Trade Pattern and Prospect in the Northeast Asian Area

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Contents

I. Introduction

Although economic cooperation among the Northeast Asian countries has been discussed actively both in the academic circle and amont policy practitioners, it still remains at the hypothetical and/or primitive level. Only, active discussions evidence the possible benefits that will come by when actual cooperation is realized.

The backgrounds for these discussions are as follows. First, recent rapproachment among the countries in Northeast Asia along with a global trend of *détente* suggests great potential for mutual cooperation among countries with different ideologies and economic systems in the region. It is evident from rapidly increasing commercial relations, cultural exchanges, and even

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diplomatic relations that closer economic interactions will benefit the countries in the region. Second, complementarity of these countries in endowments furthers the necessity of economic cooperation in that it will help them resolve problems with which they face now: economic difficulties of Northe Korea, development plan of China, need for developing the Far East area of Russia, relative backwardness of the East Sea side of Japan, and Korea's need to restructure the industrial structure. These problems may be solved through economic cooperation, thanks to the endowmnet distribution that is complementary to each other. Third, recent trends to form economic blocs such as EC and NAFTA prompt these countries to respond to these trends. That is, the new structure of the world economy caused by economic regionalism necessitates economic cooperation in this region.

This paper tries to analyze trade patterns of the Northeast Asian countries and to suggest a prospect for the future trade pattern. Analysis of the trade pattenr is important since trade is a cornerstone for economic cooperation. That is, trades between the countries are a beginning of economic cooperation. Such an analysis requires a sufficient and precise data set. Unfortunately, however, the trade data for these countries in the region, except for Japan and Korea, are very limited and, if existing, are imprecise and dubious in quality. Insufficient data limit the depth of this research, but the need for research overpasses the constraint. Thus, I will make best use of the limited data and suggest future directions for economic cooperation through trade in this region.

Section 2 will examine characteristics of trades in the region by looking at recent trade patterns and trends in trades. This examination will provide a macro-perspective for the future

development in the region and suggests some principles that have to be kept in mind when economic cooperation in this region is furthered. Section 3 will analyze the trade pattern and its transition between the U.S., Japan and South Korea in the past. This analysis will give us a glimpse at a desirable trade pattern among the Northeast Asian countries in the future. Section 4 will analyze the trade structure between the Northeast Asian countries more concretely and relate it to the endowment distribution. This analysis will confirm and strengthen the results obtained in Section 2 and Section 3. Finally Section 5 will concludes.

II. Trade Trend and Structures among Countries Related to the Region

Specifically, the Northeast Asian region covers South Korea, North Korea, Japan, the three Northeastern provinces of China, and the Far East area of Russia. Due to the severe limitation in the data for the last two areas, however, China and Russia are included as a whole. This inclusion is problematic especially for Russia because Russia is rather an European country. Also the U.S. is included in analysis since its economic relationship with South Korea, Japan and China cannot be ignored.

Table I shows export-import trends of the Northeast Asian countries and the U.S. during the past three decades. During the 1960-89 period, the world trade has expanded at the annual rate of 10.7% with its size increasing 22.2 times. This rapid growth reflects free trade emphasized in the GATT. We find in Table I that, among the countries in the region, capitalist

countries such as Korea and Japan has recorded the trade growths much higher than that of the world. In contrast, the growth rates of the socialist countries such as North Korea and Russia are far below the world level. China showed a low annual expansion in trade before 1975 like North Korea and Russia, but its trade growth rate has been accelerated since the late 1970s due to its open door policy. Reflecting mainly south Korea and Japan's rapid expansion in trade, the weight of the Northeast Asian countries in the world trade has increased from

<Table 1> Trade Trends

(million dollar)

	South Korea		Japan		North Korea		Russia	
	Export	Import	Export	Import	Exoport	Import	Export	Import
1960	32.8	343.5	4055	4491	-	-	5562	5629
1965	175.1	463.4	8452	8169	-	-	2281	2464
1970	835.5	1983.3	19318	18881	341.0	377.5	3856	3644
1975	5081.0	7274.4	55840	57880	805.9	1155.3	17568	12560
1980	17504.9	22291.6	129812	140524	1641.5	1712.4	32426	38789
1985	30283.1	31135.7	175683	129480	1285.2	1899.9	34705	44653
1989	62371.0	61556.0	274597	209635	1950.0	2840.0	40042	57193

	China		U.S.		Northeast Asia		World	
	Export	Import	Export	Import	Export	Import	Export	Import
1960	1889	1764	20612	15075	8.78%*	9.06%*	131492	134897
1965	1152	1337	27532	21431	7.29%*	7.10%*	165500	175000
1970	1573	1499	42590	39756	9.31%	8.95%	278473	294789
1975	5924	6321	108113	105880	10.76%	10.49%	791700	812400
1980	18139	19505	220786	256984	15.58%	17.67%	1280500	1261100
1985	27329	42480	213146	361626	14.94%	13.24%	1802500	1886200
1989	51751	58316	363807	493652	14.79%	12.98%	2912200	3002000

Source: International Trade Yearbook Direction of Trade Statistics

*: North Korea excluded

8.9 to 13.9% during 30 years. Another noticeable fact in Table I is that the trade balance of the U.S. that had shown surplus since WW II turn into deficit in the 1980s while Japan's trade balance recorded a strong surplus in the same period. This fact implies a certain role for Japan in economic cooperation in the region as discussed below.

