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Market Access in FTAs:
Assessment Based on Rules of Origin and Agricultural Trade Liberalization

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Market Access in FTAs: Assessment Based on Rules of Origin and Agricultural Trade Liberalization

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Abbreviations

AV	Adjusted Value
BD	Build-Down Method
BU	Build-Up Method
CC	Changes in HS Chapter
CEPT	Common External Preferential Tariff
CER	Australia-New Zealand Closer Economic Relations
CTC	Change in Tariff Classification
CTH	Changes in HS Heading
CTSH	Changes in HS Subheading
CU	Customs Union
HS	Harmonized System
JSEPA	Japan-Singapore Economic Partnership Agreement
NC	Net Cost Method
RNM	Ratio of Non-Originating Materials
ROM	Ratio of Originating Materials
ROO	Rules of Origin
RVC	Regional (local) Value Contents
SP	Specific Production Process
TM	Transaction Value Method
VNM	Value of Non-Originating Materials

1. Introduction

There are several factors behind the fast growth of FTAs in the world: economic incentives, economic reforms, and political alliances. Among these factors, economic incentives can play an important role in inducing countries to pursue FTAs with their trading partners. Economists, using simulation models, have shown that FTAs would bring significant economic gains to member countries. Examples are Cheong (2005), Schiff and Winters (2003), Scollay and Gilbert (2001), and Urata and Kiyota (2003). Cheong (2005) demonstrates using computable general equilibrium (CGE)

models that East Asian countries can collect the highest gains with a region-wide FTA in East Asia rather than any subregional FTA. Schiff and Winters (2003) also show through simulation analyses that there are potential dynamic gains for member countries from FTAs. Scollay and Gilbert (2001) forecast positive impacts on world trade through FTAs, indicating that trade creation associated with FTAs is greater than trade diversion. Regarding FTAs in East Asia, Urata and Kiyota (2003) predict that emerging economies in Southeast Asia and China gain a great deal more in terms of increases in GDP from joining an East Asian FTA than other economies such as Korea and Taiwan in Northeast Asia.

However, economic gains that are forecasted by simulation models cannot be realized automatically from the inception of an FTA. It is important to introduce measures such as FDI liberalization and the lowering of trade barriers to market entry to increase the benefits of joining an FTA. All studies cited above are based on the assumption that tariff elimination and loose rules of origin (ROO) will exist at the foundation. Therefore, it can be said that the quality of FTAs is critical in determining the scale of economic gains.

Most countries that establish FTAs state that they are pursuing high quality FTAs. A country cannot become an FTA hub in a region automatically by expanding the number of FTAs that it is involved in. Rather, it is necessary for a country to show a strong willingness for trade liberalization and trade facilitation by maximizing market access and harmonizing trade rules. In reality, market access is a core element for FTA negotiations, and should be evaluated from several viewpoints such as tariff elimination, the easing of non-tariff barriers (NTBs) such as customs clearance, the simplifying of rules of origin, and the improvement of trade rules.

This paper tries to assess the quality of FTAs in terms of tariff elimination for agricultural products and rules of origin. While analyzing the improvement of NTBs and trade rules is also important in determining the quality of FTAs, this cannot be easily evaluated in quantitative terms. This paper analyzes market access in representative FTAs such as NAFTA, EU-Mexico FTA, Australia-New Zealand Closer

Economic Relations (CER), Japan-Singapore Economic Partnership Agreement (JSEPA), Japan-Mexico Economic Partnership Agreement (JSEPA), ASEAN-China FTA, Korea-Mexico FTA and Chile-Korea FTA. Chapter 2 discusses theoretical aspects of ROO, and Chapter 3 provides the evaluation results on the stringency (restrictiveness) of rules of origin. In Chapter 4, FTAs are assessed in the context of agricultural tariff elimination. Since most FTA cases show that most manufacturing goods are liberalized within 10 years of the implementation of the FTAs, only the agriculture sector, which is the most sensitive sector in FTAs, is taken into account for the study. Finally, concluding remarks are provided in the Chapter 5.

2. Descriptive Overviews of ROO

2.1. Theoretical Survey on ROO

One of the differences between Customs Union (CU) and FTA is the authority to change tariffs on imports from non-member countries. CU member countries introduce common tariff rates against non-member countries, and they cannot change tariff rates voluntarily without prior consultation with other member countries.[1] However, FTA member countries can set tariff rates (not higher than WTO-bound rates) independently. Because the tariff rates of the member countries of an FTA are different, trade deflection can occur.[2] In order to prevent trade deflection, FTA member countries introduce specific rules, regulating that only the goods satisfying the rules be given preferential treatment in terms of tariffs. These rules are called rules of origin (ROO).

There are three criteria for defining ROO in FTAs. The first criterion is Change in Tariff Classification (CTC) or "tariff line shift." CTC is widely used in regional trading agreements (RTAs), and is preferred by the World Customs Organization (WCO), which promotes the simplification and harmonization of ROO. CTC is based

[1] CU also needs ROO during the transitional period toward the implementation of common external tariffs.
[2] Trade deflection means that a good imported via a low tariff FTA member country is re-exported into a country with high tariffs without paying tariffs.

on the Harmonized System (HS), classifying goods at a two-digit chapter level, a four-digit heading level, a six-digit subheading level or an eight (ten)-digit level. The second rule is the requirement of Regional (local) Value Contents (RVC), implying the requirement that the product should acquire a minimum regional value in exporting country or a region of a RTA.[3] The third rule is the requirement of Specific Production Process (SP), which requires a specific production process for an item. Each criterion has merits as well as demerits, as shown in Table 1. The CTC approach is relatively simple in requiring the comparison between the tariff line of a final product and those of intermediate materials, but it bears an intrinsic problem in that the HS system does not follow industrial classifications for many products.

Table 1. Merits and De-merits by ROO Criteria

	Merits	De-merits
CTC	Simple comparison between intermediate materials and final products	HS system is for trade classifications rather than for industrial classifications
RVC	Simple, transparent, easy to check	Manipulations in accounting, the effect of exchange rates, coverage of costs (logistics, trademark etc)
SP	Objective rules	No incorporation of technical development. Requirements are too stringent in most cases.

RVC is widely used in most FTAs since the criterion is simple and easy to check, but the ROO of a good can be changed by manipulating the customs value. For example, increasing profits (accounting purpose) can change a non-originating good into a ROO-qualifying one, as demonstrated in Table 2.

Table 2. RVC Criterion and Profit Rates

[3] The rule of regional value contents can be considered in various ways such as export value, import value and value of parts included in an article. However, we do not consider these separately, regarding all methods as regional value contents.

(unit: $, %)

Profit Rate	VNM	VOM	Value Added	Profits	Customs Value	RVC (%)	ROO
10% case	50	20	20	9	99	49.5	NO
20% case	50	20	20	18	108	53.7	YES

Note: ROO is 50% RVC

FTAs introduce multiple methods for calculating RVCs. Most commonly used methods are as follows: Build-Down, Build-Up method and Share of Non-Originating Parts. The RVC ratio, based on Build-Down, is expressed as a percentage in calculating the difference between the adjusted value (AV) and the value of non-originating materials (VNM) that are acquired and used by the producer in the production of the good, and then divided by the difference with AV. Explanation for other methods are given in Table 3.

Table 3. Methods for Calculating RVC

Method	**Equation**	**NAFTA Method**
Build-Down Method	$\frac{AV - VNM}{AV} * 100$	Transaction Value Method: $\frac{TV - VNM}{TV} * 100$
Build-Up Method	$\frac{VOM}{AV} * 100$	Net Cost Method: $\frac{NC - VNM}{NC} * 100$
Share of Non-Originating Parts	$\frac{VNM + VUOM}{AV} * 100$	

AV: Adjusted Value, VNM: Value of Non-Originating Materials, VOM: Value of Originating Materials, VUOM: Value of Materials with Uncertain Origin, TV: Transaction Value, NC: Net Cost

Most RTAs employ multiple criteria for setting ROO, rather than applying a single rule. According to the WTO (2002), while ROOs in many FTAs are based on CTC, RVC and SP, a combination of the three methods rather than any one single

method is widely used in an FTA.

Table 4. Frequencies of CTC, RVC and SP in RTAs

RTA (no. of RTAs)	CTC	RVC	SP
CU (6)	6	4(35-60%)	-
FTA and PTA (87)	83	75(35-60%)	74

Note: Numbers in parentheses imply the minimum requirement ratios.

Source: Modified from WTO (2002, p8)

Each criterion that is used for defining ROO has its advantages and disadvantages, and it is not easy to conclude which rule is the most desirable.[4] However, even though a specific rule is used, the stringency of the criterion can be changed depending on a member country's position towards trade liberalization. For example, chapter change will be more stringent than changes in heading or subheading, when the CTC method is employed. In the case that the RVC criterion is used, a 60% regional value contents rate will be more stringent than 40%.

Some elements of ROOs are designed to promote intra-regional trade, although ROOs in general constitute protectionist practices. For example, Cumulation[5] and *De Minimis* are commonly introduced in FTAs in order to facilitate producers under certain conditions to use intermediate inputs from the region of another FTA or a third country. *De Minimis* is called a tolerance rule in literature on the ROO and is found in 88 out of 93 RTAs surveyed, according to the WTO (2002, p9). In most cases, the *De Minimis* rule is applied to less than 10% of the total value of final products to be sourced from non-member countries.[6]

ROOs act like trade barriers, since they cause extra costs in production and management. Producers/exporters need to pay costs for calculating production costs and

[4] Parmeter (1997, p342) states that "although FTAs require rules of origin, there is a problem: there is no completely satisfactory rule of origin." Regarding merits and demerits of methods of setting ROO, refer to Parmeter (1997) and Estevadeordal (2003).

[5] Cumulation can be classified as bilateral cumulation, diagonal cumulation and full cumulation. Refer to Estevadeordal (2003) regarding the classification of cumulation.

[6] EC-South Africa FTA sets 15% for *De Minimis* rule, but this is an exceptional case.

producing bookkeeping-related documents.[7] Also, extra costs will be incurred in complying with the technical and specific process and regional value contents as specified in the ROO protocol, and these costs will be added to the prices of export goods.[8]

As ROOs become more stringent, the compliance costs will rise, undermining the gains in terms of trade creation that can be obtained from an FTA. APEC (2004, p76) states, "The complexity and stringency of ROO employed in RTAs has given rise to concerns over the diversionary effects that ROO may have on trade and investment flows."

