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COMPREHENSIVE MAPPING OF FTAs IN ASEAN AND EAST ASIA

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EXECUTIVE SUMMARY

1. Background and objectives of the project

The number of bilateral FTAs between countries within and beyond East Asia has surged, and plurilateral FTAs between ASEAN and its 6 dialogue partners have also been forged in rapid sequence in the 5 years of the latter half of the 2000s. On the other hand, the increase of RTAs/FTAs may cause problems due to overlapping of RTAs/FTAs, leading to the so-called "spaghetti bowl" phenomenon. Concern over this problem has increased in East Asia, as a wider regional free trade area became a regional policy issue, since a number of bilateral and plurilateral RTAs/FTAs in this region have accumulated in an uncoordinated way and each liberalization commitment is not necessarily binding. Given the importance of strengthening foundation for sustainable growth of East Asia, it is absolutely essential to explore ways of encouraging the convergence of various types of bilateral and plurilateral FTAs in this region.

The aim of our study is to construct a comparable and comprehensive database on FTAs in this region by investigating ASEAN FTAs with dialogue partner countries and bilateral FTAs between ASEAN countries and other East Asian countries. The purpose of our study is also to serve as a knowledge base which can be used in creating efficient FTA strategies and a region-wide FTA architecture. Unlike several types of existing FTA stocktaking studies and databases in East Asia, our study provides comparable and quantitatively-analyzable database of articles, commitments and indices related to liberalization under FTAs. Constructing such a comprehensive database based on a common framework for each issue enables us to conduct a comparative and multidimensional analysis which offers persuasive strong policy implications for construction of an efficient region-wide FTA system. Our study will complement existing studies on FTAs by offering powerful and intensive measures to compare various characteristics of all FTAs simultaneously.

Our study will cover ASEAN+n FTAs as well as AFTA, bilateral FTAs among ASEAN members and the dialogue partners, in order. For the first step, we will conduct studies on; 1) Tariff Components; 2) Rules of Origin; 3) Trade in Services and 4) Investment, and also plan to analyze FTA convergence based on our database. This report mainly introduces the framework and methodology of database construction in each chapter, and also provides some tentative analyses based on the primary dataset mainly of AFTA and several ASEAN+n FTAs.

2. Major findings

As of mid-July 2011, we have constructed our FTA quantitative datasets for AFTA and five ASEAN+n FTAs, and several bilateral FTAs. Although each dataset is still a work in progress toward the completion of the whole database, the basis for the compilation of such quantitative datasets of each chapter have already been created and developed.

2.1 Tariff

In Chapter 2, Kuno constructs the current version of the dataset covering 70 signatory-level tariff schedules bound under the five ASEAN+n FTAs and seven bilateral FTAs concluded by Japan. There are several significant difficulties regarding compilation of the datasets into a comparable format, such as significant inconsistencies among original data on the 70 signatory-level tariff schedules. Based on the conventional liberalization indices by FTA and by country calculated by using the present dataset, it was found that the most liberalized ASEAN+n FTA is the AANZFTA and the least liberalized is the AIFTA. The average level of liberalization by Australia and New Zealand is 100%, while that by India reaches 74.3%. Kuno (2011) points out that this indices suggest that the key to forming a high-quality FTA among ASEAN+6 countries is to realize further liberalization between India and the ASEAN countries.

2.2 ROOs

In Chapter 3, Medalla compiles a database on the ROOs of the ASEAN Trade in Goods Agreement (ATIGA) and four ASEAN+n FTAs, and eight bilateral FTAs by Japan with individual ASEAN countries and India. Based on several types of matrices of ROOs, she assesses the various ROO regimes of these FTAs, particularly regarding their degree of commonality and relative restrictiveness. From the point of convergence, it was found that considerable variation still exists across these five FTAs and across various sectors, although there is a substantial commonality in ROOs across the five ASEAN FTAs. She points out that reforms during the past decade have been made to simplify and liberalize the ROO regimes, but that more can still be done in terms of convergence and easing of rules.

2.3 Trade in Services

In Chapter 4, Ishido constructs indices of the degree of liberalization of commitments in trade in services and Hoekman indices for ASEAN Framework Agreement on Services

(AFAS), four ASEAN+n FTAs and six bilateral FTAs by Japan with ASEAN countries. The database includes 55 sub-sectors by four modes of service trade and two aspects of liberalization. Based on the database, comparative analyses using correlation coefficients across countries of each FTA and clustering of countries under each FTA are conducted. It was found that the index of the degree of liberalization of commitments shows great disparity between sensitive and less sensitive sectors, and the index of the degree of liberalization under the AFAS is the highest among the four ASEAN+n FTAs.

2.4 Investment

Chapter 4 by Thangavelu and Lim construct Foreign Direct Investment (FDI) restrictiveness indexes of 156 sectors by 6 areas based on temporary exclusion lists and sensitive lists provided by each country under the AFTA, as well as the ASEAN-China and the ASEAN-Korea FTAs. Based on their mapping exercises on the degree of liberalization, they found that Malaysia, The Philippines and Thailand ranked lower among the ASEAN 5 countries while the emerging countries such as Vietnam and Cambodia are ranked higher since they tend to have adopted key FDI policies to maintain their momentum of economic liberalization and integration in the region. They also found that manufacturing sectors tend to have more liberal FDI policies as compared with service sectors in both the China-ASEAN and Korea-ASEAN FTAs. Given these results, it is necessary to facilitate liberalization for service sectors in order to promote a greater flow of services and labor in the region.

3. Policy implications

The database is still in under construction. Therefore, our studies have not yet resulted in comprehensive policy implications with which to draw up an integrated regional FTA architecture. We are, however, able to offer tentative policy implications up to this point.

➢ From the Tariff dataset:

Regarding the preparation and distribution of tariff data by East Asian countries, the countries could standardize the contents and format of publicly available electronic data on MFN and preferential tariffs. Standardizing publicly available MFN and preferential tariff data could contribute to enhancing the transparency of tariff structures in the region for business and public sectors, and promote more effective and efficient FTA negotiations in this region in the future.

- **From the ROOs dataset:**

  For East Asian integration, the ultimate direction in ROO reforms should be toward ROO harmonization. In the interim, practical steps should be taken and progress toward convergence should be completed. Also, concerning streamlining of OCP, one possibility is the inter-FTA use of Certificates of Origin (Cos) among these East Asian FTAs, such as some form of Mutual Recognition of ROOs. Since substantial commonalities already exist, the ASEAN+n FTAs have the same basic rule. If this is adopted, it would actually be a very concrete step toward ROO harmonization.

- **From the Service Trade dataset:**

  Based on similarities among countries and FTAs, and differences among sectors, there are two possibilities with respect to the sequence of streamlining of the four ASEAN+n FTAs: 1) start within the same "clusters" among similarly committed countries under a particular FTA then harmonize the level of commitments across all the signatory countries to the FTA, and 2) start with harmonizing rather dissimilar countries from different "clusters" of commitments under a particular FTA, which provides for a small-scale "social experiment"; then scale up this effort later at the appropriate time to the level of the whole FTA; then eventually attempt to harmonize across all the FTAs centering on ASEAN.

