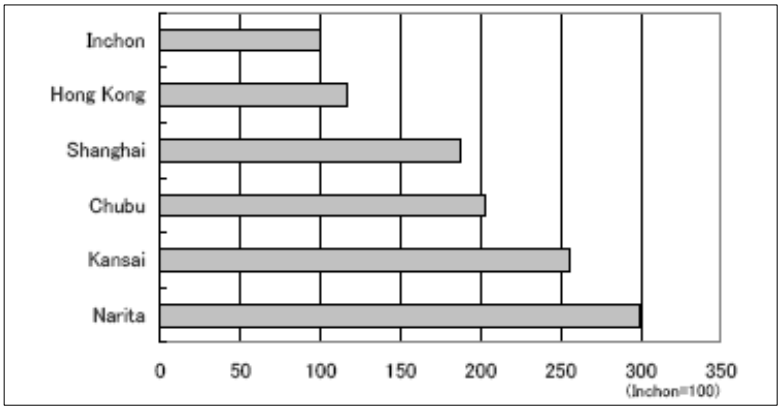


Note: Calculation is based on the assumption that 5,300 TEU container vessels were used with a loading volume of 2,000 TEU.
Source: Adapted from KMI(2004).

1) The gross domestic product growth rates and freight transport volume had high relevance before the 1990s, but the correlation has decreased as of late.

A comparison of landing fees for Boeing 747-400 freighters at three international airports in Korea, China and Japan shows that the price competitiveness of Incheon International Airport is higher than that of Pudong International Airport in Shanghai, Central Japan International Airport in Nagoya, Kansai International Airport and Narita International Airport.[2] Shanghai and Chubu, which commenced service in 2004, show almost double the charges for Incheon. Among major Japanese airports, Kansai and Narita International Airports, in particular, show almost triple the charges for Incheon and are therefore much less competitive than Incheon. In terms of nominal values of freight utility charges, Korean facility has the strongest cost competitiveness.

<Figure 2> Landing Fees for International Airports of Korea, China and Japan



Source: Central Japan International Airport Company Ltd., New Release, Nov. 15, 2004.

4) Regulations in Logistics Industry

In theory, the government's market intervention into a specific industry in a country whose economic development is approaching maturation point weakens its competitiveness, thus hampering efficiency of resource allocation and real income. Based on this, most governments are scrambling to revitalize their industrial competitiveness by minimizing intervention through regulatory reforms.

<Table 7> shows how the three countries, Korea, China and Japan, apply regulations to three major categories in the logistics sector – market entrance, overseas investment

2) Landing fees include costs for using aviation transportation control facilities required for planes to approach the airport, and to take off and land, as well as costs for using landing facilities such as runways and taxi strips.

and price setting. Government intervention in the logistics sector was the strongest in China, the table shows. When an emerging company in the country wants to advance into a certain field, the government authority makes it a rule to do a preliminary check and give out a final approval. Korea showed the lowest level of restrictions overall in the logistics industry among the three countries. Only in the air transport sector are Korean companies making initial entries supposed to obtain government approval, whereas the two other countries do not have such a rule. On the other hand, Japan requires companies intending to launch businesses in the logistics sector to garner either permission or approval from the government, with the exception of warehousing and freight-forwarding businesses.

<Table 7> Regulations in Logistics Industry in Korea, China and Japan

	Korea	China	Japan
Port sector			
New entry	Registration	Approval after review	Approval
Foreign investment	No restriction	Approval after review[3]	No restriction
Rates	Approval	Advanced Notification	Notification
Trucking freight			
New entry	Permit	Approval after review	Permit
Foreign investment	No restriction	Approval after review	No restriction
Rates	Standard Tariff System	Standard Tariff System	Standard Tariff System
Inland waterway			
New entry	Registration	Approval after review	Permit[1]
Foreign investment	No restriction	Approval after review	No restriction
Rates	No restriction	Advanced Notification	Public Notification
Rail freight			
New entry	Registration	Approval after review	Permit
Foreign investment	No restriction	Approval after review	No restriction
Rates	Approval	Public Notification	Approval(price ceiling)
Air freight			
New entry	Approval	Approval after review	Permit
Foreign investment	No restriction	Approval after review	No restriction
Rates	Approval	Public Notification	Notification
Warehouse			
New entry	No restriction	Approval after review	Registration
Foreign investment	No restriction	Approval after review	No restriction
Rates	No restriction	No restriction	Public Notification of Standard Tariff
Freight forwarding			
New entry	Registration	Approval after review	Registration
Foreign investment	No restriction	Approval after review	No restriction[2]
Rates	No restriction	No restriction	Adjustment

Note : 1) Vessels with more than 100 tons in weight and more than 30 meters in length must obtain permits. Those that do not meet these requirements can enter the market solely by making reports.

