world trade institute

MILE 14

Assessment:

MASTER'S THESIS

HANG ZHANG

THE SUSSEX FRAMEWORK ANALYSIS OF A POTENTIAL CHINA-SOUTH KOREA FREE TRADE AGREEMENT

THESIS SUPERVISOR: DR. ANIRUDH SHINGAL

30 OCTOBER 2014

ABSTRACT

This paper gives an analysis of welfare consequences of a potential China-South Korea Free Trade Agreement. By using the Sussex Framework, the study examines shallow integration and deep integration from the given FTA. First, it evaluates trade creation and trade diversion of China-South FTA by referring to five rules of thumb in shallow integration. Second, it analyzes existing and potential for deep integration quantitatively and qualitatively.

The results show that China-South Korea FTA would be welfare increasing as a whole base on analyses of trade creation and trade diversion. Besides, there is a great potential to further welfare gains for both economies if two parties have a strong wish to push the process of deep integration in FTA negotiations.

DECLARATION

This master thesis has been written in partial fulfilment of the Master of International Law and Economics Programme at the World Trade Institute. The ideas and opinions expressed in this paper are made independently, represent my own views and are based on my own research. I confirm that this work is my own and has not been submitted for academic credit in any other subject or course. I have acknowledged all material and sources used in this paper. I understand that my thesis may be made available in the World Trade Institute library.

Hang Zhang

ACKNOWLEDGEMENT

First, I would like to give my sincere thanks to my supervisor Prof. Anirudh Shingal for giving me enormous supports. He introduces the key analytical framework in his class and provides invaluable advices in improving my thesis. The thanks also go to Mate Kander, who was also one of the former MILE students. His thesis is really helpful in organizing the structure of my study.

Second, I would also like to thank World Trade Institute, which provides excellent academic resources during the academic year.

Last but not least, my special thanks go to my beloved family for continuous support through these years.

TABLE OF CONTENTS

LIST OF GRAPHS AND TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

ASEAN	Association of Southeast Asian Nations
CARIS	Centre for the Analysis of Regional Integration at Sussex
CKFTA	China-Korea Free Trade Agreement
FDI	Foreign Direct Investment
FKI	Finger-Kreinin Index
FTA	Free Trade Agreement
GATS	The General Agreement on Trade in Services
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLI	Gruber-Lloyd Index
GPA	The Agreement on Government Procurement
HS	The Harmonized Commodity Description and Coding System
IIT	Intra-Industry Trade
IPR	Intellectual Property Rights
KBIZ	Korea Federation of SMEs
MFN	Most Favoured Nation
MOFCOM	Ministry of Commerce of the People's Republic of China
NTB	Non-Tariff
RCA	Revealed Comparative Advantage
RCEP	Regional Comprehensive Economic Partnership
RMA	Revealed Market Access
SF	Sussex Framework
SPS	Sanitary and Phytosanitary
TBT	Technical Barriers to Trade

UNCTAD	United Nations Conference on Trade and Development
USD	US dollar
WITS	World Integrated Trade Solution
WTO	World Trade Organization

1. Introduction

Regional economic integration is the trend of global economic development. China and South Korea are two important economies in the world and have close economic relationship. Therefore, to establish a bilateral free trade agreement would have a profound impact on two nations and rest of the world. Though there are already relevant analyses in assessing the impact of the potential China-South Korea FTA, none of them starts with the Sussex Framework. This paper thus uses the tool of SF to give a thorough analysis of welfare implications of the potential China-South Korea FTA.

Chapter 2 first gives background information about the initiative of China-South Korea FTA. The close economic exchange between two countries indicates bright prospects for the successful conclusion of FTA. Chapter 3 details the Sussex Framework, which basically can be divided two parts, shallow and deep integration.

Chapter 4 turns to the first part of theoretical analysis, which is the examination of trade creation and trade diversion in a process of shallow integration. The result of analyses generally show a positive welfare effect on two countries if FTA is concluded. Chapter 5 furthers the study and focuses on the level of deep integration between China and South Korea. The study finds that the existing level of deep integration is relatively low between two countries. However, if two nations take the opportunity of building a comprehensive FTA and work on removing non-tariff barriers hindering the process of deep integration, a massive welfare gains are expected to be generated.

2. Background

China and South Korea are two important trading nations in Asia-Pacific region and also occupy significant positions in world economy. In 2013, the total trade volume of China is over USD 4,000 billion, which makes it the largest trading nation in goods. The overall trade volume of South Korea has also exceeded USD 1,000 billion for consecutive 3 years since 2011. In terms of bilateral economic relationship, China has already become Korea's biggest trade partner and most important foreign direct investment recipient, while Korea is China's largest import source and fourth largest export market. The close economic links lay a solid foundation for the possible FTA between two countries.

Before 2001, China and South Korea didn't put in too much time and effort in building bilateral or regional trade frameworks, instead they firmly supported the multilateral trading system. However, with the deadlock of Doha Round negotiations, members cannot achieve their expected goals and obtain substantial benefits from trade. Therefore, many countries switch to free trade agreements to further liberalize their trade bilaterally or regionally, and China and Korea are no exceptions.

So far China has concluded FTAs with ASEAN, Pakistan, Chile, New Zealand, Singapore, Peru, Hong Kong, Macau, Costa Rica, Iceland and Switzerland; and is negotiating with GCC, Australia, Norway, Korea, Japan, Sri Lanka and country groups including ASEAN, Japan, Korea, Australia, New Zealand, India (RCEP). The China-India FTA and China-Columbia FTA are also under consideration.[1] Korea has concluded FTAs with Chile, Singapore, EFTA, ASEAN, India, US, the EU and Peru; and is currently negotiating with China, Japan, Australia, New Zealand, Canada, GCC and Mexico. [2]

[1] MOFCOM, China FTA Network, (accessed 5 Spetember 2014), http://fta.mofcom.gov.cn/english/index.shtml.

[2] Korean Culture and Information Service(KOCIS), Korea in the World, (accessed 5 Spetember 2014), http://www.korea.net/AboutKorea/Korea-at-a-Glance/Korea-in-the-World.

In November 2004, President Hu Jintao of China and President Roh Moo-Hyun of South Korea jointly declared a non-governmental feasibility study on China-Korea FTA (CKFTA).[3] On the basis of the initial study, the official Joint Study Committee for a CKFTA was established in November 2006 to conduct a comprehensive research. The Joint Study Committee produced a report in 2010 and gave a systematic examination of opportunities and challenges of a potential CKFTA, while expressing the opinion that CKFTA could significantly promote bilateral trade and deepen strategic relationship between China and South Korea.

After spending a lot of time in theoretical preparations, China and Korea governments officially announced the commencement of China-South Korea FTA negotiations on 2 May 2012. Until now, there have been 13 rounds of talks between two countries. In the 6th round of negotiations, China and Korea agreed to fully liberalize 90% of their tariff lines, covering 85% of total import value.[4] Both sides subsequently wrapped up the first stage negotiations in the 7th round by agreeing on the modality including level of trade liberalization in goods, agreements scope, principles, frames and elements of talks of all fiends.[5] In the latest round, two countries announced the progress in areas of goods, services, investment and rules of origin and promised to keep maintaining consultations for remaining issues. In July, 2014 China and South Korea declared that they would endeavour to finish the negotiations by the end of this year.[6]

In view of the fact that China and South Korea have very close economic relations, it is reasonable to expect that a potential China- South Korea FTA could release substantial gains for both sides. However, there are also many tricky issues which dim the prospect of the potential FTA. For instance, there has been a wide divergence in opening level of respective

---

[3] MOFCOM, Overview of China-Korea FTA, (5 September 2014),http://fta.mofcom.gov.cn/topic/enkorea.shtml.

[4] MOFCOM, (5 September 2014), http://www.mofcom.gov.cn/article/resume/n/201309/20130900310992.shtml.

[5] MOFCOM, 'South Korea and China Complete First-stage FTA Talks', (5 September 2014),http://fta.mofcom.gov.cn/enarticle/enkorea/enkoreanews/201312/14635_1.html.

[6] MOFCOM, (5 September 2014), http://fta.mofcom.gov.cn/article/chinakorea/koreanews/201409/18275_1.html.

sensitive sectors for two countries. Korea has been reluctant to open domestic agricultural sector due to its long-term protective policy. China also wants to preclude some machinery and chemical products from FTA negotiations. Moreover, two parties have to tackle the difficulties of in-depth liberalization in issues like services, investment, and government procurement.

3. Methodology: The Sussex Framework[7]

The Sussex Framework is an analytical template developed by Centre for the Analysis of Regional Integration at Sussex, to assess the impact of a given FTA. Basically, the SF focuses on both shallow and deep integration involved in a given FTA and provides a set of well-established indicators and some qualitative methods to facilitate analysis. By thoroughly explaining these indicators, the Framework can get a relatively comprehensive understanding of the impact and viability of a FTA.

Shallow integration, also called negative integration means the removal of border barriers between FTA partners. The common practices usually include the reduction or elimination of tariff and quota in the territory of a given FTA. Shallow integration will produce two conflicting effects: trade creation and trade diversion. When trading partners in a certain FTA eliminate tariffs and quotas on all products, those inefficient domestic producers will be replaced by efficient ones from partner countries. Consumers will buy cheap imported goods instead of domestic pricey items. Therefore, the new trade between member countries in a FTA is created. On the other hand, a nation's tariff is substantially reduced on imports from partners while remains unchanged for non-partner economies, which creates the situation that highly efficient production from third-country is replaced by less efficient one from partner countries, thus producing trade diversion effect and reducing welfare in a FTA.

The SF comes out with a number of rules of thumb to evaluate the size of trade creation and trade diversion in the process of shallow integration of a potential FTA.[8]

- The higher are the initial tariffs, the more likely it is that there will be both trade creation and trade diversion.

---

[7] Evans, D., Holmes, P., Gasiorek, M., Rollo, J. & Robinson, S., *Assessing Preferential Trading Agreements Using the Sussex Framework*, Centre for the Analysis of Regional Integration at Sussex (CARIS). CARIS Working Paper No.1, March 2007.