- **From the FDI restrictiveness dataset:**

  In order to secure sustained liberalization and to facilitate FDI, it is critically important that a reliable monitoring mechanism is established and implemented in ASEAN. Also, there is a need to develop an FDI restrictiveness index that accounts for ASEAN+1, ASEAN+3 and ASEAN+6 FTAs. An extension of this study will be necessary to discover whether FTAs created greater access for FDI activities in the region, and to provide analysis and evaluation on the degree of liberalization and the FDI policy environment in each FTA.

CHAPTER 1

Comprehensive Mapping of FTAs in ASEAN and East Asia: The First Phase

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This chapter describes the objective of a research project on the comprehensive mapping of FTAs in ASEAN and East Asia, and explains the expected contributions of our studies to existing FTA studies and the FTA database. There is increased need for comprehensive study of FTAs and RTAs between ASEAN nations and their dialogue partners, in response to growing discussions about the architecture of a region-wide FTA. There exist several research studies on convergence and divergence of FTAs in this region, and there are also databases of FTAs which provide basic information on the text of agreement of each FTA. In contrast, the main objective of our study is to construct a comprehensive and quantitatively comparable database of all FTAs in this region. Such an intensive FTA database, based on a common framework around each outstanding issue, would enable us to conduct comparative and multidimensional analyses, offering policy implications for construction of an efficient, region-wide FTA system. *Our database construction will cover ASEAN+n FTAs as well as AFTA, bilateral FTAs among ASEAN members and their dialogue partners in sequence. Based on our work in constructing the database, our analyses will explore efficient FTA strategies and the region-wide FTA architecture in ASEAN and the East Asian region. This chapter also provides brief summaries of each chapter of the project report which are based on work carried out up to July 2011. Each chapter of this project report focuses on the framework and methodologies of database construction for each official text of the FTA, and also outlines some tentative analyses based on the primary dataset. In addition, we introduce some tentative policy implications based on the database up to this point.*

1. Back ground: Proliferation of FTAs in East Asia

The total number of Free Trade Agreements (FTAs) in the world has increased rapidly since the beginning of the 1990s. According to the World Trade Organization (WTO), the number of RTAs notified to the General Agreement on Tariffs and Trade (GATT) and the WTO was 505 as of 15 November 2011, and 313 were in force[1]. Until the 1980s, most of the FTAs had been plurilateral regional agreements or bilateral FTAs among countries in the same region, the enlargement of the European Union (EU) being a case in point. The number of bilateral FTAs has also been increasing rapidly since the late 1990s, and many inter-regional bilateral FTAs such as the US-Singapore FTA, the Korea-Chile FTA, the MERCOSUR-India FTA and the Japan-Switzerland FTA, and bilateral FTAs between developed and developing countries such as the Canada-Costa Rica FTA, the Thailand-Australia FTA and the Japan-Vietnam FTA have been concluded since 2000.

In the East Asian region, most governments prioritized multilateral trade liberalization under the WTO until the later part of the 1990s. However, after the formation of the Singapore-New Zealand FTA in 2001 and the Singapore-Japan FTA in 2002, the number of bilateral FTAs between countries within and beyond East Asia has surged, and plurilateral FTAs between ASEAN and its 6 dialogue partners have also been forged in rapid sequence in the 5 years of the latter half of the 2000s. Table 1 shows FTAs concluded within and beyond East Asia since the 1970s. Urata (2009) points out that the motivation behind this proliferation of FTAs in East Asia since 2000 is thought to stem from both economic competition for market access for growing East Asian economies and political competition for the initiative in East Asian regional economic integration, mainly between China and Japan. Agawal and Koo (2006) note that the most striking phenomenon is that small and medium-sized countries, such as Singapore, Korea and Thailand, have played a central role in setting the pace toward bilateralism in the Asia-Pacific region. They point out that these small and medium-sized countries have served as inspiration and motivation for their neighbors to form bilateral FTAs. To summarize major arguments from various perspectives, there are two major factors driving the proliferation of bilateral and plurilateral FTAs in East Asia. The first is the desire for economic gains by gaining access to larger export markets and by improvement of productivity through strengthening regional production and sales networks. The second is political. Nations aim to seize the initiative in regional economic integration and to promoting political and

[1] The WTO website: http://www.wto.org/english/tratop_e/region_e/region_e.htm

economic security by expanding bilateral FTA networks with regional and extra-regional countries.

