

## Chapter 1

# RULES OF ORIGIN AND AGRICULTURAL TRADE LIBERALISATION IN MAJOR FREE TRADE AGREEMENTS

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### 1. Introduction

The factors behind the fast growth of free trade agreements (FTAs) throughout the world include economic incentives, economic reforms, and political alliances. Among these, economic incentives can play an important role in inducing countries to pursue FTAs with their trading partners. Economists, including Cheong (2005), Schiff and Winters (2003), Scollay and Gilbert (2001), and Urata and Kiyota (2003) have used simulation models to show that FTAs would bring significant economic gains to member countries. Using computable general equilibrium (CGE) models, Cheong (2005) demonstrates that East Asian countries can collect the highest gains with a region-wide FTA in East Asia rather than with any sub-regional FTA. 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 considerably 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, the economic gains forecast by simulation models cannot be realised automatically from the inception of an FTA. It is important to

introduce measures such as FDI liberalisation and the lowering of trade barriers to market entry to increase the benefits. All the studies are based on the assumption that tariff elimination and loose rules of origin (ROOs) 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 claim they are pursuing high-quality FTAs. A country cannot automatically become an FTA regional hub by simply expanding its number of FTAs but must demonstrate a strong willingness for trade liberalisation and trade facilitation by maximising market access and harmonising trade rules. As a core element for FTA negotiations, market access should be evaluated from several viewpoints, such as tariff elimination, the easing of non-tariff barriers (NTBs) such as customs clearance, the simplifying of ROOs, and the improvement of trade rules.

This paper assesses the quality of FTAs in terms of tariff elimination for agricultural products and ROOs. While analysing 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 examines market access in representative FTAs such as NAFTA, the EU–Mexico FTA, Australia–New Zealand Closer Economic Relations (CER), Japan–Singapore Economic Partnership Agreement (JSEPA), Japan–Mexico Economic Partnership Agreement (JMEPA), ASEAN–China FTA, Korea–Mexico FTA and Chile–Korea FTA. Section 2 discusses theoretical aspects of ROOs, and Section 3 provides the evaluation results on the stringency (restrictiveness) of ROOs. Section 4, FTAs are assessed in the context of agricultural tariff elimination. Since most cases show that the majority of manufacturing goods are liberalised within 10 years of the implementation of an FTA, 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 Section 5.

## 2. Descriptive Overviews of ROO

### 2.1. *Theoretical survey on ROO*

One of the differences between a Customs Union (CU) and an 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 cannot change tariff rates voluntarily without consulting other member countries.<sup>1</sup> However, FTA member countries can set tariff

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<sup>1</sup>A CU also needs a ROO during the transitional period towards the implementation of common external tariffs.

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.<sup>2</sup> To prevent trade deflection, FTA member countries introduce specific ROOs that regulate that only the goods satisfying the rules can be given preferential tariffs.

Three criteria define ROOs in FTAs. The first 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 harmonisation of ROOs. CTC is based on the harmonised system (HS), classifying goods at a two-digit chapter level, a four-digit heading level, a six-digit sub-heading level or an eight- (10-) 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 the exporting country or a region of an RTA.<sup>3</sup> The third rule is the requirement of a specific production process (SP) for an item. Each criterion has merits as well as demerits, as shown in Table 1. The CTC approach is relatively simple in requiring a comparison between the tariff line of a final product and those of intermediate materials, but it has an intrinsic problem in that the HS system does not follow industrial classifications for many products.

The 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

**Table 1. Merits and de-merits by ROO criteria.**

|     | Merits  | Demerits  |
|-----|---|---|
| CTC | Simple comparison between intermediate materials and final products | HS 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                 |

<sup>2</sup>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.

<sup>3</sup>The RVC 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 as RVCs.

**Table 2. RVC criteria and profit rates (\$, %).**

| 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.

**Table 3. Methods for calculating RVC.**

| Method                             | Equation                           | NAFTA Method  |
|------------------------------------|------------------------------------|---|
| Build-down method                  | $\frac{AV - VNM}{AV} \times 100$   | Transaction value method:<br>$\frac{TV - VNM}{TV} \times 100$ |
| Build-up method                    | $\frac{VOM}{AV} \times 100$        | Net cost method: $\frac{NC - VNM}{NC} \times 100$             |
| Share of non-<br>originating parts | $\frac{VNM + VUOM}{AV} \times 100$ |   |

Notes: 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.

change a non-originating good into a ROO-qualifying one, as demonstrated in Table 2.

FTAs introduce multiple methods for calculating RVCs, the most common of which are build-down, build-up, 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 (VNMs) that are acquired and used by the producer in the production of the goods, and then divided by the difference with AV. Explanation for other methods are given in Table 3.

Most RTAs employ multiple criteria for setting ROOs, 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).

Each criterion that is used for defining ROOs has advantages and disadvantages, and it is not easy to conclude which rule is the most desirable.<sup>4</sup> However, even though a specific rule is used, the stringency of the criterion

<sup>4</sup>Parmeter (1997, p. 342) 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 ROOs, see Parmeter (1997) and Estevadeordal (2003).

**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 |

*Source:* Modified from WTO (2002, p. 8).