4) China legislated Port Act in 2003 and gave legal permission for exclusive foreign investments in harbors in 2004, but no case of this has yet been found.

2) International freights using planes and ships are exceptional.
Source: Kataoka, *Sector Analysis toward a CJK FTA; Logistics sector*, NIRA, 2006.

Analysis of the aforementioned statistics shows that China's logistics industry has a relatively lower portion in the national economy, including gross domestic product and employment, than Korea and Japan do. Given China's rapid increase in the pace of economic development and the trade scale, however, the potential growth of the country's logistics sector is the biggest.

Based on an assessment of marine and air transportation infrastructure, Korea and China excelled Japan in price competitiveness. Assessment of government restrictions in the logistics industry showed that this industry has achieved an advanced degree of progress in Korea.

What is stated above embraces meaningful policy advice on the logistics industry in the three Northeast Asian countries. First, in China, despite high price competitiveness, relatively large expenses for intermediate input that are higher than in Korea and Japan hampers the productivity of the country's logistics industry.[4] Therefore, it will be necessary for China to introduce up-to-date logistics management methods such as supply chain management solutions. To do this, it is recommended that the Chinese government fling open its doors to overseas companies with high-tech modes of operation in the logistics sector.

Second, despite highly advanced industrial competitiveness and a robust economy, hefty expenses on logistics infrastructure and related regulations are impeding the development of the logistics industry in Japan. Therefore the Japanese government will need to place top priority on relieving these issues so as to facilitate the entrance of budding companies. Fair market competition will also boost the competitiveness of the logistics industry in the country.

Third, assessment results showed that Korea's logistics industry has the highest competitiveness among the three Northeast Asian countries, largely indebted to the government's willingness to foster growth in the logistics industry and efforts to lift regulations. It is advised that Korea designate logistics as a strategically crucial sector in the upcoming free trade agreement with China and Japan. At the same time Korea will need to play a leading role in the logistics cooperation system in Northeast Asia.

4) According to calculations by Kataoka (2006) of coefficients in the transportation sector using inter-industry relations table in Korea, China and Japan, the reading for Korea at 0.016 was almost half the figures of Japan and China, at 0.032 and 0.035, respectively. This means that Korea has the highest cost efficiency in the field of transport.

Ⅲ. Logistics Cooperation for Sustainable Progress in Northeast Asia

Northeast Asia's collaborative efforts to pursue prosperity through sustainable development and establish its identity in the global economy requires a consistent flow of human resources, freight and information. It will only be possible when an optimum level of logistics infrastructure is constructed and an efficient logistics network is formed in the Northeast Asian region. Although the region is currently seeing a rapid increase in human resource exchange and commercial trade, transport efficiency remains very low due to the lack of a integrated transportation system.

Given the current situation, a comprehensive transportation system can have two major categories – freight transport and passenger transport. For freight transport, if the geographic features of the Northeast Asian countries – Korea, China and Japan, in particular – are taken into account, establishing a combined integrated transport system with a focus on marine transport is necessary. The system will take two forms – a combination of marine and road transport, or that of marine and railroad transport.[5] For both kinds to operate properly, the equipment of these facilities, such as an on-dock rail system, which can efficiently link ports with roads or railroads, must be sufficiently developed. Passenger transport is expected to be centered around marine and air transport. As air fares in Northeast Asia show no huge gap with other forms of transportation, an increase in the number of passengers who place top priority on time management and the emergence of budget carriers is expected to boost the importance of air, rather than marine transport. The following will present detailed plans on efficient freight and passenger transportation systems in Northeast Asia.

1. Northeast Asian integrated transportation network

Marine transport makes up the largest portion of freight transport in Northeast Asia. To maximize transportation efficiency in the future, however, fully taking advantage of an integrated transportation system will be necessary. Adoption of the system is crucial in that the region will have to cope with explosive economic growth and internal trade volume. There are two types of integrated transportation systems: the train ferry

5) For more information on rail-ferry system between Korea and China, see Park Chang Ho et al(2007) and Cho Sam Hyun & Kim Hyun Duk(2007).

system and the road feeder system.[6] Using the two types of transportation systems, transport fees could be lowered to a similar level to existing marine transportation, while transport time could be shortened by 20 to 40 percent.