Table 1: FTAs initiated by East Asian economies

Date of entry into force		Agreement name	Type	Coverage
1970s	11-Feb-73	Protocol on Trade Negotiations (PTN)	PSA	Goods
	17-Jun-76	Asia Pacific Trade Agreement (APTA)	PSA	Goods
	1-Feb-77	Australia - Papua New Guinea (PATCRA)	FTA	Goods
1980s	1-Jan-81	South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA)	PSA	Goods
	1-Jan-83	Australia - New Zealand (ANZCERTA)	FTA & EIA	Goods & Services
	19-Apr-89	Global System of Trade Preferences among Developing Countries (GSTP)	PSA	Goods
1990s	20-Jun-91	Lao PDR - Thailand	PSA	Goods
	28-Jan-92	ASEAN Free Trade Area (AFTA)	FTA	Goods
	7-Dec-95	South Asian Preferential Trade Arrangement (SAPTA)	PSA	Goods
2000-	1-Jan-01	New Zealand - Singapore	FTA & EIA	Goods & Services
	15-Dec-01	India - Sri Lanka	FTA	Goods
	1-Jan-02	Asia Pacific Trade Agreement (APTA) - Accession of China	PSA	Goods
	30-Nov-02	Japan - Singapore	FTA & EIA	Goods & Services
	1-Jan-03	EFTA - Singapore	FTA & EIA	Goods & Services
	13-May-03	India - Afghanistan	PSA	Goods
	28-Jul-03	Singapore - Australia	FTA & EIA	Goods & Services
	1-Jan-04	China - Hong Kong, China	FTA & EIA	Goods & Services
	1-Jan-04	China - Macao, China	FTA & EIA	Goods & Services
	1-Jan-04	US - Singapore	FTA & EIA	Goods & Services
	1-Apr-04	Korea - Chile	FTA & EIA	Goods & Services
	1-Jan-05	ASEAN - China	PSA & EIA	Goods & Services
	1-Jan-05	Thailand - Australia	FTA & EIA	Goods & Services
	1-Jan-05	US - Australia	FTA & EIA	Goods & Services
	1-Apr-05	Japan - Mexico	FTA & EIA	Goods & Services
	1-Jul-05	Thailand - New Zealand	FTA & EIA	Goods & Services
	1-Aug-05	India - Singapore	FTA & EIA	Goods & Services
	22-Aug-05	Jordan - Singapore	FTA & EIA	Goods & Services
	1-Jan-06	South Asian Free Trade Agreement (SAFTA)	FTA	Goods
	2-Mar-06	Korea - Singapore	FTA & EIA	Goods & Services
	28-May-06	Trans-Pacific Strategic Economic Partnership (TPP)	FTA & EIA	Goods & Services
	13-Jul-06	Japan - Malaysia	FTA & EIA	Goods & Services
	24-Jul-06	Panama - Singapore	FTA & EIA	Goods & Services
	29-Jul-06	India - Bhutan	FTA	Goods
	1-Sep-06	EFTA - Korea	FTA & EIA	Goods & Services
	1-Oct-06	Chile - China	FTA & EIA	Goods & Services
	1-Jul-07	Pakistan - China	FTA & EIA	Goods & Services
	17-Aug-07	Chile - India	PSA	Goods
	3-Sep-07	Chile - Japan	FTA & EIA	Goods & Services
	1-Nov-07	Japan - Thailand	FTA & EIA	Goods & Services
	1-Jan-08	Pakistan - Malaysia	FTA & EIA	Goods & Services
	1-Jul-08	Japan - Indonesia	FTA & EIA	Goods & Services
	31-Jul-08	Brunei - Japan	FTA & EIA	Goods & Services
	1-Oct-08	China - New Zealand	FTA & EIA	Goods & Services
	21-Nov-08	ASEAN - Korea (Myanmar)	FTA & EIA	Goods & Services
	1-Dec-08	ASEAN - Japan	FTA	Goods
	11-Dec-08	Japan - Philippines	FTA & EIA	Goods & Services
	1-Jan-09	China - Singapore	FTA & EIA	Goods & Services
	6-Mar-09	Australia - Chile	FTA & EIA	Goods & Services
	1-Jun-09	MERCOSUR - India	PSA	Goods
	1-Aug-09	Peru - Singapore	FTA & EIA	Goods & Services
	1-Sep-09	Japan - Switzerland	FTA & EIA	Goods & Services
	1-Oct-09	Japan - Viet Nam	FTA & EIA	Goods & Services
	27-Oct-09	India - Nepal	PSA	Goods
	1-Jan-10	ASEAN - Australia - New Zealand	FTA & EIA	Goods & Services
	1-Jan-10	ASEAN - India	FTA	Goods
	1-Jan-10	ASEAN - Korea	FTA & EIA	Goods & Services
	1-Jan-10	Korea - India	FTA & EIA	Goods & Services
	1-Mar-10	Peru - China	FTA & EIA	Goods & Services
	1-Jan-11	Hong Kong, China - New Zealand	FTA & EIA	Goods & Services
	1-Jul-11	EU - Korea	FTA & EIA	Goods & Services
	1-Jul-11	India - Malaysia	FTA & EIA	Goods & Services
	1-Aug-11	India - Japan	FTA & EIA	Goods & Services
	1-Aug-11	Peru - Korea	FTA & EIA	Goods & Services

However, the increase of RTAs/FTAs may cause problems due to overlapping of RTAs/FTAs, leading to the so-called “spaghetti bowl” phenomenon. Concern over this problem has increased in East Asia, as a wider regional free trade area became a regional policy issue, since a number of bilateral and plurilateral RTAs/FTAs in this region have

accumulated in an uncoordinated way and each liberalization commitment is not necessarily binding. Multiple rules of origins (ROOs), at the center of the spaghetti bowl problem, are applied to each bilateral and plurilateral FTA in this region. If a country forms multiple bilateral FTAs with the same partner redundantly under several plurilateral FTAs, the spaghetti bowl problem becomes obvious. Medalla (2011) gives an example of an ASEAN producer exporting to another ASEAN country who has to decide which of several different FTAs should provide the rules of governing his transaction. Furthermore, each ASEAN+n FTA consists of plural bilateral FTAs between member countries, hence the levels of liberalization of tariffs, non-tariff measures, service trade and investment and other sectors are different from one partner to another under the same ASEAN+n FTA. Proliferation of FTAs in such an uncoordinated fashion not only increases inefficiency in trade transactions but also creates impediments to the future development of regional integration based on a region-wide FTA. In order to strengthen the foundation for sustainable growth of East Asia, it is absolutely essential to explore ways of encouraging the convergence of various types of bilateral and plurilateral FTAs in this region.

2. Objective of this study

More than twenty RTAs/FTAs including the ASEAN Free Trade Area (AFTA) have been concluded and are in effect in East Asia at present. An FTA is expected to improve the productivity of member countries by not only improving the efficiency of production but also encouraging scale and competitive effects. In addition, a region-wide FTA in ASEAN and East Asia would play a critical role in promoting and reinforcing regional production and sales networks in this area. The increase of RTAs and FTAs may however cause problems due to overlapping which, again, may give rise to a spaghetti bowl phenomenon. There are rising concerns about this problem in East Asia, as a wider regional free trade area emerges as a regional policy issue. It should be reiterated that the accumulation of bilateral and plurilateral RTAs and FTAs in this region was uncoordinated, and that liberalization commitments were not always binding.

The aim of our study is to construct a comparable and comprehensive database on FTAs in this region by investigating the articles of concluded ASEAN FTAs with dialogue partner countries and bilateral FTAs between ASEAN countries and other East Asian countries. The purpose of our study is also to serve as a knowledge base which can be used in creating efficient FTA strategies and a region-wide FTA architecture.

Several research groups have already conducted studies on the convergence and divergence of FTAs in this region, and such existing studies have developed their own comparisons of ASEAN+n FTAs in specific areas, such as tariff nomenclature and Rules Of Origin (ROOs).[2] The EAFTA (East Asian Free Trade Area) Study was conducted by experts from ASEAN countries and China, Japan and Korea, while the CEPEA (Comprehensive Economic Partnership in East Asia) Study was done by experts from India, Australia and New Zealand in addition to the above thirteen countries. The Joint Expert Group for EAFTA reported the outcome of the Phase I study in 2006 and the Phase II study in 2009. They conducted an in-depth analysis of the EAFTA, including a comparative study on trade in goods, services and investment, ROOs, trade facilitation and cooperation issues under three ASEAN +1 FTAs. Likewise, the Track Two Study Group for CEPEA released their Phase I report in 2008 and the Phase II report in 2009. They engaged in research for potential region-wide FTAs based on three pillars; deepening economic integration, narrowing development gaps, and achieving sustainable development. In addition to these two major studies of the frameworks for regional FTAs in East Asia, an FTA framework between China, Japan and Korea also has been studied by the Trilateral Joint Research (Development Research Center of the State Council (DRC) of China, National Institute for Research and Advancement (NIRA)/ Institute of Development Economies - Japan External Trade Organization (IDE-JETRO) of Japan and Korea Institute for International Economic Policy (KIEP) of Korea) from 2003 to 2009. Thus, many and various comprehensive and comparative studies on the frameworks of regional FTAs in East Asia have already been conducted.