[8] See note7 at p.5.

- The greater the number of PTA partners, the more likely it is that trade creation will outweigh trade diversion.
- The higher the initial share of trade between them, the higher the likelihood of the FTA enhancing welfare.
- The wider the differences in comparative advantage between partners, the more likely the PTA will be welfare improving.
- The more similar is the product mix in the member economies, the greater is the likelihood of trade creation.

The SF also puts forward some thoughts on deep integration of a FTA. Generally, deep integration means the removal of barriers to trade behind borders. These barriers may include sanitary and phytosanitary measures (SPS) and technical barriers to trade (TBT), regulations on services and investment, lax protection of intellectual property rights and restrictions on government procurement. Deep integration in such areas always produces considerable gains compared with shallow integration. It stimulates finer market specialization and optimizes reallocation of resources. More FDI flows without limitations also promote technology transfer and diffusion in recipient countries. A sound competitive policy also brings substantial benefits to partner countries in one FTA through enhancement of productivity in enterprises and increase in consumer welfare by getting access to cheap products. [9]

Although there are few data available and well-established analytical tools to evaluate the degree of deep integration, the SF does propose some useful methods in estimating the existing and potential for further deep integration quantitatively and qualitatively. The first one is calculating the level of intra-industry trade (IIT) between trading partners in one FTA. As CARIS mentioned in its working paper, a high level of IIT can lead to finer specialization and generate productivity gains, which yield large increases in trade and likely to outweigh any potential trade loss from shallow integration.[10] Another important channel to assess the potential gains from deep integration is to give a thorough analysis of investment regimes in

[9] See note 7 at p.8.

[10] See note 7 at p.9.

FTA partners and extent of liberalization in FDI negotiations. In addition to IIT levels and FDI regimes, other important issues like TBT, SPS, services, IPRs and government procurement should also be examined.

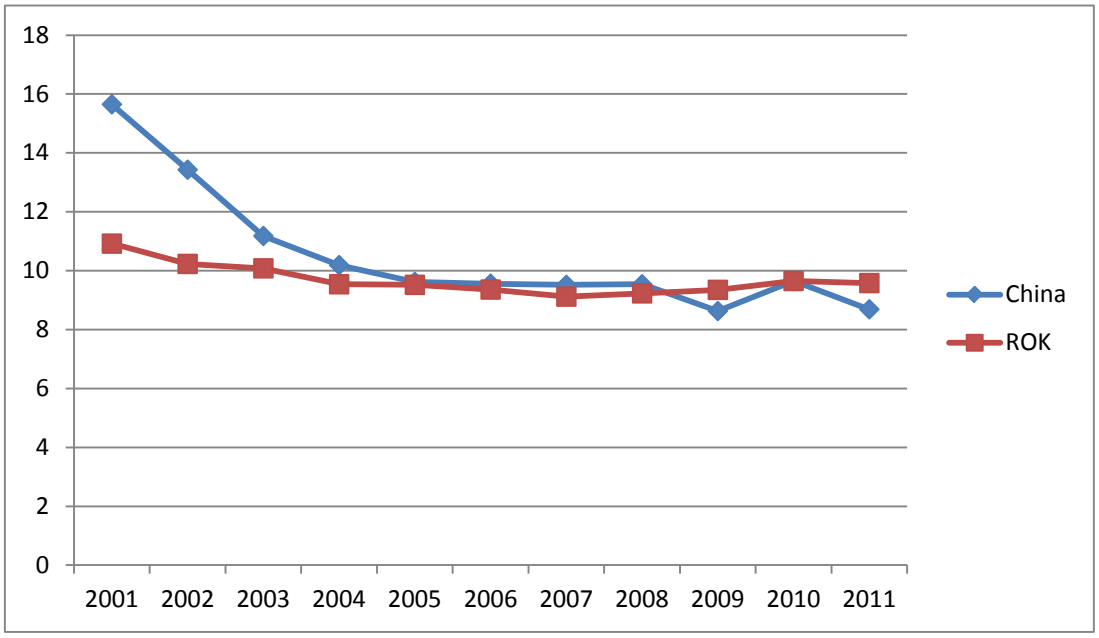
4. Expected shallow integration effects

As mentioned previously, basically there are five rules of thumb to evaluate trade creation and trade diversion in one given FTA. The paper will analyze five factors one by one to give a full understanding of the overall effect of shallow integration for China-South Korea FTA.

First rule of thumb

This sub-chapter first examines the effect of shallow integration of a potential China-South Korea FTA by referring to the first rule of thumb. Under this rule, if the initial tariffs of China and South Korea maintain a high level, then the FTA between them is more likely to generate both trade creation and trade diversion. To facilitate this analysis, Figure 4.1 demonstrates the evolution of bilateral tariffs between China and South Korea.

Figure 4.1: The evolution of China and South Korea bilateral tariffs (%, 2001-2011, Simple Average)



Source: WTO-IDB via WITS

Figure 4.1 shows the trend of bilateral simple average tariffs between China and South Korea since 2001. The simple average tariffs China imposed to Korea have been decreasing generally and reached 8.69% in 2011. The trend of tariff levels of South Korea relatively keeps stable, with average tariffs declining from 10.92% in 2001 to 9.58% in 2011. However, both two countries' tariff levels are single digit and not very high in recent years. Therefore, in the case of FTA reached by China and South Korea, the effects of trade creation and trade diversion would less likely to become substantial for two countries.

Though the initial tariff levels are very useful in determining the extent of trade creation and trade diversion, some important features may be missing if we solely relied on this indicator. For example, some tariff lines may have very high tariff levels which far exceed the average ones stated above. If these products are covered by the potential FTA between China and Korea, then trade creation and trade diversion would be high. Therefore, some important indicators like standard deviation、minimum and maximum rates、number of domestic and international peaks[11] should also be considered in the analysis of the first rule thumb[12]. Table 4.2 takes these indexes into consideration.

Table 4.2: Comparative tariff profiles on bilateral imports, China and South Korea (2001-2011)

Reporter	Tariff Year	Simple Average	Standard Deviation	Minimum Rate	Maximum Rate	Domestic Peaks(%)	Int'l Peaks(%)
Korea,Rep.	2001	10.92	43.79	0	827	1.72%	6.84%
	2002	10.23	43.65	0	818.1	1.61%	7.03%

[11] Domestic tariff peaks are defined as those exceeding three times the overall simple average applied rate. International tariff peaks are defined as those exceeding 15%. See WTO, Trade Policy Review of The Former Yugoslav Republic Of Macedonia , WT/TPR/S/290, 23 October 2013, p33.

[12] Kander, M.'Free Trade Between Economic Giants?: The Sussex Framework Analysis of a Potential EU-Japan Free Trade Agreement', World Trade Institute, Master's Thesis, 2012, p.24.

	2003	10.08	42.17	0	809.2	1.72%	7.05%
	2004	9.54	41.94	0	800.3	1.57%	6.80%
	2005	9.52	41.74	0	800.3	1.62%	6.92%
	2006	9.36	40.86	0	800.3	1.52%	6.85%
	2007	9.12	41.32	0	800.3	1.63%	6.41%
	2008	9.23	40.77	0	800.3	1.70%	6.47%
	2009	9.35	40.81	0	800.3	1.97%	6.83%
	2010	9.65	41.36	0	800.3	1.91%	6.74%
	2011	9.58	41.2	0	800.3	1.96%	6.57%
China	2001	15.65	10.47	0	114	1.19%	42.26%
	2003	11.18	7.58	0	68	1.50%	24.87%
	2004	10.19	7.12	0	65	1.51%	17.03%
	2005	9.62	6.64	0	65	2.15%	13.88%
	2006	9.56	6.72	0	65	1.77%	13.82%
	2007	9.52	6.53	0	65	1.79%	14.02%
	2008	9.54	6.68	0	65	1.86%	13.94%
	2009	8.63	6.13	0	65	1.06%	9.90%
	2010	9.65	6.98	0	65	2.12%	14.39%

