

# Study on Changes and Development Trends of the Trade Structure between Korea and China

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## Abstract

The economic exchanges have become increasingly frequent between China and Korea and the average annual growth rate of the total trade volume has increased by 30% since the establishment of diplomatic relations between the two countries. With the rapid economic growth and industrial upgrading of China, there are changes in the investment of Korea in China and domestic demand of China, and the trade structure of Sino- Korea has changed a lot in recent years. The changes have mainly manifested in the following aspects, including the increased proportion of high-tech products, raw materials and the intra-industry trade, the decreased proportion of consumer goods, the inter-industry trade and the trade deficit of China. With the development of the situation of international economy, the scale of Korea and China trade will continue to expand and the structure of Korea and China trade will also keep on changing in the long run.

Keywords: the trade structure; Korea and China trade; the inter-industry trade; the intra-industry trade.

## 1. Introduction

### 1.1. Background of Korea and China trade

The Korea and China trade has been increasing greatly since the establishment of diplomatic relations between the two countries in 1992. The growth had slowed down because of The Southeast Asian Financial Crisis happened in 1997, especially there was significant negative growth of the export from China to Korea in 1998. After the crisis, due to the growth of the domestic demand of China and the investment of Korean enterprises in China, the growth rate of Korea and China trade was recovered quickly and reached into the highest level before the crisis in 2000. Since then, the growth rate had dropped to its lowest level influenced by the downturn of the world economy. After 2003, the growth rate of Korea and China trade had been maintained at around 20%. The Global Financial

Crisis which broke out in 2008 caused a serious blow on Korea and China trade. As can be seen from this process, the economy of China and Korea are obvious extraversion, so they are easily influenced by the home and abroad economic situation, and the regional or global economic fluctuations affect the Korea and China trade every time. In addition, some encouraging changes are appearing in the development of Korea and China trade. The growth rate of the export from China to Korea have exceeded the growth rate of import from Korea to China since 2004. The deficit of Korea and China trade will be bettered.

According to the latest statistics counted by Commerce Department of China, the Korea and China trade volume have exceeded \$ 200 billion in 2011, achieving 213.92 billion<sup>1)</sup>. Report of foreign trade situation of China, December 2011. The Korea and China trade volume increased by 21.1% than 2010. China continued to be the largest country in both export and import of Korea. The export volume of Korea to China was \$ 129.81 billion that increased by 24.2% than the last year and accounted for 23.5% of the annual total export volume. The import volume of Korea from China was \$ 84.11 billion that increased by 16.6% than the last year and accounted for 13.7% of the total import volume.

However, the growth rate of Korea and China trade was not always so quickly and it began to decline in 2008 due to The Global Financial Crisis. The growth rate of Chinese import fell down to 11.5% in 2008 from the highest nearly 50% in 2003, that of the export decreased to 22.1% in 2008 from 29.8% in 2007.

<Table 1> The trend of Korea and China trade volume (USD Billion, %)

Year	Export of Korea to China		Import from China to Korea		Balance of payments
	Amount	Growth rate	Amount	Growth rate	
1992	2.65	164.7	3.73	8.3	-1.07
1993	5.15	94.1	3.93	5.5	1.22
1994	6.20	20.4	5.46	39.0	0.74
1995	9.14	47.4	7.40	35.5	1.74
1996	11.38	24.4	8.54	15.4	2.84
1997	13.57	19.3	10.12	18.5	3.46

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1) Commerce Department of China.

1998	11.94	-12.0	6.48	-35.9	5.46
1999	13.68	14.6	8.87	36.7	4.82
2000	18.45	34.9	12.80	44.3	5.66
2001	18.19	-1.4	13.30	3.9	4.89
2002	23.75	30.6	17.40	30.8	6.35
2003	35.11	47.8	21.91	25.9	13.20
2004	49.76	41.7	29.59	35.0	20.18
2005	61.92	24.4	38.65	30.6	23.27
2006	69.46	12.2	48.56	25.6	20.90
2007	81.99	18.0	63.03	29.8	18.96
2008	91.39	11.5	76.93	22.1	14.46
2009	86.70	-5.1	54.25	-29.5	32.45
2010	104.52	20.6	72.14	33.0	32.38
2011	129.81	24.2	84.11	16.6	45.70

Source: Commerce Department of China. <http://zhs.mofcom.gov.cn>.

## 1.2. Motivation and significance of research

Either from the total or from the proportion in the national economy, Korea and China trade has significant influence on the economy of the two countries. Therefore, research on the development of Korea and China trade has vital significance both on the bilateral trade and the development of the world economy. As the direct reflection of the condition and connotation between Korea and China, the trade structure could not only reflect the distribution of trade relation, terms and interests between these two countries, but also reflect their production mode and the status in the international division of labor for each. Analyzing the development and change of Korea and China trade structure could provide the basis for adjusting the development strategy, trade decision and trade structure to commercial cooperate for Korea and China in the future. It could also provide theoretical value and practical significance to promote the sustainable development of trade between the two countries.