Although these studies provide important perspectives on each regional FTA strategy, they still have not offered a comprehensive tool to compare the various characteristics of all FTAs at once. In addition, there are several databases of FTA articles provided by related agencies of FTA members, or by certain international organizations. The World Trade Organization (WTO) has released the Trade Agreements Information System which contains information on all regional trade agreements notified to the organization, such as the date of notification and entry into force, coverage of FTA (Goods/Services), and type of FTA[3]. Asia-Pacific Economic Cooperation (APEC) provides the "Comparative Toolkit of Study on Identifying Convergence and Divergence in APEC FTAs/RTAs", which covers all FTAs related to the APEC member countries[4]. This database provides the text of each chapter of 42 FTAs in the region.

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[2] For example, the joint studies conducted by EAFTA Joint Expert Group and CEPEA Tract Two Study Group.
[3]Trade Agreements Information System released by WTO at http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx.
[4] "Comparative toolkit of study on Indentifying Convergence and Divergence in APEC FTAs/RTAs" is released

Although there are several types of studies and databases of FTAs in East Asia, there is still no comparable and quantitatively-analyzable database which can serve as a measure to compare characteristics and multidimensional aspects of all FTAs objectively among ASEAN members and other East Asian countries. Although it is exceedingly difficult to compare the characteristics of all FTAs at once, we need such datasets and reference indices in order to extensively discuss and elicit from diverse perspectives a convincing future strategy for a region-wide FTA architecture.

Our study sets itself apart from several existing FTA stocktaking studies by providing comparable and quantitatively-analyzable database of articles, commitments and indices related to liberalization under FTAs. Constructing such an intensive database based on a common framework for each issue enables us to conduct a comparative and multidimensional analysis which offers persuasive strong policy implications for construction of an efficient region-wide FTA system. Our study will complement existing studies on FTAs by offering powerful and intensive measures to compare various characteristics of all FTAs simultaneously.

Our study will cover ASEAN+n FTAs as well as AFTA, bilateral FTAs among ASEAN members and the dialogue partners, in order. For the first step, the following four chapters; 1) Tariff Components; 2) Rules of Origin; 3) Trade in Services and 4) Investment are covered. , We will also conduct several analyses on FTA convergence based on our database. This report mainly introduces the framework and methodology of database construction in each chapter, and also provides some tentative analyses based on the primary dataset mainly of AFTA and several ASEAN+n FTAs.

3. Summary of the report in each chapter

As of mid-July 2011, we have constructed our FTA quantitative datasets for AFTA and five ASEAN+n FTAs, and several bilateral FTAs. Although each dataset is still a work in progress toward the completion of the whole database, the basis for the compilation of such quantitative datasets of each chapter have already been created and developed. This project report provides the methodology of compilation of the dataset for each chapter. Also, each researcher engages in some simple comparative analysis using their respective datasets.

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by APEC at; http://www.mincetur.gob.pe/apec_fta/

3.1 Tariff

Starting with the tariff dataset, Kuno (2011) constructs the current version of the dataset covering 70 signatory-level tariff schedules bound under the five ASEAN+n FTAs namely, the ASEAN-Japan Comprehensive Economic Partnership (AJCEP), the ASEAN-Korea FTA (AKFTA), the ASEAN-China FTA (ACFTA), the ASEAN-Australia-New Zealand FTA (AANZFTA), and the ASEAN-India FTA (AIFTA) and seven bilateral FTAs concluded by Japan. Kuno gives a detailed description of the methodologies of compilation of tariff datasets, and shows that there are several significant difficulties regarding compilation of the datasets into a comparable format, such as significant inconsistencies among original data on the 70 signatory-level tariff schedules.

Based on the present dataset, Kuno calculated the conventional liberalization index by FTA and by country. The most liberalized ASEAN+n FTA is the AANZFTA and the least liberalized is the AIFTA. The average level of liberalization by Australia and New Zealand is 100%, while that by India reaches 74.3%. Kuno points out that this index suggests that the key to forming a high-quality FTA among ASEAN+6 countries is to realize further liberalization between India and the ASEAN countries.

Using his dataset, Kuno can identify "tariff lines already liberalized under the Most Favored Nation (MFN) regime" and "tariff lines newly liberalized under the FTA". He points out that this decomposition exercise is useful in identifying true liberalization efforts made by a particular country during FTA negotiation. Such data could provide useful information of the cost to each member country in this region in the process of forming a region wide FTA.

3.2 Rules of Origins (ROOs)

Medalla (2011) compiles a database on the Rules of Origin of the ASEAN Trade in Goods Agreement (ATIGA) and four ASEAN+n FTAs, and eight bilateral FTAs by Japan with individual ASEAN countries and India. She constructs matrices of ROOs, including a Product Specific Rules (PSRs) comparison, matrixes of Operational Certification Procedures (OCP), matrixes of Verification Procedures at 6 digit 2002 HS classification under ASEAN+n FTAs and bilateral FTAs. Using the dataset, she assesses the various ROO regimes of these FTAs, particularly regarding their degree of commonality and relative restrictiveness. She finds a substantial commonality in ROOs across the five ASEAN FTAs (ATIGA, AKFTA, ACFTA, AJCEP and AANZFTA), although, from the point of convergence, considerable variation still exists across these five FTAs, and across various sectors.

In addition, Medalla (2011) assesses the ROO restrictiveness in ASEAN and ASEAN+n FTAs by using the index/point system by type of ROO. The result shows that the ATIGA ROO regimes appear the most liberal; she points out that this result is indicative of the continued reforms being undertaken. The ACFTA appears to be the most restrictive and the main reason is that it followed the original ASEAN ROO, with only a few changes. In sum, there is substantial commonality in ROOs across the four FTAs although considerable variation still exists. She indicates that reforms during the past decade have been made to simplify and liberalize the ROO regimes, but that more can still be done in terms of convergence and easing of rules.

3.3 Service Trade

Ishido (2011) explains and constructs an index of the degree of liberalization of commitments in service trade, including 55 sub-sectors by four modes and two aspects of liberalization for AFAS, four ASEAN+n FTAs and six bilateral FTAs by Japan with ASEAN countries. He also constructs a Hoekman index of each FTA by sectors. Based on the dataset, comparative analyses using correlation coefficients across countries of each FTA and clustering of countries under each FTA are conducted. Ishido (2011) finds that the index of the degree of liberalization of commitments shows great disparity between sensitive and less sensitive sectors, and the index of the degree of liberalization under the AFAS is the highest among the four ASEAN+n FTAs. Ishido (2011) also finds that there are cross-country and sector specific similarities among the ASEAN+n FTAs. He points out that this implies that shared domestic sensitivities can be overcome by a shared economic cooperation scheme for enhancing competitiveness through FTA provisions.