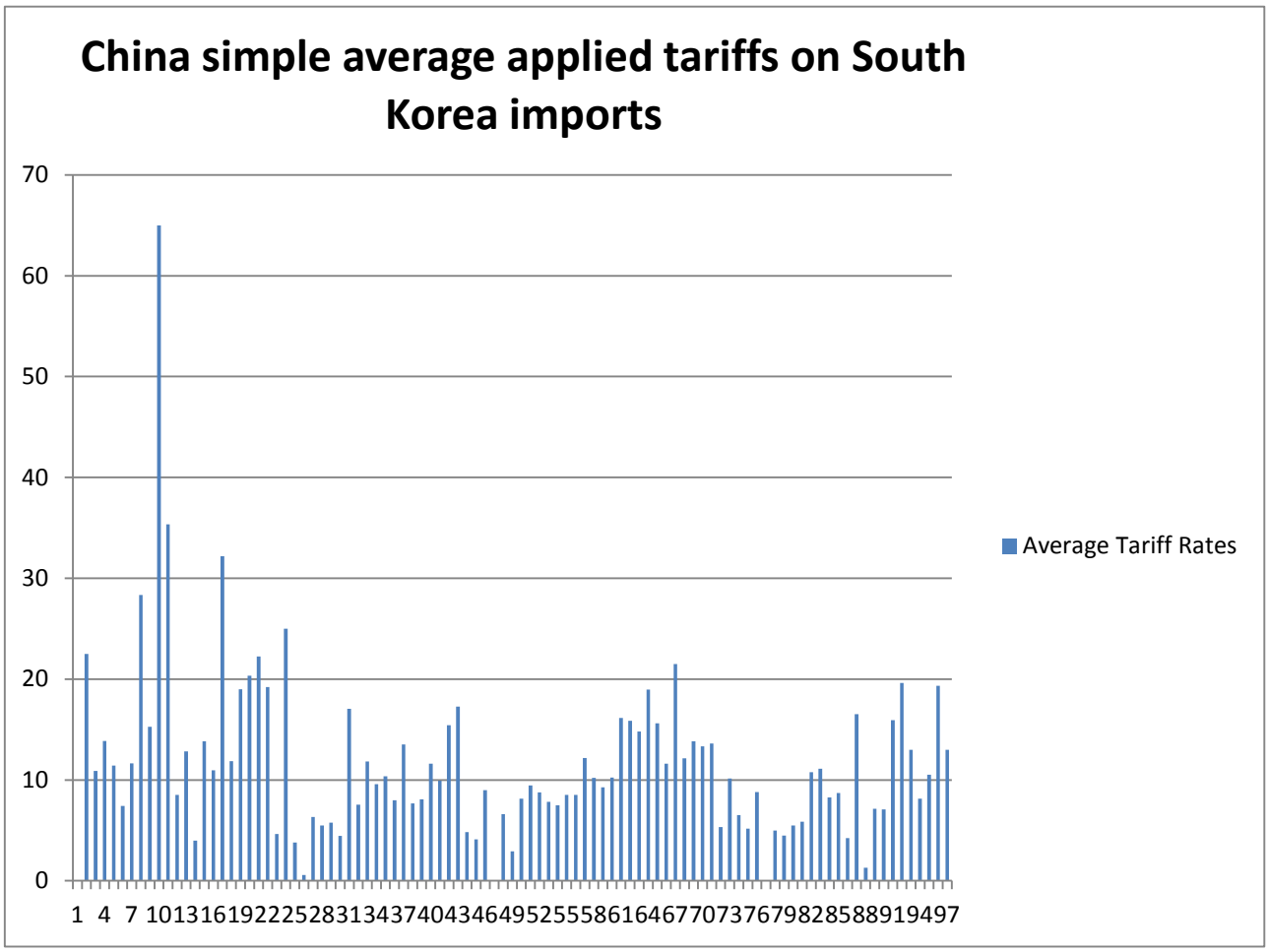
Source: WTO-IDB via WITS

Table 4.2 clearly shows a different picture from the analysis of Figure 4.1 mentioned above. Though the average tariff levels between China and South Korea are relatively low, the high

standard deviation of South Korea means that its tariff rates applying to China are widely dispersed other than the mean value. Besides, the maximum rates of China and South Korea in 2010 reached surprisingly 65% and 800.3% respectively, and the percentage of international tariff peaks in 2010 was 6.74% in South Korea and 14.39% in China, which indicate that a greater extent of tariff creation and tariff diversion would be produced if these products with high tariff levels are covered by the potential FTA between two economies.

To find out which kinds of products are highly protected by China and South Korea, Figures 4.3 and 4.4 below are established to detail the average tariff levels of traded products between two countries based on HS 2-digit level.

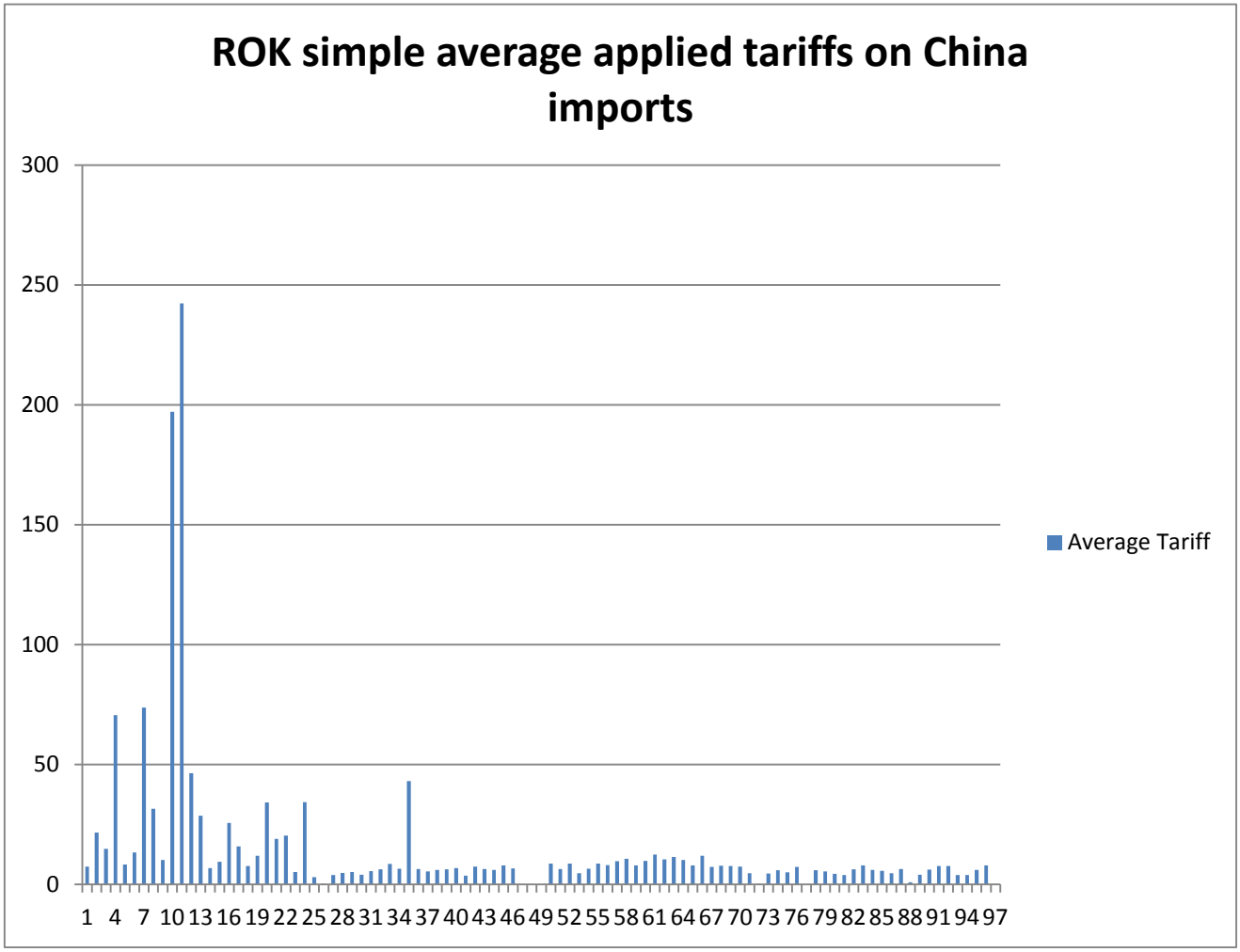
Figure 4.3: China applied tariffs on imports from South Korea by product (%, 2010, Simple Average, HS 2-digit level, AHS)



Source: WTO-IDB via WITS

Figure 4.3 illustrates the levels of protection for imports from South Korea. There are 42 products of total 95 reach international tariff peaks, which account for 44%. Especially, codes 10(cereals)、11(products of the milling industry; malt; starches;) and 17(sugars and sugar confectionery) reach domestic tariff peaks. Specifically, the simple average applied tariff is 65% for cereals; 35.36 for products of the milling industry; malt; starches; and 32.20 for sugars and sugar confectionery. If these highly protected products are covered by the potential China-South Korea PTA, a large extent of trade creation and trade diversion are expected to be generated.

Figure 4.4: South Korea applied tariffs on imports from China by product (%, 2010, Simple Average, HS 2-digit level, AHS)



Source: WTO-IDB via WITS

Similarly, Figure 4.4 illuminates South Korea applied tariffs on products imported from China. Compared with a sizable coverage of total tariff lines falling under international tariff peaks in China, there are fewer commodities qualify for tariff peaks in South Korea, with only 21 products average tariffs exceed 15% of the overall simple average applied rate. However, the level of South Korea's tariff peaks is far beyond that of China, with 242.34% of applied tariffs for code 11(products of the milling industry; malt; starches); 197.10% for code 10(cereals); 73.75% for code 07(edible vegetables and certain roots and tubers）and 70.69% for code 04(dairy produce; birds' eggs; natural honey; edible). These data mean that the liberalization of these sectors in the potential China-South Korea FTA would increase the extent of both trade creation and trade diversion for two economies.

Table 4.5: South Korea's top 15 product categories with highest simple average tariffs (%, 2010, HS 2-digit level, AHS)

HS Code	Product Description	Simple Average	Agricultural Goods
11	Products of the milling industry; malt; starches; inulin; wheat gluten	242.34	Yes
10	Cereals	197.1	Yes
7	Edible vegetables and certain roots and tubers	73.75	Yes
4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	70.69	Yes
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit;	46.36	Yes

	industrial or medicinal plants; straw and fodder		
35	Albuminoidal substances; modified starches; glues; enzymes	43.18	Partial
24	Tobacco and manufactured tobacco substitutes	34.29	Yes
20	Preparations of vegetables, fruit, nuts or other parts of plants	34.27	Yes
8	Edible fruit and nuts; peel of citrus fruit or melons	31.59	Yes
13	Lac; gums, resins and other vegetable saps and extracts	28.7	Yes
16	Preparations of meat, of fish or of crustaceans, molluscs or other aquatic invertebrates	25.73	Yes
2	Meat and edible meat offal	21.71	Yes
22	Beverages, spirits and vinegar	20.45	Yes
21	Miscellaneous edible preparations	18.97	Yes
17	Sugars and sugar confectionery	15.87	Yes

Source: WTO-IDB via WITS and Figure 4.4

As mentioned previously, domestic agricultural sector in South Korea has been protected with high tariffs for a long time. To have a clearer picture of the degree of protection in Korea's agricultural products, Table 4.5 lists top 15 product categories with highest applied tariffs in South Korea and indentifies those agricultural products. According to WTO definition, agricultural goods cover all products referring to HS code chapters 1 to 24(excluding fish and fish products) and some products belonging to chapters 29, 33, 35, 38, 41, 43, 50, 51, 52 and 53.[13] It can be seen from the Table above that almost all top 15 product categories with highest tariffs in South Korea fall under the agricultural goods categories, which strongly supports the fact about the highly protective policy on domestic agricultural sector in Korea. Therefore, if agricultural products could be covered in bilateral FTA negotiations, a large amount of trade creation and trade diversion are expected to happen.