*Note:* Numbers in parentheses imply the minimum requirement ratios.

can be changed depending on a member country's position towards trade liberalisation. For example, chapter change will be more stringent than changes in heading or sub-heading when the CTC method is employed. When the RVC criterion is used, a 60% RVCs rate will be more stringent than a 40% one.

Some elements of ROOs are designed to promote intra-regional trade, although ROOs in general constitute protectionist practices. For example, cumulation<sup>5</sup> and *de minimis* are commonly introduced in FTAs to facilitate producers under certain conditions to use intermediate inputs from the region of another FTA or a third country. The WTO (2002, p. 9) found *de minimis*, or a tolerance rule in ROO parlance, in 88 out of 93 RTAs it surveyed. 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.<sup>6</sup>

ROOs act like trade barriers, since they cause extra costs in production and management. Producers/exporters need to pay to calculate production costs and produce bookkeeping-related documents.<sup>7</sup> In addition, extra costs are incurred in complying with the technical and specific process and RVCs as specified in the ROO protocol, and these costs are added to the prices of export goods.<sup>8</sup>

As ROOs become more stringent, the compliance costs will rise, undermining the gains in terms of trade creation which can be obtained from an FTA. APEC (2004, p. 76) 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".

<sup>5</sup>Cumulation can be classified as bilateral cumulation, diagonal cumulation, and full cumulation. Refer to Estevadeordal (2003) regarding the classification of cumulation.

<sup>6</sup>EC–South Africa FTA sets 15% for the *de minimis* rule, but this is an exceptional case.

<sup>7</sup>Regarding empirical research on administrative costs in an FTA and costs of preparing documents for preferential treatment, see Koskinen (1983) and Herin (1986), respectively.

<sup>8</sup>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 utilisation rate of NAFTA preferences is as low as 64% owing in part to stringent ROO. For more information on the costs of ROO, see Estevadeordal (2003, pp. 8–9).

## 2.2. Descriptive analysis of ROO in major FTAs

This section provides a descriptive analysis of ROOs in major FTAs, focusing on assessing their stringency. An empirical examination of their stringency will be given in the next section. Most FTAs have several 100 pages on ROO protocol, and thus it requires much time and effort to understand the structure and technical aspects of the ROO in an FTA. Unfortunately, the existing literature on the subject is limited.<sup>9</sup>

Several FTAs were chosen as case studies for this analysis. These 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 the ASEAN Free Trade Area (AFTA) and the ASEAN–China, JSEPA, US–Singapore, Japan–Singapore, Japan–Mexico, Korea–Singapore, and Korea–Chile FTAs. We will now 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 to follow more complicated ROO.

### 2.2.1. 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 RVC. Estevadeordal (2003, p. 348) evaluated that the US specifies the ROO to be of “substantial transformation” in its FTAs. The CTC in chapter, heading and sub-heading is the most widely used, with additional requirements of specific process and regional value contents. The *de minimis* rule is 7% in NAFTA, lower than in other FTAs.

Several countries have since followed the structure of the NAFTA ROO with minor modifications for some items.<sup>10</sup> 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 as set out in Annex 401 of the agreement. Technical processes are required for many items. RVCs

<sup>9</sup>Comprehensive analysis of ROO in major RTAs can be found in Brenton (2003), Estevadeordal (2003), and WTO (2002).

<sup>10</sup>The framework of the NAFTA ROO became the basis of ROOs in FTAs concluded by Canada, Chile, Mexico, Japan, Korea, and so on.

ratios are as high as 50–60% depending on calculation methods.<sup>11</sup> The agreement specifies a more stringent rule for automobiles (HS8702–8704), with 62.5% under the net cost method.

In other FTAs, the US introduced a lower RVCs ratio. For example, in the US–Chile FTA, 35% (build-up) and 45% (build-down) were adopted for some HS34. A similar ROO was used for the US–Singapore FTA. However, a more stringent ROO was introduced in the US–Australia FTA, especially for textiles and footwear. In the case of footwear (HS64), the RVCs ratio was set at 55% (build-down) with an additional requirement of sub-heading change. The analysis of the US's FTAs suggests that the stringency of ROO depends on its FTA partners.

The ROO of the EU heavily depends on PANEURO, which establishes a highly uniform ROO across the EU FTAs, such as the EU–EFTA FTA and the EU–Mexico FTA. The EU–Mexico FTA adopted 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 RVC ratios 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.

### 2.2.2. ROOs in East Asian FTAs

FTAs by East Asian countries cover a wide spectrum in terms of the stringency of ROO. The simplest ROOs can be found in the AFTA, and the ASEAN–China FTA, which specifies 40% RVCs across all tariff lines, is the simplest ROO in the world.<sup>12</sup> The criterion of 40% RVCs was first introduced by AFTA when the Common External Preferential Tariff (CEPT) scheme was agreed on in 1992. During the negotiation for an FTA between China and ASEAN, China accepted the AFTA ROO and concluded the negotiations at the end of 2004.<sup>13</sup>

Singapore has been receptive to loose ROOs, while the US has imposed stringent ROOs, as seen in the NAFTA agreement and in its recent FTAs with other countries. Singapore adopted the position of the US for the ROO

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<sup>11</sup>NAFTA has two approaches for calculating the regional contents: the transaction value method and the net cost method.