In the case of the dataset of six bilateral FTAs by Japan and ASEAN members, there are positive correlations among these FTAs as expected. Also, it is found that these bilateral FTAs Japan signed with ASEAN members are more committed, especially in mode 3 and mode 4. For comparison purposes, Ishido (2011) also constructs a dataset for India's two bilateral FTAs, namely the India-Korea CEPA and India-Singapore CECA. He finds that the commitment levels of Japan's bilateral FTAs are significantly higher than those of India, and that commitment patterns among member countries of an FTA are more similar in the case of India's FTA. He suggests, however, that similarly clustered sectors should be harmonized first, the "social-experiment" aspect should be recognized, and the smallest-scale feature of bilateral FTA would allow for some bold opening up of the service trade market. The convergence

scenario in East Asia's service sector could actually start with some bold policy initiatives in terms of bilaterally opening up service sectors for further trade.

3.4 Investment rules

Turning to the investment rules of FTAs, Thangavelu and Lim (2011) construct Foreign Direct Investment (FDI) restrictiveness indexes of 156 sectors by 6 areas based on temporary exclusion lists and sensitive lists provided by each country under the ASEAN Free Trade Agreement, as well as their more recent individual action plans. Also, they construct an index for the ASEAN-China and ASEAN-Korea FTAs. The results of their mapping exercises on the degree of liberalization show that Malaysia, The Philippines and Thailand ranked lower among the ASEAN 5 countries. Conversely, the emerging countries such as Vietnam and Cambodia are ranked higher since they tend to have adopted key FDI policies to maintain their momentum of economic liberalization and integration in the region. By sector, it was found that the degree of liberalization in the service sectors under the AFTAS is higher than under the agreement of GATs. However, Thangavelu and Lim (2011) point out that the degree of liberalization in service sectors is much lower compared with the manufacturing sector, thereby indicating a greater need to liberalize the service sectors in ASEAN. In addition, they point out that there is still greater opportunity for liberalizing ASEAN's manufacturing sector. They find that agricultural and resources sectors, in particular, tend to have very restrictive FDI policies.

Thangavelu and Lim (2011) also construct an FDI index for the China-ASEAN and Korea-ASEAN FTAs for comparison. They find that manufacturing sectors tend to have more liberal FDI policies as compared with service sectors in both the China-ASEAN and Korea-ASEAN FTAs, and they point out that it is necessary to facilitate liberalization for service sectors in order to promote a greater flow of services and labor in the region.

4. Policy implications from each chapter

The database is still in under construction and it is planned to cover all ASEAN+n FTAs and the bilateral FTAs of ASEAN countries and their dialogue partners sequentially. Our studies have therefore not yet resulted in comprehensive policy implications with which to draw up an integrated regional FTA architecture. We are, however, able to offer tentative policy implications up to this point.

From the Tariff dataset:

A policy implication can be derived regarding the preparation and distribution of tariff data by East Asian countries. The countries could standardize the contents and format of publicly available electronic data on MFN and preferential tariffs. Standardizing publicly available MFN and preferential tariff data could contribute to enhancing the transparency of tariff structures in the region for business and public sectors, and promote more effective and efficient FTA negotiations in this region in the future.

From the ROOs dataset:

Although the "spaghetti bowl" of FTAs might not be as messy as it may seem, it would still be cumbersome for Customs authorities to be processing different Certificates of Origin forms. Harmonization of these forms, across ASEAN+n FTAs at least, would simplify not just administration but compliance of exporters dealing with multiple markets.

For East Asian integration, the ultimate direction in ROO reforms should be toward ROO harmonization. There should be harmonization upwards, toward best practice, in line with the goal of deepened regional integration. In the interim, practical steps should be taken and progress toward convergence should be completed.

In addition, further streamlining of OCP could focus on facilitating the use of cumulation. One possibility is the inter-FTA use of Certificates of Origin (Cos) among these East Asian FTAs, such as some form of Mutual Recognition of ROOs. Since substantial commonalities already exist, the ASEAN + n FTAs have the same basic rule. If this is adopted, it would actually be a very concrete step toward ROO harmonization.

From the Service Trade dataset:

Overall, the absolute degree of commitment in service sectors remains rather low, even under the ASEAN+n FTAs with a preferential nature. Given that there are more benefits than costs arising from deepening trade in services, further harmonization of the service chapters under the four ASEAN+n FTAs studied would be economically valid for bringing about more benefits to the ASEAN members, as well as for all the other participating countries in the Asia-Pacific area.

With regard to the ASEAN+n FTAs, there are cross-country similarities in the pattern of commitments under each FTA. This implies that the shared domestic sensitivities can be overcome by a shared economic cooperation scheme for enhancing competitiveness through

FTA provisions. Based on similarities among countries and FTAs, and differences among sectors, there are two possibilities with respect to the sequence of streamlining of the four ASEAN+n FTAs: 1) start within the same "clusters" among similarly committed countries under a particular FTA then harmonize the level of commitments across all the signatory countries to the FTA, and 2) start with harmonizing rather dissimilar countries from different "clusters" of commitments under a particular FTA, which provides for a small-scale "social experiment"; then scale up this effort later at the appropriate time to the level of the whole FTA; then eventually attempt to harmonize across all the FTAs centering on ASEAN.

From the FDI restrictiveness dataset:

In short, there have been significant improvements on direct measures to improve and facilitate FDI in ASEAN, especially in the case of cross-border investment. At the same time, indirect measures such as the time required to open and close investment establishments have deteriorated much. In order to secure sustained liberalization and to facilitate FDI, it is critically important that a reliable monitoring mechanism is established and implemented in ASEAN.

There is a need to develop an FDI restrictiveness index that accounts for ASEAN+1, ASEAN+3 and ASEAN+6 FTAs. An extension of this study will be necessary to discover whether FTAs created greater access for FDI activities in the region, and to provide analysis and evaluation on the degree of liberalization and the FDI policy environment in each FTA. Comparative analysis on the degree of restrictiveness and liberalization of the investment rules of ASEAN and its six dialogue partners, on the basis of FTA agreements and industrial sectors covered, will also provide multidimensional measures for evaluation among FTAs and could become a basis for discussion on feasible investment rules for a region-wide FTA.

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CHAPTER 2

Constructing the Tariff Dataset for the ERIA FTA Database[1]

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This chapter provides technical notes on the preferential tariff dataset in the ERIA FTA Database and briefly shows sample analyses that can be conducted with the dataset. The current version of our dataset consists of variables including, among others, status of preferential tariff elimination, MFN tariff rates, and a set of dummy variables indicating product category, and it is utilizable for empirical and policy studies in which preferential tariff data on East Asian countries are required. By utilizing the dataset, we investigate the level of liberalization by FTA, by country, and by sector (HS 2-digits chapter) and identified some commonly liberalized or protected products among the ASEAN countries.

[1] We would like to extend a special note of appreciation to the ASEAN Secretariat (ASEC) and the Ministry of Economy, Trade, and Industry (METI) of Japan, for their contribution in providing relevant data and technical advice.