2.2. Descriptive Analysis of ROO in Major FTAs

This section provides descriptive analysis of ROOs in major FTAs, focusing on assessing the stringency of ROOs. Empirical examination of the stringency of ROO will be given in the following chapter. Most FTAs have a several hundred pages on ROO protocol, and thus, requires a large amount of time and effort to understand the structure and technical aspects of the ROO in a FTA. Unfortunately, the existing literature on the subject is limited.[9]

For the analysis of ROOs, several FTAs were chosen as case studies for this paper. They are NAFTA and the EU-Mexico FTA, which represent the first-generation FTAs pursued by the US and the EU. Examples of FTAs under implementation by East Asian countries are ASEAN Free Trade Area (AFTA) and ASEAN-China, Japan-Singapore (EPA), US-Singapore, Japan-Singapore, Japan-Mexico, Korea-Singapore, and Korea-Chile FTAs. In this section, we will compare the stringency of ROOs of East Asian FTAs with that of the US and EU FTAs. Before presenting the result, however, it is worth mentioning that the ROOs in the AFTA and the ASEAN-China FTA, which introduce a simple rule for ROO. But other FTAs by East Asian countries have chosen

[7] Regarding empirical research on administrative costs in a FTA and costs of preparing documents for preferential treatment, refer to Koskinen (1983) and Herin (1986), respectively.
[8] Several empirical researches on the costs of stringent ROO under NAFTA show substantial costs to intra-regional traders and producers. For example, Cadot *et al* (2002) found that the utilization rate of NAFTA preferences is as low as 64% due to stringent ROO in part. Regarding more information on the costs of ROO, refer to Estevadeordal (2003, pp.8-9).
[9] Comprehensive analysis of ROO in major RTAs can be found in Brenton (2003), Estevadeordal (2003), and WTO (2002).

to follow more complicated rules of origin.

● ROOs in the US and EU FTAs

NAFTA is the first FTA with comprehensive coverage of trade, investment, services, and trade rules. In promoting FTAs, the US has imposed quite stringent ROOs based on the change of heading, specific requirements for HS chapters, and complicated criteria for the regional value content. Essevadeordal (2003, p348) evaluated that the US specifies the ROO of "substantial transformation" in its FTAs. The CTC in chapter, heading and subheading is most widely used, with additional requirements of specific process and regional value contents. *De Minimis* rule is 7% in NAFTA, lower than in other FTAs.

Since then, several countries have followed the structure of NAFTA ROO with minor modifications for some items.[10] A stringent ROO of "wholly obtained or produced entirely" is applied to primary industries, and each of the non-originating materials used in the production of the good must undergo an applicable change in tariff classification set out in Annex 401 of the agreement. Technical processes are required for many items. Regional value contents ratios are as high as 50-60% depending on calculation methods.[11] The agreement specifies a more stringent rule for automobiles (HS8702-8704) with 62.5% under the net cost method.

In other FTAs, the US introduces a lower regional value contents ratio. For example, in the US-Chile FTA, 35% (Build-Up) and 45% (Build-Down) were adopted for some of HS34. A similar ROO is used for the US-Singapore FTA. However, a more stringent ROO was introduced in the US-Australia FTA, especially for textiles and footwear. In case of footwear (HS64), the regional value contents ratio is set at 55% (Build-Down) with an additional requirement of subheading change. The analysis of the US's FTAs suggests that the stringency of ROO depends on its FTA partners.

The EU's ROO heavily depends on PANEURO, which establishes a highly uniform ROO across the EU's FTAs such as the EU-EFTA FTA and the EU-Mexico

[10] The framework of the NAFTA ROO became the basis of ROOs in many FTAs, concluded by Canada, Chile, Mexico, Japan, Korea, and so on.
[11] NAFTA has two approaches for calculating the regional contents: One is the transaction value method, and the other is net cost method.

FTA. The EU-Mexico FTA adopts a wide range of rules in defining the ROO. In general, EU ROOs are rather restrictive. The EU ROO is dominated by changes in heading, although regional value content ratios range from 20% to 50%, with 20% for HS30. One problem with the EU ROO is that the agreement imposes complicated rules for producers. For example, special requirements are specified for sugar and cocoa in defining the ROO for HS 18-22.

● ROOs in East Asian FTAs

FTAs by East Asian countries cover a wide spectrum in terms of the stringency of ROO. The most simplest ROO can be found in the AFTA, and the ASEAN-China FTA, which specify 40% regional value contents across all tariff lines, is the simplest ROO in the world.[12] The criterion of 40% regional value contents was first introduced by AFTA, when the Common External Preferential Tariff (CEPT) scheme was agreed upon in 1992. During the negotiation for a FTA between China and ASEAN, China accepted the AFTA ROO and concluded the negotiations at the end of 2004.[13]

Singapore has been receptive to a loose ROO, while the US has imposed a stringent ROO, as seen in the NAFTA agreement and in its recent FTAs with other countries. Singapore adopted the position of the US for the ROO in the bilateral FTA with the US. The US-Singapore FTA, which was concluded in 2003, basically follows the framework of the NAFTA ROO, but it is substantially less restrictive than the NAFTA.

Chapter 3 of the US-Singapore FTA contains the rules of origin, and the requirements for specific items are given in Annex 3A. Heading changes are required for HS27-HS48. For some HS chapters such as HS73, 78, 81, 84, 85, and 90, regional value content ratios are required as 35% in the Build-Up method and 45% in Build-Down method. *De Minimis* is set at 10%.

Japan and Korea were predisposed to introduce a complex and stringent ROO

[12] Similarly simple ROO can be found in CER (Australia-New Zealand FTA), with a 50% RVC rule. However, it specifies an additional requirement that the last manufacturing process should be performed in the exporting territory for some items. However, the 40% rule is applied in the AFTA without extra requirements.

[13] China led the negotiation with ASEAN for a bilateral FTA. In 2003, China provided an Early Harvest Package to ASEAN countries in order to attract ASEAN countries to the negotiation table.

to placate strong domestic opposition to trade liberalization.[14] However, with mounting experience in FTA negotiations, Korea is likely to relax the stringency of the ROOs in her second FTA, while Japan adopts more restrictive ROOs in the FTA with Mexico. Japan's first FTA—the Japan-Singapore EPA—specifies a "wholly obtained or produced entirely" rule. It says that products should undergo sufficient transformation in the member country to receive preferential treatment in the FTA. Cumulation and *De Minimis* are accepted but the agreement specifies different shares of *De Minimis* with it being set at lower than or equal to 10 percent.

Heading changes are required for HS01-24, HS38 (chemical products), HS85 (machinery), with subheading changes or regional contents requirements (liquor and cordials). A regional contents requirement of 60% (with a combination of subheading changes) is required for other chapters of HS. For textile fabrics and articles (HS59), fabric should be made with yarn from a FTA member country.

The Japan-Mexico EPA contains a less restrictive ROO than the Japan-Singapore EPA in several aspects. *De Minimis* is introduced at 10% for all items. Chapter, heading, and subheading changes are used for HS01-63. However, a stringent ROO is introduced for Mexico's major exports such as footwear (HS64) and natural resources like copper and zinc. The rule for these items specifies heading or subheading changes with a 50-55% regional contents requirement.

The ROO of the Korea-Chile FTA is also a variation of the NAFTA, with stringent and complex specifications for sensitive items. In particular, heading changes are required for HS01-HS10, which are agricultural and fishery products, in order to prevent transshipment of agricultural products. *De Minimis* is specified at 8%. A combination of heading change and regional value content is used for several chapters such as HS19, 29, 30, 31, 38, etc. In general, low regional content ratios are set as 45% for the Build-Down method and 35% for the Build-Up method. For some of HS84, a 30% regional contents ratio is specified when the Build-Up method is used in calculating the regional contents ratio. However, an exceptionally high regional content ratio is specified for HS200892-200899 (preparations of vegetables, fruits, nuts or other

[14] Esdevadeordal (2003, p12) states, "The ROO of Japan-Singapore EPA are complex, as evidenced by the more than 200-page ROO protocol." Similar comments can be found in Esdevadeordal (2003, p12) for Korea-Chile FTA.

parts of plants). This is to curb the importation of non-Chilean juices and similar products.

The Korea-Singapore FTA was concluded within a year of the start of negotiations in early 2004 and became effective in March 2006. Korea was worried about the illegal transshipment of goods through Singapore in the FTA and wanted to have a stringent ROO, while Singapore wanted to introduce Outward-Processing. Korea also strongly wanted to provide the ROO for products produced in the Gaesung Industrial Complex.[15] Korea could have persuaded Singapore on this issue, while accepting Outward-Processing, but not as an exchange. Both countries agreed on a 10% *De Minimis* rule, with textiles being an exception. This latter point was considered to be sensitive in the Japan-Singapore EPA. Unlike the FTA with Chile, the Build-Down method is widely used with ratios of 45%, 50% and 55%.

3. Empirical Assessment of ROOs

Stringent ROO can discourage exporters not to take advantage of tariff preferences provided by FTAs, undercutting the economic gains of FTAs. As different ROOs are introduced by overlapping FTAs, the spaghetti-bowl problem may be present, enforcing dampening trade effects of the ROO.[16] The ROO may be the source of under-realization of FTA preferences, but there is not a great deal of literature on measuring the stringency of the ROO. Two pioneering works on this subject are Estevadeordal (2003) and the Productivity Commission (PC, 2004). The PC provides a comprehensive index approach for measuring the stringency and restrictiveness of ROOs and improves Estevadeordal index, which is too simple to use for empirical works. Both approaches are designed to calculate the degree of restrictiveness of ROOs, making numerical comparison of ROOs possible in FTAs. This chapter tries to measure the restrictiveness indices for selected FTAs in terms of the PC approach and Estevadeodal and presents

[15] Gaesung Industrial Complex is located in North Korea. The acceptance of the Gaesung products as Korean goods was a critical concern for South Korea, in terms of economic gains as well as a symbolic meaning for improving South Korea-North Korea relations.

[16] Because of the experimental operating difficulties of the ROO, there is a limited number of research on the stringent ROO effects on trade. Examples are Cadet, et al (2002), and Krueger (1995). The former shows 64% of NAFTA utilization ratio due to the ROO, and the latter tells that Canadian companies tend to pay tariffs rather than resorting to tariff preferences by complying with the stringent ROO.

the results of the study at the end of this chapter.[17] More focus is given to the PC index than the Estevadeodal index, since the former can cover the latter.

3.1. Analysis on Index Components

The PC approach has a bottom-up structure, requiring an initial survey of detailed components of the ROO in the relevant appendix of a FTA, and aggregation of those into relevant upper categories. Each component is valued with weights for higher category, and aggregated up to the top level for a single number of index.[18] The top level has three categories: primary criteria, supplementary criteria, and other effects of ROO. Primary ROO criteria in most FTAs has two components: "wholly obtained" criterion and substantial transformation criterion. In order to mitigate the restrictiveness of ROO, supplementary criteria such as Cumulation and *De Minimis*, are widely adopted. In particular, recent FTAs introduce outward processing in facilitating global outsourcing and the flow of intermediate goods across countries.

Table 5 summarizes principle ROO criteria in FTAs, presenting that "wholly obtained" rules and substantial transformation rules are generally applied for all FTAs considered in this study. CTC and RVC are commonly used for defining substantial transformation. However, the most stringent rule, technical processes (SP) are rarely applied. In defining substantial transformation with RVC, different thresholds are adopted. For example, the US sets a relatively high requirement in NAFTA but a low RVC ratio in its FTA with Singapore. Different ratios of RVC are reflected with relevant weights in calculating the restrictiveness index.

Table 5. Principle ROO Criteria in FTA[1)]

	Wholly Obtained	Substantial Transformation		
		CTC	RVC	SP
NAFTA	●	●	●[2)]	○
EEA	●	●	●	○
EFTA	●	●	●	○

[17] The index approach requires a weighting scheme for ROO criteria used in defining ROO. This research follows the PC scheme.