To diagnose the future possibilities in economic cooperation of the Northeast Asian countries, we have to examine export-import among these countries and with the rest of the world. Table 2 summarizes export-import of these countries during the 1980-90 period. First, it is evident that South Korea, North Korea and China depend substantially on the inner region trade while Japan and Russia's dependence on the region is relatively low. The latter countries' low dependence can be explained easily by the fact that Russia is an European country and the weight that Japan has in the world trade.

Second, Japan has shown trade surpluses in the inner region trade throughout the period while other countries have suffered from trade deficits continuously. Even in the year 1980 when Japan expereinced a trade deficit of 10.7 billion dollars, Japan recorded 4.2 billion dollar surplus in the regional trade. In 1989, Japan showed a trade surplus of 9 billion dollars or so in the regional trade. This fact suggests, combined with accumulated surpluses of Japan in the worldwide trade during the 1980s, that Japan will have to play a certain role in economic cooperation in the region. Third, the inner region trade has grown at the annual rate of 11.0% during the 1980s while the total amount of the Northeast Asian countries' trade has been growing more rapidly, the weight of the regional trade seems to be still low, considering complementarity in the endowment distribution of the region.

<Table 2> Regional Trade in Northeast Asia

(million dollar, %)

		Export			Import		
		1980	1985	1989	1980	1985	1989
China	NEA	4700	7915	11791	5683	17191	13854
		25.91%	28.96%	22.78%	29.14%	40.47%	23.76%
	World	18139	27329	51751	19505	42480	58316
South Korea	NEA	3183	5289	15175	5938	8222	19709
		18.18%	17.47%	24.33%	26.64%	26.41%	32.02%
	World	17505	30283	62371	22292	31136	61556
North Korea	NEA	441	1026	1326	826	1615	2107
		26.86%	79.84%	68.00%	48.25%	85.00%	74.19%
	World	1642	1285	1950	1712	1900	2840
Russia	NEA	1949	3267	6198	3056	4962	6454
		6.01%	9.41%	15.48%	7.88%	11.11%	11.28%
	World	32426	34705	40042	38789	44653	57193
Japan	NEA	13674	22770	28233	9440	12293	27298
		10.53%	12.96%	10.28%	6.72%	2.49%	13.02%
	World	129812	175683	274597	140524	129480	209635
NEA	NEA	23947	40267	62719	25123	44283	69422
		12.00%	14.95%	14.56%	11.27%	17.74%	17.82%
	World	199524	269285	430711	222822	249649	389540

Source: Direction of Trade Statistics

Table 3-7 show trade partners of the Northeast Asian countries. It is most noticeable from tables that these countries from the two blocs in trade, and trades within the same bloc are very active whereas trades across the blocs are very little. North Korea, China and Russia are in one block and South Korea and Japan in the other that is closely connected to the U.S. Especially South and North Koreas' concentration into the within-bloc trade is most visible. This concentration reflects well diplomatic and political relationships in the region. Only Japan has a non-trivial share in trades with the socialist bloc. Reflecting the total size of Japan's trade, the trade with the socialist bloc explains about 5% of Japans trade while Japan's weights in the socialist countries are substantially high. North

Korea depends on Japan as much as a quarter of its total trade and China does about 20% of its total trade.

<Table 3> Export and Import of South Korea

(million dollar, %)

(Export)

	1985	1986	1987	1988	1989
Japan	4,546 (15%)	5,426 (15.60%)	8,437 (17.84%)	12,004 (19.78%)	13,489 (21.63%)
North Korea	-	-	-	-	-
Russia	59.7 (0.19%)	49.9 (0.14%)	67.2 (0.14%)	111.6 (0.18%)	207.7 (0.33%)
China	683 (2.25%)	668 (1.92%)	813 (1.72%)	1,809 (2.98%)	1,438 (2.31%)
U.S	10,789 (35.62%)	13,920 (40.00%)	18,382 (38.86%)	21,478 (35.40%)	20,987 (33.65%)
EC	3,255 (10.75%)	4,315 (12.40%)	6,600 (13.95%)	8,134 (13.40%)	7,441 (11.93%)
World	30,283 (100%)	34,792 (100%)	47,301 (100%)	60,679 (100%)	62,371 (100%)

(Import)

	1985	1986	1987	1988	1989
Japan	7,557 (24.27%)	10,869 (34.25%)	13,657 (33.29%)	15,847 (30.59%)	17,612 (28.61%)
North Korea	-	-	-	-	-
Russia	62.3 (0.20%)	63.9 (0.20%)	133.1 (0.32%)	178.3 (0.34%)	391.7 (0.64%)
China	607 (1.95%)	615 (1.94%)	673 (1.64%)	1,387 (2.68%)	1,705 (2.77%)
U.S.	6,554 (21.10%)	6,548 (20.63%)	8,761 (21.36%)	12,706 (24.52%)	15,824 (25.71%)
EC	2,971 (9.54%)	3,321 (10.47%)	4,641 (11.25%)	6,046 (11.69%)	6,678 (10.85%)
World	31,136 (100%)	34,734 (100%)	41,025 (100%)	51,812 (100%)	61,556 (100%)

Source: Direction of Trade Statistics

<Table 4> Export and Import of Japan

(million dollar, %)

(Export)