1. Introduction

The preferential tariff is undoubtedly one of the most traditional and essential measures under any free trade agreements (FTAs), and its theoretical and policy implications, including its impacts on trade, have been studied for a long time. However, despite its importance, few empirical studies have attempted to investigate the impacts of FTAs by using a *product-level* preferential tariff dataset, mainly due to data availability and/or data inconsistency of product classification among FTAs and countries.[2]

This chapter provides technical notes on a newly constructed preferential tariff dataset in the *ERIA FTA Database* and briefly shows sample analyses that can be conducted with the dataset.[3] To our knowledge, this is the first and the most consistent and comprehensive preferential tariff dataset for this region, with which one can easily analyze the level of liberalization and the tariff structure of a country under the relevant FTAs. The current version of our product-level tariff dataset covers 12 FTAs with 70 country-level tariff schedules, namely, five "ASEAN+n" FTAs and Japan's seven bilateral FTAs. By utilizing the dataset, we calculated the "level of liberalization index" by FTA, by country, and by sector (HS 2-digits chapter) and identified some commonly liberalized or protected products among the ASEAN countries. It is expected that publicizing this database *per se* contributes to enhance the transparency of tariff structure in the region and to make policy discussion more accurate and future FTA negotiations more efficient. We also believe that the database will serve as an important

[2] Medvedev (2010) tries to investigate the effects of FTAs on bilateral trade using a product-level preferential tariff dataset.

[3]

"public good" for economists and policy analysts who need tariff dataset for their econometric and policy analysis on FTAs.

This chapter is organized as follows: Section 2 discusses issues related to the compilation of preferential tariff data in this region. It is followed by the specification of our dataset as well as some results of simple comparative analyses on the degree of tariff elimination by FTA/country/industry. Section 3 presents some policy implications.

2. Data Specification

2.1. Original tariff data

Before presenting the specification of our preferential tariff dataset, we briefly review some characteristics and heterogeneity observed in the original tariff data across FTAs.

The current version of our dataset covers 70 signatory-level tariff schedules bound under the five ASEAN+n FTAs, namely, the ASEAN-Japan Comprehensive Economic Partnership (AJCEP), the ASEAN-Korea FTA (AKFTA), the ASEAN-China FTA (ACFTA), the ASEAN-Australia-New Zealand FTA (AANZFTA), and the ASEAN-India FTA (AIFTA). The number of FTAs covered in this study and the number of tariff schedules stipulated under the relevant FTAs are not identical. This is because there are as many tariff schedules as there are signatories under each FTA. For example, for the AJCEP, tariff schedules of 11 signatories (Japan and the ten ASEAN member countries) are stipulated under the agreement.

The original data on 70 signatory-level tariff schedules, originally published by each national authority and provided through the ASEAN Secretariat (ASEC) in electronic formats, have some inconsistency among themselves for the following

reasons. First, while some files contain time-series data on preferential tariff rates applied during the "transitional period", others only contain categorical information indicating the status of tariff elimination (e.g., Normal Track, Sensitive List, Highly Sensitive List). Second, while some files contain data on MFN applied tariff rates (Base Rate), others do not. Third, original tariff schedules are not necessarily consistent among FTAs and countries, in terms of version of the Harmonized Commodity Description and Coding System (HS) of tariff nomenclature (HS2002 or HS2007) as well as level of HS code digit employed in the tariff schedules. Finally, the type of electronic file provided (MS-Excel, MS-Word, or PDF), the shape of table within the files, and the language are different.

2.2. Data compilation

Given the data inconsistency mentioned in the previous subsection, reshaping and converting the original data into a unique format in a systematic and comparable way is essential in developing a tariff dataset and conducting comparative studies on tariff structure in the region. In doing so, we wrote a data management program (STATA do-files) for each tariff schedule, in order to secure full traceability and reproducibility of the data transformation, and we generated 70 csv-files and STATA dta-files that contain common variables described below, and are consistent amongst each other *except for* HS versions.

Any tariff dataset usable for future empirical studies should be converted into a single classification, that is, either HS2002 or HS2007 version, so that the tariff data can easily be merged with trade data. However, depending on the years of negotiation or conclusion of the FTAs, countries employ different versions of tariff classification

(HS2002 or HS2007). This means a spreadsheet containing a country's tariff schedule in an FTA cannot share the same row (tariff lines) with that of the country's other FTAs or that of other countries' FTAs, unless we take a further step to convert the tariff schedules into a unique HS version. Although the United Nations Statistics Division publishes a correspondence table between HS2002 and HS2007 versions, it only provides correspondence for the HS 6 digits level classifications, which are internationally standardized.[4] Each national authority, who autonomously defines and revises the most detailed tariff classification for HS 8-10 digits, does not usually publish any correspondence tables. As this concordance exercise at the HS 8-10 digits level has to be done by the human eye, which is sometimes discretionary, we did not compile the tariff schedules into a single file at this stage of the project.

2.3. Data specification

Our product-level preferential tariff dataset contains the following variables.

rta: categorical variable indicating the names of FTAs.

country: categorical variable indicating the names of signatories.

hs07org: original HS classification number (HS2007 version) corresponding to the most disaggregated tariff lines. (*hs02org* in case the tariff schedule follows HS2002 version.)

hssec: categorical variable indicating the HS section the product belongs to.

hs07dg2: categorical variable indicating the HS chapter (2 digits) the product belongs to.

[4] Available at http://unstats.un.org/unsd/cr/registry/regot.asp. (accessed March 15, 2010).

hs07dg4: categorical variable indicating the HS heading (4 digits) the product belongs to. (*hs02dg4* in case the tariff schedule follows HS2002 version.)

hs07dg6: categorical variable indicating the HS subheading (6 digits) the product belongs to. (*hs02dg6* in case the tariff schedule follows HS2002 version.)

agri: dummy variable taking unity when the product belongs to the agricultural sector (HS2-24).

mfn: Most-Favored-Nation (MFN) applied tariff rate (or Base Rate) for each tariff line applied by the country.

mfnyear: year for the MFN applied tariff rate data. The years differ across FTAs depending on the year of negotiation/conclusion of the FTAs.

zeromfn: dummy variable taking unity if *mfn*=0.

zerorta: dummy variable taking unity if the final preferential tariff rate for the tariff line is zero vis-à-vis FTA members.

free: dummy variable taking unity if either *zeromfn*=1 or *zerorta*=1.

zerobyrta: dummy variable taking unity if *zeromfn*=0 and *zerorta*=1.

Our data management program is designed to automatically generate a summary table for (i) conventional FTA liberalization index[5] (share of *free*=1 tariff lines), (ii) share of *zeromfn*=1 tariff lines, (iii) share of *zerobyrta*=1 tariff lines for each tariff schedule. It also generates lists of sensitive product groups (HS heading), in which all

[5] In other words, the numerator of this index is the union of tariff lines subject to duty free MFN applied tariff and tariff lines subject to preferential tariff elimination committed by a country under a particular FTA, whereas the denominator is a total number of tariff lines.

the tariff lines included are non-zero (protected) in the tariff schedule of a country under an FTA.