[18] Refer to PC (2004) for detailed rules for individual criteria and components.

EU-Mexico	●	●	●	○
EFTA-SGP	●	●	●	○
US-SGP	●	●	●[3)]	○
AFTA	●		●	○
ASEAN-China	●	●	●[4)]	
Japan-SGP	●	●	●	○
Japan-Mexico	●	●	●	○
Korea-Chile	●	●	●[5)]	○
Korea-SGP	●	●	●	○

Note 1) ●: Generally applied, ○: Applied in small number of items

2) The RVC should be not less than 60% (transaction value method) or 50% (net cost method). 62.5% under the net cost method is set for automobiles (HS 8702.xx, 8703.21-90, 8704.21, 8704.31)

3) 35% in the Build-Up method and 45% in the Build-Down method

4) Not less than 60% (FOB price of a final good) of originating materials (CIF) from non-ACFTA

5) 30% in the Build-Up method and 45% in the Build-Down method. 80% for canned juice mix as an exception

CTC criterion will depend on the HS classification of ROO for transformation from intermediate goods to final products. If Chapter change is required, then it will be most restrictive. This index rule is deliberately approached by Estevadeodal (2000), as shown in Table 6. His index is designed to evaluate RVC and SP, in the framework of CTC requirements.

Table 6. Restrictiveness Index of ROO defined by Estevadeordal

Index	Description
1	Changes in HS8-10 digit (CI)
2	More restrictive than index 1 and changes in HS6 digit (CTSH)
3	More restrictive than index 2. Changes in HS6 digit (CTSH) and RVC
4	More restrictive than index 3 and changes in HS4 digit (CTH)
5	More restrictive than index 4. Changes in HS4 digit (CTH) and RVC
6	More restrictive than index 5 and changes in HS2 digit (CC)
7	More restrictive than index 5 and changes in HS2 digit (CC) and SP requirement

Source: Summarized from Estevadeodal (2003)

Several components of RVC are incorporated into measuring the index, in addition to the RVC threshold. Important elements are how to calculate the RVC, reference prices and methodology across tariff lines. As seen in Table 7, FTAs have wide range of specifications for RVC in terms of threshold, methodology, and reference price. European FTAs heavily use Ratio of Non-Originating Materials in calculating the RVC, while East Asian countries tend to adopt Built-Down methods or Built-Up methods. For reference prices, European countries prefer Ex-Works (factory) prices, but FOB prices are widely used by the US and East Asian countries. Table 8 shows most commonly adopted specifications for FTAs, and each FTA defines different rules across tariff lines.

Table 7. Method for Calculation of RVC

	Value Added		Method of Calculation		Remarks
	VNM[1)]	VOM[2)]	Method[3)]	Reference Price	
NAFTA	40%, 50%	60%. 50%	TM, NC	FOB	Auto (62.5%)
EEA	40%	(60%)	RNM	Ex-works	
EFTA	40%	(60%)	RNM	Ex-works	
EU-Mexico	20~50%		RNM	Ex-works	Combined with CTC
EFTA-SGP	20~60%	40~80%	RNM	Ex-works	
US-SGP	40~70%	30~60%	BD, BU	FOB	
AFTA	60%	40%	ROM	FOB	
ASEAN-China	60%	40%	ROM	FOB	
Japan-SGP	40%	60%	BD, BU	FOB	
Japan-Mexico	50%	50%	TM		65%[4)]
Korea-Chile	55%, 70%	45%, 30%	BD, BU	FOB	Juice mix (80%)
Korea-SGP	45~55%	45~55%	BD	FOB	

Note: 1) Share of value added should be less than ones specified

2) Share of value added should be more than ones specified

3) TM: Transaction Value Method, NC: Net Cost Method, RNM: Ratio of Non-Originating Materials, ROM: Ratio of Originating Materials, BD: Build-Down Method, BU: Build-Up Method

4) 65% of originating materials is required as an exception. 8544 (ex), 8703 (ex), 8704-8707, 8708 (ex), 8716 (ex).

Major components of supplementary criteria are *De Minimis*, Cumulation, and

Outward Processing.[19] Most FTAs allow a 10% *De Minimis* rule. Higher tolerance rates will be regarded as less restrictive ROO. Cumulation is also widely accepted in FTAs, and full cumulation is less restrictive than bilateral ones. Outward processing is rarely defined, because of technical difficulties in tracing the source of intermediate goods. However, some credit is given for considering initial value added before outsourcing to the third countries, since outward processing increases local content, thus making it easy to comply with ROO.

Table 8. Supplementary Criteria ROO Criteria by FTA[1)]

	Supplementary Criteria		
	De Minimis	Cumulation	Outward Processing
NAFTA	7% (FOB)	●	
EEA	10% (ex works)	●	*
EFTA	10% (ex works)	●	*
EU-Mexico	10% (ex works)[2)]	Bilateral	
EFTA-SGP	10% (ex works)	●	*
US-SGP	10%, 7%[3)]	●	
AFTA		●	
AFTA-China		Full	
Japan-SGP	○[6)]	Bilateral	
Japan-Mexico	10%	Bilateral	
Korea-Chile	8%	Bilateral	
Korea-SGP	10%	Bilateral	*[7)]

Note 1) ●: Generally applied, ○: Applied in small number of items, ◦: No application, *: Allowed

2) Not apply to products in HS 50-63

3) *De Minimis* in US-SGP FTA – 10% of adjusted value, 7% of weight of fibers or yarns.

4) Not less than 60% (FOB price of a final good) of originating materials (CIF) from non-ACFTA

[19] Outward Processing is designed to acknowledge that part of the manufacturing process (labor-intensive works) may be outsourced to less developed countries. For example, stages 1, 2 and 3 are required for production, and stage 2 is labor-intensive (outsourced). If we recognize the Outward Processing, local content will be a total of stages 1 and 3, while the conventional approach accepts only stage 3.

6) Noted in Appendix IIA (not in Text).

7) The total value of non-originating inputs should not exceed 40% of customs value, and the value of originating materials is not less than 45% of the customs value.

3.2. Assessment of Restrictiveness of ROO

Based on the discussions in the previous section, this section provides empirical results of restrictiveness of ROO by Estevadeordal and Suominen (2004) and the Productivity Commission (2004) in Section 3.2.1. Although these studies are comprehensive in analyzing ROO, they analyze FTAs by European and American countries. Four FTAs by Japan and Korea are under implementation, and these FTAs are not included in existing studies. Section 3.2.2 summarizes the study results for assessing restrictiveness of ROO in these FTAs by Japan and Korea. Rather than devising a restrictiveness index, this paper follows the approaches by existing studies.

3.2.1. Existing Studies

This section reports on existing studies on the restrictiveness index of ROO in FTAs, based on the research by Estevadeordal and Suominen (2004) and the Productivity Commission (2004). Both studies analyze the restrictiveness of ROO with different sets of FTAs, most of them being FTAs by Europe and Americas.

The EU prefers to define heading changes in tariff classification with other requirements (CTH+),[20] while FTAs in the Americas almost equally depend on chapter changes (CC+) and heading changes. As an exception, the MERCOSUR adopted the CTH rule in bilateral FTAs with Chile and Bolivia.[21] Thus, it can be said that the US has set more restrictive ROO than the EU.

Table 9. Composition of CTC Criterion for ROO

(unit: %)

	FTAs by EU[1)]					
	S. Africa	Mexico	Chile	Poland	Estonia	GSP(93)
CC+	14.24	14.47	14.24	14.08	14.08	13.93
CTH+	57.65	58.34	57.25	62.43	63.62	63.70
CTSH+	2.37	2.37	2.25	2.34	2.38	2.36

[20] EU uses RVC requirement in its FTAs, and more frequency for RVC than US's FTA.
[21] MERCOSUR is the Customs Union for South American Countries (Argentina, Brazil, Paraguay, and Uruguay).

Others[2)]	25.74	24.82	26.26	21.15	19.92	20.01
	FTAs in Americas					
	NAFTA	G-3	FTAs by Mexico		FTAs by MERCOSUR	
			Costa Rica	Bolivia	Chile	Bolivia
CC+	54.44	42.08	42.77	42.68	0.00	0.00
CTH+	40.65	46.02	47.19	47.15	100.00	100.00
CTSH+	4.35	7.88	9.66	9.21	0.00	0.00
Others[2)]	0.56	4.02	0.38	0.96	0.00	0.00

Note: 1) The EU's FTA with Poland (1993) and Estonia (1995)

2) Others cover one of "wholly obtained," RVC and SP, or combinations of these requirements.

Source: Figure 2 and Table 3 in Estevadeordal and Suominen (2004)

The Productivity Commission (2004) provides restrictiveness indices for ROO in FTAs based on a variety of countries. It calculates indices using the bottom-up approach, based on an aggregation scheme with weights. The most restrictive ROO can be found in the NAFTA, and its index is 0.67 with 0.46 for primary criteria, which can be closely related with the study by Estevadeodal (2003) in Table 6. Restrictive ROO following the NAFTA is found in the EU-Poland FTA and MERCOSUR with an index of 0.60.

Table 10. ROO Restrictiveness Index by Productivity Commission

Criteria	EFTA	EU-Poland	PANEURO	EU-Mexico	CER	AFTA
Primary	0.15	0.33	0.30	0.31	0.14	0.08
Supplementary	0.11	0.12	0.08	0.08	0.07	0.11
Others	0.10	0.15	0.15	0.13	0.13	0.13
Total	**0.35**	**0.60**	**0.53**	**0.52**	**0.33**	**0.31**
Criteria	NAFTA	US-Singapore	US-Chile	MERCOSUR	Chile-MERCOSUR	Andean
Primary	0.46	0.23	0.26	0.37	0.18	0.14
Supplementary	0.09	0.04	0.08	0.11	0.11	0.09
Others	0.13	0.11	0.13	0.13	0.13	0.10
Total	**0.67**	**0.39**	**0.46**	**0.60**	**0.42**	**0.33**

Source: Table A.2 (pp. 44-45) in Productivity Commission (2004)

However, the US has adopted a less restrictive ROO in recent FTAs such as the US-Singapore FTA and the US-Chile FTA. Similar trends can be found for the EU and MERCOSUR. Some countries tend to adopt loose type of ROOs. For example, Australia-New Zealand, AFTA and Andean Community chose to set relatively simple and loose ROOs.

3.2.2. Restrictiveness of ROO in FTAs by Japan and Korea

Before presenting the restrictiveness index of FTAs by Japan and Korea, the structures of ROO in Table 11 for Japan's bilateral FTAs with Singapore and Mexico, and Table 12 for Korea's FTA with Chile and Singapore are provided for readers' brief overview. Restrictiveness indices are taken from Estevadeodal (2003), and the numbers of tariff lines for each ROO category are given in terms of a HS6 or HS8 digit. It is not easy to classify the specification of ROO for some tariff lines, and regard it as closest category.