Second rule of thumb

The second rule of thumb estimates that the more trade partners involve in negotiations of a potential FTA, the more likely trade creation will be produced. The basic logic behind this is that more negotiating countries will naturally increase the possibility of sourcing efficient inputs in one given PTA, thus reducing trade diversion.

The negotiations of China-South Korea FTA currently have been taking place between only two countries and there are not further plans to include other countries in the short-term. Consequently, more trade diversion is likely to be created instead of trade creation. However, the successful conclusion of China-South FTA will lay a solid foundation for both two countries to better integrate into a bigger FTA context like China-South Korea-Japan FTA, Regional Comprehensive Economic Partnership or even Free Trade Agreement of the Asia Pacific. Once more countries join the regional free trade frameworks besides China and South Korea, more welfare gains are expected to happen.

13 General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, T.I.A.S. 1700, 55 U.N.T.S. 194 [hereinafter GATT]

Third rule of thumb

According to the third rule of thumb, if member countries have already traded a lot among each other before the FTA, then the potential agreement is likely to produce more trade creation. Tables 4.6 and 4.7 below try to illuminate the rule by referring to trade profiles of China and South Korea.

Table 4.6: Trade values and distribution of China's exports and imports with top 10 partners (2013)

Reporter	Partner	Trade Flow	Trade Value in 1000 USD	Total Import/Export in 1000 USD	Share of Import/Export
China	Hong Kong, China	Export	384497866.9	2209007280	17.41%
China	United States	Export	369063858.6	2209007280	16.71%
China	Japan	Export	150132589	2209007280	6.80%
China	**Korea, Rep.**	**Export**	**91164951.04**	**2209007280**	**4.13%**
China	Germany	Export	67342500.44	2209007280	3.05%
China	Netherlands	Export	60314751.57	2209007280	2.73%
China	United Kingdom	Export	50942127.63	2209007280	2.31%
China	Russian Federation	Export	49591171.96	2209007280	2.24%
China	Vietnam	Export	48586298.2	2209007280	2.20%

China	India	Export	48432411.24	2209007280	2.19%
China	**Korea, Rep.**	**Import**	**183072918.4**	**1792451427**	**10.21%**
China	Japan	Import	162245572.8	1792451427	9.05%
China	Other Asia, nes	Import	156405132.4	1792451427	8.73%
China	United States	Import	153394862	1792451427	8.56%
China	Australia	Import	98954088.03	1792451427	5.52%
China	Germany	Import	94156749.71	1792451427	5.25%
China	Malaysia	Import	60153183.87	1792451427	3.36%
China	Switzerland	Import	56191550.34	1792451427	3.13%
China	Brazil	Import	54299122.65	1792451427	3.03%
China	Saudi Arabia	Import	53450710.54	1792451427	2.98%

Source: UN Comtrade via WITS

Table 4.6 gives the detail of China's trade values with ten biggest partners including exports and imports. In terms of exports, South Korea is listed as China's fourth largest export market, which accounts for 4.13% of total exports (USD 91.1 billion). For imports, South Korea is China's most important source in 2013 which amounts to 10.21% of total imports (USD 183 billion). These data shows that South Korea is a very important trade partner for China and a natural supplier, thus a potential FTA between them is more likely to reduce trade diversion and create more trade creation.

Table 4.7: Trade values and distribution of South Korea's exports and imports with top 10 partners (2013)

Reporter	Partner	Trade Flow	Trade Value in 1000 USD	Total Import/Export in 1000 USD	Share of Import/Export
Korea, Rep.	**China**	**Export**	**145869498.3**	**559618558.9**	**26.07%**
Korea, Rep.	United States	Export	62326903.27	559618558.9	11.14%
Korea, Rep.	Japan	Export	34662219.48	559618558.9	6.19%
Korea, Rep.	Hong Kong, China	Export	27756045.52	559618558.9	4.96%
Korea, Rep.	Singapore	Export	22289025.48	559618558.9	3.98%
Korea, Rep.	Vietnam	Export	21087581.63	559618558.9	3.77%
Korea, Rep.	Other Asia, nes	Export	15699099.21	559618558.9	2.81%
Korea, Rep.	Indonesia	Export	11568177.88	559618558.9	2.07%
Korea, Rep.	India	Export	11375792.02	559618558.9	2.03%
Korea, Rep.	Russian Federation	Export	11149103.33	559618558.9	1.99%

Korea, Rep.	**China**	**Import**	**83051449.61**	**515572970.4**	**16.11%**
Korea, Rep.	Japan	Import	60029172.94	515572970.4	11.64%
Korea, Rep.	United States	Import	41762164.04	515572970.4	8.10%
Korea, Rep.	Saudi Arabia	Import	37665213.75	515572970.4	7.31%
Korea, Rep.	Qatar	Import	25873843.03	515572970.4	5.02%
Korea, Rep.	Australia	Import	20783741.51	515572970.4	4.03%
Korea, Rep.	Germany	Import	19335287.53	515572970.4	3.75%
Korea, Rep.	Kuwait	Import	18725096.88	515572970.4	3.63%
Korea, Rep.	United Arab Emirates	Import	18122896.94	515572970.4	3.52%
Korea, Rep.	Other Asia, nes	Import	14632594.18	515572970.4	2.84%

Source: UN Comtrade via WITS

Table 4.7 demonstrates South Korea's export and import data with ten biggest partners. It is very straightforward to find that China is South Korea's most important and largest export market and import source. Specifically, in 2013, the trade value of South Korea's export to China reaches USD 145 billion and accounts to an overwhelming 26.07% of its total exports.

Similarly, China is also the largest import source for South Korea and occupies 16.11% of total imports (USD 83 billion).

All these data two tables above have showed clearly indicate that China and South Korea are important trade partners and efficient suppliers for each other. Therefore, it is reasonable to expect that more trade creation will be generated upon the successful conclusion of FTA between two countries.

It is also very important to find most heavily trade products between China and South Korea besides the overall trade values. According to the third rule of thumb, if certain products are most traded between two economies, it is highly possible that two countries are most efficient suppliers for each other, thus reducing trade diversion after signing the FTA. Tables 4.8 and 4.9 try to identify products which are most heavily traded between China and South Korea.

Table 4.8 China's top 10 exports to South Korea and corresponding imports (2013, HS 2012 2-digit level)

Reporter	Product Code	Product Description	Export Value in 1000 USD	Export Share	Import Value in 1000 USD	Import Share
China	**85**	Electrical machinery and equipment	34144924.63	37.45%	76962660.21	42.04%
China	**84**	Nuclear reactors, boilers, machiner	8936944.5	9.80%	15662063.79	8.56%
China	**72**	Iron and steel	6527961.87	7.16%	3981342.422	2.17%
China	**90**	Optical, photographic,	4172268.884	4.58%	23550789.59	12.86%

		cinematograp				
China	73	Articles of iron or steel	2781037.016	3.05%	1262471.669	0.69%
China	**29**	Organic chemicals	2508492.055	2.75%	15320298.75	8.37%
China	62	Articles of apparel and clothing ac	2017612.014	2.21%	92791.971	0.05%
China	**27**	Mineral fuels, mineral oils and pro	1982498.393	2.17%	10262931.66	5.61%
China	61	Articles of apparel and clothing ac	1738136.452	1.91%	61886.189	0.03%
China	28	Inorganic chemicals; organic or ino	1636634.079	1.80%	860691.971	0.47%

Source: UN Comtrade via WITS

Table 4.8 lists China's top 10 exports to South Korea and corresponding imports in 2013. The No.1 exporting product is Electrical machinery and equipment, which accounts for 37.45% of total exports (USD 34.1 billion). The following products include Nuclear reactors, boilers, machiner (USD 8.94 billion); Iron and steel (USD 6.53 billion); Optical, photographic, cinematograp (USD 4.17 billion); Articles of iron or steel (USD 2.78 billion); Organic chemicals (USD 2.51 billion); Articles of apparel and clothing ac (USD 2.02 billion); Mineral fuels, mineral oils and pro (USD 1.98 billion); Articles of apparel and clothing ac (USD 1.73 billion); and Inorganic chemicals; organic or ino (USD 1.64 billion). The combined shares of top 10 exports from China reach 72.88%. It is hence vital to include these product categories

in the negotiations of FTA between China and South Korea as they are most heavily exported and would likely to produce more trade creation and less trade diversion. The 80.85% of total import share of these products further strength the importance of liberalizing them in the FTA.

Table 4.9 South Korea's top 10 exports to China and corresponding imports (2013, HS 2012 2-digit level)

Reporter	Product Code	Product Description	Export Value in 1000 USD	Export Share	Import Value in 1000 USD	Import Share
SOUTH KOREA	85	Electrical machinery and equipment	48094867.74	32.97%	26281882.38	31.65%
SOUTH KOREA	90	Optical, photographic, cinematograp	21756159.88	14.91%	3558338.509	4.28%
SOUTH KOREA	29	Organic chemicals	15003823.51	10.29%	2570683.521	3.10%
SOUTH KOREA	84	Nuclear reactors, boilers, machiner	14274721.04	9.79%	9483389.196	11.42%
SOUTH KOREA	39	Plastics and articles thereof	10761234.59	7.38%	1839411.354	2.21%
SOUTH KOREA	27	Mineral fuels, mineral	8911999.895	6.11%	1343571.635	1.62%

		oils and pro				
SOUTH KOREA	87	Vehicles other than railway or tram	6934723.375	4.75%	1559832.375	1.88%
SOUTH KOREA	72	Iron and steel	3639803.39	2.50%	6749541.705	8.13%
SOUTH KOREA	74	Copper and articles thereof	2001205.716	1.37%	520372.176	0.63%
SOUTH KOREA	89	Ships, boats and floating structure	1236143.71	0.85%	563832.508	0.68%

Source: UN Comtrade via WITS

Following same logic, Table 4.9 identifies South Korea's top 10 exports to China and corresponding imports. The combined share of top 10 exports comes to an enormous 90.92% in 2013, among which Electrical machinery and equipment is still the most heavily traded (USD 48 billion). It is easy to find that codes 85(Electrical machinery and equipment); 84(Nuclear reactors, boilers, machiner); 72(Iron and steel); 90(Optical, photographic, cinematograp); 29(Organic chemicals) and 27(Mineral fuels, mineral oils and pro) are commonly included by Top 10 exports list from China and South Korea. These product categories should be the key areas to be liberalized to create more trade creation and less trade diversion for both two economies.