	1985	1986	1987	1988	1989
South Korea	7,159 (4.07%)	10,557 (5.01%)	13,344 (5.77%)	15,442 (5.83%)	16,491 (6.01%)
North Korea	249 (0.14%)	185 (0.09%)	216 (0.09%)	239 (0.09%)	196 (0.07%)
Russia	2,772 (1.58%)	3,178 (1.51%)	2,587 (1.12%)	3,131 (1.18%)	3,069 (1.12%)
China	12,590 (7.17%)	9,936 (4.72%)	8,337 (3.60%)	9,486 (3.58%)	8,477 (3.09%)
U.S.	66,684 (37.96%)	81,926 (38.88%)	85,017 (36.75%)	90,245 (34.06%)	93,954 (34.21%)
EC	21,128 (12.03%)	31,122 (14.77%)	38,305 (16.56%)	47,172 (17.80%)	47,986 (17.48%)
World	175,683 (100%)	210,718 (100%)	231,332 (100%)	264,961 (100%)	274,597 (100%)

(Import)

	1985	1986	1987	1988	1989
South Korea	4,144 (3.20%)	5,334 (4.18%)	8,173 (5.42%)	11,827 (6.31%)	12,931 (6.17%)
North Korea	177 (0.14%)	170 (0.13%)	240 (0.16%)	323 (0.17%)	294 (0.14%)
Russia	1,438 (1.11%)	1,988 (1.56%)	2,368 (1.57%)	2,772 (1.48%)	2,990 (1.43%)
China	6,534 (5.05%)	5,727 (4.49%)	7,478 (4.96%)	9,861 (5.26%)	11,083 (5.29%)
U.S.	26,099 (20.16%)	29,410 (23.04%)	31,957 (21.18%)	42,267 (22.54%)	48,253 (23.02%)
EC	9,371 (7.24%)	14,173 (11.10%)	17,862 (11.84%)	24,163 (12.89%)	28,137 (13.42%)
World	129,480 (100%)	127,660 (100%)	150,907 (100%)	187,483 (100%)	209,635 (100%)

Source: Direction of Trade Statistics

<Table 5> Export and Import of North Korea

(million dollar, %)

(Export)

	1985	1986	1987	1988	1989
South Korea	-	-	-	-	-
Japan	161.0 (25.93%)	154.3 (23.74%)	217.3 (28.63%)	293.3 (33.31%)	267.5 (34.63%)
Russia	-	642 (9.88%)	717 (9.45%)	882 (10.02%)	891 (11.54%)
China	222.5 (35.84%)	255.2 (39.27%)	214.7 (28.30%)	212.3 (24.11%)	166.7 (21.58%)
U.S	0.5 (0.08%)	-	-	-	-
EC	66.8 (10.76%)	76.8 (11.82%)	110.1 (14.51%)	60.7 (6.89%)	48.4 (6.27%)
World	620.9 (100%)	649.9 (100%)	758.9 (100%)	880.6 (100%)	772.4 (100%)

(Import)

	1985	1986	1987	1988	1989
South Korea	-	-	-	-	-
Japan	274.3 (33.01%)	203.7 (23.56%)	237.6 (21.45%)	262.7 (22.19%)	215.8 (17.57%)
Russia	-	1,079 (13.01%)	1,329 (12.00%)	1,736 (14.66%)	1,492 (12.12%)
China	263.0 (31.65%)	280.8 (33.85%)	304.8 (27.51%)	379.7 (32.07%)	398.5 (32.37%)
U.S.	-	-	-	0.1 (0.01%)	-
EC	60.3 (7.26%)	80.2 (9.67%)	201.0 (18.14%)	109.8 (9.27%)	138.7 (11.27%)
World	831.0 (100%)	829.5 (100%)	1,107.8 (100%)	1,184.1 (100%)	1,231.2 (100%)

Source: Direction of Trade Statistics

<Table 6> Export and Import of China

(million dollar, %)

	1985	1986	1987	1988	1989
South Korea	607 (2.22%)	615 (1.96%)	673 (1.71%)	1,387 (2.91%)	1,705 (3.29%)
Japan	6,091 (22.29%)	5,079 (16.19%)	6,392 (16.19%)	8,046 (16.88%)	8,180 (15.08%)
North Korea	239 (0.87%)	255 (0.81%)	277 (0.70%)	345 (0.72%)	362 (0.69%)
Russia	1,037 (3.79%)	1,230 (3.92%)	1,247 (3.15%)	1,476 (3.90%)	1,699 (3.28%)
U.S.	2,336 (8.55%)	2,633 (8.39%)	3,030 (7.67%)	3,399 (7.13%)	3,988 (7.70%)
EC	2,283 (8.35%)	4,017 (12.80%)	3,916 (9.92%)	4,746 (9.95%)	4,720 (9.12%)
World	27,329 (100%)	31,367 (100%)	39,464 (100%)	47,663 (100%)	51,751 (100%)

(Import)

	1985	1986	1987	1988	1989
South Korea	683 (1.61%)	668 (1.54%)	813 (1.88%)	1,809 (3.27%)	1,483 (2.46%)
Japan	15,178 (35.72%)	12,463 (28.81%)	10,087 (23.33%)	11,062 (19.98%)	10,105 (17.32%)
North Korea	245 (0.57%)	281 (0.64%)	236 (0.54%)	234 (0.42%)	183 (0.31%)
Russia	1,017 (2.39%)	1,472 (3.40%)	1,291 (2.98%)	1,802 (3.25%)	1,945 (3.33%)
U.S.	5,199 (12.23%)	4,718 (10.90%)	4,836 (11.18%)	6,633 (11.98%)	6,918 (11.86%)
EC	6,151 (14.47%)	7,757 (17.93%)	7,274 (16.82%)	8,176 (14.77%)	8,777 (15.05%)
World	42,480 (100%)	43,247 (100%)	43,222 (100%)	55,352 (100%)	58,316 (100%)