Japan defined ROO in its FTA with Singapore as a HS6 digit, while using a HS8 digit with its FTA with Mexico. However, we found that the number of tariff lines with ROO in the EPA with Singapore is less than half of those with Mexico, although the former was based on a HS6 digit (the smaller number of tariff lines in a HS6 digit than a HS8 digit).[22]

Table 11. Summary of ROO in Japan-Singapore FTA and Japan-Mexico FTA

(unit: number of items in HS6)

Japan-Singapore EPA			**Japan-Mexico EPA**		
Category	Index	HS6	Category	Index	HS8
CC + RVC	7	24	CC+SP	7	294
SP	6	120	SP	6	12
CC	6	49	CC	6	1,958
CTH + RVC + SP	6	14	CC or CC+RVC	6	3
CTH + SP	6	21	CC or CTH+RVC	6	108
CTH + RVC	5	182	CC or CTSH+RVC	6	83

[22] In addition to this, Japan had narrow market access, especially for agriculture, and did not mention tariff lines for exclusion from tariff elimination. Thus, the number of tariff lines with ROO in the agreement became smaller.

CTH	4	1,684	CC or RVC	6	2
			CTH+SP	6	3
			CTH+RVC; CC; or CTSH+RVC	5	1
			CTH+RVC; CC; or CTH	5	1
			CTH+RVC	5	189
			CTH	4	1,128
			CTH or CC+RVC	4	1
			CTH or CTH+RVC	4	131
			CTH or CTH ; CTSH+RVC	4	8
			CTSH or CTH or RVC	4	2
			CTH or CTSH+RVC	4	661
			CTH or RVC	4	59
			CTSH+RVC	3	17
			CTSH; CC or CTSH+RVC	3	1
			CTSH or CTH or CTSH+RVC	3	4
			CTSH or CTH+RVC	3	30
			CTSH or CTSH+RVC	3	37
			CTSH or CTH+RVC or CTSH+RVC	3	1
			CTSH	2	472
			RVC	1	13
Total		**2,094**	**Total**		5,219

Source: Calculated based on the agreement of Japan-Singapore EPA and Japan-Mexico EPA

There are substantial differences between Japan's first EPA and second EPA. In Japan's first EPA with Singapore, Japan introduced a smaller number of categories for ROO than in the EPA with Mexico. The majority of tariff lines has a CTH requirement for ROO in the EPA with Singapore, while the EPA with Mexico has a CC criterion. This implies that ROO in the EPA with Mexico is more restrictive than in the EPA with Singapore. Japan also heavily adopts the combined criteria of CTC and RVC in the EPA with Mexico, which enforce the restrictiveness of ROO.

On the contrary, Korea's ROO shares similar pattern in its first two bilateral

FTAs with Chile and Singapore. First, the number of categories is similar in the two FTAs, although Korea reduced the number of categories in the later FTA with Singapore. Second, the most frequent ROO in both FTAs is a CTH criterion. Third, a HS6 digit is the tariff lines for defining ROO in both FTAs.

One of the differences is that the number of restrictive ROO (tariff lines with Index 6 or 7) is smaller in the Korea-Singapore FTA than the Korea-Chile FTA. This means that the former FTA is less restrictive than the latter.

Table 12. Summary of ROO in Korea-Chile FTA and Korea-Singapore FTA

(unit: number of items in HS6)

Korea-Chile FTA			**Korea-Singapore FTA**		
Category	Index	HS6	Category	Index	HS6
CC + SP	7	178	CC + SP	7	292
CC + RVC	7	80	CC + RVC	7	144
CC	6	1,287	CC	6	874
CC or (CC+RVC)	6	1	CC or (CTH+RVC)	6	5
CC or (CTH+RVC)	6	27	CTH + RVC	5	278
CC or (CTSH+RVC)	6	31	CTH	4	2,968
CTH + RVC	5	322	CTH or RVC	4	1
CTH	4	1,739	CTH or (CTH+RVC)	4	85
CTH or (CTH+RVC)	4	66	CTH or (CTSH+RVC)	4	397
CTH or (CTSH+RVC)	4	471	CTSH + RVC	3	19
CTH or RVC	4	739	CTSH	2	117
CTSH + RVC	4	131	CTSH or RVC	2	1
CTSH	3	105	RVC	1	31
CTSH or RVC	3	5			
RVC	1	30			
Total		**5,212**			**5,212**

Note: CC - Changes in HS2 digit, CTH - HS4 digit, CTSH - HS6 digit, RVC - Regional Value Contents, SP - Specific Production Requirement

Based on Table 11 and 12, Table 13 was prepared to compare the composition of CTC criteria in the FTAs by Japan and Korea with those of NAFTA and the EU-Mexico FTA. It is evaluated that the Japan-Singapore EPA has the highest share of CTH criterion, while the Japan-Mexico EPA is analyzed to have the lowest share of CTH among the six FTAs discussed in this study. The Japan-Mexico EPA increased the share of CTSH criterion, reducing the share of CTH substantially.

Table 13 shows that Korea has a similar structure of ROO, as shown in the previous analysis. Korea's ROO tends to be developed towards CTH criterion, by reducing shares of ROOs for CC and CTSH. It implies that Korea is moving towards a

less restrictive ROO, while making some items more restrictive by changing ROO criteria from CTSH to CTH.

Table 13. Composition of CTC in FTAs by Japan and Korea

(unit: %)

	NAFTA	EU-Mexico FTA	**Japan's EPA with**		**Korea's FTA With**	
			Singapore	**Mexico**	**Chile**	**Singapore**
CC+	54.44	14.47	9.22	47.14	30.21	25.18
CTH+	40.65	58.34	90.78	29.14	59.76	67.79
CTSH+	4.35	2.37	0.00	23.47	9.46	6.44
Other	0.56	24.82	0.00	0.25	0.58	0.59
Total	100	100	100	100	100	100

Source: Information on NAFTA and EU-Mexico FTA is recited from Table 9(originally from Estevadeordal-Suominen, 2004)

Restrictiveness of ROO can be calculated with relevant information for primary criterion, supplementary criterion, and other criterion, as described in the Productivity Commission (2004), in addition to above Table 11-13. In general, it can be said that Japan's ROO is more restrictive than Korea's, and East Asian ROO is less restrictive than NAFTA or the EU's ROO system (PANEURO). Table 14 shows that Japan increased the restrictiveness of ROO in its second FTA, and its ROO with Singapore is more restrictive than Korea's ROO with Singapore. Korea's ROO in its second FTA is less restrictive than its first FTA with Chile. Korea borrowed the framework of ROO system for its first FTA from NAFTA, and its ROO is less restrictive than NAFTA. Finally, the US adopted a rather less restrictive ROO in a recent FTA with Singapore, which went into force in January 2004. Four East Asian FTAs have more restrictive ROO than the US-Singapore FTA.

Table 14. ROO Restrictiveness of FTAs by Japan and Korea

(unit: %)

Criteria	PANEURO	NAFTA	US-SGP FTA	Japan-SGP FTA	Japan-Mexico FTA	Korea-Chile FTA	Korea-SGP FTA

Primary	0.3	0.46	0.23	0.33	0.34	0.28	0.3
Supplementary	0.08	0.09	0.04	0.06	0.09	0.11	0.06
Others	0.15	0.13	0.11	0.1	0.10	0.08	0.08
Total	**0.53**	**0.67**	**0.39**	**0.49**	**0.54**	**0.47**	**0.44**

Source: Information on PANEURO, NAFTA, and US-Singapore (SGP) is taken Table A-2 in Productivity Commission (2004)

4. Agricultural Liberalization in Major FTAs

GATT Article IVXX specifies requirements for regional trading blocs to be eligible for exemption from the GATT/WTO most-favored nations (MFN) principle. It states that "duties and other restrictive regulations of commerce…are eliminated with respect to substantially all the trade between the constituent territories of the union or at least with respect to substantially all the trade in products originating in such territories." It was GATT Article IVXX that was the most controversial to construe. Indeed, it was difficult to make consensus on the meaning of "substantially all" total trade among the member states,[23] and the time span for eliminating tariffs and non-tariff barriers. Moreover, there are also differences in interpreting whether tariffs should be totally eliminated and how many of the non-tariff barriers should be included within the trade liberalization package. Even the Committee on Regional Trade Agreements in WTO has not been able to reach a conclusion over this controversy.

There are many cases of FTA member states taking conservative positions toward tariff elimination notwithstanding the recognition that trade liberalization will be beneficial to their economies. They have allowed exceptions from tariff elimination for sensitive items and have introduced a long-term implementation for tariff eliminations. On the other hand, Australia-New Zealand FTA (CER) and the Australia-Singapore FTA

[23] WTO (2002) cautiously mentions that "a threshold has been proposed at 95% of all HS tariff lines at the six-digit level, to be complemented by an assessment of prospective trade flows at various stages of implementation of the RTA, thereby allowing the incorporation of cases where trade is initially concentrated in relatively few products."

stipulated complete tariff elimination. Both agreements indicate that each party shall eliminate all customs duties on goods originating in the territories of the other party that meet the requirements for the rules of origin specified in respective agreements. However, most of the agreements allow exceptions. This chapter analyzes the content of trade liberalization focusing on agricultural tariffs, since manufacturing sectors are liberalized within 10 years of the implementation in most cases.

Tariff elimination schemes of agricultural tariff lines were analyzed for two groups of FTAs by Western countries and East Asian countries. NAFTA, US-Australia FTA, US-Chile FTA, and EU-Mexico FTA are selected for samples of western countries' FTAs, while East Asian FTAs for analysis are Japan-Singapore Economic Partnership Agreement (EPA), Japan-Mexico EPA, Korea-Singapore FTA, and Korea-Chile FTA.

Tariff elimination can be analyzed with diverse approaches depending on the purpose of research. This study counts tariff lines according to the categories of tariff elimination provided in appendices of FTAs considered.[24] Tariff lines in the HS chapter 01-24 except HS3 (fisheries) are regarded as agricultural products.[25] For reference, detailed survey results are provided in the Appendices 1-11. It is not easy to make groups for comparison since each agreement introduces different liberalization categories, including quota without tariff change, partial liberalization, and future reviews. This chapter reports the summary of the survey of agricultural liberalization by calculating the numbers of tariff lines for three groups; the first group is items which are scheduled to be liberalized within 10 years after the implementation of a FTA, the second one includes items of liberalization after 10 years and the third group is for excluded items from trade liberalization.

4.1. FTAs by Western Countries

[24] For more accurate analysis, trade volumes need to be considered in addition to tariff lines. However, this requires substantially more work efforts, and this can be done in a follow-up study.
[25] Some items in HS29, 33, 35, 38, 41, 43, 50, 51-53 can be regarded as agriculture, but these items are not taken into account in this study.

Australia and New Zealand have liberalized bilateral trade including agriculture in the CER. The agreement started with poor market access in 1982. However, with additional negotiations, trade in goods was fully liberalized in July 1990.[26] Australia also liberalized its agriculture market for US exporters in the US-Australia FTA, which was implemented in January 2005.

Prior to the NAFTA's entry into force, the US, Canada and Mexico were important trade partners for each other, with bilateral trade among them slightly higher than trade with any other single trading partner. NAFTA was the first comprehensive agreement to include not only tariff elimination among member countries, but also various economic issues such as services, investments, trade regulations, economic cooperation, environments and labor. Moreover, it also represents substantial liberalization in most traded goods. NAFTA classified almost all products into four categories, and the majority of these products were scheduled to be liberalized within 10 years, with a maximum 15 years for import-sensitive items.

