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Impact of the Sino-Korea Free Trade Agreement on China's Agricultural Industry

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Abstract
Free Trade Agreement (FTA) between China and South Korea was an inevitable consequence of intimate cultural and geographical background between two countries. On the surface, China is prevailing over the current agreement. However the agreement contained tariff concessions on staple items from South Korea. This implies Chinese agricultural market was also has been affected in some ways. Previous researches were mostly focusing on the feasibility of free trade agreement between China and South Korea. Little empirical research has been done on the actual results of the agreement regarding tariff concession. This article discusses the current status of agricultural trade and future of Sino-Korea agricultural trade. Major agricultural products of both countries are analyzed through general equilibrium analysis, then changes of production, consumption and import and export rate is predicted. Finally, implications to China have been suggested.
Keywords: Sino-Korea FTA, Agricultural products, General equilibrium analysis

1. Introduction

China and South Korea are close geographically close. Therefore, the strong complementarity economic relationship between China and South Korea dates back a long history. At present, China is the most important trade partner for South Korea.[1] According to the National Bureau of Statistics of People's Republic of China(中华人民共和国国家统计局), the amount of agricultural product trade has increased 209% in year 2014 reaching 5.63 billion to the 1.82 billion dollars in year 2000. Two countries opened up a new era signing on the free trade agreement. It was a great leap for both economy and welfare. It will also have a favorable and unfavorable impact on industry, agriculture, and business. This thesis studies the results of the agreement, and analyzes the impact of tariff concession on Chinese agricultural product market.

2. Sino-Korea FTA negotiation process

The research on trade between China and South Korea has started since 1992. This has developed with a steady increase and showed rapid growth after year 2002. In year 2001, China has laid a founding stone for FTA proposing the contract. The negotiation process had three main phases.[2]

2.1 Private participation feasibility phase

In November 2001, China proposed FTA to South Korea. In September 2004, a joint research team was established to discuss private participation feasibility. This research project was to be continued for two years until March 2005.

2.2 Government and non-government organizations phase

Based on the previous research on private participation feasibility, research on collaboration of government and non-governmental organizations has been initiated. Starting March 2007 until June 2008, China and South Korea conducted five rounds of joint research and settled issues such as marks-of-origin regulations, service trade, and product trade. In May 2010, two countries issued a joint statement <Sino-Korea long-term development plan for economy and trade cooperation>.

2.3Official negotiation

From May 2012 to July 2017, through twelve rounds of negotiations, China and South Korea have reached the agreement. On 30th of December 2015, Sino-Korea FTA came in to effect.

3. Status of Agricultural products trade between China and South Korea

Since year 1992, when South Korea has established diplomatic ties with China, agricultural products trade between two countries has continuously increased, especially after China has joined WTO (World Trade Organization). From year 2004 to 2013, exports of agricultural products to China have heavily increased by 369%, from 310 million to 1.14 billion US dollars. Korea's agricultural imports to China increased by 178%

[1] 程祉霖.中韩农产品贸易问题研究[D]，硕士学位论文，吉林大学，2015.
[2] 郭素玲.中韩农产品贸易发展与未来趋势解析[J], 世界农业，2015（1）：102-107.

from $ 2.12 billion to 3.79 billion-dollar (Fig. 3-1).

Fig.3-1 Agricultural products trade between South Korea and China 2004-2013 (hundred million)

	Export	Import	Trade balance	Total
2004	3.104653	21.2594372	-18.1548	24.36409
2005	3.307047	28.2187957	-24.9117	31.52584
2006	3.286705	27.3896075	-24.1029	30.67631
2007	4.509881	36.2445383	-31.7347	40.75442
2008	5.150275	30.627244	-25.477	35.77752
2009	4.998476	25.623082	-20.6246	30.62156
2010	7.18448	30.7135434	-23.5291	37.89802
2011	11.32191	36.5980783	-25.2762	47.91998
2012	10.91775	34.1874535	-23.2697	45.10520
2013	11.46664	37.9863618	-26.5197	49.45300

In terms of absolute amount, the amount of China's exports of agricultural products exported to South Korea is much larger than the amount of agricultural products imported from Korea. Also, agricultural imports from Korea only take a small portion of the whole agricultural imports. However, South Korea has a high dependence on Chinese agricultural products. Therefore it can be seen that China has more advantageous position in terms of agricultural trade.