In April of 2002, Korea and China signed up a memorandum of understanding to launch railroad ferries so that the two countries could operate combined transportation systems. The signing led to an official agreement on building a railroad ferry route linking Incheon and Yentai in 2006. The prerequisite for launching the route will be securing RO/RO vessels and facilities enhancement at Incheon port to enable the entry of railroad ferries. In September 2006, Korea Railroad and Japan Railroad agreed on freight transportation, based on an integrated system that uses railroad ferries. This system began operation in March 2007.[7] The launch of the Busan-Fukuoka railroad ferry allows freight from Japan to go by way of Korea and arrive at China's major rail transportation system. Starting with the launch of a railroad ferry connecting Hainan and Guangzhou in 2003, China currently operates a railroad ferry linking Dalian and Yentai.

Meanwhile, several barriers need to be lifted before establishing an integrated transportation system in the Northeast Asia. First, there is the difference in rail gauge among Korea, China and Japan. While Japan uses a narrow gauge, Korea and China have adopted the standard gauge of 1.435 meters. In this regard, the three countries need to have a standardized rail gauge and freight train size.

Second, the three countries need to form a computer network to simplify customs procedures and maximize the efficiency of the integrated transportation system in major Northeast Asian ports such as Incheon, Busan, Yentai and Fukuoka. Third, as a government-level negotiations channel on the operation of railroad and truck ferries among Korea, China and Japan is absent at the present, the three countries need to form a standing committee for discussing overarching matters. Fourth, the chassis for loading container vessels on ferries or RO/RO vessels has yet to be standardized,

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6) Asiana Airlines launched a service called 'AMX' (Asiana Multimodal Express) that utilizes RFS for the first time in Asia. The service transports freight from Qingdao to the United States. Trucks loaded with freight are shipped on a ferry to cross the West Sea and arrive at Incheon International Airport. Then, the freight is transported to the United States by plane. The service is a combination of road-marine-aviation transportation.

7) This transportation method uses high-speed freight trains for inland shipments (Euiwang ICD ↔Busanjin Station CY) and uses high-speed ferries (Busan Port <-> Hakata Port) for marine transport. In inland Japan, the method again uses trains. Through this integrated transportation system, door-to-door service is completed in a matter of three days from Seoul to Tokyo. The means of transportation used in this process is 12-feet containers, smaller than ordinary containers sized at 20-40 feet.

serving as barrier against efficiently establishing an integrated transportation system. As the three countries have different regulations on the chassis used for transporting marine containers, resulting in the use of a different chassis by each country, extra time for transshipment is yet another obstacle to be tackled for efficient logistics operations.

Meanwhile, if an integrated transportation system using railroad ferries is introduced in Northeast Asia, it will connect with TCR and TSR via North Korea so that the whole network can effectively complete a Eurasian land bridge. Use of the TCR/TSR will shorten the transportation period by 15 to 17 days, compared with existing marine transport. Transportation costs will be similar or slightly higher at $1,960 (USD) to $2,600 (USD) per TEU. Such cost and time efficiency is expected to help an integrated transportation system linking Northeast Asia and Europe gain competitiveness in high value-added freight or small-scale freight. In the long term, in order for an integrated transportation system to leap to success in Northeast Asia, reconnecting roads that have been severed by North Korea is critical. In this regard, successful development and operation of the Haeju Special Economic Zone, as agreed upon at the inter-Korean summit in 2007, is crucial. According to an accord made at the summit, Haeju will be developed into a special economic zone, and Haeju, Kaesong and Seoul will be linked via land using railroads linking Munsan, Kaesong and Shineuiju, which will lay a solid foundation for establishing a Trans-Northeast Asia Transportation Network (TNATN). If a road transportation route via North Korea is launched, the transportation time for freight trains from Busan to Berlin will shrink from 18 days to 19 days, and the costs will come down to $1,200 (USD) per TEU, which is two thirds of the cost of existing transportation means. The Northeast Asian integrated transportation system will allow connection with route 1 and route 6 of the Asian Highway, a project being promoted by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Furthermore, the system will enable cooperation with TAR (Trans-Asian Railway), thus greatly contributing to beef up economic exchange and international trade in Northeast Asia.[8)]