The US liberalized its agricultural market for Mexican exports, allowing no exception. The US recorded 97% tariff elimination of agricultural tariff lines, and 3% were scheduled to be eliminated after 10 years from implementation. Similar liberalization structure can be found in the FTA with Chile, although a higher share of agriculture was scheduled to be liberalized compared to the US-Mexico FTA. However, the US allowed 336 tariff lines (HS8) to be excluded from liberalization in the US-Australia FTA, with only 53.3% of agriculture to be liberalized within 10 years. Even the US, who has kept a strong position for trade liberalization, showed a conservative stand-point in the FTA with Australia, one of the major exporters in the area of agriculture.

Table 15. Agricultural Liberalization in FTAs by Western Countries

(unit: tariff lines, %)

Importer	Exporter	Within 10 year	After 10 year	Exception	Total
US	Mexico	1,154	36	0	1,190

[26] The 1988 CER Protocol on Acceleration of Free Trade in Goods.

		(97.0)	(3.0)	(0.0)	(100)
US	Chile	1,364 (85.2)	235 (14.8)	0 (0.0)	1,599 (100)
US	Australia	876 (53.3)	434 (26.3)	336 (20.4)	1,646 (100)
Australia	US	Immediate elimination of all tariff lines for agriculture			
Chile	US	574 (81.2)	133 (18.8)	0 (0.0)	707 (100)
EU	Mexico	1,204 (59.3)	0 (0.0)	833 (40.7)	2,047 (100)
Mexico	US	832 (90.6)	17 (1.8)	70 (7.6)	919 (100)
Mexico	EU	669 (67.9)	0 (0.0)	316 (32.1)	985 (100)
Average		**79**	**8**	**13**	**100**

Note: Numbers in the parenthesis are shares out of total number of tariff lines for agriculture

Source: Summarized from appendices provided in Appendices 1-7

Chile is one of countries which has actively promoted FTAs, and achieved high economic growth and the improvement of the business environment. The country did not allow exceptions for agriculture, and 574 tariff lines (HS8, 81.2%) were liberalized within 10 years. Out of 574 items, 441 items (62.4%) were immediate liberalization products at the implementation of the FTA with the US.

The EU and Mexico started to negotiate a free trade agreement in late 1998 and concluded these negotiations in late 1999. The agreement came into effect on July 1, 2000. The EU had tried to enlarge and deepen its economic integration within Europe before the agreement, and the EU-Mexico FTA offered the opportunity for the EU to expand its regionalism to non-European regions. The EU has protected its agriculture in the multilateral trading system and regional trade agreements. In its FTA with Mexico, the EU liberalized only 59% of agriculture within 10 years, and allowed 41% to be excluded from tariff elimination. In responding to the EU's tariff concession, Mexico eliminated 68% of agricultural tariff lines, with exception share of 32%. However, the country recorded 90.6% of tariff lines in the NAFTA. It can be inferred that the market access for a country depends on the counter party in a FTA.

On average, 79% of agricultural tariff lines were liberalized within 10 years in

the Western FTAs analyzed in this study, while it is calculated that countries allowed 13% of agriculture to be excluded from liberalization package.

4.2. FTAs by Japan and Korea

There are several FTAs in East Asia including ASEAN Free Trade Area (AFTA), AFTA-China FTA, Japan-Singapore EPA, Korea-Chile FTA, etc. ASEAN countries felt the need for a more instrumental economic cooperation program in early 1990s, and a Common Effective Preferential Tariff (CEPT) was proposed at the 22nd ASEAN Economic Minister's Meeting (AEM) in October 1990. It is not easy to compare the liberalization scheme of AFTA, since the targeted tariff rates were 0-5% rather than zero tariffs for items in the liberalization list. Similar schemes were introduced for AFTA's FTAs with China and Korea.

With this problem, those FTAs were not taken for analysis. Instead, four FTAs by Japan and Korea were reviewed for assessing agricultural liberalization, representing FTAs by East Asian countries. More FTAs, such as the US-Singapore FTA, can be added for the study, but this is left for future works.

Japan concluded its first FTA with Singapore in January 2002. The agreement was officially entitled the Agreement between Japan and the Republic of Singapore for a New-Age Economic Partnership (JSEPA), since it is expected to promote economic partnership and linkages of the two countries in a comprehensive manner. However, Japan showed a passive position in liberalizing agricultural market, recording the lowest rate of tariff elimination within 10 years in the FTAs reviewed in this study. The country introduced only one liberalization category for agriculture, which is immediate liberalization.[27] The agreement stipulates only agricultural items for immediate liberalization, while other items are not shown in the agreement.

Japan improved market access for agriculture in the FTA with Mexico, which was signed in September 2004, and went into force in April 2005. Mexico strongly

[27] MFN Tariff rates for items in the immediate liberalization category were zero. This means Japan's agriculture has not been affected at all by the Japan-Singapore EPA.

requested Japan to expand market access for the Japanese agricultural market during negotiation. Japan provided tariff-rate quotas for some of agricultural products such as pork and oranges, while minimizing tariff elimination for agriculture. Japan agreed with Mexico in eliminating 51.9% of its agricultural tariffs within 10 years, and 7.7% within 11 years. Forty items (HS8) were categorized as preferential tariff treatment, under which parts of tariffs were supposed to be cut.[28]

Table 16. Agricultural Liberalization in FTAs by Japan and Korea

(unit: tariff lines, %)

Importer	Exporter	Within 10 years	After 10 years	Exception	Total	Remarks
Japan	Singapore	250 (39.4)	0 (0.0)	385 (60.6)	635 (100)	HS6
Japan	Mexico	508 (51.9)	75 (7.7)	396 (40.5)	979 (100)	HS8
Korea	Singapore	933 (65.0)	0 (0.0)	481 (34.0)	1,414 (100)	HS10
Korea	Chile	1,011 (71.5)	12 (0.9)	391 (27.7)	1,414 (100)	HS10
Average		**57.1**	**2.2**	**40.7**		

Note: numbers in the parenthesis are shares out of total number of tariff lines for agriculture

Korea introduced four categories for agricultural trade liberalization in the FTA with Singapore: Immediate elimination, five-year elimination, 10-year elimination and exception. In its first FTA, Korea eliminated 65% of agricultural tariff lines and 34% were grouped for exception from trade liberalization. Korea was more progressive than Japan in bilateral FTAs with Singapore, in that the former recorded higher liberalization rate than the latter.

Korea spent three years in concluding its first FTA with Chile, and additional 1.5 years for approval from the National Assembly. The government of Korea liberalized 71.5% of agricultural products in the FTA within 10 years from the

[28] These items mostly apply for HS Chapter 2 (meats).

implementation (April 2004). Most of them were supposed to eliminate tariffs in the fifth year when the agreement became effective.

FTAs by Japan and Korea showed that 57.1% of agricultural tariff lines were supposed to be liberalized on average, and 40.7% were categorized into exception. Overall, East Asian countries adopted lower liberalization ratio of within 10-year liberalization for agriculture than Western countries, although it should be carefully interpreted in that only FTAs by Japan and Korea were under consideration.

4.3. ASEAN-China FTA

China and ASEAN began talks on a free trade accord in early 2002 and signed a framework agreement in November, containing general goals of the bilateral FTA between ASEAN and China. At the agreement, both parties agreed to work faster toward a free trade agreement in 2010, thus creating a large marketplace with over with 1.7 billion consumers, about US$1.8 trillion in GDP and US$1.2 trillion in trade volume. After a series of negotiations, the two sides have concluded the FTA on the market access for commodity in 2004 and implemented the agreement July 2005, reducing bilateral tariffs, which should be down to zero for most products by 2010.

According to Article 3 (4) of the framework agreement of ASEAN-China FTA,[29] the products which are subject to the tariff reduction or elimination program shall be categorized into two Tracks as follows: Normal Track and Sensitive Track. For products listed in the Normal Track, respective applied MFN tariff rates gradually reduced or eliminated over a period from July 1, 2005 to 2012 for ASEAN 6 and China, and in the case of the new ASEAN Member States,[30] the period shall be from July 1, 2005 to 2018 with higher starting tariff rates and different staging. Products listed in the

[29] The Framework Agreement on Comprehensive Economic Co-operation between the Association of South East Asian Nations and the People's Republic of China, which is signed November 4, 2002 in Phnom Penh.

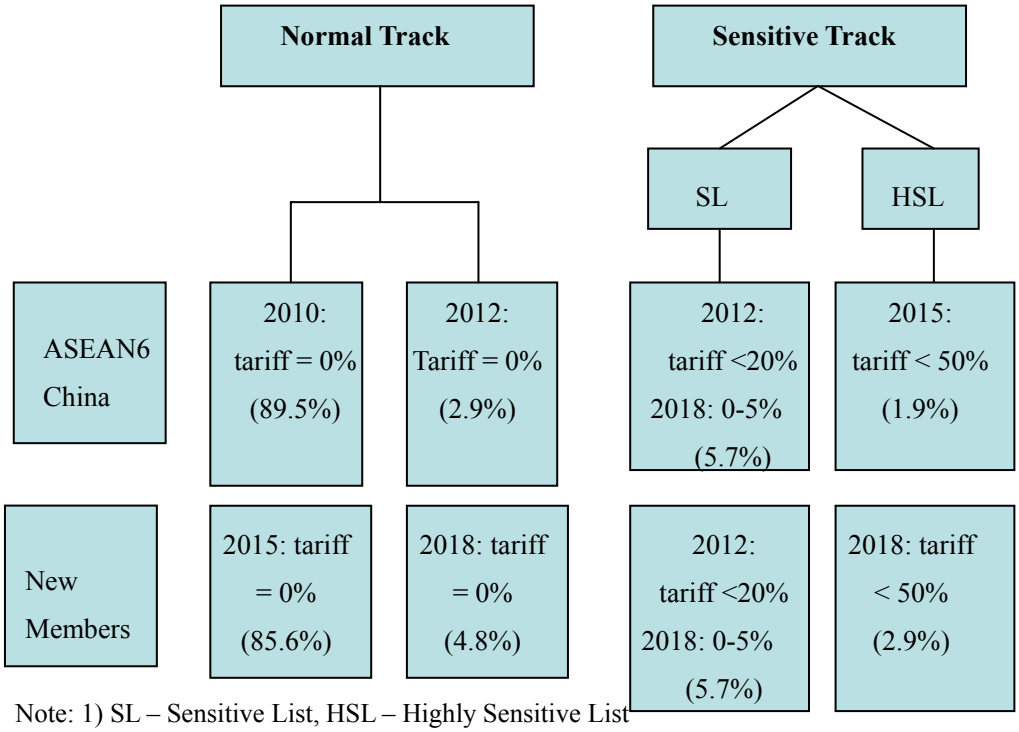
[30] New ASEAN member countries are Cambodia, Laos, Myanmar and Vietnam.

Sensitive Track shall have their respective positive applied MFN tariff rates, meaning that those items would not be free of tariffs even after 2018.