<sup>12</sup>Similarly simple ROOs can be found in CER (Australia–New Zealand FTA), with a 50% RVC rule, although it specifies an additional requirement that the last manufacturing process should be performed in the exporting territory for some items. The 40% rule is applied in the AFTA without extra requirements.

<sup>13</sup>China led the negotiation with ASEAN for a bilateral FTA. In 2003, China provided an Early Harvest Package to ASEAN countries to attract them to the negotiating table.

in the bilateral FTA with the US. The US–Singapore FTA, concluded in 2003, basically follows the framework of the NAFTA ROO but is substantially less restrictive than the NAFTA.

Chapter 3 of the US–Singapore FTA contains the ROOs, 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, RVC ratios are required at 35% in the build-up method and 45% in the build-down method. *de minimis* is set at 10%.

Japan and Korea were predisposed to introduce complex and stringent ROOs to placate strong domestic opposition to trade liberalisation.<sup>14</sup> However, with mounting experience in FTA negotiations, Korea is likely to relax the stringency of the ROOs in its second FTA, while Japan has adopted more restrictive ROOs in its FTA with Mexico. Japan's first FTA — the JSEPA — specifies a “wholly obtained or produced entirely” rule. It dictates 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%.

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

The JMEPA contains less restrictive ROO than the JSEPA in several aspects. *De minimis* is introduced at 10% for all items. Chapter, heading, and sub-heading 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 sub-heading 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, 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 contents ratios are set at 45% for the build-down method and 35% for the build-up method. For

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<sup>14</sup>Estevadeordal (2003, p. 12) 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 Estevadeordal (2003, p. 12) for the Korea–Chile FTA.

some of HS84, a 30% regional content ratio is specified when the build-up method is used in calculating the regional content ratio. However, an exceptionally high regional contents ratio is specified for HS200892–200899 (preparations of vegetables, fruits, nuts, or other 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 was anxious to provide the ROO for products made in the Gaesung Industrial Complex.<sup>15</sup> 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 JSEPA. 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 ROOs can discourage exporters from taking advantage of tariff preferences provided by FTAs, undercutting their economic gains. As different ROOs are introduced by overlapping FTAs, the spaghetti bowl problem may be present, enforcing the dampening trade effects of the ROOs.<sup>16</sup> ROOs may be a source of under-realisation of FTA preferences, but there is not a great deal of literature on measuring their stringency. Two pioneering works are Estevadeordal (2003) and the Productivity Commission of Australia (PC, 2004). The PC provides a comprehensive index approach for measuring the stringency and restrictiveness of ROOs and improves the 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 section measures the restrictiveness indices for selected FTAs in terms

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<sup>15</sup>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.

<sup>16</sup>Because of the experimental operating difficulties of the ROO, there is a limited amount of research on the stringent ROO effects on trade. Examples are Cadet *et al.* (2002) and Krueger (1995). The former shows 64% of NAFTA utilisation ratio resulting from the ROO, and the latter reveals that Canadian companies tend to pay tariffs rather than resort to tariff preferences by complying with the stringent ROO.

of the PC and Estevadeordal approaches.<sup>17</sup> More focus is given to the PC index than the Estevadeordal 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 ROOs in the relevant appendix of an FTA and then aggregating these into relevant upper categories. Each component is valued with weights for the higher category and aggregated to the final index of the restrictiveness of ROO.<sup>18</sup> The top level has three categories: primary criteria, supplementary criteria, and other effects of ROO. Primary ROO criteria in most FTAs have two components: “wholly obtained” and substantial transformation. To mitigate the restrictiveness of ROOs, 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 summarises principle ROO criteria in FTAs, showing that “wholly obtained” rules and substantial transformation rules are generally applied for all the FTAs considered in this study. CTC and RVC are commonly used for defining substantial transformation. However, the most stringent rule, technical processes (SP), is 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.

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 Estevadeordal (2000), as shown in Table 6. His index is designed to evaluate RVC and SP in the framework of CTC requirements.

Several components of RVC are incorporated into measuring the index, in addition to the RVC threshold. Important elements are calculation of the RVC, reference prices, and methodology across tariff lines. As seen in Table 7, FTAs have a wide range of specifications for RVC in terms of threshold, methodology, and reference price. European FTAs heavily use the ratio of non-originating materials in calculating the RVC while East Asian countries tend to adopt built-down or built-up methods. For

<sup>17</sup>The index approach requires a weighting scheme for ROO criteria used in defining ROO. This research follows the PC scheme.

<sup>18</sup>See PC (2004) for detailed rules for individual criteria and components.