Major imported items for China are fisheries products, sugar, beverages, and processed food. Major imported items for Korea are fisheries products, vegetables, and meats. Fisheries products take up the largest portion of the imports from Korea to China, followed by sugar. These two in total amount up to 40 % of the whole import shares. In case of Korea, fisheries products are the most imported items, followed by vegetables. These two take 50% of the total, and next largest rate is 11%, which is cooking oil. It is followed by animal products, medicinal herbs, fruits, and sugar.

3.1Fisheries products

From year 2001 to 2014, in overall, Chinese fisheries products export to South Korea was in a downtrend. The average amount was 0.4 ~0.6 million tons, and year 2006 was the highest of 0.604 million tons, and lowest in 2013 of 0.416 million tons. On the contrast, the overall export of Korea for fisheries products is rising. From year 2001 to 2008, the export of Korea increased by around 300%. From year 2009 to 2013, the annual growth was 3.7% even though it is a comparatively low rate to the rate before year 2008. For China, the main products are frozen fish and shellfish which take up 38.7% and 34.5% respectively. Processed fish and live fish take up 10.8% and 4.7% respectively. For Korea, the main products are frozen fish and shellfish, which take up 43.1% and 30.5% of the total share. Water plants and other fisheries products are 15.9% and 3.9% respectively.

3.2 Sugar

From year 2001 to 2014, sugar exported to Korea from China shows growth at first but turns downward afterwards. From year 2001 to 2009, the export increased from 70 thousand tons to 149 thousand tons, showing annual growth of 9.9%. From year 2010 to 2012, the amount decreased from 144 thousand tons to 99 thousand tons. In year 2013, recovered to 154 thousand tons and in 2014 in dropped again to 123 thousand tons.

On the contrary, for Korea, from year 2001 to 2014, the sugar export increased from 83 thousand tons to 198 thousand tons (+6.9%). The trade volume grew 8.5 times bigger, 7.6 million dollars to 72.1 million dollars.

China exported mainly glucose and other sugar products taking up 24.1% and 74.0% respectively. Korea exported mainly sugar which was 97.6% of the total share.

3.3 Cereals

The exports to Korea increased at first but turned downward later on. From year 2001 to 2007, the export amount increased gradually from 120 thousand tons to 240 thousand tons. However, between year 2008 and 2014, it decreased from 234 thousand tons to 129 thousand tons showing a steep downfall. The volume of export has also decreased by 9.9%, year 2001 181 million dollars and year 2014 163 million dollars, due to the rise of the unit price.

On the other hand, the export is on a rising trend. From year 2001 to 2014, the export grew from 40 thousand tons to 130 thousand tons (2.25 times larger amount). The trade volume also increased 16 times bigger from 3.15 million dollars to 52.56 million dollars.

China is mainly exporting flour and starch products and takes up 55% and 21% respectively. For Korea, the major items are instant noodle and flour products consisting 43% and 42% respectively.

3.4 Animal products

Since year 2001 until 2007, China has continuously been growing from 30 thousand tons to 55 thousand tons. During year 2007 to 2013, the amount showed little drop from 39 thousand tons to 22 thousand tons. For Korea, the export is on the fair rise. From year 2013, it started at 10 thousand tons growing up to 15 thousand tons in year 2014. In terms of animal products, China tends to be self-sufficient, and Korea imports mainly beef and pork..

3.5 Vegetables

For China, from year 2001 to 2007, the trade grew 11.7% annually in average from 194 thousand tons to 815 thousand tons. For Korea, the change was small, the amount remaining 3 thousand tons. China mainly exports frozen vegetables and processed vegetables and is 53.1% and 44.9% of the total share respectively.