The number of products listed in the sensitive track shall be subject to a maximum ceiling to be mutually agreed among the Parties. ASEAN 6 and China can not have more than 400 HS6 tariff lines, while the sensitive track items for new member countries can not exceed 500 items (HS6). The sensitive track items will be categorized into two groups: Sensitive List and Highly Sensitive List. Only maximum 40% of sensitive track items can be listed as highly sensitive goods.

Since the ASEAN-China FTA involves 11 countries and special considerations are taken into account in the concession of tariff elimination, the appendices of tariff elimination are quite complicated. Figure 1 represents overall views of tariff elimination in the ASEAN-China FTA. Most of tariff lines (92.4% for ASEAN 6 and China, 90.4% for new member countries) will be completely liberalized by 2012 for ASEAN 6 and China and 2018 for new member countries. The remaining items will be categorized into sensitive track and tariffs for these items will be reduced to 0-5% by 2018 for ASEAN 6 and China and 2020 for new member countries. However, small numbers of items, which are listed as highly sensitive, will have their tariffs reduced to not higher than 50% not later than January 1, 2015 for ASEAN 6 and China, and January 1, 2018 for the newer ASEAN member countries.

Figure 1. Summary of Tariff Elimination in the ASEAN-China FTA



Note: 1) SL – Sensitive List, HSL – Highly Sensitive List

2) Numbers in the parentheses are shares of total tariff lines

Tariff elimination scheme in Figure 1 covers all tariff lines including agriculture. Since most member countries of the ASEAN-China FTA have no serious agricultural problem in FTAs, small numbers of agricultural products are classified for the high sensitive list. For example, China has 32 items (HS6 digit), Malaysia 38 (HS9), Philippines 41 (HS6) and Thailand 51 (HS6). Detailed lists of items for highly sensitive lists are given at Appendix 12-15.

5. Conclusion

In order to curb trade deflection, FTAs introduce ROO, but too stringent ROO will reduce the economic gains from the establishment of FTAs due to its internal characteristic of protection against imports. According to the assessment in this paper, advanced economies such as the US and the EU are likely to use the ROO more

heavily than developing countries. This trend was seen when the former countries established FTAs with developing countries, targeting the blocking of the inflow of imports from partner countries.

ROO will be maintained unless member countries of a FTA agree to revise it. However, original ROO adopted in a FTA may not be relevant as economic structure and business environment change.[31] For example, most companies depend on a wide range of outsourcing, and it will be more beneficial for FTAs to allow some forms of outsourcing, resulting in the facilitation of intra and external trade. Or political issues can raise the necessity of changing the structure of ROO for specific sectors.

As MFN tariffs are reduced, the importance of ROO will become smaller, since the expected net gains from satisfying the ROO will shrink. Krueger (1985) argues that many companies give up applying for the tariff preferences of the NAFTA because of high compliance costs. Even though tariff preferences are high enough to cover the extra costs, companies will then have incentives for satisfying the ROO.

This paper reports that FTAs by East Asian countries have a wide gap in ROOs, from the most simplest ROO in the world (ASEAN-China FTA) to stringent ROOs in FTAs by Japan and Korea.[32] This implies a high probability of the spaghetti-bowl effect in East Asia. All FTAs by East Asia are under implementation now, and no serious problems are reported yet. The region will experience negative impacts coming from different ROOs across FTAs.

East Asia has been discussing and promoting a region-wide FTA since the East Asian Vision Group (EAVG) was established in 1999, with the agreement by ASEAN+3

[31] Australia and New Zealand adopted a loose type of ROO in the bilateral FTA (CER) in 1990s, but recently the two countries are discussing the revision of the ROO.
[32] This means that ROOs are designed defensively by Japan and Korea, showing a passive approach against FTAs and resulting in their standing in the way of regional trade integration.

Leaders. One viable approach is to consolidate multiple bilateral FTAs in East Asia into an East Asian FTA (Cheong 2005). Although there are many huddles the region should overcome in future for the FTA, one of them will be to harmonize the ROOs in East Asian FTAs.

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APPENDICES

Appendix 1. US's Tariff Liberalization for Agriculture in the NAFTA

(# of HS8)

	A	B	C	D	C+	Ctq	Sug	Total
Ch.01	10	-	-	10	-	-	-	20
Ch.02	52	-	-	19	-	-	-	71
Ch.04	13	-	64	2	-	-	-	79
Ch.05	5	-	-	6	-	-	-	11
Ch.06	21	1	-	6	-	-	-	28
Ch.07	93	46	25	15	8	7	-	194
Ch.08	68	12	15	20	3	-	-	118
Ch.09	11	-	1	32	-	-	-	44
Ch.10	10	1	6	4	-	-	-	21
Ch.11	31	1	-	6	-	-	-	38
Ch.12	22	1	-	29	2	-	-	54
Ch.13	4	3	-	8	-	-	-	15
Ch.14	5	1	-	8	-	-	-	14
Ch.15	48	8	1	13	-	-	-	70
Ch.16	26	-	-	-	-	-	-	26
Ch.17	15	1	3	1	-	-	12	32
Ch.18	10	-	2	5	-	-	2	19
Ch.19	12	1	5	9	-	-	-	27
Ch.20	76	25	43	10	4	-	-	158
Ch.21	17	-	5	6	1	-	2	31
Ch.22	58	1	5	1	2	-	-	67
Ch.23	16	-	2	11	-	-	-	29
Ch.24	9	-	14	1	-	-	-	24
Subtotal	632	102	191	222	20	7	16	1190
Share	53.1	8.6	16.1	18.7	1.7	0.6	1.3	100.0

Note: A - Tariff elimination at the implementation of the agreement; B - 5 year liberalization; C - 10 year liberalization; D – zero tariff item; C+ - 15 year liberalization; Ctq – 10 year liberalization with quota; Sug – 15 year liberalization for sugar

Source: Calculated from the NAFTA Agreement

Appendix 2. Mexico's Tariff Liberalization for Agriculture in the NAFTA

(# of HS8)

	A	B	C	D	Ctq	Ca	Cg	EX	B+	BP	Sug	Pr	Total
Ch.01	10	1	5	9	2	-	-	4	-	-	-	-	31
Ch.02	1	3	23	7	9	3	-	14	-	2	-	-	62
Ch.04	1	-	1	-	-	-	-	45	-	-	-	-	47
Ch.05	12	-	1	-	-	-	-	-	-	-	-	-	13
Ch.06	23	-	-	6	-	-	-	-	-	-	-	-	29
Ch.07	97	2	-	3	2	1	1	-	-	-	-	-	106
Ch.08	45	14	6	-	1	-	-	-	-	-	-	-	66
Ch.09	30	-	4	-	-	-	-	-	-	-	-	-	34
Ch.10	6	1	10	2	-	2	1	-	-	-	-	-	22
Ch.11	-	-	35	-	-	2	-	-	-	-	-	-	37
Ch.12	11	2	12	55	-	-	-	-	-	-	-	3	83
Ch.13	29	1	1	1	-	-	-	-	-	-	-	4	36
Ch.14	12	-	1	-	-	-	-	-	-	-	-	-	13
Ch.15	16	2	59	-	-	2	-	-	-	-	-	-	79
Ch.16	-	-	11	-	-	-	-	4	-	-	-	-	15
Ch.17	-	-	12	-	-	-	-	-	-	-	12	-	24
Ch.18	6	-	4	-	-	-	-	-	-	-	1	-	11
Ch.19	1	10	9	-	-	-	-	-	-	-	-	-	20
Ch.20	41	12	13	-	2	-	-	-	-	-	-	-	68
Ch.21	6	6	13	-	-	-	-	2	-	-	2	-	29
Ch.22	9	20	14	-	-	-	-	-	1	-	-	-	44
Ch.23	6	9	22	-	-	-	-	1	-	-	-	-	38
Ch.24	-	-	12	-	-	-	-	-	-	-	-	-	12
Subtot	362	83	268	83	16	10	2	70	1	2	15	7	919
Share	39.4	9.0	29.2	9.0	1.7	1.1	0.2	7.6	0.1	0.2	1.6	0.8	100

Note: A - Tariff elimination at the implementation of the agreement; B - 5 year liberalization; C - 10 year liberalization; D – zero tariff item; Ca - 9 year liberalization ; Cg – 14 year liberalization; EX – Exclusion; B+ - 7 year liberalization; BP – 5 year liberalization with large cut later; Sug – 15 year liberalization for sugar; Pro – Import prohibited item
Source: Calculated from the NAFTA Agreement

Appendix 3. US' Tariff Liberalization for Agriculture in the US-Australia FTA

(# of HS8)

	A	B	D	E	F	G	H	I	Wine	Total
Ch.01	12	1	-	14	1	-	-	-	-	28
Ch.02	43	16	-	19	-	-	20(20)	-	-	98
Ch.04	55	2	8	2	25(1)	-	-	157(99)	-	249
Ch.05	5	1	-	15	-	-	-	-	-	21
Ch.06	19	2	1	6	-	-	-	-	-	28
Ch.07	90	30	23	16	8	-	-	-	-	167
Ch.08	60	16	13	23	4	2(2)	-	-	-	118
Ch.09	13	2	-	33	-	-	-	-	-	48
Ch.10	16	1	-	4	-	-	-	-	-	21
Ch.11	29	3	-	4	1	-	-	-	-	37
Ch.12	24	2	-	31	2(2)	-	-	2	-	61
Ch.13	5	-	-	10	-	-	-	-	-	15
Ch.14	6	-	-	7	-	-	-	-	-	13
Ch.15	28	9	5	16	2	-	-	2(2)	-	62
Ch.16	19	7	1	2	-	-	-	-	-	29
Ch.17	13	2	2	2	15	-	-	32(2)	-	66
Ch.18	12	1	4	6	-	-	-	54(26)	-	77
Ch.19	18	10	2	10	-	-	-	30(14)	-	70
Ch.20	80	33	25	13	29(3)	-	-	3	-	183
Ch.21	19	7	8	9	7	-	-	42(11)	-	92
Ch.22	20	-	2	32	6	-	-	2(2)	11(11)	73
Ch.23	20	1	-	10	-	-	-	4(4)	-	35
Ch.24	9	4	6	19	9(7)	-	-	8	-	55
Subtot	615	150	100	303	109	2	20	336	11	1646
Share	37.4	9.1	6.1	18.4	6.6	0.1	1.2	20.4	0.7	100.00

Note: A - Tariff elimination at the implementation of the agreement; B - 4 year liberalization; C - 8 year liberalization; D – 10 year liberalization; Wine - 10 year liberalization with quota; E - zero tariff item; F -18 year liberalization; G - 17 year liberalization; I – Exclusion
Source: Calculated from the US-Australia FTA

Appendix 4. US' Tariff Liberalization for Agriculture in the US-Chile FTA

(# of HS8)