**Table 5. Principle ROO criteria in FTA.**

|              | Wholly Obtained | Substantial Transformation |                |    |
|--------------|-----------------|----------------------------|----------------|----|
|              |                 | CTC                        | RVC            | SP |
| NAFTA        | ●               | ●                          | ● <sup>a</sup> | ○  |
| EEA          | ●               | ●                          | ●              | ○  |
| EFTA         | ●               | ●                          | ●              | ○  |
| EU–Mexico    | ●               | ●                          | ●              | ○  |
| EFTA–SGP     | ●               | ●                          | ●              | ○  |
| US–SGP       | ●               | ●                          | ● <sup>b</sup> | ○  |
| AFTA         | ●               |                            | ●              | ○  |
| ASEAN–China  | ●               | ●                          | ● <sup>c</sup> |    |
| Japan–SGP    | ●               | ●                          | ●              | ○  |
| Japan–Mexico | ●               | ●                          | ●              | ○  |
| Korea–Chile  | ●               | ●                          | ● <sup>d</sup> | ○  |
| Korea–SGP    | ●               | ●                          | ●              | ○  |

Notes: ●, Generally applied; ○, Applied in small number of items.

<sup>a</sup>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).

<sup>b</sup>35% in the build-up method and 45% in the build-down method.

<sup>c</sup>Not less than 60% (FOB price of a final good) of originating materials (CIF) from non-ACFTA.

<sup>d</sup>30% in the build-up method and 45% in the build-down method. 80% for canned juice mix as an exception.

**Table 6. Restrictiveness index of ROO defined by Esteveadoral.**

| Index | Description   |
|-------|---|
| 1     | Changes in HS8–10 digit (CI)  |
| 2     | More restrictive than index 1 and changes in HS6 digit (CTSH) <sup>a</sup>                  |
| 3     | More restrictive than index 2. Changes in HS6 digit (CTSH) and RVC <sup>b</sup>             |
| 4     | More restrictive than index 3 and changes in HS4 digit (CTH) <sup>c</sup>                   |
| 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) <sup>d</sup>                    |
| 7     | More restrictive than index 5 and changes in HS2 digit (CC) and SP <sup>e</sup> requirement |

Source: Summarised from Esteveadoral (2003).

<sup>a</sup>Changes in HS subheading.

<sup>b</sup>Regional (local) value contents.

<sup>c</sup>Changes in HS heading.

<sup>d</sup>Changes in HS chapter.

<sup>e</sup>Specific production process.

**Table 7. Method for calculation of RVC.**

|              | Value Added      |                  | Method of Calculation |                 | Remarks           |
|--------------|------------------|------------------|-----------------------|-----------------|-------------------|
|              | VNM <sup>a</sup> | VOM <sup>b</sup> | Method <sup>c</sup>   | 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% <sup>d</sup>  |
| Korea–Chile  | 55%, 70%         | 45%, 30%         | BD, BU                | FOB             | Juice mix (80%)   |
| Korea–SGP    | 45–55%           | 45–55%           | BD                    | FOB             |                   |

<sup>a</sup>Share of value added should be less than those specified.

<sup>b</sup>Share of value added should be more than those specified.

<sup>c</sup>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.

<sup>d</sup>65% of originating materials is required as an exception. 8544 (ex), 8703 (ex), 8704–8707, 8708 (ex), 8716 (ex).

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 the most commonly adopted specifications for FTAs, and that each FTA defines different rules across tariff lines.

Major components of supplementary criteria are *de minimis*, cumulation, and Outward Processing.<sup>19</sup> 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 as less restrictive than bilateral. 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 third countries, since outward processing increases local content, thus making it easy to comply with ROOs.

<sup>19</sup>Outward processing is designed to acknowledge that part of the manufacturing process (labour-intensive works) may be outsourced to less developed countries. For example, stages 1, 2, and 3 are required for production, and stage 2 is labour-intensive (outsourced). If we recognise outward processing, local content will be a total of stages 1 and 3, while the conventional approach accepts only stage 3.

**Table 8. Supplementary criteria for the restrictiveness of ROO by FTA.**

|                         | Supplementary Criteria      |            |                    |
|-------------------------|-----------------------------|------------|--------------------|
|                         | <i>de minimis</i>           | Cumulation | Outward Processing |
| NAFTA                   | 7% (FOB)                    | ●          |                    |
| EEA                     | 10% (ex works)              | ●          | *                  |
| EFTA                    | 10% (ex works)              | ●          | *                  |
| EU–Mexico               | 10% (ex works) <sup>a</sup> | Bilateral  |                    |
| EFTA–SGP                | 10% (ex works)              | ●          | *                  |
| US–SGP                  | 10%, 7% <sup>b</sup>        | ●          |                    |
| AFTA                    |                             | ●          |                    |
| AFTA–China <sup>c</sup> |                             | Full       |                    |
| Japan–SGP               | ○ <sup>d</sup>              | Bilateral  |                    |
| Japan–Mexico            | 10%                         | Bilateral  |                    |
| Korea–Chile             | 8%                          | Bilateral  |                    |
| Korea–SGP               | 10%                         | Bilateral  | * <sup>e</sup>     |

Notes: ●, generally applied; ○, applied in small number of items; ○, no application; \*, allowed.

<sup>a</sup>Does not apply to products in HS 50–63.

<sup>b</sup>*de minimis* in US–SGP FTA — 10% of adjusted value, 7% of weight of fibres or yarns.

<sup>c</sup>Not less than 60% (FOB price of a final good) of originating materials (CIF) from non-ACFTA.

<sup>d</sup>Noted in Appendix IIA (not in text).