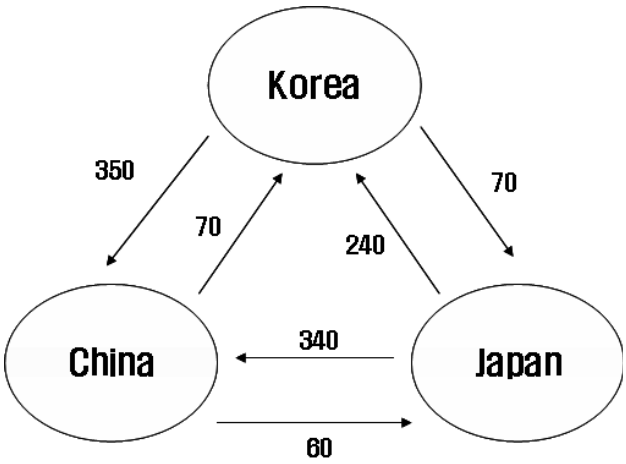
8) Route 1 (AH1) stretches 20,710 kilometers, passing Tokyo in Japan, Fukuoka, Busan, Seoul, Pyeongyang, Beijing, Guangdong, Hanoi, Ho Chi Minh City, Phnom Penh, Bangkok, Dhaka, Kolkata, New Delhi, Islamabad, Kabul, Teheran, Istanbul, and ending in Turkey and Kapikule near the border of Bulgaria. Route 6 (AH 6) starts from Busan in Korea and then passes Gangreung and Weonsan, Vladivostok, Harbin, Novosibirsk, Omsk and Moscow, ending at Krasnoyarsk near the border between Russia and Belarus. The route is 10,407 kilometers.

2. Northeast Asian air transport network

The aviation market in Northeast Asia has marked galloping growth in the past decade. Among Korea, China and Japan, 11.3 million people used international flight service in the year 2005, and the number is likely to increase in coming years.

If a prospective increase in passengers on business trips amid rising trade volume among Northeast Asian countries is taken into account, then strengthening aviation service networks in Northeast Asia will be indispensable.

<Figure 3> International Airline Passengers in Korea, China and Japan
(in 2005, 10,000 persons)



The following will present measures for beefing up the Northeast Asian aviation network. First, the measure would be expanding shuttle flight services linking Korea, China and Japan, which are currently in operation. In other words, shuttle flight service routes, Seoul Gimpo-Shanghai and Hongqiao-Tokyo-Haneda, should be expanded to Beijing, Tianjin and Qingdao in China; Busan in Korea; and Osaka in Japan – politically and economically crucial cities, thus strengthening the aviation network of Northeast Asia.

The Gimpo-Haneda line began operating in November 2003, while the Haneda-Hongqiao line was launched in September of this year. In late October, the Gimpo-Hongqiao line opened. Compared with existing international airports (Incheon, Pudong and Narita), Gimpo, Hongqiao and Haneda airports offer shorter distances from downtown and less transfer time. Due to such advantages, the number of

passengers is exploding. Passengers on the Gimpo-Haneda route more than doubled from 600,000 in 2004 to 1.41 million in 2006. As the scale of economic exchange among Korea, China, and Japan grows, and international events such as the 2008 Beijing Olympics and the 2010 Shanghai Expo are scheduled to take place, the three countries should expedite the addition of shuttle flights linking Beijing, Seoul, and Tokyo, all of which are capital cities, as well as those connecting Tianjin, Busan, and Osaka, which are emerging as leading cities in Northeast Asia.

Second, the three countries should brace for increased flight shuttle service by establishing more facilities and related regulations, thus guaranteeing pleasant trips. At present, folks in Korea, China and Japan are required to get visas to travel to each country. The visa issuance procedure takes up traveler time and hampers quick immigration procedures.[9] Therefore, the three countries might consider introducing either a special or common visa program, thus simplifying visa issuance and immigration procedures so that they can improve flight shuttle services and more easily exchange human resources. As a long-term goal, the three governments will have to deliberate on the idea of adopting a permanent visa-waiver program.

Third, it is necessary for the three countries to establish small-scale international aviation networks for small jet planes so that Northeast Asia can have an aviation transportation network linking non-capital cities.

According to global trend, the aviation industry is seeking economy of scale by introducing large-scale planes such as the A-380 or B-787 Dreamliner. On the other hand, the industry is also showing a tendency to target niche markets by adopting light planes and increasing flight frequency. Flight shuttle service using light jets has had a recent series of launches in the United States. It seems highly possible that Northeast Asia will also introduce similar services to connect smaller cities in the region.[10] Furthermore, such regional small-scale aviation networks will complement flight shuttle services linking major cities in Northeast Asia.