3. Sample analyses using the tariff dataset

Even though our dataset only covers the 12 FTAs at this stage, and tariff schedules with HS2002 classification have to be converted into HS2007 classification before we use the dataset for rigorous empirical studies, we can still utilize the current version of our dataset for various policy studies.

First, with our dataset, one can calculate the conventional liberalization index by FTA and by country, and investigate how levels of liberalization differ across countries (See Table 1). The most liberalized ASEAN+n FTA in the region is the AANZFTA (94.6% after the transitional period). This is followed by the ACFTA (92.0%), AKFTA (91.6%), AJCEP (89.2%), and AIFTA (76.5%). It is therefore a key to realize further liberalization among India and ASEAN countries in forming a clean FTA among ASEAN+6 countries. The average level of liberalization by country indicates that, when compared with CLMV countries, the ASEAN 6 countries except for Indonesia achieved much higher level of liberalization (more than 90%) under the ASEAN+n FTA.

Table 1: Level of Liberalization by country under the ASEAN+n FTAs

	ASEAN-Korea	ASEAN-China	ASEAN-ANZ	ASEAN-India	ASEAN-Japan	Average
SGP	100.0%	100.0%	100.0%	100.0%	100.0%	**100.0%**
BRN	97.8%	97.9%	98.5%	82.6%	96.4%	**94.6%**
MLS	93.5%	93.7%	95.5%	79.6%	92.1%	**90.9%**
THA	93.7%	88.3%	98.8%	74.3%	96.9%	**90.4%**
IDN	90.3%	89.0%	93.4%	50.4%	88.7%	**82.3%**
PHI	97.9%	86.5%	94.8%	75.8%	96.0%	**90.2%**
VTN	84.3%	na	90.9%	69.7%	84.7%	**82.4%**
CAM	85.5%	86.7%	86.2%	84.1%	76.0%	**83.7%**
LAO	85.4%	96.4%	90.7%	77.5%	84.2%	**86.8%**
MYA	87.5%	*86.9%*	86.1%	73.6%	79.4%	**82.7%**
KOR	92.2%					
CHN		94.6%				
AUS			100.0%			
NZ			100.0%			
IND				74.3%		
JPN					86.3%	
Average	**91.6%**	**92.0%**	**94.6%**	**76.5%**	**89.2%**	

Source: author's calculation.

Note: Data on Myanmar under the ASEAN-China FTA is missing for HS01-HS08.

The relatively lower average level of liberalization of Indonesia (82.3%) is heavily influenced by its level of liberalization under the AIFTA (50.4%).

If we focus on the liberalization effort made by ASEAN's partners under the ASEAN+n FTAs, the highest level of liberalization vis-à-vis ASEAN countries has been achieved by Australia and New Zealand (100%), followed by China (94.6%), Korea (92.2%), Japan (86.3%), and India (74.3%).

Second, one can easily transform the conventional liberalization into more aggregated classification such as HS 2-digit or HS 4-digit. It should be mentioned that commonly liberalized product groups achieved by partner countries vis-à-vis ASEAN10 include, among others, some textile products (HS56, 58, 60), some base metals (HS71, 72, 75, and 78-82) including iron and steel, clocks and watches (HS91) and musical instruments (HS92) (See Table 2). Partner countries except for India further and

commonly eliminate their tariffs on some other textile products (HS53, 57, 59), cement (HS68), iron and steel products (HS73), aluminum products (HS76), optical, technical, medical apparatus (HS90), and toys, games, and sport requisites (HS95). Tariffs on machinery, electrical and electronic products (HS84-85) and automobile products (HS87) are also to be fully eliminated by Japan, Australia, and New Zealand. On the other hand, commonly liberalized product groups achieved by ASEAN6 countries vis-à-vis partners (except for India) include vegetable products (HS14), cereal products (HS19), furskins, cork, and plaiting material (HS43, 45-46), some textile products (HS51, 53), some base metal (HS75, 77-80), and musical instruments (HS92) (See Table 3). It should also be pointed out that among the so-called ASEAN sensitive sectors, liberalization index of tobacco (HS24) and beverages and spirits (HS20) are the lowest among the ASEAN countries, whereas vegetable products (HS14), live animals (HS1), products of animal origins (HS5), cocoa (HS18), articles of apparel (not knit or crochet) (HS62) are relatively and commonly liberalized by them vis-à-vis partners.[6]

Third, the duty-free tariff lines, vis-à-vis an FTA member country, can easily be decomposed into "tariff lines already liberalized under the MFN regime" and "tariff lines newly liberalized under the FTA" (See Figure 1). This decomposition exercise is particularly useful in identifying true liberalization efforts made by a particular country during an FTA negotiation, as well as how truly preferential a country's commitment is against member countries. We can even further extend this decomposition by sector (Figure 2), by HS chapter (Figure 3), or even by HS heading, depending on the purpose of analysis.

[6] For more comprehensive results, see Table A-1 to A-5 in the Annex.