<sup>e</sup>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, Section 3.2.1 provides the empirical results of restrictiveness of ROOs by Estevadeordal and Suominen (2004) and the Productivity Commission (2004). Although these studies are comprehensive in analysing ROOs, they analyse FTAs by European and American countries. Four FTAs by Japan and Korea that are under implementation are not included in existing studies. Section 3.2.2 summarises the study results for assessing restrictiveness of ROOs in these FTAs by Japan and Korea. Rather than devising a restrictiveness index, this paper follows the approaches of existing studies.

#### 3.2.1. Existing studies

The EU prefers to define heading changes in tariff classification with other requirements (CTH+), while FTAs in the Americas almost equally depend on chapter changes (CC+) and heading changes. As an exception, the

**Table 9. Composition of CTC criterion for ROO (%).**

|                     | FTAs by EU <sup>a</sup> |        |                |         |                  |         |
|---------------------|-------------------------|--------|----------------|---------|------------------|---------|
|                     | 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    |
| Others              | 25.74                   | 24.82  | 26.26          | 21.15   | 19.92            | 20.01   |
|                     | FTAs in US              |        |                |         |                  |         |
|                     | 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 <sup>b</sup> | 0.56                    | 4.02   | 0.38           | 0.96    | 0.00             | 0.00    |

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

Notes: <sup>a</sup>The EU's FTA with Poland (1993) and Estonia (1995).

<sup>b</sup>Others cover one of "wholly obtained" RVC and SP, or combinations of these requirements.

MERCOSUR adopted the CTH rule in bilateral FTAs with Chile and Bolivia.<sup>20</sup> Thus, it can be said that the US has set more restrictive ROOs than has the EU (Table 9).

The Productivity Commission (2004) provides restrictiveness indices for ROOs in FTAs based on a variety of countries. It calculates indices using the bottom-up approach, based on an aggregation scheme with weights (Table 10). The most restrictive ROO can be found in the NAFTA, with an index of 0.67 with 0.46 for primary criteria, which can be closely related with the study by Estevadeordal (2003) in Table 6. Restrictive ROOs following the NAFTA are found in the EU–Poland FTA and MERCOSUR with an index of 0.60.

However, the US has adopted less restrictive ROOs 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 ROOs. For example, Australia–New Zealand, AFTA, and the Andean community chose to set relatively simple and loose ROOs.

<sup>20</sup>MERCOSUR is the Customs Union for South American Countries (Argentina, Brazil, Paraguay, and Uruguay).

**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 the Productivity Commission (2004).

### 3.2.2. Restrictiveness of ROO in FTAs by Japan and Korea

Before looking at the restrictiveness index of FTAs by Japan and Korea, the structures of ROOs in Table 11 for Japan's bilateral FTAs with Singapore and Mexico, and Table 12 for Korea's FTA with Chile and Singapore provide a brief overview. Restrictiveness indices are taken from Estevadeordal (2003), and the numbers of tariff lines for each ROO category are given in terms of an HS6 or HS8 digit. In cases when it is not easy to classify the specification of ROOs for tariff lines, the closest category will be used when analysing the restrictiveness index.

Japan defined the ROO in its FTA with Singapore as an HS6 digit while using an HS8 digit with its FTA with Mexico. However, we found

**Table 11. Summary of ROO in the Japan–Singapore FTA and Japan–Mexico FTA (number of items in HS6).**

| JSEPA          |       |      | JMEPA                           |       |      |
|----------------|-------|------|---------------------------------|-------|------|
| 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     | 1958 |
| 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   |
| CTH            | 4     | 1684 | 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     | 1128 |
|                |       |      | 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          |       | 2094 | Total                           |       | 5219 |

Source: Calculations based on the JSEPA and JMEPA.

**Table 12. Summary of ROO in Korea–Chile FTA and Korea–Singapore FTA (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     | 1287 | 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     | 2968 |
| CTH + RVC           | 5     | 322  | CTH or RVC          | 4     | 1    |
| CTH                 | 4     | 1739 | 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               |       | 5212 |                     |       | 5212 |

*Notes:* CC, changes in HS2 digit; CTH, HS4 digit; CTSH, HS6 digit; RVC, regional value contents; SP, specific production requirement.

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 an HS6 digit (an HS6 digit has a smaller number of tariff lines than an HS8 digit).<sup>21</sup>

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

On the contrary, Korea's first two bilateral FTAs with Chile and Singapore share a similar pattern. First, the number of categories is similar in the two FTAs, although Korea reduced these in the later FTA with

<sup>21</sup>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 was reduced.

**Table 13. Composition of CTC in FTAs by Japan and Korea (%).**

|       | 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 repeated from Table 9 (originally from Estevadeordal and Suominen, 2004).

Singapore. Second, the most frequent ROO in both FTAs is a CTH criterion. Third, an HS6 digit is the tariff line for defining ROO in both FTAs.

One of the differences is that the number of restrictive ROOs (tariff lines with index 6 or 7) is smaller in the Korea–Singapore FTA than in the Korea–Chile FTA. Thus, the former FTA is less restrictive than the latter.