Source: Direction of Trade Statistics

<Table 7> Export and Import of Russia

(million dollar, %)

	1985	1986	1987	1988	1989
South Korea	62.3 (0.18%)	63.9 (0.19%)	133.1 (0.37%)	178.3 (0.47%)	391.7 (0.98%)
Japan	1,307 (3.77%)	1,807 (5.34%)	2,152 (5.90%)	2,520 (6.70%)	2,718 (6.79%)
North Korea	-	1,079 (3.19%)	1,329 (3.65%)	1,736 (4.62%)	1,492 (3.73%)
China	924 (2.66%)	1,338 (3.95%)	1,173 (3.22%)	1,638 (4.36%)	1,768 (4.42%)
U.S.	402 (1.16%)	551 (1.63%)	427 (1.17%)	592 (1.57%)	713 (1.78%)
EC	14,736 (42.46%)	12,028 (35.54%)	13,653 (37.46%)	13,791 (36.68%)	14,957 (37.35%)
World	34,705 (100%)	33,844 (100%)	36,448 (100%)	37,598 (100%)	40,042 (100%)

(Import)

	1985	1986	1987	1988	1989
South Korea	59.7 (0.13%)	49.9 (0.12%)	67.2 (0.15%)	111.6 (0.22%)	207.7 (0.36%)
Japan	3,049 (6.83%)	3,496 (8.14%)	2,845 (5.66%)	3,444 (6.94%)	3,376 (5.90%)
North Korea	-	642 (1.49%)	717 (1.63%)	882 (1.78%)	891 (1.56%)
China	1,141 (2.56%)	1,353 (3.15%)	1,372 (3.13%)	1,623 (3.27%)	1,869 (3.26%)
U.S.	2,665 (5.97%)	1,372 (3.19%)	1,628 (3.71%)	3,033 (6.11%)	4,698 (8.21%)
EC	10,454 (23.41%)	10,658 (24.81%)	11,714 (27.70%)	13,133 (26.46%)	15,145 (26.48%)
World	44,653 (100%)	42,951 (100%)	43,888 (100%)	49,635 (100%)	57,193 (100%)

Source: Direction of Trade Statistics

Also it is noteworthy that the U.S. has a substantial interest in the trade with the Northeast Asian countries. South Korea and Japan depend heavily on the trade with the U.S.(about 30% of their trades). China and Russia's trades with the U.S.

explain about 10% of their total trades and especially, the importance of the U.S. to China is increasing rapidly. Only North Korea is isolated from the U.S., reflecting the diplomatic relationship that does not exist.

The analysis in this section can be summarized as follows. First, the trade within the bloc is very active but the trade across the block is trivial still. Second, the importance of the U.S. in the northeast Asian region trade should not be ignored when economic cooperation is furthered. Third, Japan's ecomomic position in the region that reflects its accumulated trade surpluses should be taken into account and Japan also has to recognize its role and duty in the regional economic cooperation.

III. Trade Pattern between South Korea, Japan and the U.S.

The trade experience in the past between South Korea, Japan and the U.S. suggests a future course of trade patterns in the Northeast Asian region. Especially Korea's experience can be very useful to China and North Korea. Of course, these three countries's experience cannot apply directly to the two socialist countries. As long as China pursues its open door policy further and if North Korea follows the Chinese path for its development, however, the Korean experience can be a model case for them. Besides, the analysis of the afore-mentioned three countries' experience can give us a glimpse at the role that the U.S. may play when the region's economic cooperation is enhanced.

<Table 8-1> Export to the U.S. by South Korea

(million dollar, %)

	1972	1975	1980	1985	1989
Total	759.0	1536.3	4606.4	10754.1	20639.0
Foods	2.25%	3.81%	2.67%	1.35%	1.17%
Raw materials	33.35%	22.63%	19.28%	15.50%	8.92%
Capitalgoods	11.25%	14.56%	22.99%	26.79%	31.11%
General machineries	2.04%	2.04%	3.06%	5.58%	11.25%
Electric	7.84%	10.27%	8.87%	9.88%	13.76%
Transportation	0.50%	0.96%	7.61%	8.48%	3.86%
Nondurable consumption	38.25%	40.72%	36.37%	35.61%	32.21%
Garment & textiles	31.57%	29.24%	22.74%	21.25%	18.10%
Shoes	5.40%	7.61%	10.34%	10.56%	10.98%
Durable consumption	14.89%	11.76%	18.67%	20.75%	26.59%
TV	0.65%	1.22%	4.01%	3.15%	1.24%
Audio	0.71%	1.71%	0.83%	2.31%	3.52%

Source: Trade Statistics

<Table 8-2> Import from U.S. by South Korea

(million dollar, %)