Fourth rule of thumb

The basic logic behind the fourth rule of thumb is that the wider the differences in comparative advantage between partners, the more likely domestic inefficient producers will be replaced by efficient ones in partner countries, thus creating more trade within a given FTA. To measure the differences in comparative advantage between China and South Korea, the index of Revealed Comparative advantage (RCA) can be introduced. Basically, the RCA can be calculated using the following formula[14]:

$$RCAni = (xi / xt) / (wi / wt)$$

xi represents exports of product i by country n to the world; xt represents total exports of country n to the world; wi represents total exports of product i in the world; wt represents total exports of all commodities in the world

The index of RCA calculates the proportion of export share of product i in country n's total exports divided by export share of product i in world's total exports. If the value of RCAni is greater than 1, it means county n has a comparative advantage in product i export. On the other hand, if the value of RCAni is less than 1, that means county n has a comparative disadvantage in product i export. [15]Table 4.10 below presents the RCAs of top 15 export sectors for both China and South Korea.

Table 4.10: Comparison of RCAs for the top 15 export sectors of China and South Korea (2013, HS 2012, 6-digit level)

Reporter	Product Code	Product Description	ExportValue in 1000 USD	Export share(CHN/SOUTH KOREA-WLD)	Export share(WLD-WLD)	RCA

[14] Balassa, B. 'Trade Liberalisation and Revealed Comparative Advantage', *The Manchester School*, 33, 1995,pp.99-123.

[15] Boschma,R.,Minondo,A.&Navarro,M.'The Emergence of New Industries at the Regional Level in Spain: A Proximity Approach Based on Product Relatedness', Economic Geography,89(1),2013,pp.29-51.

SOUTH KOREA	271019	Other	39287875.1	7.03%	3.97%	1.77
SOUTH KOREA	870323	Of a cylinder capacity exceeding 1,500 cc but not exceeding 3,000 cc	27232142.14	4.87%	1.63%	2.99
SOUTH KOREA	901380	Other devices, appliances and instruments	24893085.21	4.45%	0.50%	8.90
SOUTH KOREA	854232	Memories	21963588.56	3.93%	0.47%	8.36
SOUTH KOREA	854231	Processors and controllers	20702546.18	3.70%	0.97%	3.82
SOUTH KOREA	890190	Other vessels for the transport of goods and other vessels for the transport of both persons	14525892.07	2.60%	0.35%	7.42

		and goods				
SOUTH KOREA	870899	Other	13614294.86	2.43%	0.61%	3.99
SOUTH KOREA	**851712**	**Telephones for cellular networks/for other wireless networks**	**13175359.09**	**2.36%**	**1.05%**	**2.24**
SOUTH KOREA	271012	Light oils and preparations	11713133.05	2.09%	1.72%	1.22
SOUTH KOREA	**851770**	**Parts**	**10744824.29**	**1.92%**	**0.55%**	**3.49**
SOUTH KOREA	890120	Tankers	9817042.743	1.76%	0.11%	15.96
SOUTH KOREA	890590	Other	9447619.24	1.69%	0.09%	18.77
SOUTH KOREA	852990	Other	7768425.781	1.39%	0.25%	5.56
SOUTH KOREA	870332	of a cylinder capacity >1500cc but not >2500cc	6151250.661	1.10%	0.84%	1.31

SOUTH KOREA	870322	of a cylinder capacity >1000cc but not >1500cc	5974296.485	1.07%	0.45%	2.37
China	847130	Portable Automatic data processing	110802219.8	5.02%	0.90%	5.58
China	851712	Telephones for cellular networks/for other wireless networks	95625510.88	4.34%	1.05%	4.13
China	851770	Parts	47116398.05	2.14%	0.55%	3.88
China	854231	Processors and controllers	37458192.64	1.70%	0.97%	1.75
China	901380	Other devices, Appliances and ins	36048021.5	1.63%	0.50%	3.27
China	847330	Parts and accessories of the mach	28598928.26	1.30%	0.53%	2.45

China	711319	of Other precious metal, whether	28034768.67	1.27%	0.51%	2.49
China	851762	machines for the reception, conv	26879246.86	1.22%	0.50%	2.44
China	**271019**	**Other**	**19488962.37**	**0.88%**	**3.97%**	**0.22**
China	**890190**	**Other vessels for the transport of goods and other vessels for the transport of both persons and goods**	**18115195.63**	**0.82%**	**0.35%**	**2.35**
China	854239	Other	17754191.92	0.81%	0.95%	0.85
China	640299	Other	17745973.58	0.80%	0.14%	5.75
China	**854232**	**Memories**	**17692083.88**	**0.80%**	**0.47%**	**1.71**
China	850440	Static Converters	17613653.28	0.80%	0.28%	2.85
China	847170	storage units	16591268.27	0.75%	0.38%	1.98

Source: UN Comtrade via WITS

Table 4.10 calculates values of RCA of top 15 exports of two countries. It is easy to find that seven same product categories are identified in both two economies' top 15 export lists, that is, codes 271019(others); 901380(optical devices, appliances and instruments,nes); 854232(memories); 854231(processors and controllers); 890190(other vessels for the transport of goods and other vessels for the transport of both persons and goods); 851712(telephones for cellular networks/for other wireless networks) and 851770(telephone parts). Though there is a huge similarity between the product categories of two countries' top 15 export lists, the RCA values of these common products are different. It is clear to see that although both two countries have export advantages in almost all seven product categories except petroleum oil sector in China (RCA_{271019}=0.22<1), the degree of advantages of two economies are different. South Korea is more competitive in five of seven product categories (codes 271019; 901380; 854232; 854231; 890190) while China has more comparative advantages in code 851712 and code 851770. In terms of different sectors in two countries' top lists, Korea also enjoys comparative advantages in auto industry (codes 870323; 870899; 870322; 870332) while China is more competitive in sectors relate to footwear manufacturing (640299)、data processing equipments and office machines (codes 847130; 847330; 847170) and jewellery (code 711319). Generally, these data shows that there are wide differences in comparative advantages of products in China and South Korea, thus creating sizable room for trade creation if the potential FTA covers these sectors.

Fifth rule of thumb

The fifth rule of thumb shows the positive relationship between product similarity and trade creation. The high similarity in product mixes is more likely to cause welfare gains as there is a greater chance that domestic suppliers are replaced by more efficient partners in case of FTA concluded. In our case, export data are used in analyzing similarity of traded products

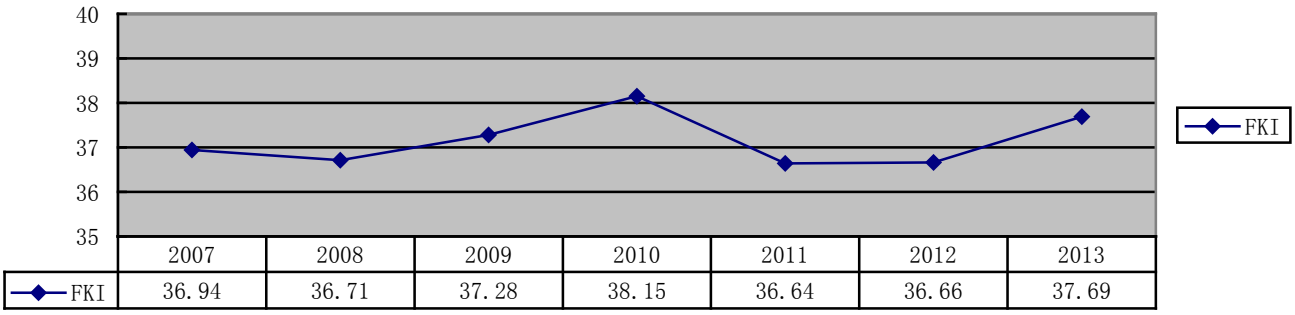
between China and South Korea considering low availability of production data. The Finger-Kreinin Index (FKI) is used to test the similarity of export patterns of two economies:[16]

$$FKIab = \{\sum_i \min[(xi(ac), xi(bc)]\}100$$

Where *FKIab* represents export similarity index between country a and country b; *xi(ac)* is the share of product i in country a 's total exports to the third market c; *xi(bc)* is the share of product i in country b's total exports to c.

The FKI is the minimum value of the shares of products in two economies' total exports to the common third market. The FKI would be 0 if export patterns of two economies are totally different. On the contrary, if FKI is equal to 1, the export mixes of two countries are completely same. The paper tests export similarity between China and South Korea using HS 6-digit level.

Figure 4.11: FKIs between China and South Korea (%, 2007-2013, HS 2007, 6-digit level,)



	2007	2008	2009	2010	2011	2012	2013
FKI	36. 94	36. 71	37. 28	38. 15	36. 64	36. 66	37. 69

Source: UN Comtrade via WITS

Figure 4.11 calculates FKIs between China and South Korea during the period from 2007 to 2013. On the one hand, the value of FKI has been lower than 50, which shows low degree of similarity in export patterns between two countries. One the other hand, there is a slight increase in FKI from 36.94 in 2007 to 37.69 in 2013, indicating a potential to export more

[16] Finger, J. M.& Kreinin, M. E. 'A Measure of Export Similarity and Its Possible Uses', *The Economi Journal*, 89, 1979, pp. 905-912.

same products between China and South Korea. Therefore, the long-term effect from shallow integration in China-South Korea FTA is likely to be beneficial for both economies.