Based on Tables 11 and 12, Table 13 compares the composition of CTC criteria in the FTAs by Japan and Korea with those of NAFTA and the EU–Mexico FTA. It shows that the JSEPA has the highest share of CTH criterion, while the JMEPA has the lowest share of CTH among the six FTAs discussed. The JMEPA increased the share of CTSH criterion, reducing the share of CTH substantially. Korea has a similar ROO structure, as shown in the previous analysis. Korea’s ROOs tend towards CTH criterion by reducing shares of ROOs for CC and CTSH. This implies that Korea is moving towards less restrictive ROOs while making some items more restrictive by changing ROO criteria from CTSH to CTH.

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

**Table 14. ROO restrictiveness of FTAs by Japan and Korea (%).**

| Criteria      | PANEURO | NAFTA | US–<br>SGP<br>FTA | Japan–<br>SGP<br>FTA | Japan–<br>Mexico<br>FTA | Korea–<br>Chile<br>FTA | Korea–<br>SGP<br>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 from Table A-2, Productivity Commission (2004).

#### 4. Agricultural Liberalisation in Major FTAs

GATT Article IVXX specifies requirements for regional trading blocs to be eligible for exemption from the GATT/WTO most-favoured 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”. GATT Article IVXX was the most controversial to construe. Indeed, it was difficult to achieve consensus on the meaning of “substantially all” total trade among the member states,<sup>22</sup> and the timespan for eliminating tariffs and NTBs. Moreover, there are differences in interpretation as to whether tariffs should be totally eliminated and how many of the NTBs should be included within the trade liberalisation package. Even the Committee on Regional Trade Agreements in the WTO has not been able to resolve this controversy.

Many FTA member states take conservative positions towards tariff elimination even though they recognise that trade liberalisation will benefit their economies. They have allowed exceptions from tariff elimination for sensitive items and have introduced long-term implementation for tariff eliminations. On the other hand, the Australia–New Zealand FTA (CER) and the Australia–Singapore FTA stipulated complete tariff elimination. Both agreements indicate that each party will eliminate all customs duties on goods originating in the territories of the other party that meet the requirements for the ROOs specified in the respective agreements.

<sup>22</sup>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”.

However, most of the agreements allow exceptions. This section analyses the content of trade liberalisation focusing on agricultural tariffs, since in most cases manufacturing sectors have been liberalised within 10 years of implementation.

Tariff elimination schemes of agricultural tariff lines were analysed for two groups of FTAs: NAFTA, the US–Australia FTA, US–Chile FTA, and EU–Mexico FTA for Western countries and the JSEPA, JMEPA, Korea–Singapore FTA, and Korea–Chile FTA for East Asia.

There are several ways to analyse tariff elimination depending on the purpose of the research. This study counts tariff lines according to the categories of tariff elimination provided in the appendices of the FTAs considered.<sup>23</sup> Tariff lines in the HS chapters 01–24, except HS3 (fisheries), are regarded as agricultural products.<sup>24</sup> It is not easy to make groups for comparison since each agreement introduces different liberalisation categories, including quota without tariff change, partial liberalisation, and future reviews. This section summarises the survey of agricultural liberalisation by calculating the number of tariff lines for three groups: items scheduled to be liberalised within 10 years after the implementation of an FTA; items scheduled to be liberalised more than 10 years after implementation; and items excluded from trade liberalisation.

#### 4.1. FTAs by Western countries

Australia and New Zealand have liberalised bilateral trade including agriculture in the CER (Table 15). The agreement started with poor market access in 1982. However, with additional negotiations, trade in goods was fully liberalised in July 1990.<sup>25</sup> Australia also liberalised its agriculture market for US exporters in the US–Australia FTA, implemented in January 2005.

Prior to NAFTA, the US, Canada, and Mexico were important trading partners, 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, the environment, and labour. Moreover, it also

<sup>23</sup>For more accurate analysis, trade volumes need to be considered in addition to tariff lines. However, this requires substantially more work and will be done in a follow-up study.

<sup>24</sup>Some items in HS29, 33, 35, 38, 41, 43, 50, 51–53 can be regarded as agriculture, but these are not taken into account in this study.

<sup>25</sup>The 1988 CER Protocol on Acceleration of Free Trade in Goods.

**Table 15. Agricultural liberalisation in FTAs by Western countries (tariff lines, %).**

| Importer  | Exporter  | Within 10 Years   | After 10 Years | Exception  | Total      |
|-----------|-----------|---|----------------|------------|------------|
| US        | Mexico    | 1154 (97.0)   | 36 (3.0)       | 0 (0.0)    | 1190 (100) |
| US        | Chile     | 1364 (85.2)   | 235 (14.8)     | 0 (0.0)    | 1599 (100) |
| US        | Australia | 876 (53.3)  | 434 (26.3)     | 336 (20.4) | 1646 (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    | 1204 (59.3)   | 0 (0.0)        | 833 (40.7) | 2047 (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        |

*Source:* Summarised from Appendices 1 to 7.

*Note:* Numbers in parentheses are shares of the total number of tariff lines for agriculture.

represented substantial liberalisation in most traded goods. NAFTA classified almost all products into four categories, with the majority scheduled to be liberalised within 10 years, with a maximum of 15 years for import-sensitive items.