	1972	1975	1980	1985	1989
Total	647.20	1881.1	4890.2	6489.3	15910.7
Foods	41.08%	33.02%	24.28%	12.38%	10.54%
Raw materials	33.70%	38.74%	47.45%	46.04%	41.92%
Capital goods	23.56%	26.62%	26.32%	38.94%	43.34%
General machineries	8.10%	8.63%	8.37%	13.27%	18.83%
Electric	10.66%	9.17%	8.86%	15.60%	14.22%
Transportation	4.03%	8.12%	7.98%	8.05%	8.06%
Nondurable consumption	0.37%	0.18%	0.42%	0.44%	1.49%
Durable consumption	1.28%	1.36%	1.54%	2.20%	2.71%

Source: Trade Statistics

Table 8-1 and 8-2 show the transition in the commodity composition of the trade betwwn South Korea and the U.S. during the 1972-89 period. Among South Korean exports to the U.S., the share of raw materials declined from 33.4% to 8.9% during the period while that of capital goods rose from 11.3% to 31.3%, especially due to the rapid increases in transportation equipments and machineries. Durable consumption goods' share increased from 14.9% in 1972 to 26.6% in 1989. Among durable consumption goods, audio products such as recorders and pianos showed a rise in the export share, but TV sets and sports equipments' shares declined. The non-durable consumption goods' share in the South Korean exports to the U.S. remained relatively stable, but it declined from 38.3% to 32.2%, reflecting a substantial decline in the garments export. In case of foods, its share decreased from 2.3% to 1.1% and its importance in the South Korean exports was quite low throughout the period considered.

On the other hand, it is most notable, from the transition of the South Korean imports from the U.S., that the foods' share in 1989 drastically declined to a fourth of the 1972's whereas that of capital goods doubled during the period, from 23.6% to 43.3%. In capital goods, machineries, electronic equipment and transportation equipments all increased their share in the South Korean imports. Although the consumption goods' share stayed at the 1-2% level, the durable goods' share increased appreciably, reflecting the South Koreans' demand for high quality consumption goods in the late 1980s.

Now let's examine the transition in the trade pattern between South Korea and Japan during the three decades. We can find easily from Tables 9-1 and 9-2 that heavy industry products kept their lion's share in the Japan's export to South

Korea and expanded continuously while the share of light industry products kept declining. More specifically, machineries

<Table 9-1> Export to South Korea by Japan

(million dollar, %)

	1960	1965	1970	1975	1980	1985	1990
Total	100.0	180.3	818.2	2247.7	5368.3	7097.2	17457.2
Foods	0.9%	0.2%	13.7%	0.2%	1.5%	0.2%	0.3%
Raw materials	4.7%	4.0%	3.4%	5.2%	4.6%	3.0%	4.5%
Light industry products	n.a.	23.3%	22.2%	17.5%	13.7%	13.4%	10.9%
Textiles	8.2%	20.2%	18.4%	10.8%	5.9%	5.3%	4.1%
Heavy industry products	76.5%	71.5%	59.2%	74.9%	77.8%	81.4%	82.5%
Chemical	33.1%	28.5%	10.8%	19.5%	15.6%	14.1%	14.0%
Metals	6.7%	15.8%	12.2%	15.5%	18.9%	14.8%	11.0%
Machineries	36.8%	27.2%	36.2%	39.9%	43.3%	52.4%	57.6%
General	5.2%	14.2%	17.4%	18.3%	19.7%	25.0%	28.5%
Electric	9.0%	6.8%	8.8%	13.1%	16.9%	21.2%	23.3%
Transportation	21.3%	4.0%	8.5%	6.9%	3.8%	3.1%	2.8%
Others	6.2%	1.1%	1.6%	2.3%	2.3%	2.0%	1.7%

Source: White Papers, MITI.

<Table 9-2> Import from South Korea by Japan

(million dollar, %)

	1960	1965	1970	1975	1980	1985	1990
Total	18.6	41.3	229.0	1308.0	2996.3	4091.9	11706.7
Foods	35.5%	37.3%	18.2%	26.5%	19.5%	19.2%	12.6%
Raw materials	48.4%	44.6%	34.1%	8.6%	6.3%	3.5%	2.7%
Ores	8.1%	6.5%	4.0%	3.5%	0.1%	12.9%	4.0%
Manufactured products	7.0%	11.6%	43.7%	60.4%	72.8%	62.8%	79.1%
Chemical				2.4%	7.9%	4.9%	4.9%
Machineries			2.6%	12.9%	12.0%	12.2%	18.0%
Textiles		6.5%	24.1%	32.0%	29.9%	29.4%	25.4%
Others				13.1%	23.6%	23.6%	30.8%
Others				1.0%	1.3%	1.6%	1.5%

Source: White Papers, MITI.

and electronic equipments led the increase of heavy industry products, from 5.2% to 28.5% and from 9.0% to 23.3%, respectively. However, the chemical products' share decreased from 33.1% in 1960 to 14.0% in 1990.

In case of light industry products, their share in the Japan's export to South Korea declined 23.3% in 1965 to 10.9% in 1990, led by a big decline in garments and textiles. Finally, foods and raw materials stayed at a low level throughout the period. These facts reflect well both the Japan and South Korea's endowments, and South Korea's rapid industrialization.