9) Starting in March 2006, Korea and Japan ran a visa-waiver program for those entering each country for travel, transit and commercial purposes for up to 90 days.

10) Cessna, a U.S. company and one of the world's top three business jet manufacturers, unveiled the Mustang, a small, six-seat private jet, in Korea on Oct. 17. The Mustang, a multi-purpose business jet, has a maximum speed of 630 kilometers per hour, a maximum cruising range of 2,151 kilometers and a maximum ascending altitude of 12,497 meters.

Ⅳ. Conclusion

This paper has so far compared the competitiveness of the logistics industry in Korea, China and Japan, the three core countries of Northeast Asia. The paper has also studied freight transport measures through a Northeast Asian integrated transportation system and passenger transport measures through a Northeast aviation transport network, aimed at consistent development in the region.

The following part will propose requisites for Busan to transform itself into a Northeast Asian logistics hub and further grow into a gateway to Eurasia under the swirling changes taking place in the economy and politics of Northeast Asia.

First, Korea's logistics industry has a competitive edge over both Japan and China, as was shown in Chapter 2. Therefore, the Korean government needs to strategize its options in the logistics industry, the most competitive in the country's service sector, in upcoming free trade negotiations with China and Japan. Because it is highly possible that Busan, as the foremost gateway for imports and exports and a marine transport center, will become the huge beneficiary of the free trade agreement with the two countries, the city government should consider taking utmost advantage of the port city's potential.[11)]

Second, Korea needs to foster Busan into a strategic point for the Rail Ferry System and Road Feeder System. For Busan Port to emerge as a Northeast Asian logistics hub, it will need to attract a massive amount of freight from neighboring countries. For this, the city should get away from its former international logistics strategy, which was focused on simple container marine transportation, and form a Rail-Sea-Rail or Road-Sea-Road system that takes the Japan-South Korea-North Korea-China-Russia route. The establishment of complex transportation networks in Northeast Asia as mentioned above will prove to be more effective if the agreements made at the inter-Korean Summit are carried out, and if the Asian Highway project, by the United Nations Economic and Social Commission for Asia, and the Pacific and Eurasian train network projects proceed in the future.

Third, Korea should participate in establishing shuttle flight service in Northeast Asia amid exploding flight demand from active economic interchange and tourism industry development. In addition to Shanghai-Gimpo-Haneda shuttle flight service, which is

11) As of 2005, Busan processed 70 percent of domestic export and import freights. The city accounts for 61 percent of seamen, 43 percent of harbor transport companies and 36 percent of vessels nationwide.

currently in operation, the three countries need to add the Beijing (Tianjin)-Busan-Osaka (Fukuoka) route. For this, the role of regional carrier operators such as Busan International Air or Yeongnam Air, which are currently under plans to launch businesses with Busan as a center point, is very crucial. Given the current momentum, buoyed by an increasing number of airline passengers at the new wing of Gimpo International Airport, which opened in October, the airport is forecast to reach its saturation point around 2015. In this respect, Korea needs to consider building a new airport in the Southeastern region.

Lastly, Busan should take a leading role in forming a network among cities in Northeast Asia and sharing knowledge and experience accumulated in the course of managing an urban economy, culture and education. By doing so, the city should be able to contribute to cooperative prosperity in Northeast Asia. Economic interchange, cooperation and partnership among regions and cities, rather than countries, in Northeast Asia have been on the rise.

Although there are some networking groups run by some coastal cities and regional groups such as the Organization for East Asian Economic Development and the Association of North East Asian Regional Governments, the region needs to add more participating cities and develop a variety of more practical interchange programs. For this, the interchange programs which currently have local autonomous entities, regional economic groups and universities as members should also invite an extensive range of civic groups to join, thus expanding the network among Northeast Asian cities and broadening the ground for mutual understanding. Furthermore, increased human resource interchange across Northeast Asia will serve as an important catalyst for establishing logistics infrastructure in the region.

The limitation of this paper are as follows.

First, the paper evaluated competitiveness of logistics industry among Korea, China and Japan using macroeconomic variables. Thus further research id need to examine the various indicators using microeconomic variables in logistics industry among three countries.

Second, more sophisticated empirical methods are required to evaluate competitiveness of logistics industry among Korea, China and Japan.