The US liberalised its agricultural market for Mexican exports, allowing no exception. The US recorded 97% immediate tariff elimination of agricultural tariff lines, with the final 3% scheduled to be eliminated after 10 years. A similar liberalisation structure can be found in the FTA with Chile, although a higher share of agriculture was scheduled to be liberalised compared to the US–Mexico FTA. However, the US allowed 336 tariff lines (HS8) to be excluded from liberalisation in the US–Australia FTA, with only 53.3% of agriculture to be liberalised within 10 years. Even the US, which has held strongly for trade liberalisation, showed a conservative standpoint in the FTA with Australia, one of the major agricultural exporters.

Chile is one country that has actively promoted FTAs, achieving high economic growth and improvement in its business environment. It did not allow exceptions for agriculture, and 574 tariff lines (HS8, 81.2%) were liberalised within 10 years. Of 574 items, 441 (62.4%) were immediately liberalised on the implementation of the FTA with the US.

The EU and Mexico began negotiations for a FTA in late 1998 and concluded these in late 1999, with the agreement coming into effect on 1 July 2000. The EU had been concentrating on enlarging and deepening its economic integration within Europe, and the EU–Mexico FTA offered it the opportunity to expand into non-European regions. The EU has protected

its agriculture in the multilateral trading system and regional trade agreements. In its FTA with Mexico, it liberalised only 59% of agriculture within 10 years, allowing 41% to be excluded from tariff elimination. In responding to the EU's tariff concession, Mexico eliminated 68% of agricultural tariff lines, withholding 32%. However, it recorded a total of 90.6% of tariff lines in the NAFTA. Thus, it can be said that the market access in FTAs is reciprocal.

On average, 79% of agricultural tariff lines were liberalised within 10 years in the Western FTAs analysed in this study, while countries allowed 13% of agriculture to be excluded from liberalisation package.

#### 4.2. FTAs by Japan and Korea

FTAs in East Asia include the (AFTA), the AFTA–China FTA, JSEPA, Korea–Chile FTA, etc. ASEAN countries felt the need for a more instrumental economic cooperation program in the 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 liberalisation scheme of AFTA, since the targeted tariff rates were 0–5% rather than zero tariffs for items in the liberalisation list. Similar schemes were introduced for AFTA's FTAs with China and Korea (Table 16).

Because of this problem, those FTAs were not analysed. Instead, four FTAs by Japan and Korea were reviewed for assessing agricultural liberalisation, representing FTAs by East Asian countries. More FTAs, such as the US–Singapore FTA, could be added, but this is left for future work.

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 was very slow in liberalising its agricultural market, recording the lowest rate of tariff

**Table 16. Agricultural liberalisation in FTAs by Japan and Korea (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) | 1414 (100) | HS10    |
| Korea    | Chile     | 1011 (71.5)     | 12 (0.9)       | 391 (27.7) | 1414 (100) | HS10    |
| Average  |           | 57.1            | 2.2            | 40.7       |            |         |

*Note:* Numbers in parentheses are shares of the total number of tariff lines for agriculture.

elimination within 10 years in the FTAs reviewed here. It introduced only one liberalisation category for agriculture — immediate liberalisation. MFN tariff rates for items in the immediate liberalisation category were zero; thus Japan's agriculture has not been affected by the JSEPA. Japan improved market access for agriculture in the FTA signed with Mexico in September 2004 and operational from April 2005. During negotiations Mexico strongly requested that Japan expand access to its agricultural market. Japan provided tariff-rate quotas for agricultural products such as pork and oranges, while minimising tariff elimination for agriculture. Japan agreed with Mexico in eliminating 51.9% of its agricultural tariffs within 10 years, and a further 7.7% within 11 years. Forty items (HS8) were categorised as receiving preferential tariff treatment, under which parts of tariffs were supposed to be cut.<sup>26</sup>

Korea introduced four categories for agricultural trade liberalisation 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 liberalisation. Korea was more progressive than Japan in bilateral FTAs with Singapore, recording a higher liberalisation rate.

Korea spent three years concluding its first FTA with Chile, and an additional 1.5 years gaining approval from the National Assembly. It liberalised 71.5% of agricultural products in the FTA within 10 years from implementation (April 2004), although most tariffs were supposed to be eliminated in the fifth year after the agreement became effective.

In the FTAs by Japan and Korea, 57.1% of agricultural tariff lines were supposed to be liberalised on average, and 40.7% were categorised as exceptions. Overall, East Asian countries adopted a lower liberalisation ratio within a 10-year liberalisation period for agriculture than did Western countries, although it should be carefully interpreted in that only FTAs by Japan and Korea were considered.

### 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 that contained the general goals of the bilateral FTA. Both parties agreed to work faster towards a FTA in 2010, thus creating a large marketplace with over 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 concluded the FTA on market access for

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<sup>26</sup>These items mostly apply for HS Chapter 2 (meats).

commodities in 2004 and implemented the agreement in July 2005 reducing bilateral tariffs; these should be zero for most products by 2010.