## 2. The Changes of Korea and China Trade Structure

### 2.1. The increased proportion of high-tech products in Korea and China Trade

In the early establishment of diplomatic relations between Korea and China, the main products exported from China to Korea were low-tech, low value-added raw materials such as minerals, fiber products, leather and labor-intensive products. The main products imported from Korea were chemical products, electronic products, product parts, vehicles, machinery production products, ships, industrial fiber and other high-tech and added value technology-intensive and capital-intensive products. With the domestic industrial structure upgrading of China and the growing technical strength of enterprises, the proportion of high technology products of Korea and China trade in-

creases as well as the trade structure upgrades rapidly. From table 2 we can see that although the products exported from China to Korea are mainly middle- low-grade products but the proportion of them reduces, and the proportion of high-grade products rises constantly. In addition, the proportion of middle-high-grade and high-grade products also has exceeded over 50%<sup>2)</sup>. Before 2000, among the products exported from Korean to China, the low-tech, low-grade and middle-low-grade products accounted for nearly 50%. After 2000, the proportion of high-tech, high-grade and middle-high-grade products has been close to 80% in recent years. The increasing of the proportion of high-tech products in Korea and China trade indicates that the industrial structure of China is escalated and the production capacity of high-tech products is improved. Meanwhile, the production of high-tech products needs more raw materials of high-tech content and intermediate products. So it drives upgrade of products imported from Korea, making the proportion of high-tech, high-grade and middle-high-grade products raw materials and intermediate products increase among the products exported from Korea .

<Table 2> The trade index of Korea's major industries-industry (%)

Type of trade		Average annual growth rate				Proportion				
		1995-99	2000-04	2005-07	2007-10	1995	2001	2004	2007	2010
The products exported from Korea to China	High-grade goods	34.7	52.5	18.4	39.7	10.0	22.0	34.7	36.2	38.2
	Middle-high-grade goods	18.5	36.6	24.0	31.8	40.1	33.4	37.2	40.2	41.8
	Middle-low-grade goods	23.0	25.9	13.2	21.1	21.3	25.7	20.8	18.1	15.4
	Low-grade goods	14.1	3.6	0.8	2.5	28.6	18.8	7.3	5.5	4.6
The products exported from China to Korea	High-grade goods	51.4	34.1	29.3	32.3	9.6	29.7	33.9	33.7	34.2
	Middle-high-grade goods	22.2	25.9	35.5	29.5	13.1	15.9	14.3	16.4	17.2
	Middle-low-grade goods	17.2	34.1	30.9	32.9	46.2	32.3	35.9	36.9	37.8
	Low-grade goods	5.2	21.5	21.4	21.5	31.1	22.1	15.9	13.0	10.8

Source: Commerce Department of China. Report of foreign trade situation of China, December 2011.

### 2.2. The trade proportion of means of production and raw materials increased as well as the relative decline in the proportion of consumer goods

China is a big manufacturing country. The production capacity of all kinds of domestic products is being increased. So large quantities

2) Product grade classification with reference to the OECD standard classification (International Trade Table "SITC" Rev. 3).

of means of production and raw materials should be imported to meet the needs of enterprises, while Korea is one of the countries which are the most important suppliers of high-tech production and raw materials<sup>3)</sup>. At the same time, Korea is also a country lacking of resources. Its development depends on part of raw materials from China, especially the rapid development of Korea's export trade for this demand in recent years. The two reasons above result in the increased proportion of means of production as well as raw materials in the Korea and China trade.

According to the statistics of the Korea International Trade Association, the growth rate of means of production exported from Korea to China is the fastest. From 2005 to 2010, the average growth rate was 39.8%. The average annual growth rate of raw materials goods was 21.8% followed by the same period. And the exported consumer goods average annual growth rate was only 8.9%. The proportion of means of production and raw materials in the total trade volume of exported goods from Korea to China rose from 54.6% in 2000 to 63.3% in 2010. In 2004, means of production exported from Korea to China began to exceed over the raw materials. From 2004 to 2010, in the goods exported from China to Korea, the growth rate of means of production was the fastest, with the average annual rate was 38.2 %, followed by raw materials with the growth rate of 32.3 %. The growth rate of consumer goods was 20.8%, which was the slowest. In addition, the proportion of means of production and raw materials in all of the goods exported from China to Korea increased much more rapidly, from 44.1% in 2000 to 58.1% in 2010<sup>4)</sup>. The proportion of consumer goods in the total volume of imports and exports showed a downward trend in the two countries while the export volume and growth rate of consumer goods exported from China to Korea grew faster than import.