Again, reflecting South Korea's industrialization during the past three decades, Japan's imports from South Korea went through a drastic transition in the commodity composition. The foods' share in the Japan's imports from South Korea declined from 35.5% in 1960 to 12.6% in 1990, and raw materials that explained almost a half of the total import in the early 1960s reduced its share to a twentieth of the 1960's 2.7%. In contrast, the share of manufactured products recorded a drastic increase during the period, from 7.0% to 79.1%. Textiles and garments rose from 6.5% in 1965 to 32.0% in 1975, but, after 1975, kept declining. Chemical products, and machinery and equipments that did not exist at all in the 1960s showed a rapid growth since the 1970s.

Finally, Japan's trade with the U.S. went through a similar change that took place in the trade with South Korea during the 1960-90 period, with foods being and exception as Tables 10-5 and 10-2 show. That is, during the same period, Japan's export to the U.S. exhibited an increasing tendency of the heavy industry product's from the U.S., the share of raw materials declined by a big margin while that of manufactured products increased continuously. It is a special feature that foods import maintained its share of about 20%, differing from the trade structure with South Korea.

<Table 10-1> Export to the U.S. by Japan

(million dollar, %)

	1960	1965	1970	1975	1980	1985	1990
Total	1082.9	2479.2	5939.8	11148.6	31367.3	65277.6	90322.4
Foods	6.8%	3.4%	2.3%	1.5%	0.8%	0.6%	0.3%
Raw materials	2.0%	0.8%	0.4%	0.3%	0.2%	0.2%	0.2%
Light industry products	58.5%	36.6%	23.7%	10.4%	8.5%	8.6%	7.6%
Textiles	26.6%	17.8%	10.0%	3.9%	1.9%	1.6%	0.9%
Heavy industry products	32.7%	58.3%	72.4%	85.3%	89.1%	89.6%	90.2%
Chemical	1.6%	1.9%	2.7%	3.1%	2.4%	2.2%	2.7%
Metals	13.9%	27.9%	21.8%	22.4%	13.3%	7.1%	4.7%
Machineries	17.2%	28.5%	47.8%	59.8%	73.4%	80.4%	82.7%
General	3.2%	3.7%	6.9%	8.5%	10.7%	15.6%	23.5%
Electric	9.8%	15.2%	22.4%	17.9%	16.4%	23.0%	21.5%
Transportation	0.8%	6.4%	15.4%	29.1%	40.9%	36.8%	32.8%
Others	0.0%	0.9%	1.2%	2.6%	1.4%	1.0%	1.7%

Source: White Papers, MITI.

<Table 10-2> Import from the U.S. by Japan

(million dollar, %)

	1960	1965	1970	1975	1980	1985	1989
Total	1545.3	2366.1	5559.6	11608.1	24408.0	25793.0	52368.6
Foods	7.9%	23.8%	14.6%	21.4%	21.2%	19.7%	20.1%
Raw materials	47.3%	36.3%	29.7%	27.1%	26.2%	17.5%	14.7%
Ores	11.5%	8.7%	13.7%	16.4%	8.6%	7.6%	3.2%
Manufactured products	33.4%	31.1%	41.4%	34.6%	43.5%	52.7%	18.0%
Chemical	9.6%	7.5%	7.2%	6.7%	10.4%	13.2%	25.4%
Machineries	17.3%	17.6%	25.4%	18.9%	20.5%	29.3%	30.8%
Others	6.5%	6.0%	8.8%	9.0%	12.5%	10.2%	
Others	-0.2%	0.2%	0.6%	0.5%	0.6%	2.6%	2.1%

Source: White Papers, MITI.

More specifically, the share of light inustry products that recorded 58.5% out of the total export to the U.S. in 1960 declined to 7.6% in 1990, only an eighth of the 1960's level. In contrast to the heavy industry products' share in export to the

U.S. tripled during the period, from 32.7% to 90.2%. A rapid growth in machineries and equipments is most remarkable, with its share of 17.2% in 1960 increasing to 82.7% in 1990.

On the other hand, it is noteworthy that foods kept its share around 20% in the Japan's import from the U.S. This high share of foods suggests that, with further economic cooperation in the region, Japan is likely to substitute imports from the region for those from the U.S. Raw materials and ores explained 47.3% and 11.5% of the total imports from the U.S. in 1960, but were reduced to 14.7% and 3.2% in 1990, respectively. This reduction came from the Japan's effort to diversify sources of imports in the past. Finally, the manufactured products' share in imports from the U.S. increased from 33.4% to 59.9% during the period.

The above analysis says two main things about the transition in the national division of labor between these three countries. First of all, the importance of the U.S. to Japan and South Korea has never been reduced throughout whole transitions. Second South Korea has been following the trade pattern of Japan with some time lag. These two characteristics in the trade between South Korea, Japan and the U.S. imply that the following two facts should receive substantial consideration when economic cooperation in the region develops further. First, how to keep the U.S. market while substituting raw materials and foods in the region for those from the U.S. is a seious problem that has to be resolved. The second problem to be considered is how to coordinate South Korea and Japan when constructing the international division of labor in the region. These two countries' export structures have to develop into complementary, rather than competitive, ones.

IV. Trade Pattern between Northeast Asian Countries

The previous section has analyzed the transition of the trade pattern between the U.S., Japan and South Korea. This section tries to analyze the trade pattern between the Northeast Asian countries. Using these two analysis, the next concluding section will suggest some directions for furthering economic cooperation in the region through the international division of labor.