4. The impacts of Sino-Korea FTA to China

4.1Contents of agreement

Compared to the previous FTAs, Korea showed more protective approach exempting 30% of the items, which is 60% of the import volume. Korea minimized the market-opening by excluding major items such as rice, hot pepper, garlic, beef, and pork. China eliminated 93% of the tariff on agricultural products. Moreover, 102 sensitive items such as sugar, flour, and cigarettes has been excluded. Also, instant noodles are agreed to abolish tariff within twenty years.

4.2GTAP (Global Trade Analysis Project) model

By using GTAP model, the level of tariff concession has been analyzed. GTAP model is a tool to calculate the impact of policy change or events where internal economic sections (production, consumption, investment) are external sections (imports, exports) are interdependent. In this model, the role players are household, businesses, government, and foreign section. The households maximize its utility under limited budget. Businesses maximize its profit under limited technologies. The standard GTAP Model is a multi-region, multi-sector, computable general equilibrium model, with perfect competition and constant returns to scale. It starts under a premise that the subject countries and world economy are at a 'steady state'. When tariffs are abolished with trade liberalization the prices are flexibly change to balance the market.

4.3 Results

Agricultural products consisting fisheries product, sugar, animal product, fruits, and vegetables has been analyzed through GTAP model. This research used the seventh edition GTAP data base. The data includes 113 countries and 57 industries. The results are as follows.

4.3.1 Fisheries products

China has fully opened up with 100% liberalization rate (99% of the items). As a result, China will experience 0.25% rise in its domestic production, import by 5.35%, and export by 1.27%. On the contrast, the consumption rate will fall by 0.14%. The price level is expected to rise by 0.66% in average.

4.3.2 Sugar

Sugar was a sensitive sector for China and was exempted. However, processed food tariff was to be abolished within ten years. When the tariff for processed foods reaches zero, production rate will decrease by 3.78%, consumption rise by 0.46 %. Export will rise by 1.89%, and import will rise by 28.34%. The price level will fall by 0.13 %. In other words, import will rise dramatically and threat the related industries in China.

4.3.3 Animal products

Pork and beef are extremely sensitive issues for South Korea and it has been exempted. Therefore, there will not be a great change in production and trade amount. However, for other meat sector, the export will grow to about 5.71 %. Also, it is estimated that production, import, and the price will increase to a small scale.

4.3.4 Fruits and vegetables

This field of trade shows a clear advantage of Chinese products and exempted from tariff concession. Thus, production amount, consumption amount, and price level will not be greatly affected.

Table4-1 General equilibrium analysis of main agricultural products taxes reduction
Measure: %

Groups	Chinese tariff	Korean tariff	Effects on Chinese industries				
			Production	Consumption	Export	Import	Domestic price
Fisheries	0	0	0.25	-0.14	5.35	1.27	0.66
Sugar	exempted	0	-3.87	0.46	1.89	17.34	-0.13
Meat	0	exempted	-0.10	0.00	-1.51	0.18	0.14
Other meats	0	0	0.15	-0.03	5.71	1.64	0.26
Fruits, Vegetables	0	exempted	0.09	-0.04	-0.71	1.06	0.38

5. Implications

All in all, limited competition exist in some parts of the traded products, the subsidiarity for both countries is fairly high. Sino-Korea FTA will bring positive impacts for both countries. However, comprehensive measures are needed for major industry sectors.

To be specific, in terms of agriculture, meat products except fisheries products and beef will have a good market opportunity. The Chinese government needs to support measures to maximize meat export. At the same time, measures and compensation for the harmed industries are needed. Especially, sugar industry will be greatly affected. Even though Korea is not a major sugar producing country, processed food industry is comparatively advanced. It seems that China needs to prepare protective measures for vulnerable sectors.

To conclude, Sino-Korea FTA will lead Chinese industry structure to be more advanced and effective form and positively affect Chinese economy.

6. Future research directions

One of the major interests for countries establishing free trade agreement is FDI (foreign direct investment). With FTA, China will be dealing with large and small direct investments. These are expected to eventually bring development of technology and industrial structure in China. Therefore, additional research should include more quantitative analysis in order to trace the real effects of FDI within free economic zone.

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