### 2.3. The decreased proportion of inter-industry trade and the increased proportion of intra-industry trade<sup>5)</sup>

Automobile, electronics, machinery, petrochemicals, steel and ship-building are pillar industries of both China and Korea. With the enhancement of Chinese manufacturing, the international competitiveness of the products in those areas is also enhanced and the intra-industry division of China and Korea in the pillar industry is more and more clear. Hence, the intra-industry trade index and proportion of electronic products, mechanical products, automobile products are gradually increasing. Before the middle of the 1990s, the main Korea and China trade was inter-industry trade, then, the intra-trade index of various commodities has been increasing constantly. Please see Table 3. for details.

3) Jin Yong-jiu. The analysis of trade structure between China and Korea, Jilin University, 2010.

4) Statistics Database of United Nations Commodity Trade(www.comtrade.un.org)

5) Intra-industry trade with the formula  $B_i = \frac{|X_i - M_i|}{X_i + M_i}$  to calculate,  $X_i$  is exports and  $M_i$  is imports of commodity  $i$ . The closer to 100 of  $B_i$  means the hugger of the proportion of intra-industry trade, and the closer to 0 of  $B_i$  means the lower of the proportion of intra-industry trade.

<Table 3> The change of Korea's major industries-industry trade index (%)

Year	Manu- facturing	Steel	Electro- nic products	Auto- mobile	General machi- nery	Fiber	Petroch- emical industry	Other manu- facturing
1992	11.90	11.47	22.37	4.52	9.39	7.37	2.30	17.56
1993	13.05	8.52	29.20	0.53	6.99	10.42	3.30	19.93
1994	18.49	18.43	35.33	3.26	7.41	12.54	5.22	25.40
1995	19.36	19.12	47.72	2.02	6.74	12.75	6.63	23.89
1996	20.74	17.32	56.07	2.93	9.10	13.26	5.26	21.07
1997	19.86	12.63	55.78	6.78	13.13	14.73	5.94	15.32
1998	18.37	7.58	44.90	2.24	10.04	16.73	2.63	16.34
1999	23.40	12.78	46.51	8.63	15.15	16.66	3.17	21.27
2000	26.02	12.77	52.53	14.73	15.48	15.91	3.40	22.15
2001	28.07	12.64	54.94	7.04	19.93	15.70	3.27	24.78
2002	27.90	15.00	45.22	7.42	18.47	18.68	3.76	25.01
2003	28.11	12.92	45.39	4.34	16.75	18.67	3.36	25.94
2004	28.73	20.95	47.00	4.85	18.74	19.03	3.13	23.73
2005	29.96	22.43	48.96	8.06	26.28	22.86	4.01	21.58
2006	34.15	22.06	55.37	16.33	32.33	22.81	7.73	24.85
2007	35.23	22.73	56.32	18.21	34.12	22.98	7.82	25.03
2008	36.79	23.11	58.12	20.35	36.23	22.92	7.91	25.62
2009	38.11	23.81	58.97	21.77	38.09	23.13	8.06	26.75
2010	39.02	24.15	59.39	23.58	39.25	23.86	8.27	28.19

Source: Korea International Trade Association DB (www. kita. net).

## 3. Reasons of Changes in Korea and China Trade Structure

### 3.1. Industrial upgrading and technological progress of enterprises of China

China increased investment on fixed assets centered at manufacturing industry in 2000. And the growth rate of investment on fixed assets which was 10.5% on average annual during "the ninth five-year period" increased to 23.7% during "the tenth five-year period". Among them, the growth rate of the investment in manufacturing industry soared from - 0.9% to 37.4%<sup>6)</sup>. The increased investment on the heavy industry as well as chemical industry enlarged the production capacity in raw materials and the means of production. For one thing, it increased the self-sufficiency rate and slowed down the growing rate of import from Korea, for another thing, it increased the export to Korea, resulting in the augment of the proportion in the raw materials and means of production in the two countries' trade. Stepping into "the eleventh five-year period ", the way of the eco-

6) Li Zhun-ye. An analysis on trade structure between Korea and China ,Chinese Industrial Economy, July 2009.

conomic growth has transformed from "quickly and well" into "well and quickly", promoting the industrial upgrading. The technology of China has made great progress and the technology gap between the two countries is narrowing fast. The quality improvement of products make sure that some of the raw materials and intermediate products supply no longer rely on import, but turn to domestic purchasing, causing the decreased proportion of the goods imported from Korea and promoting improvement of expenditure structure from China to Korea. Some high-tech products in China not only meet the domestic market, but also gradually step into the Korean market, improving the overall technical content between China and Korea as well as the rate of high-tech products in the Korea and China Trade.