Third, more deep researches are also needed to suggest the establishment of integrated transportation system, especially in air transport network, based on current situation of logistics network in Northeast Asia region.

The next study will deal with these subjects.

Reference

1. Bang Ho Kyung(2004), "Current Situation and Improvement of Logistics System in Northeast Asia," KIEP World Economy, pp.44-54
2. Central Japan International Airport Company(2004), Airport Landing Fees in Major International Airport in East Asia, News Release 2004-11-15.
3. Cho Sam Hyun, Kim Hyun Duk(2007), "An Alternative for Establishing a Logistics Cooperation System among Korea, China and Japan Focused on Rail-ferry System," Journal of Korea Port Economics Association, Vol.23, pp.61-73.
4. Containerization International Yearbook, 2006.
5. ICAO(2006), Airports Council International.
6. International Monetary Fund(2005), International Financial Statistics Yearbook.
7. Japan's Cabinet Office(2005), System of Nation Accounts.
8. KMI(2004), Study on port facility fee system revision.
9. Ministry of Construction & Transportation(2006), Yearbook of Construction & Transportation Statistics, 2006.
10. Mitsuhiko Kataoka(2006) "Sector Analysis toward a CJK FTA; Logistics sector," NIRA Working Paper NO. 2006-2, pp.1-20.
11. National Bureau of Statistics of China(2005), China Statistical Yearbook.
12. National Statistics Office(2005), Korea Statistical Yearbook.
13. Park Chang Ho, Ahn Seung Bum, Kim Hyeong Il(2007), "A Feasibility Study on Rail-Ferry System: Focused on Sino-Korea Transport Routes, " Journal of Korea Port Economics Association, Vol.23, pp.87-107.

< 요약 >

한·중·일 물류산업 경쟁력과 물류협력방안

한철환

본 논문은 한·중·일 3개국의 물류산업 구조와 규제현황을 통해 물류산업의 경쟁력을 진단해 보고, 향후 동북아지역의 공동번영을 위한 물류분야의 협력방안을 제시하였다. 한·중·일 물류산업의 경쟁력을 평가한 결과, 중국물류산업은 한국과 일본에 비해 GDP와 고용 등 국가경제에서 차지하는 비중이 상대적으로 적으나 향후 물류분야의 성장잠재력은 가장 큰 것으로 평가된다. 물류인프라 측면에서 볼 때 한국과 중국은 일본에 비해 비용경쟁력을 갖춘 것으로 평가된다. 또한 물류산업에 있어서 정부의 규제측면에서 한국은 중국과 일본에 비해 규제정도가 가장 낮아 물류산업의 자유화가 상당부분 진척된 것으로 평가할 수 있다.

이상의 결과는 동북아 3개국 물류산업에 대한 유의한 정책적 함의를 내포하고 있는바, 첫째, 중국의 경우 물류산업의 생산성을 제고하기 위해서는 SCM 등 최신 물류경영기법을 도입이 필요하며, 이를 위해서는 선진물류기법을 갖추고 있는 외국기업에 대한 문호개방이 효과적인 방안이 될 것이다. 둘째, 일본은 높은 물류인프라 비용과 물류산업에 대한 각종 규제가 물류산업의 경쟁력을 저해하고 있어 물류산업의 규제완화를 통해 기업의 자유로운 시장진입과 공정한 시장경쟁을 촉진할 필요가 있다. 셋째, 한국의 물류산업은 동북아 3개국 중 가장 경쟁력이 높은 것으로 평가되므로 향후 논의될 한·중·일 FTA협상에 있어서 물류분야를 전략적 협상분야로 적극 활용할 필요가 있다.

또한 본 논문은 동북아지역의 지속적 발전을 위한 물류협력방안으로써 동북아 복합일관운송네트워크 구축을 통한 화물운송방안과 동북아 항공운송네트워크 구축을 통한 여객운송 방안을 제시하였다. 특히 부산이 동북아의 물류거점 나아가 유라시아의 관문으로 역할하기 위해 필요한 방안으로써 첫째, 철도페리시스템(Train Ferry System)과 Road Feeder System의 거점화, 둘째, 동북아 역내 경제교류 및 관광산업 발전에 따라 급증하고 있는 항공수요를 흡수하기 위한 동북아 항공셔틀서비스 구축, 셋째, 부산이 동북아 역내 도시간 네트워크 구축에 주도적 역할 수행 등을 제시하였다.

□ 주제어 : 동북아, 물류산업, 경쟁력, 물류협력