According to Article 3(4) of the framework agreement of the ASEAN–China FTA,<sup>27</sup> products subject to the tariff reduction or elimination program were categorised into two tracks: normal and sensitive. For products listed in the normal track, respective applied MFN tariff rates will gradually be reduced or eliminated between 1 July 2005 and 2012 for ASEAN 6<sup>28</sup> and China, and in the case of the new ASEAN member states,<sup>29</sup> the period is from 1 July 2005 to 2018, with higher starting tariff rates and different staging. Products listed in the sensitive track will 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 is subject to a maximum ceiling to be mutually agreed among the parties. ASEAN 6 and China cannot have more than 400 HS6 tariff lines, while the sensitive track items for new member countries cannot exceed 500 items (HS6). The sensitive track items will be categorised into two groups: sensitive list and highly sensitive list. A maximum of 40% of sensitive track items only 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 tariff lines (92.4% for ASEAN 6 and China, 90.4% for new member countries) will be completely liberalised by 2012 for ASEAN 6 and China and by 2018 for new member countries. The remaining items will be categorised into the sensitive track and the tariffs for these items will be reduced to 0–5% by 2018 for ASEAN 6 and China and 2020 for new member countries. However, a small number of highly sensitive items will have their tariffs reduced to not higher than 50% not later than 1 January 2015 for ASEAN 6 and China, and 1 January 2018 for the newer ASEAN member countries.

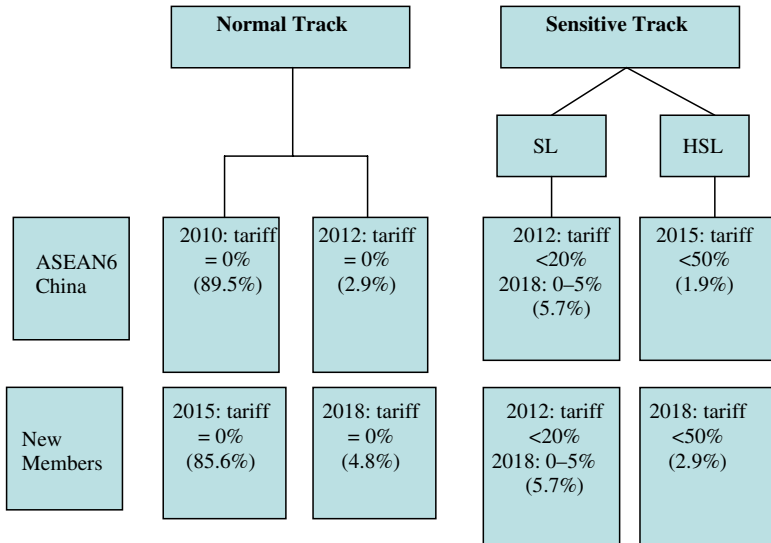
The tariff elimination scheme in Fig. 1 covers all tariff lines, including agriculture. Since most member countries of the ASEAN–China FTA have no serious agricultural problems in FTAs, only a small number of agricultural products are classified as highly sensitive. For example, China has

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<sup>27</sup>The Framework Agreement on Comprehensive Economic Co-operation between the Association of South East Asian Nations and the People's Republic of China, signed on 4 November 2002 in Phnom Penh.

<sup>28</sup>ASEAN 6 refers to the original members of ASEAN: Brunei, Indonesia, Malaysia, Philippines, Thailand, and Singapore.

<sup>29</sup>The new ASEAN member countries are Cambodia, Laos, Myanmar, and Vietnam.



**Fig. 1. Summary of tariff elimination in the ASEAN–China FTA.**

*Notes:* SL, sensitive list; HSL, highly sensitive list. Numbers in parentheses are shares of total tariff lines.

32 items (in HS6), Malaysia 38 (HS9), Philippines 41 (HS6), and Thailand 51 (HS6).

## 5. Conclusion

To curb trade deflection, FTAs introduce ROOs, but overly-stringent ROOs will reduce the economic gains from the establishment of FTAs because of the internal characteristic of protection against imports. This paper concludes that advanced economies such as the US and the EU are likely to use ROOs more heavily than developing countries, blocking the inflow of imports from their FTA partner countries.

ROOs will be maintained unless member countries of an FTA agree to revise it. However, original ROOs adopted in an FTA may not be relevant since economic structures and business environments change.<sup>30</sup> 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

<sup>30</sup>Australia and New Zealand adopted a loose type of ROO in the bilateral FTA (CER) in the 1990s, but the two countries are now discussing its revision.

in the facilitation of intra- and external trade. Also, political issues can influence changes in the structure of ROOs for specific sectors.

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

This paper reports that FTAs by East Asian countries have a wide gap in ROOs, from the simplest ROO in the world (ASEAN–China FTA) to stringent ROOs in FTAs by Japan and Korea.<sup>31</sup> This implies a high probability of the spaghetti bowl effect in East Asia. All East Asian FTAs are now implemented and, while no serious problems have been reported, the region will experience negative impacts from the different ROOs.

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 Leaders. One viable approach is to consolidate the many bilateral FTAs in East Asia into a single East Asian FTA (Cheong, 2005). Although the FTAs will bring substantial economic gains for East Asian countries, the region will need to overcome many challenges during the consolidation process. In particular, the ROO is one of the most difficult areas, since each country and each FTA has different types of ROOs depending on industrial competitiveness.

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<sup>31</sup>ROOs have been designed defensively by Japan and Korea, showing that they have a passive approach to FTAs and resulting in their obstructing regional trade integration.

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