Based on the above analyses of trade creation and trade diversion effects in the potential China-South Korea FTA, more welfare gains are expected to be created for both two economies if the FTA is concluded. Specifically, though the initial bilateral average tariffs between China and South Korea are not very high, there is a wide range of products with high tariff levels in both two countries and the liberalization of these products would release the potential of trade creation; China is the largest trade partner for South Korea, and South Korea in turn is the third largest trade partner for China. The close trade relation between two countries indicates more trade creation in one potential FTA as they have already become natural suppliers for each other; The wide comparative advantage differences in two countries exports further decrease the possibility of trade diversion as domestic inefficient products are more likely to be replaced by efficient suppliers from partner country; The only obstacle to trade creation is the low degree of similarity in export patterns between China and South Korea. However, the gradual increase of FKI in recent years indicates that more same products are exported in both two countries, thus leaving a great potential to increase welfare in a potential FTA.

5. Expected deep integration effects

After have finished the analysis of shallow integration for China-South Korea FTA, now the paper turns to the possible deep integration. As mentioned above, deep integration from one possible FTA can generate welfare gains through technology transfer and diffusion, further market specialization and better allocation of resources. Benefits from deep integration are always enormous that could offset any losses from trade diversion in shallow integration. To assess the existing and potential for deep integration in China-South FTA, the paper examines the level of intra-industry trade between two countries and identifies the existing non-tariff barriers in key areas including TBT and SPS, services, investment, IPR and government procurement.

Quantitative assessment: Intra-industry trade

The IIT index is used to measure the degree of trade in goods within same industry between two countries. The high level of IIT between two economies can boost finer specialization and increase productivity, thus generating welfare gains for both two countries. It is therefore a sound indicator to assess the existing level of deep integration between trade partners in a

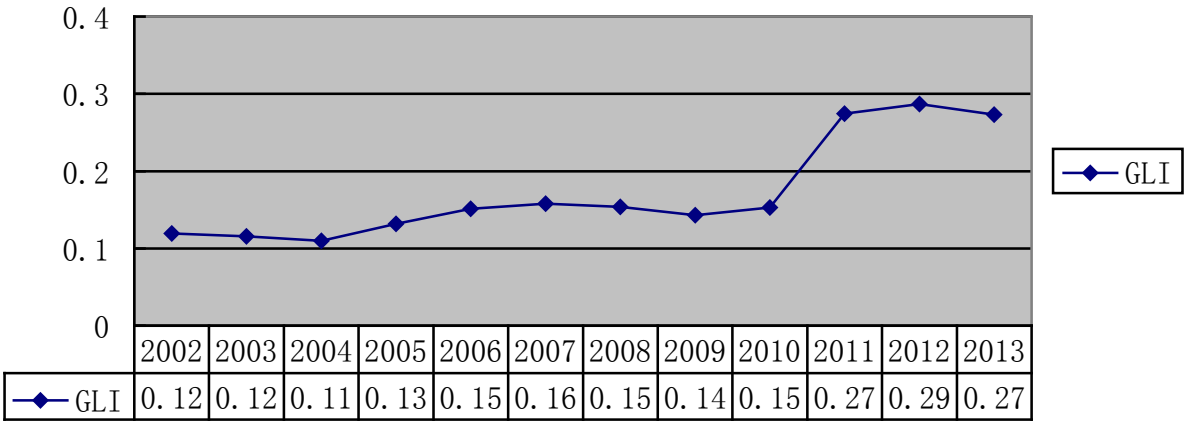
given FTA. The most common used quantitative method to calculate the level of IIT is Gruber-Lloyd Index (GLI):[17]

$$GLIij = 1 - \frac{\sum_k | xij^k - mij^k |}{Xij + Mij}$$

Where *GLIij* means the value of IIT between country i and country j; xij^k represents export values of product k between i and j; mij^k represents import values of product k between two countries; Xij and Mij are total exports and imports respectively.

According to the definition of this formula, the higher are the values of GLI, the deeper is level of intra-trade between two countries. If GLI is equal to 0, two countries would have no overlap in goods trade. If GLI is 1, then all trades are completely conducted within same industries, which imply a solid deep integration between two certain countries and potential substantial welfare gains when the FTA is concluded. Figure 5.1 illustrates the evolution of GLIs between China and South Korea over time.

Figure 5.1: The evolution of GLIs between China and South Korea (2002-2013, HS1996, 6-digit level)



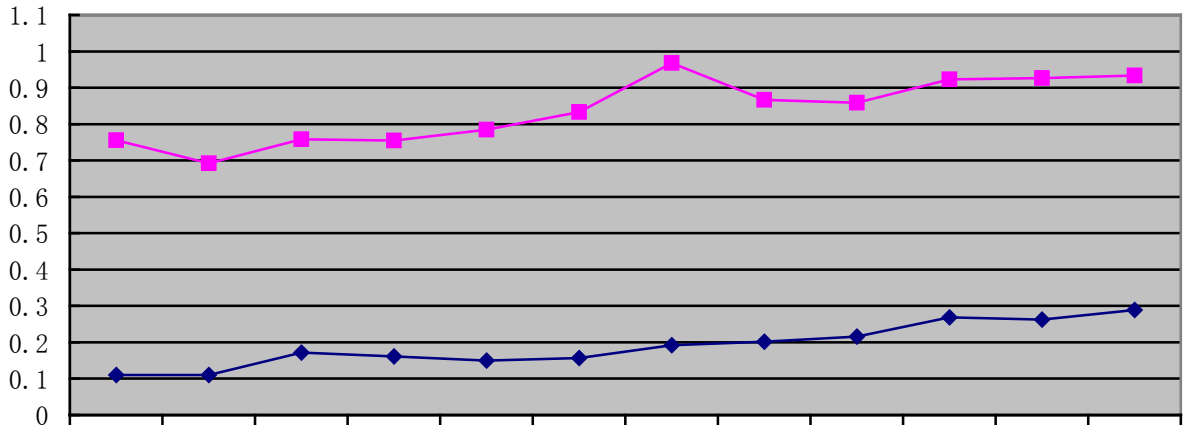
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GLI	0.12	0.12	0.11	0.13	0.15	0.16	0.15	0.14	0.15	0.27	0.29	0.27

Source: UN Comtrade via WITS

[17] Grubel, H. G. & Lloyd, P. J. (1971). 'The Empirical Measurement of Intra-Industry Trade', *Economic Record* , **47** (4), 1971, pp 494–517.

Figure 5.1 shows the evolution of China-South Korea GLIs since 2002. It is clear to find that it has been maintaining a relatively low level before 2010, which means that the level of deep integration between these two economies was low. However, the value of GLI has a steady increase from 0.1528 in 2010 to 0.2730 in 2013, which may shows a great potential of deep integration by concluding a comprehensive FTA between China and South Korea.

Figure 5.2: GLIs for agricultural sector and manufacturing sector between China and South Korea (2002-2013, HS1996, 2-digit level)



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Manufacture	0.6458	0.582	0.5867	0.5934	0.6356	0.6767	0.7757	0.6649	0.6427	0.6545	0.6643	0.6454
Agricuture	0.11	0.1101	0.1717	0.161	0.1494	0.1566	0.1921	0.2019	0.2158	0.2689	0.2625	0.2885

Source: UN Comtrade via WITS

Figure 5.2 gives the detail of GLIs for manufacturing and agricultural sectors between China and South Korea. The value of GLI in agricultural sector though increases from 0.11 in 2002 to 0.2885 in 2013. It is still on a lower level, which indicates that inter-industry trade occupies the dominant position in bilateral agricultural trade. The manufacturing industry, by contrast,

has a relatively high level of GLI which records 0.6454 in 2013, which shows a high level of deep integration.

Qualitative assessment

TBT and SPS

The Chinese agricultural imports is most heavily regulated by Korean TBT and SPS measures , which is due to the Korean long-term implemented protective policy on domestic agricultural sector. To be consistent with WTO relevant rules, Korea turns to TBT and SPS measures to prevent its agricultural sector from fierce competition of Chinese agricultural imports.[18] For instance, Korean government does not recognize results of tests and certifications on imported agricultural products which are provided by Chinese agencies, and it is always lengthy and costly for Chinese enterprises to do tests in Korea. South Korea also carries out the strictest testing standard on Chinese agricultural products, which requires all Chinese agricultural imports to be fully checked by designed agencies. This greatly increased burdens and operating risks of Chinese importers. Another important NTB blocking Chinese agricultural imports is South Korea's differential treatment to pest- or disease-free areas. The Korean government considers the whole territory within China as a quarantine area, thus same agricultural goods produced in pest- or disease-free areas are also forbidden to import even if only some regions in China are found to have listed pests or diseases. In pharmaceutical industry, Korea has a very strict license requirement on imported medicine. All medicine exporters have to provide numerous documents and conduct safety tests in Korean agencies or international institutions accepted by Korean government. This process is expensive and time-consuming, which depresses export competitiveness of Chinese companies and hinders imports of Chinese traditional medicines. There are also some problems with Korean Industrial Standards System for its frequent change of certification method for Chinese imported industrial products, which increases entering costs of Chinese companies. However, now there is a common understanding between China and South Korea during FTA

[18] MOFCOM, http://ccn.mofcom.gov.cn/spbg/show.php?id=4569, accessed 30 September 2014.

negotiations in removing unjustified technical barriers and wilder application of international standards, more welfare gains are expected to be generated through this deep integration process.[19]

Services

The bilateral services trade between China and South Korea has grown rapidly in recent years. According to Figure 5.3 below, South Korea service exports to China in 2012 reached US $15.3075 billion and increased by 854% from 1999. The import value of services from China also has a remarkable rise over the past decade, which amounts to US $17.0279 billion in 2012. In 2006, China replaced Japan as the biggest services trade partner with South Korea in Asia. However, the bilateral services trade only accounts for 15% of Korean's total services trade in 2012, while the share for China is even less with less than 7%.[20] The data shows that there is still a great potential for `further development in bilateral services trade between China and South Korea if the potential barriers hindering deep integration in services are removed.