Table 11 and 12 show the commodity structure of the Northeast Asian countries' innerregion trades in 1989. As will be discussed below more in detail, this one year trade pattern reflects quite well the endowment distribution of these countries. Two caveats: this commodity structure is not the one that reflects the total trades of these countries and, thus, shows only comparative advantages of them in the region. Second, the scale effects exist substantially in the tables, so that each country's share in the commodity type does not reflect comparative advantages of that country directly. In fact, the trade size of Japan, South Korea and China in the total reaches about 85%.

First we analyze the commodity structure of each country in the inner-region trade. In case of South Korea, the share of manufactured products including machineries and transportation equipments is about 80% of the total export while foods export explains about 13%. South Korea's imports in the region concentrate on manufactured products(about 90% of its total import and, especially, machineries and transportation equipments compose 50% or so of the total regional import. This phenomenon reflects the size effect of the trade between South Korea and Japan and the fact that South Korea depends heavily on Japan in those items.

<Table 11> Regional Export by Commodity of Northeast Asian Countries

(million dollar, %)

	South Korea -NEA	Japan-NEA	China-NEA	Russia-NEA	North Korea -NEA	NEA Total
Foods and livestocks	1,662,513 13.05%	80,221 0.28%	2,246,869 18.51%	365,250 6.13%	118,778 9.14%	4,473,631 7.31%
Beverage and cigarette	31,769 0.25%	6,191 0.02%	25,389 0.21%	1,599 0.03%	460 0.04%	65,409 0.11%
Raw materials	379,283 2.98%	612,732 2.11%	1,791,203 14.76%	975,147 16.37%	58,080 4.47%	3,816,444 6.24%
Fuels	442,537 3.47%	152,686 0.53%	2,384,694 19.65%	1,017,891 17.09%	67,831 5.22%	4,065,638 6.64%
Fat and wax	1,284 0.01%	17,873 0.06%	17,230 0.14%	2,387 0.04%	0 0.00%	38,775 0.06%
Chemical	562,347 4.41%	3,433,298 11.82%	668,526 5.51%	584,835 9.82%	16,613 1.28%	5,265,619 8.61%
Manufactured	3,512,349 27.56%	8,192,902 28.20%	2,431,007 20.03%	2,051,026 34.44%	415,594 31.96%	16,602,878 27.13%
Machineries and transportation	1,979,939 15.54%	14,244,390 49.03%	330,531 2.72%	757,965 12.73%	29,510 2.27%	17,342,336 28.34%
Other manufactured	4,030,482 31.63%	1,659,690 5.71%	1,871,770 15.42%	172,686 2.90%	591,081 45.46%	8,325,710 13.61%
Miscellaneous	141,250 1.11%	649,451 2.24%	371,493 3.06%	27,074 0.45%	2,265 0.17%	1,191,533 1.95%
Total	12,743,750 100.00%	29,049,436 100.00%	12,138,712 100.00%	5,955,860 100.00%	1,300,213 100.00%	61,187,973 100.00%

Source: Direction of Trade Statistics

Almost all exports of Japan are manufactured products while its major imports from the region are foods(16% or so), raw materials(24% or so) and manufactured products(60% or so). The China's export commodity structure shows that the major item is manufactured product(44% or so), and raw materials (34% of so) and foods(19% or so) follow in the order. However, heavy industry products explain only 10% of the export. In imports, manufactured products including heavy industry products are dominant items whereas the weight of foods and raw materials are trivial. In case of North Korea,

manufactured products centering on light industry products occupy 80% or so of the total export, and foods and raw materials do about 10%, respectively. The major items of the North Korea's import are manufactured products(60% or so) and raw materials(more than 30%) including fuels. Finally, Russia exports to the region are rather even; foods and raw materials explains about half and manufactured products, the other half.

<Table 12> Regional Import by Commodity of Northeast Asian Countries

(million dollar, %)

	South Korea -NEA	Japan-NEA	China-NEA	Russia-NEA	North Korea -NEA	NEA Total
Foods and livestocks	241,012 1.22%	3,821,626 15.80%	132,751 0.92%	737,707 10.83%	87,897 4.08%	4,920,994 7.31%
Beverage and cigarette	7,877 0.04%	41,967 0.17%	14,653 0.10%	5,263 0.08%	2,190 0.10%	71,950 0.11%
Raw materials	592,099 3.01%	2,525,601 10.44%	615,609 4.26%	407,267 5.98%	57,512 2.67%	4,198,088 6.24%
Fuels	465,834 2.36%	3,198,598 13.22%	147,270 1.02%	18,665 0.27%	641,836 29.80%	4,472,202 6.64%
Fat and wax	15,397 0.08%	13,251 0.05%	2,120 0.01%	10,986 0.16%	897 0.04%	42,652 0.06%
Chemical	2,459,127 12.48%	1,005,157 4.15%	1,790,010 12.39%	484,321 7.11%	53,566 2.49%	5,792,181 8.61%
Manufactured	4,670,146 23.71%	5,343,436 22.09%	5,258,138 36.39%	2,312,376 33.94%	679,059 31.53%	18,263,166 27.13%
Machineries and transportation	9,746,026 49.48%	1,807,700 7.47%	5,583,610 38.64%	1,536,202 22.55%	403,033 18.71%	19,076,570 28.34%
Other manufactured	1,288,102 6.54%	5,906,287 24.41%	479,165 3.32%	1,275,658 18.72%	209,070 9.71%	9,158,281 13.61%
Miscellaneous	213,027 1.08%	528,880 2.19%	425,254 2.94%	124,711 1.83%	18,814 0.87%	1,310,686 1.95%
Total	19,698,648 100.00%	24,192,502 100.00%	14,448,580 100.00%	6,813,166 100.00%	2,153,875 100.00%	67,306,771 100.00%