### 3.2. Demand changes of Korea

The fast-growing exported commodities of Korea lead to the increasing imported demand of intermediate products in recent years. Because of the favorable geographical position and improvement in production capacity of intermediate products as well as the content of product technology of China, the enterprises in Korea increased the kinds and scale of the import of intermediate products from China. The products imported from China involve not only intermediate products which are demanded by export sector but also products for domestic use<sup>7)</sup>. Due to the need for industrial upgrading, some enterprises which no longer had the advantage of domestic production were out of the Korean domestic market or transferred their production bases into China, causing some domestic products reliance on China.

### 3.3. Growing investment from Korean promoting the development of intra-industry division

The direct investment has been increasing rapidly since the establishment of diplomatic relations between the two countries. The investment was only \$910 million in 1995, while it had risen to \$4.87 billion in 2011, and nearly 80% of it was invested in the manufacturing industry<sup>8)</sup>. Accompanied by the direct investments, parts of the industries or links of productions were transferred to China, which accelerated the development of intra-industry division of Korea and China and increased the proportion of the intra-industry trade. In addition, some enterprises of Korea strived to make localization strategy in China and made best use of the cheap raw materials as well as larger proportion of intermediate goods in China in recent years. This change made such enterprises continue to enlarge export to Korea, and meanwhile decrease the import. This could improve the structure of balance in payments of the two countries.

## 4. The Development Prospect of Korea and China Trade

Korea and China are the trade powers in Asian. The changes of trade structure between them not only reflect on the variations of their comprehensive national power but also have great effect on the global trade market. Therefore, it is beneficial to look into the future as well as know about the trend of Korea and China Trade. On one hand, it is advantageous for enterprises to make adjustments to the trend in time; on the other hand, it is favorable for the government to take revisions in the policies of trade timely and cope with the changes of international trade situations better. According to the development of international economy as well as the changes of domestic situations, we have the following perspectives.

First of all, the economy of China and Korea is complementary because of the huge potential market, the geographic proximity, the differences in economic development as well as resources and so on. Therefore, the trade scale between the two countries will expand in the long run.

Secondly, the increasing trend of China exporting to Korea will continue in the short time. With the development of Chinese economy and the Korea and China industry division, the export of consumer goods from China to Korea will continue to increase. Accounting for continued deterioration of the shortage of shipbuilding steel plate in the short time in Korea, it is inevitable that China is about to increase exporting steel to Korea<sup>9)</sup>.

In addition, the IT products exported from Korea to China will continue to increase, but it is difficult to keep the high rate as before. IT industry has been developing rapidly in China and the assembling process of Korean enterprises is transferred continuously to China. Therefore, the import of IT parts from Korea will continually increase. However, in the meanwhile, the localizing promotion of Korean industries investing in China will suppress the increase of importing from Korea.

Finally, the KRW has had a large depreciation after the Global Economic Crisis, the price competitiveness and the export from Korea to China have generally risen. And all of these have made pressures on Chinese products in the international market. What's more, with the development of economy, the standard of Chinese domestic wages will continue to rise and the advantage of price competitiveness of the labor intensive products will gradually disappear<sup>10)</sup>. Therefore, in order to reduce the trade deficit with Korea continually, it is necessary for China to improve the technological competitiveness and value-added of products.

In general, the optimization of the trade structure is an important guarantee for the sustainable development of Korea and China trade. It is effective to optimize the trade structure between Korea and China with government policy, investment and technical cooperation.

On the policy side, the two countries must continue to develop a

7) Liu Cheng-chan. Study on the forms of Bilateral trade between China and Korea, Fudan University, 2009.

8) Ministry of Strategy and Finance of Korea. Report of the economic results and prospects at the 20th anniversary of the establishment of diplomatic relations between Korea and China, 2012.

9) Wang Ji-kong. Changes and prospect of the Sino-Korea trade structure, Latitude and Longitude of Economy, November 2009.

10) Lou Chun-jie. The effect of RMB exchange rate changes on the trade between Korea and China, Liaoning University, 2011.

strategic economic and trade partnership and work together to solve trade barriers. In terms of investment, the Chinese government should guide the Korean capital to invest in basic industries, leading industries and high-tech industries. Meanwhile, The Chinese government should further strengthen the management and service on the Korean enterprises investing in China. Furthermore, China should encourage qualified enterprises to go to Korea to invest. For technology cooperation, the Chinese government should promote domestic enterprises to enhance the ability of technological innovation and make more use of high-tech and green technology to expand the technology spillover effect.

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