Figure 5.3: Trade in services of South Korea with trade partners (USD million, 1999-2012)

[19] 'The Joint Study Report for China-Korea FTA', Joint Study Committee for a CKFTA, 2010, (accessed 30 September 2014), http://fta.mofcom.gov.cn/enarticle/enkorea/enkoreanews/201006/2759_1.html, p.158.

[20] Calculated based upon data from International Trade Statistics Database and MOFCOM

Year	Partner	World	Japan	United States	Middle East	**China**	Services not allocated geographically	European Union (27 countries)
1999	Export	28319.6	6599.3	9020.2	850.1	**1604.1**	1919.4	3099.5
	Import	27383.8	4700.7	10263.3	501.2	**2067.9**	1675.2	3943.1
2000	Export	32667.1	7450.6	9949.4	882.3	**1966.2**	2127.2	3896.5
	Import	33639.8	5498.4	11847.1	902.1	**2644.7**	2187	5049.7
2001	Export	30886.4	6317.3	9322.6	1215.2	**2169.8**	2353.3	3288.1
	Import	33255.5	4364.3	11540.7	912	**2470.2**	2454.6	5780.9
2002	Export	31128.4	5369.9	8693.2	1689.6	**2664**	3048.9	3529.5
	Import	37067.2	4556.2	11577.4	957.5	**3862**	2765.9	6414.8
2003	Export	35901.3	5440.5	9796.6	2027.6	**3815.8**	3393.9	4248.7
	Import	40862	4946.6	12419	1067.4	**4261.9**	3190.7	7186.8
2004	Export	45465.6	6856.6	11974.9	2151.8	**5275.5**	4044.1	5599
	Import	50628.3	6308.6	13874.4	1190.5	**5956.1**	4878.7	9152.5
2005	Export	50730.3	6854.8	12547	3833.5	**6053.9**	4756.7	6499.8
	Import	59860.6	7233.8	15954.9	1779.8	**8053.3**	6043.9	10303.4
2006	Export	57212.5	6668.5	13425.3	5324.3	**7034.1**	5696.8	7513.1
	Import	70426.1	8173.4	19427.9	2788	**9730.9**	6477.6	11646.2
2007	Export	71650.5	6976.9	15909.7	7493.4	**9121.4**	7531.7	9931.6
	Import	84897.5	9698.8	21786.5	3280.8	**11495.6**	6724.8	16446.2
2008	Export	91333.3	9843.7	14968.7	10741.3	**13533.1**	10007.1	11058.6
	Import	97876.2	9500.4	22982.5	5155.9	**13924.7**	8004.8	19916.7
2009	Export	72752.1	8476.8	11970.1	12848	**9793.9**	7796.2	7153.8
	Import	82342	7319.4	21144.2	4292.7	**12603.2**	7311.5	15772.2
2010	Export	83260.3	10243.6	12703.8	10251.9	**13558.8**	9236.6	8774.1
	Import	97498.7	8691	25007.4	4385.5	**15013.5**	8484.3	17526.2
2011	Export	90900.1	9443	14438.3	10187.9	**13751.4**	10793.5	9236.4
	Import	103179.2	8507.7	25174.1	5814.1	**17261.3**	8570	17414.2
2012	Export	103019.4	12418.8	16828.4	14074.6	**15307.5**	10321	9528.8
	Import	108233	8154.5	28543.2	6461.8	**17027.9**	9276.2	17540.4

Source: OECD. Stat Extracts

The South Korea has been liberalizing its domestic services market since its accession to WTO and OECD. It now has a relatively high degree of openness in services with 106 of the sub-sectors in the W/120 classification list fully or partially open to foreign countries.[21] Korea takes a negative list approach to liberalize its services sector, which means sectors not included in this list are open to foreign investors. Currently, Sectors which are restricted from foreign investments include professional, medical, health, communications, distribution, educational, financial, and transport services.[22] Forms of restrictions vary from license requirement, ownership of foreign investors to location of establishments or qualification requirements on foreign services suppliers. For example, in communication services sector, Article 5 of the Telecommunications Business Act 2007 regulates that "A license to supply

[21] See note 19 at p.51 and FTA Korea, (accessed 10 October, 2014) http://www.fta.go.kr/main/.

[22] FTA Korea,(accessed 10 October, 2014) http://www.fta.go.kr/main/.

facilities-based public telecommunications services can only be granted to a juridical person under Korean law. A foreign government, foreign person, or deemed foreign person may not hold more than 49 percent in aggregate of the total voting shares of a facilities-based supplier of public telecommunications services." [23]Foreign investors are also not allowed to enter postal business as it is monopolized by Korea Post. For services sector, Korea government puts some limitations on the residences of senior executives. Other important limitations include requirement of Korea medical and health licenses for all foreign professors in medical services sector and restrictions on the establishment of foreign higher and adult education institutions in Korea.[24]

Compared with Korea, China makes commitments to 82 service sectors of total 155 sub-sectors in its services schedule. Sectors which are most closed for foreign investors include business, communication and financial services. The most common forms of restrictions include requirements on specific types of legal entities, limitations on shares of foreign capitals and quantitative requirements on foreign services suppliers. For instance, foreign investors usually have to establish joint ventures with local Chinese partners to enter certain services markets, especially business, communication and financial services. Besides, foreign shares in joint ventures in some cases are not permitted to exceed 50%. In legal services sector, all representatives of foreign legal firms have to stay in China for more than six months per year. Foreign doctors may come to China and provide medical services temporarily if they obtain special license from Chinese relevant agency. In financial sector, Chinese government set a few requirements on qualifications of shareholder of foreign banks and securities companies, such as minimum total assets and capital adequacy ratio. [25]

The restrictions mentioned above create obstacles to deep integration in services trade between China and South Korea. Both countries have certain services sectors protected and

[23] Korea Communication Commission, 'Telecommunications Business Act ', partially amended by Law No. 8867 dated Feb. 29, 2008.

[24] See note 19 at pp.79-94.

[25] See note 19 at pp.63-78

difficult issues to be negotiated in concluding a potential comprehensive FTA. If two countries succeed in liberalizing their traditional highly-protected service sectors, then potential gains from the deep integration would be substantial.

FDI

In 2013, there are 1371 Korean investment projects ratified in China, which was an increase of 4.98% year-on-year. By the end of December 2013, the total number of Korean investment projects in China has reached 56,224, and the aggregate actual investment amounted to US $55.95 billion, which makes South Korea the fourth largest FDI source. China, by contrast, has far less active investment activities in South Korea. Chinese aggregate actual investment in 2013 only reached US $1.24 billion. [26]

Although South Korea has already taken a series of policies and measures to promote FDI, there are still some significant barriers to FDI inflows. Major issues relate to investment in Korea include market access limitations for FDI in some sectors, increase in operation costs and lack of transparency of foreign investment regimes.

Specifically, Korea's barriers to foreign investors can be divided into two parts. The first is the barrier to investment accession. South Korea regulates foreign investment activities under negative list approach. *The Foreign Investment Promotion Act* clearly lists restricted and excluded business for foreign investment. Table 5.4 gives details of these businesses and relevant permissible criteria.

Table 5.4: Restricted and prohibited businesses for foreign investment in South Korea

Prohibited Business	Restricted Business	Permissible criteria

[26] MOFCOM, http://shangwutousu.mofcom.gov.cn/article/hycy/201402/20140200499603.shtml. Accessed 5 October, 2014.

Postal service; Central bank; Personal Exemption; Corporation Exemption; Pension; Financial market Management; Other financial support services; Other cultural and social sciences research and development; Law-making body; Central highest executive body; Financial and economic policy administration; Other general public Administration; General supporting administration for government agencies; Educational administration; Culture and tourism administration; Environment administration; Health and welfare administration; Other social service Management administration; Labor administration; Agriculture and fisheries administration; Construction and transportation	Cultivation of grains and other food crops	Permissible for all except the cultivation of rice and barley
	Beef cattle rearing	Permissible w hen the foreign investment ratio is less than 50%
	In/Offshore fishing	Permissible when the foreign investment ratio is less than 50%
	Manufacture of other basic inorganic chemicals	Permissible except for the manufacturing and supply businesses of fuels for nuclear power generation
	Smelting and refining of other nonferrous metals and manufacture of alloy	Same as the permissible criteria for the manufacturing business of other basic inorganic chemicals
	Nuclear generation	Not opened
	Hydroelectric generation	The aggregate of electricity generation facilities purchased by a foreigner from Korea Electric Power Corporation (KEPCO) shall not be more than 30% of the entire power generation facilities in Korea.
	Thermal power generation	
	Other generation	
	Power transmission and distribution	Permissible to the following only: 1. The ratio of foreign investment is less than 50%. 2. Ownership of stocks with voting rights by a foreign investor shall be less than that of the dominant shareholder who is a national of Korea
	Collection, transport, and disposal of	Permissible except for radioactive wastes management