	A	B	C	D	E	F	G	H	J	Total
Ch.01	12	-	-	-	-	11	-	-	-	23
Ch.02	59	9	1	-	-	20	-	4	-	93
Ch.04	143	15	5	7	2	2	-	-	77	251
Ch.05	6	-	-	-	-	11	-	-	-	17
Ch.06	21	1	-	-	-	6	-	-	-	28
Ch.07	96	14	12	6	9	15	3	-	-	155
Ch.08	58	15	10	4	2	24	4	-	-	117
Ch.09	14	-	-	-	-	33	-	-	-	47
Ch.10	17	-	-	-	-	4	-	-	-	21
Ch.11	29	3	-	-	-	6	-	-	-	38
Ch.12	27	-	-	-	2	29	-	-	-	58
Ch.13	4	1	-	-	-	10	-	-	-	15
Ch.14	6	-	-	-	-	8	-	-	-	14
Ch.15	29	8	2	1	3	16	-	-	1	60
Ch.16	26	-	-	-	-	1	-	-	-	27
Ch.17	44	-	1	3	15	2	-	-	1	66
Ch.18	38	-	-	1	12	7	-	-	20	78
Ch.19	38	2	2	2	6	9	-	-	9	68
Ch.20	89	11	29	6	13	12	10	-	-	170
Ch.21	56	1	1	-	15	7	1	-	7	88
Ch.22	27	3	-	-	4	31	7	-	1	73
Ch.23	21	1	-	-	-	12	-	-	2	36
Ch.24	20	2	5	-	9	20	-	-	-	56
Subtot	880	86	68	30	92	296	25	4	118	1,599
Share	55.0	5.4	4.3	1.9	5.8	18.5	1.6	0.3	7.4	100.0

Note: A - Tariff elimination at the implementation of the agreement; B - 4 year liberalization; C - 8 year liberalization; D – 10 year liberalization; E - 12 year liberalization; F - zero tariff item; G - 11 year liberalization; H – 9 year liberalization without change in 1-2 year; J -11 year liberalization without change in 1-7 year

Source: Calculated from the US-Chile FTA

Appendix 5. Chile's Tariff Liberalization for Agriculture in the US-Chile FTA

(# of HS8)

	A	B	C	E	G	H	O	V	합계
Ch.01	19	-	-	-	-	-	-	-	19
Ch.02	29	16	-	4	-	4	-	-	53
Ch.04	2	13	24	5	-	-	-	-	44
Ch.05	16	-	-	-	-	-	-	-	16
Ch.06	12	-	-	-	-	-	-	-	12
Ch.07	42	3	18	-	-	-	-	-	63
Ch.08	63	-	-	-	-	-	-	-	63
Ch.09	32	-	-	-	-	-	-	-	32
Ch.10	7	-	2	5	1	-	1	-	16
Ch.11	8	7	-	18	1	-	-	-	34
Ch.12	32	-	14	6	-	-	-	-	52
Ch.13	11	-	1	-	-	-	-	-	12
Ch.14	11	-	-	-	-	-	-	-	11
Ch.15	20	-	-	3	25	-	-	-	48
Ch.16	8	2	3	-	-	-	-	-	13
Ch.17	13	-	-	-	13	-	-	-	26
Ch.18	12	-	-	-	12	-	-	-	24
Ch.19	14	2	-	1	4	-	-	-	21
Ch.20	40	2	4	1	4	-	-	-	51
Ch.21	17	2	-	-	14	-	-	-	33
Ch.22	10	-	-	6	-	-	5	5	26
Ch.23	14	10	-	5	-	-	-	-	29
Ch.24	9	-	-	-	-	-	-	-	9
Subtot	441	57	66	54	74	4	6	5	707
Share	62.4	8.1	9.3	7.6	10.5	0.6	0.8	0.7	100

Note: A - Tariff elimination at the implementation of the agreement; B - 4 year liberalization; C - 8 year liberalization; E - 12 year liberalization; G - 11 year liberalization; H – 9 year liberalization without change in 1-2 year; O - 2 year liberalization; V – 11 year liberalization without change in 1-6 year

Source: Calculated from the US-Chile FTA

Appendix 6. EU's Tariff Liberalization for Agriculture in the EU-Mexico FTA

(# of HS8)

	1	2	3	4	4a	O	Subtot
Ch.01	13	3	3	17	0	11	47
Ch.02	40	18	15	42	0	118	233
Ch.04	4	0	0	1	0	163	168
Ch.05	22	0	0	0	0	0	22
Ch.06	14	20	2	3	0	0	39
Ch.07	14	7	32	97	0	12	162
Ch.08	17	15	39	49	0	8	128
Ch.09	49	6	0	1	0	0	56
Ch.10	5	0	0	2	0	48	55
Ch.11	0	0	8	4	0	71	83
Ch.12	75	3	2	0	0	0	80
Ch.13	16	0	2	0	0	1	19
Ch.14	12	0	0	0	0	0	12
Ch.15	54	46	9	14	7	5	135
Ch.16	3	29	3	18	0	34	87
Ch.17	0	0	0	0	0	46	46
Ch.18	2	4	0	0	1	21	28
Ch.19	1	1	0	0	0	45	47
Ch.20	7	41	26	104	0	107	285
Ch.21	9	8	0	1	0	24	42
Ch.22	35	26	0	1	0	114	176
Ch.23	32	5	0	25	0	5	67
Ch.24	0	25	5	0	0	0	30
Subtot	424	257	146	379	8	833	2,047
Share	20.7	12.55	7.13	19	0.4	40.7	100

Note: 1 - Tariff elimination at the implementation of the agreement; 2 - 3 year liberalization; 3 - 8 year liberalization; 4 - 10 year liberalization; 4a - 9 year liberalization; O – future review, exception and others

Source: Calculated from the EU-Mexico FTA

Appendix 7. Mexico's Tariff Liberalization for Agriculture in the EU-Mexico FTA

(# of HS8)

	1	2	3	4	4a	O	Subtot
Ch.01	21	0	3	1	0	13	38
Ch.02	3	0	4	1	0	59	67
Ch.04	2	0	0	0	0	46	48
Ch.05	17	9	1	2	0	1	30
Ch.06	40	0	0	0	0	0	40
Ch.07	75	2	0	0	0	4	81
Ch.08	50	0	7	5	3	3	68
Ch.09	2	25	2	0	0	5	34
Ch.10	2	3	0	0	0	17	22
Ch.11	0	0	2	1	4	30	37
Ch.12	75	2	6	0	0	0	83
Ch.13	7	23	2	0	0	0	32
Ch.14	10	0	1	0	0	0	11
Ch.15	12	4	4	16	14	19	69
Ch.16	9	5	3	3	1	22	43
Ch.17	3	0	0	0	0	22	25
Ch.18	1	0	0	0	0	13	14
Ch.19	3	1	4	0	0	17	25
Ch.20	47	13	0	0	0	13	73
Ch.21	8	11	1	5	1	12	38
Ch.22	17	7	21	3	2	5	55
Ch.23	5	4	14	1	0	14	38
Ch.24	11	2	0	0	0	1	14
Subtot	420	111	75	38	25	316	985
Share	42.64	11.27	7.61	3.86	2.54	32.08	100.00

Note: 1 - Tariff elimination at the implementation of the agreement; 2 - 3 year liberalization; 3 - 8 year liberalization; 4 - 10 year liberalization; 4a - 9 year liberalization; O – future review, exception and others

Source: Calculated from the EU-Mexico FTA

Appendix 8. Japan's Tariff Liberalization for Agriculture in the Japan-Singapore EPA

(# of HS6)

	Immediate Liberalization	Exception	Subtotal
Ch.01	21	2	23
Ch.02	26	33	59
Ch.04	1	26	27
Ch.05	17	0	17
Ch.06	9	3	12
Ch.07	10	51	61
Ch.08	10	45	55
Ch.09	25	7	32
Ch.10	9	7	16
Ch.11	2	27	29
Ch.12	37	7	44
Ch.13	10	2	12
Ch.14	6	2	8
Ch.15	12	34	46
Ch.16	6	20	26
Ch.17	3	13	16
Ch.18	3	8	11
Ch.19	0	19	19
Ch.20	0	50	50
Ch.21	2	14	16
Ch.22	10	12	22
Ch.23	25	0	25
Ch.24	6	3	9
Subtot	250	385	635
Share	39.37	60.63	100.00

Source: Calculated from the Agreement between Japan and the Republic of Singapore for a New-Age Economic Partnership

Appendix 9. Japan's Tariff Liberalization for Agriculture in the Japan-Mexico EPA

(# of HS8)

	A	B	Ca	P	Q	X	Subtotal
Ch.01	25	0	0	0	0	5	30
Ch.02	32	0	0	1	20	20	73
Ch.04	2	5	0	0	1	23	31
Ch.05	17	0	0	0	0	2	19
Ch.06	12	0	0	0	0	0	12
Ch.07	36	21	0	0	0	25	82
Ch.08	20	30	2	0	1	29	82
Ch.09	25	2	0	0	0	28	55
Ch.10	11	0	0	0	0	13	24
Ch.11	2	0	1	0	0	31	34
Ch.12	38	0	0	0	0	12	50
Ch.13	12	0	0	0	0	5	17
Ch.14	6	0	0	0	0	3	9
Ch.15	14	9	0	0	0	36	59
Ch.16	26	0	0	2	8	15	51
Ch.17	3	0	0	0	0	18	21
Ch.18	3	1	0	0	0	8	12
Ch.19	0	0	0	0	0	19	19
Ch.20	2	74	26	0	5	65	172
Ch.21	5	9	4	0	2	23	43
Ch.22	20	8	2	0	0	7	37
Ch.23	31	1	0	0	0	5	37
Ch.24	6	0	0	0	0	4	10
Subtot	348	160	35	3	37	396	979
Share	35.5	16.34	3.6	0.3	3.8	40.4	100.0

Note: A-immediate liberalization, B-liberalization within 8 years, Ca-liberalization in 11 years, P(Q)-preferential liberalization, R-future review, X-exception

Source: Calculated from the Agreement between Japan and the United Mexican States for the Strengthening of the Economic Partnership

Appendix 10. Korea's Tariff Liberalization for Agriculture in the Korea-Singapore FTA

(# of HS10)

	Immediate	Year 5	Year 10	Exception	Subtotal
Ch.01	9	35	0	6	50
Ch.02	2	3	31	55	91
Ch.04	0	3	0	48	51
Ch.05	30	26	9	4	69
Ch.06	0	35	30	9	74
Ch.07	0	1	58	65	124
Ch.08	0	0	32	41	73
Ch.09	3	25	3	5	36
Ch.10	10	2	6	14	32
Ch.11	1	4	11	29	45
Ch.12	47	49	16	14	126
Ch.13	3	12	4	9	28
Ch.14	2	0	4	17	23
Ch.15	17	54	20	6	97
Ch.16	0	18	23	49	90
Ch.17	9	5	3	16	33
Ch.18	1	25	1	6	33
Ch.19	0	36	3	10	49
Ch.20	2	0	71	28	101
Ch.21	0	37	14	16	67
Ch.22	0	11	30	11	52
Ch.23	34	1	8	2	45
Ch.24	0	0	4	21	25
Subtot	170	382	381	481	1414
Share	12.02	27.02	26.94	34.02	100.00

Source: Calculated from the Korea-Singapore Free Trade Agreement

Appendix 11. Korea's Tariff Liberalization for Agriculture in the Korea-Chile FTA

(# of HS10)