Source: Direction of Trade Statistics

The above commodity structure may contain biases that arise from regional characteristics(that is, it does not reflect comparative advantages of these countries as a whole) and historical aspects(that is, some countries in the region had been isolated from each other). But it gives a relatively clear view of the Northeast Asian countries' comparative advantages. Manufactured products have high weights in export in the order of Japan, South Korea, North Korea, Russia and China in 1989, and foods and raw materials shows a reversed order. On the other hand, the weights of foods and raw materials in import take an order of Japan, North Korea, Russia, South Korea and China, but a direct interpretation of this order can be misleading because of aforementioned reasons.

From the same tables, the shares that each country has in the respective commodity trade can be seen easily. In foods and living livestocks export, China(50%) and Korea(37%) occupy major positions and the other countries' shares are quite low. Japan(78%) imports the most of foods and living livestocks and Russia(13%) follows after Japan. For raw materials, China is again the biggest exporter(47%) and Russia(26%), Japan(16%), South Korea(10%) and North Korea(2%) follow in order. Similar to foods and living livestocks, Japan is a major importer of raw materials and China, South Korea and Russia have similar weights(15-10%). In fuels, China export 59% of the total regional export, Russia, 25% and Korea, 11%. Japan imports most of fuels(72%) and North Korea(14%) follow after Japan, reflecting its heavy dependence on China, South Korea's import explains about 10% of the total.

In chemical products, Japan is the largest exporter(65%), and China(13%), South Korea(11%) and Russia(11) explain the remaining portion. South Korea's import explains 72% of the

total chemical products import and China, Japan and Russia follow in the order. Japan again export two thirds of the total export, leading other countries. Korea(21%), China(15%) and Russia(12%) follow after Japan. In the manufactured products export, Ja[an explains about a falf of the total export, but the imports are distributed rather evenly among Japan(29%), China(29%) and South Korea(25%). In machineries and transportation equipments, Japan is a definitely leading exporter (82%) and South Korea has a 10% market share. For import, South Korea explains about a half of the total trade and China's import is about 30%. Most of other manufactured products are exported by Southe Korea explains about a half of the total trade and China;s import is about 30%. Most of other manufactured porducts are exported by South Korea (48%), China(22%) and Japan(20%) while Japan is a major importer(64%).

As worried above, the scale effects are quite strong. That is, North Korea ranks the last almost in every item. And South Korea is the largest importer in the region for machneries, transportation equipment and chemical products, but all this reflects just the fact that South Korea is a major trade partner with Japan in the region. Putting aside these scale effects, we can see that, in the heavy industry products export, Japan leads all other countries and, then South Korea, Russia and China follow after Japan. For the light industry products export, South Korea goes first, then China, Japan, North Korea and Russia go after South Korea in the order. For foods export, China and South Korea are in relatively favorable position whereas Russia, North Korea and Japan are on the importer side Finally, China and Russia have a comparative advantage in raw materials, and Japan and South Korea import most of

those raw materials.

The distribution of comparative advantages of the Northeast Asian countries are a direct result from the endowment distribution of these countries. From a simple economic perspective, the above complementarity in the endowment distribution implies a great potential for development in the region through economic cooperation. Especially in the two major production factors, labor and capital, are abundant in the region. In addition, natural resources and technologies abound in the region. Economic complementarity between the Northeast Asian countries will be a natural basis for economic cooperation in the region.

V. Conclusion

Economic complementarity in the Northeast Asian countries makes economic cooperation in the region promising and very beneficial to these countries. However, unresolved political, diplomatic and military barriers still make it difficult to predict when and how further economic cooperation will be realized. Thus, economic cooperation in the region will concentrate mostly on the form of trades for the time being. That is, trades are an easist way to cooperate without resolving all barriers.

While promoting trades in the region further, the following points that have been discovered in the previous analysis are to be kept in mind. First of all, economic cooperation in this region should not be narow, confining to the region and closed to the rest of the world. As found in sections 2 and 3, the trades within the region are still limited and the dependence on the U.S. as a major market has been and will be important

continuously. Thus, avoiding a narrow regionalism, the Northeast Asian countries have to seek the way that will expand cooperation in the region. It has to be remembered that a narrow regionalism causes only trade frictions with outsiders, hurting economic cooperation in the region indirectly.

Second, special consideration has to be given to Japan's position in the Northeast Asian area. Not only Japan has accumulated an enormous surplus that could be an important source of capital necessary for the regional development, but also it has been accumulated trade surpluses even when it was in trade deficits with other places. This fact implies that Japan should play a certain role and, at the same time, feel some duties in furthering economic cooperation in the region. Especially when we consider the history in the region before the end of WWII, this consideration will be a serious one.

Third, the trade patterns in the region have to be organized not in a comparative static sense but in a dynamic sense. That is, as found in the transition of trade patterns between South Korea, Japan and the U.S., the comparatively advantageous position of each country has to be defined in a dynamic context. The trade structure of each country has to evolve, rather than staying in a static situation. In the words, international division of labor in this region has to be established in the prospect of the future. Thus, a certain coordination between countries is required.

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