Administration; Telecommunications Administration; Other industry promotion administration; Foreign affairs Administration; National defense Administration; Court; Public prosecutor's Office; Correctional body; Police station; Fire station; Other judicial and public order; administration; Social security Administration; Educational institution for toddlers; Elementary school; Middle school; Academic high school; Commercial and information industry;	retroactive waste	businesses pursuant to Article 9 of the Radioactive Waste Control Act
	Wholesale of meat	Permissible when the foreign investment ratio is less than 50%
	Home-waters transport of passengers	Permissible only if all of the following requirements are fulfilled: 1. Permit for: Transport of freight and passengers between South and North Korea 2. Case of joint venture with a shipping company of the Republic of Korea 3. Less than 50% of foreign investment ratio
	Home-waters transport of freight	Same as the permissible criteria for home-waters of passengers
	International aviation transport	Permissible when the foreign investment ratio is less than 50%
	Domestic aviation transport	Permissible when the foreign investment ratio is less than 50%
	Small-sized aircraft transport	Permissible when the foreign investment ratio is less than 50%
	Publication of newspapers	Permissible when the foreign investment ratio is less than 30%
	Publication of magazines and periodicals	Permissible when the foreign investment ratio is less than 50%
	Radio broadcasting	Not opened
	Terrestrial broadcasting	Not opened
	Program offering	Permissible when the foreign investment ratio is less than 49% (Note, however, that broadcast

high school; Technical high school; Other technological and; vocational high school; College; University; Graduate school; Special education school; Lifelong education Facility; Other non-classified educational institution; Performing artist; Non-performing artist; Industrial association; Professional association; Labor union; Buddhist organization; Christian organization; Catholic organization; Ethnic religion Organization; Other religious Organization; Other religious Organization; Environment movement		channels using operators engaged in general programming are permissible when the foreign investment ratio is less than 20%; for broadcast channels using businesses engaged in programming specializing in news reports, permissible when the ratio is less than 10%)
	Cable broadcasting	For general CATV broadcasting businesses, permissible when the foreign investment ratio is less than 49% (For CATV relay broadcasting businesses, however, permissible only when the foreign investment ratio is less than 20%)
	Satellite and other broadcasting	Permissible when the foreign investment ratio is less than 49% (For Internet multimedia broadcasting contents operators engaged in general programming or programming specializing in news reports, however, permissible when the foreign investment ratio is less than 20%)
	Wired Commission communication	Permissible when the aggregate number of stocks (limited to voting stocks inclusive of stock equivalents with voting rights, such as stock depository receipts, etc., and investment equities) owned by foreign governments or

Organization; Other civic organization; Other association and Organization; Foreign missions in Korea; Other international and foreign institution;		foreigners (including a deemed foreign person) is less than 49/100 of the total of issued stocks (for KT, however, no foreigner can become the largest shareholder, but permissible when he/she owns less than 5/100 of the total issued stocks)
	Wireless Commission communication	Same as the permissible criteria for the wired communication business
	Satellite communication	Same as the permissible criteria for the wired communication business
	Other telecommunications	Same as the permissible criteria for the wired communication business (no limit for value-added communication business, however)
	News offering	Permissible when the foreign investment ratio is less than 25%
	Domestic bank	Permissible only for commercial and local banks (not opened for specialized banks and Agricultural, Fisheries, and Livestock Cooperatives, however)
	Property management company	<Deleted. Feb. 27, 2004>

Source: Integrated Public Notice of Foreign Investment

It can be seen from the table 5.4 that 62 sectors in South Korea are forbidden from foreign investment. These forbidden areas mainly relate to national security (Foreign affairs

administration, national defence administration), public administration (Educational administration, Environment administration) and national health (Health and welfare administration). In terms of restricted businesses, South Korea provides a limited access for FDI with permission criteria, which mainly take the form of foreign investment ratio ceiling. Sectors which are affected include agriculture, animal husbandry, fishery, publishing, transportation, transmission and distribution, and broadcast communication.

The second kind of barrier is difficulties in operation for foreign investors. Especially, the inadequacy of Korea's tax regimes is listed by foreign enterprises as the most serious problem in doing business in this country. Many foreign companies complain about the lengthy tax investigation of foreign enterprises and inconsistency of tax administration. Transparency issues are also raised by some foreign enterprises which point that many important official investment documents only have Korean version. This language obstacle makes foreign enterprises difficult to get to know the changes of Korea's relevant laws and policies in time.

In China, issues relate to FDI commonly indentified by foreign companies include restrictions on certain sectors, inefficient government agencies and imperfect investment-related regulatory and legal system. There are lists of restricted and prohibited foreign investment industries which include Exploring and Mining of Precious Metals, Construction and Management of Refineries, Printing and Record Medium Reproduction, Manufacturing of Containers, Cultivation of China's rare precious breeds and Processing of green tea and special teas with China's traditional crafts. [27] Besides, foreign investors are always discouraged by the inconsistency and overlapping among state, provincial and municipal laws and regulations in China.

IPR

[27] See note 19 at p.113

IPR is also a key issue in China-South Korea FTA negotiations. According to a survey in 2008 conducted by Korea Federation of SMEs (KBIZ), 32.8 % of total 1000 Korean SMEs questioned consider "Strengthen the protection of IPRs" the highest priority issue in China-Korea FTA negotiations.[28] Compared with the relatively high level of IPR protection in South Korea, China faces more pressure in increasing protection level of IPRs.

The most serious problem with IPR protection in China is the lax enforcement of IPRs. Many foreign enterprises blame Chinese governments for the insufficient transparency of enforcement process and mild punishment on IPR infringement. In terms of specific areas in IPRs, Korea enterprises complain about the lengthy term of trademark objection in China, which increase the possibility of counterfeiting. The Chinese laws also do not provide protection on trademarks under application, which is different from Korean practice. Some issues relate to industry design may rise between two countries due to the lack of protection to a part of industrial design and shorter duration of protection in China.

Government procurement

China's GPA accession process is still ongoing, which means China does not have the obligation to open its domestic government procurement market to foreign countries on a non-discriminatory basis. Currently, China's government procurement practice is regulated by *The Government Procurement Law of the People's Republic of China.* According to Article 10, the government shall prefer domestic goods, construction and services, except the goods, construction or services needed are not available within China or are procured for consumption abroad.[29] Therefore, if there is a breakthrough in opening Chinese government procurement market in FTA negotiations, it is expected that more welfare gains could be produced.

---

[28] http://www.mofcom.gov.cn/aarticle/i/jyjl/j/200804/20080405460697.html, accessed 10 October, 2014.

[29] ' The Government Procurement Law of the People's Republic of China', adopted at the 28th Meeting of the Standing Committee of the Ninth National People's Congress on June 29, 2002.

6. Conclusion

The paper gives an analysis of welfare implications of a potential China-South Korea FTA by using the Sussex Framework.

First, it evaluates effects of trade creation and trade diversion by referring to five rules of thumb in shallow integration. The high volume of bilateral trade and wide comparative advantage differences in exports indicate more trade creation for China and South Korea if FTA is concluded. Though the initial bilateral average tariffs are not high, the existence of individual products with tariff peaks in two countries show a potential for trade creation and

trade diversion by liberalizing them in FTA negotiations. The low degree of similarity in export patterns between two economies is more likely to result in more trade diversion. However, the value of FKI increases gradually in recent years, which leaves a considerable room for further welfare gains.

Second, the paper examines the existing level of deep integration between China and South Korea with qualitative and quantitative method. The relatively low value of GLIs means that two countries mainly conduct inter-industry trade, thus implying low level of deep integration. Then the study identifies non-tariff barriers and regulatory restrictions in areas of TBT, SPS, services, investment, IPRs and government procurement. If two parties succeed in tackling these barriers in FTA negotiations, a large amount of welfare gains are expected to be created.

LIST OF REFERENCES

Balassa, B., 'Trade Liberalisation and Revealed Comparative Advantage', The Manchester School, 33, 1995, pp.99-123.

Boschma,R., Minondo,A. & Navarro,M. 'The Emergence of New Industries at the Regional Level in Spain: A Proximity Approach Based on Product Relatedness', Economic Geography,89(1),2013,pp.29-51.

Evans, D., Holmes, P., Gasiorek, M., Rollo, J. & Robinson, S., Assessing Preferential Trading Agreements Using the Sussex Framework, Centre for the Analysis of Regional Integration at Sussex (CARIS). CARIS Working Paper No.1, March 2007.

Finger, J. M.& Kreinin, M. E. 'A Measure of Export Similarity and Its Possible Uses', The Economic Journal, 89, 1979, pp. 905-912.

FTA Korea, (accessed 10 October, 2014), http://www.fta.go.kr/main/.

General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, T.I.A.S. 1700, 55 U.N.T.S. 194 [hereinafter GATT].

' The Government Procurement Law of the People's Republic of China', adopted at the 28th Meeting of the Standing Committee of the Ninth National People's Congress on June 29, 2002.

Grubel, H. G. & Lloyd, P. J. (1971). 'The Empirical Measurement of Intra-Industry Trade', Economic Record, 47 (4), 1971, pp 494–517.

Joint Study Committee for a CKFTA, 'The Joint Study Report for China-Korea FTA', 2010, (accessed 30 September 2014),http://fta.mofcom.gov.cn/enarticle/enkorea/enkoreanews/201006/2759_1.html.

Kander, M.'Free Trade Between Economic Giants?: The Sussex Framework Analysis of a Potential EU-Japan Free Trade Agreement', World Trade Institute, Master's Thesis, 2012, pp.24.

Korean Culture and Information Service(KOCIS), International Relations, (accessed 5 Spetember 2014), http://www.korea.net/AboutKorea/Korea-at-a-Glance/Korea-in-the-World.

Korea Communication Commission, ‘Telecommunications Business Act ', partially amended by Law No. 8867 dated Feb. 29, 2008.

MOFCOM, China FTA Network, (accessed 5 September 2014),http://fta.mofcom.gov.cn/english/index.shtml.

— , China-Korea FTA, (accessed 5 September 2014), http://fta.mofcom.gov.cn/topic/enkorea.shtml.

—, ‘90% of products will be granted zero tariff in China-Korea FTA’, (accessed 5 September 2014), http://www.mofcom.gov.cn/article/resume/n/201309/20130900310992.shtml.

—,‘South Korea and China Complete First-stage FTA Talks’, (accessed 5 September 2014),http://fta.mofcom.gov.cn/enarticle/enkorea/enkoreanews/201312/14635_1.html.

—,‘The 13th round of China-Korea FTA negotiation concluded in Beijing’, (accessed 5 September
2014), http://fta.mofcom.gov.cn/article/chinakorea/koreanews/201409/18275_1.html.

— , ‘The introduction to trade barriers in South Korea’, (accessed 30 September 2014), http://ccn.mofcom.gov.cn/spbg/show.php?id=4569. .

—, http://shangwutousu.mofcom.gov.cn/article/hycy/201402/20140200499603.shtml, accessed 5 October, 2014.

— , http://www.mofcom.gov.cn/aarticle/i/jyjl/j/200804/20080405460697.html, accessed 10 October, 2014.

WTO, Trade Policy Review of The Former Yugoslav Republic Of Macedonia , NWT/TPR/S/290, 23 October 2013, p33.