	Immediate	Year 5	Year 7	Year 9	Year 10	Year 16	DDA	Exception	Subtotal
Ch.01	9	35	0	0	0	0	6	0	50
Ch.02	4	6	4	0	45	0	32	0	91
Ch.04	0	4	0	0	8	0	39	0	51
Ch.05	33	26	0	0	5	0	5	0	69
Ch.06	0	67	0	0	7	0	0	0	74
Ch.07	0	25	6	0	46	0	47	0	124
Ch.08	0	5	4	0	23	1	38	2	74
Ch.09	3	25	0	0	0	0	8	0	36
Ch.10	10	2	1	0	0	0	13	6	32
Ch.11	0	7	0	0	2	0	31	5	45
Ch.12	67	26	1	0	3	0	29	0	126
Ch.13	8	12	0	0	0	0	8	0	28
Ch.14	13	10	0	0	0	0	0	0	23
Ch.15	26	52	0	0	0	0	19	0	97
Ch.16	43	17	2	0	14	0	14	0	90
Ch.17	8	11	0	0	0	0	14	0	33
Ch.18	1	24	2	0	1	2	0	3	33
Ch.19	0	32	0	0	6	1	5	5	49
Ch.20	1	30	14	1	27	6	22	0	101
Ch.21	4	40	5	0	8	2	8	0	67
Ch.22	0	44	1	0	4	0	3	0	52
Ch.23	11	24	0	0	2	0	8	0	45
Ch.24	0	0	0	0	4	0	21	0	25
Subtot	241	524	40	1	205	12	370	21	1414
Share	17.04	37.06	2.83	0.07	14.50	0.85	26.17	1.49	100.0

Note: DDA-review after the conclusion of the DDA
Source: Calculated from the Korea-Chile Free Trade Agreement

Appendix 12. China's Items for the Highly Sensitive List

NO.	HS CODE	DESCRIPTION
1	1005.10.00	Maize seeds
2	1005.90.00	Maize (excluding seed)
3	1006.10.10	Rice seeds
4	1006.10.90	Rice in the husk (paddy or rough)(excluding seed)
5	1006.20.00	Husked (brown) rice
6	1006.30.00	Semi-milled or wholly milled rice
7	1101.00.00	Wheat or meslin flour
8	1102.20.00	Maize (corn) flour
9	1102.30.00	Rice flour
10	1103.11.00	Groats & meal of wheat
11	1103.13.00	Groats & meal of maize (corn)
12	1103.21.00	Wheat pellets
13	1104.23.00	Other worked grains of maize (corn), not elsewhere specified
14	1507.10.00	Crude soya-bean oil
15	1507.90.00	Soya-bean oil (excluding crude) & fractions
16	1511.10.00	Crude palm oil
17	1511.90.10	Palm oil (excluding crude) & liquid fractions
18	1511.90.20	Palm stearin
19	1511.90.90	Other palm oil and its fractions, not elsewhere specified
20	1514.10.10	Crude rape, colza oil & fractions thereof
21	1514.10.90	Mustard oil & fractions thereof
22	1514.90.00	Rape, colza or mustard oil (excluding crude) & fractions thereof
23	1701.11.00	Raw cane sugar, in solid form
24	1701.12.00	Raw beet sugar, in solid form
25	1701.91.00	Cane or beet sugar, containing added flavouring or colouring
26	1701.99.10	Granulated sugar
27	1701.99.20	Superfine sugar
28	1701.99.90	Other cane or beet sugar, in solid form, not elsewhere specified
29	2402.90.00	Cigars, cigarillos, cigarettes, etc, not containing tobacco
30	2403.10.00	Smoking tobacco with or without tobacco substitutes
31	2403.91.00	Homogenized or reconstituted tobacco
32	2403.99.00	Other manufactured tobacco, not elsewhere specified

Appendix 13. Malaysia's Items for the Highly Sensitive List

NO.	HS CODE	DESCRIPTION
1	0105.11.100	Day old chicks of the species Gallus weighing not more than 185 gram
2	0105.92.000	Fowls of the species Gallus domestic weighing not more than 2000 gram; others
3	0207.11.000	Meat of fowls of the species Gallus domestic, not cut in pieces, fresh or chilled
4	0207.12.000	Meat of fowls of the species Gallus domestic, not cut in pieces, frozen
5	0207.13.000	Edible cuts and offal, of the species gallus domestic, fresh or chilled
6	0207.14.000	Edible cuts and offal, of the species gallus domesticus, frozen
7	0401.10.100	Milk and cream not concentrated not containing sugar, fat content less than 1%
8	0401.10.900	Milk and cream not concentrated not containing sugar, fat content less than 1%
9	0401.20.100	Milk and cream not concentrated, fat content more than 1% but less than 6%
10	0401.20.900	Milk and cream not concentrated not containing sugar
11	0401.30.100	Milk and cream not concentrated not containing sugar
12	0401.30.900	Milk and cream not concentrated not containing sugar
13	0407.00.111	Fresh hens' eggs, in shell, for hatching
14	0407.00.112	Fresh ducks' eggs, in shell, for hatching
15	0407.00.910	Hens' eggs, in shell, preserved or cooked
16	0407.00.920	Ducks' eggs, in shell, preserved or cooked
17	0704.90.110	Round cabbages, fresh or chilled
18	1006.10.100	Pulut (glutinous rice), in the husk in the husk
19	1006.10.900	Other rice in the husk
20	1006.20.100	Husked pulut (glutinous rice)
21	1006.20.900	Other husked (brown) rice
22	1006.30.100	Pulut (glutinous rice), semi-milled or wholly semi-milled
23	1006.30.900	Other semi-milled or wholly milled rice, whether or not wholly milled rice
24	1006.40.100	Broken rice for animal feeding
25	1006.40.900	Other broken rice
26	2402.20.100	Beedies
27	2402.20.900	Other cigarettes containing tobacco
28	2402.90.100	Ccigars, cheroots and cigarillos containing tobacco substitutes
29	2402.90.200	Cigarettes containing tobacco substitutes /others
30	2403.10.110	Smoking tobacco, whether or not containing tobacco substitutes
31	2403.10.190	Other smoking tobacco, whether or not containing tobacco substitutes

32	2403.10.900	Smoking tobacco, whether or not containing tobacco substitutes
33	2403.91.100	Homogenised or reconstituted tobacco, for retail sale
34	2403.91.900	Homogenised or reconstituted tobacco, other than for retail sale
35	2403.99.200	Snuff
36	2403.99.310	Cut rags
37	2403.99.390	Other manufactured tobacco cut rags
38	2403.99.900	Tobacco extracts and essences

Appendix 14. Philippine's Items for the Highly Sensitive List

NO.	HS CODE	DESCRIPTION
1	0103.91	- - Weighing less than 50 kg:
2	0103.92	- - Weighing 50 kg or more
3	0105.11	- - Fowls of the species Gallus domesticus
4	0105.92	- - Fowls of the species Gallus domesticus,wighing not more than 2,000g
5	0105.93	- - Fowls of the species Gallus domesticus, weighing more than 2,000g
6	0203.11	- - Carcasses and half-carcasses
7	0203.12	- - Hams, shoulders and cuts thereof with bone in
8	0203.19	- - Other
9	0203.21	- - Carcasses and half-carcasses
10	0203.22	- - Hams, shoulders and cuts thereof with bone in
11	0203.29	- - Other
12	0207.11	- - Not cut in pieces, fresh or chilled
13	0207.12	- - Not cut in pieces, frozen
14	0207.13	- - Cuts and offal, fresh or chilled
15	0207.14	- - Cuts and offal, frozen
16	0207.32	- - Not cut in pieces, fresh or chilled
17	0207.33	- - Not cut in pieces, frozen
18	0207.35	- - Other, fresh or chilled
19	0207.36	- - Other frozen
20	0701.90	- Other
21	0703.10	- Onions and shallots
22	0703.20	- Garlic
23	0704.10	- Cauliflowers and headed broccoli
24	0704.90	- Other
25	0706.10	- Carrots and turnips
26	0711.90	- Other vegetables; mixtures of vegetables
27	0714.10	- Manioc (cassava)
28	0714.20	- Sweet potatoes
29	1005.90	- Other
30	1006.10	- Rice in the husk (paddy or rough)
31	1006.20	- Husked (brown) rice

32	1006.30	- Semi-milled or wholly milled rice, whether or not polished or glazed
33	1006.40	- Broken rice
34	1602.32	- - Of fowls of the species Gallus domesticus
35	1602.41	- - Hams and cuts thereof
36	1602.49	- - Other, including mixtures
37	1701.11	- - Cane sugar
38	1701.12	- - Beet sugar
39	1701.91	- - Containing added flavouring or coloring matter
40	1701.99	- - Other
41	2309.90	- Other

Appendix 15. Thailand's Items for the Highly Sensitive List

NO.	HS CODE	DESCRIPTION
1	0401.10	- Of a fat content, by weight, not exceeding 1%
2	0401.20	- Of a fat content, by weight, exceeding 1% but not exceeding 6%
3	0401.30	- Of a fat content, by weight, exceeding 6%
4	0402.10	- In powder, granules or other solid forms, of a fat content, by weight, not exceeding 1.5%
5	0701.10	- Seed
6	0701.90	- Other
7	0703.10	- Onions and shallots
8	0703.20	- Garlic
9	0712.20	- Onions
10	0712.90	- Other vegetables; mixture of vegetables
11	0801.11	- - Desiccated
12	0801.19	- - Other
13	0813.40	- Other fruit
14	0901.11	- - Not decaffeinated
15	0901.12	- - Decaffeinated
16	0901.21	- - Not decaffeinated
17	0901.22	- - Decaffeinated
18	0901.90	- Other
19	0902.10	- Green tea (not fermented) in immediate packings
20	0902.20	- Other green tea (not fermented)
21	0902.30	- Black tea (fermented) and partly fermented tea, in immediate packings
22	0902.40	- Other black tea (fermented) and other partly fermented tea
23	0904.11	- - Neither crushed nor ground
24	0904.12	- - Crushed or ground
25	1005.90	- Other
26	1006.10	- Rice in the husk (paddy or rough)
27	1006.20	- Husked (brown) rice
28	1006.30	- Semi-milled or wholly milled rice, whether or not polished or glazed
29	1006.40	- Broken
30	1201.00	Soya beans, whether or not broken.

	1201.001	- - - Edible
	1201.009	- - - Other
31	1203.00	Copra.
32	1209.91	- - Vegetable seeds
33	1507.10	- Crude oil, whether or not degummed
34	1507.90	- Other
35	1511.10	- Crude oil
36	1511.90	- Other
37	1513.11	- - Crude oil
38	1513.19	- - Other
39	1513.21	- - Crude oil
40	1513.29	- - Other
41	1701.11	- - Cane sugar
42	1701.12	- - Beet sugar
43	1701.91	- - Containing added flavouring or colouring matter
44	1701.99	- - Other
45	2101.11	- - Extracts, essences and concentrates
46	2101.12	- - Preparations with a basis of extracts, essences or concentrates
47	2202.90	- Other
48	2304.00	Oil-cake and other solid residues
49	2401.10	- Tobacco, not stemmed/stripped
50	2401.20	- Tobacco, partly or wholly stemmed/stripped
51	2401.30	- Tobacco refuse