Table 2: Level of Liberalization achieved by Partners vis-à-vis ASEAN10

HS	CHN	KOR	AUS	NZ	IND	JPN	HS	CHN	KOR	AUS	NZ	IND	JPN
1	100.0%	96.4%	100.0%	100.0%	85.3%	84.6%	50	100.0%	100.0%	100.0%	100.0%	100.0%	73.2%
2	100.0%	46.3%	100.0%	100.0%	91.8%	42.5%	51	84.7%	62.1%	100.0%	100.0%	66.5%	100.0%
3	100.0%	65.8%	100.0%	100.0%	59.9%	40.9%	52	96.9%	82.4%	100.0%	100.0%	27.9%	100.0%
4	100.0%	15.7%	100.0%	100.0%	25.0%	9.7%	53	100.0%	100.0%	100.0%	100.0%	92.5%	100.0%
5	100.0%	94.1%	100.0%	100.0%	100.0%	100.0%	54	95.5%	96.4%	100.0%	100.0%	70.0%	100.0%
6	100.0%	82.9%	100.0%	100.0%	62.5%	100.0%	55	95.4%	100.0%	100.0%	100.0%	43.0%	100.0%
7	100.0%	60.9%	100.0%	100.0%	54.3%	81.8%	56	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
8	100.0%	38.0%	100.0%	100.0%	50.0%	81.8%	57	100.0%	100.0%	100.0%	100.0%	95.8%	100.0%
9	87.5%	86.5%	100.0%	100.0%	14.8%	91.7%	58	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
10	46.4%	69.2%	100.0%	100.0%	32.4%	68.9%	59	100.0%	100.0%	100.0%	100.0%	86.8%	100.0%
11	72.2%	18.2%	100.0%	100.0%	2.9%	28.0%	60	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
12	100.0%	78.8%	100.0%	100.0%	73.2%	82.4%	61	100.0%	95.0%	100.0%	100.0%	65.3%	100.0%
13	100.0%	77.8%	100.0%	100.0%	100.0%	90.5%	62	100.0%	90.5%	100.0%	100.0%	64.3%	100.0%
14	100.0%	85.7%	100.0%	100.0%	87.5%	100.0%	63	100.0%	100.0%	100.0%	100.0%	71.0%	100.0%
15	79.6%	85.7%	100.0%	100.0%	32.5%	57.0%	64	100.0%	100.0%	100.0%	100.0%	4.2%	37.2%
16	100.0%	59.3%	100.0%	100.0%	64.7%	25.0%	65	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
17	66.7%	72.7%	100.0%	100.0%	81.6%	28.0%	66	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
18	100.0%	90.3%	100.0%	100.0%	29.6%	23.3%	67	100.0%	100.0%	100.0%	100.0%	86.7%	100.0%
19	100.0%	70.2%	100.0%	100.0%	85.7%	0.7%	68	100.0%	100.0%	100.0%	100.0%	97.8%	100.0%
20	94.9%	60.6%	100.0%	100.0%	48.6%	51.6%	69	100.0%	91.9%	100.0%	100.0%	89.7%	100.0%
21	100.0%	76.1%	100.0%	100.0%	37.5%	34.0%	70	100.0%	98.6%	100.0%	100.0%	84.0%	100.0%
22	100.0%	69.2%	100.0%	100.0%	23.1%	52.7%	71	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
23	100.0%	87.0%	100.0%	100.0%	19.7%	95.2%	72	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
24	0.0%	100.0%	100.0%	100.0%	0.0%	54.5%	73	100.0%	100.0%	100.0%	100.0%	94.2%	100.0%
25	100.0%	97.2%	100.0%	100.0%	94.3%	98.7%	74	100.0%	98.9%	100.0%	100.0%	80.0%	100.0%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
27	92.4%	91.0%	100.0%	100.0%	55.4%	100.0%	76	100.0%	100.0%	100.0%	100.0%	92.7%	100.0%
28	99.2%	98.6%	100.0%	100.0%	96.6%	100.0%	78	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
29	99.1%	96.3%	100.0%	100.0%	75.3%	99.3%	79	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
30	100.0%	100.0%	100.0%	100.0%	34.1%	100.0%	80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
31	89.7%	94.7%	100.0%	100.0%	37.9%	100.0%	81	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
32	100.0%	100.0%	100.0%	100.0%	94.7%	100.0%	82	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
33	100.0%	95.6%	100.0%	100.0%	60.0%	100.0%	83	94.7%	100.0%	100.0%	100.0%	95.2%	100.0%
34	100.0%	94.3%	100.0%	100.0%	72.9%	100.0%	84	99.5%	99.3%	100.0%	100.0%	92.5%	100.0%
35	100.0%	82.8%	100.0%	100.0%	71.1%	77.3%	85	95.6%	99.2%	100.0%	100.0%	86.3%	100.0%
36	100.0%	100.0%	100.0%	100.0%	92.0%	100.0%	86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
37	70.1%	97.7%	100.0%	100.0%	98.1%	100.0%	87	73.0%	90.3%	100.0%	100.0%	38.8%	100.0%
38	100.0%	98.6%	100.0%	100.0%	78.6%	100.0%	88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
39	97.5%	91.4%	100.0%	100.0%	30.4%	100.0%	89	52.4%	100.0%	100.0%	100.0%	100.0%	100.0%
40	95.5%	98.6%	100.0%	100.0%	52.9%	100.0%	90	100.0%	100.0%	100.0%	100.0%	95.1%	100.0%
41	100.0%	100.0%	100.0%	100.0%	100.0%	69.0%	91	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
42	100.0%	100.0%	100.0%	100.0%	3.2%	87.5%	92	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
43	100.0%	100.0%	100.0%	100.0%	100.0%	33.3%	93	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
44	65.7%	55.2%	100.0%	100.0%	98.8%	78.8%	94	95.0%	98.9%	100.0%	100.0%	94.1%	100.0%
45	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95	100.0%	100.0%	100.0%	100.0%	83.9%	100.0%
46	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96	100.0%	100.0%	100.0%	100.0%	97.8%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
48	6.0%	100.0%	100.0%	100.0%	91.7%	100.0%							
49	58.3%	100.0%	100.0%	100.0%	79.4%	100.0%							

Source: author's calculation.

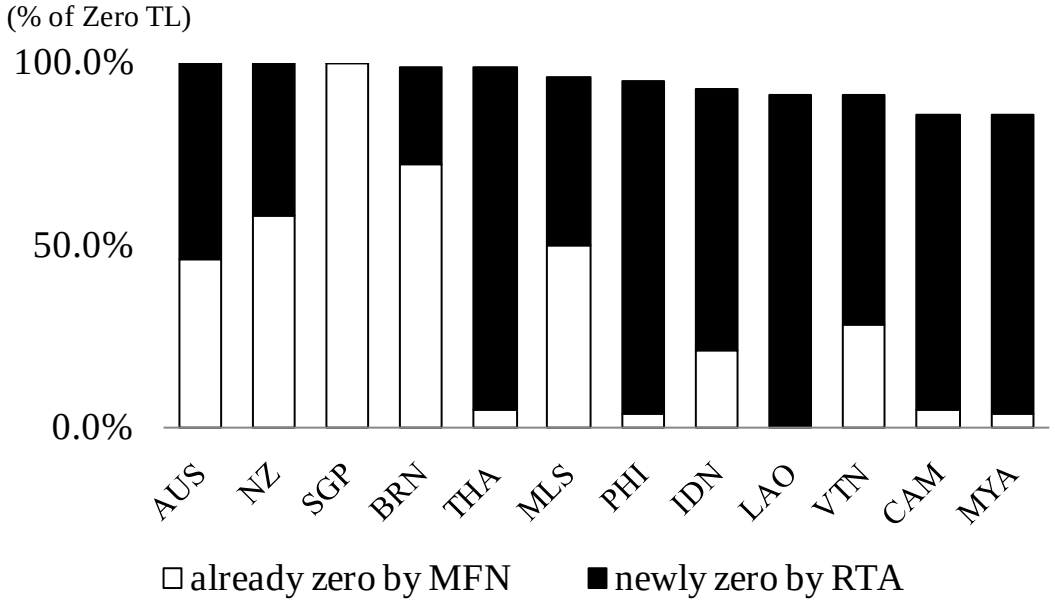
Table 3: Average Level of Liberalization Achieved by ASEAN6 vis-à-vis Partners

HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP	HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP	HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP
1	97.4%	95.4%	96.9%	82.7%	90.4%	**33**	93.3%	98.7%	98.5%	73.3%	88.4%	**65**	100.0%	97.4%	98.9%	67.9%	94.4%
2	91.5%	87.1%	89.3%	71.5%	84.7%	**34**	99.4%	98.9%	95.6%	70.1%	97.3%	**66**	100.0%	100.0%	97.1%	76.2%	92.6%
3	100.0%	98.3%	98.8%	78.6%	97.3%	**35**	98.3%	100.0%	100.0%	79.8%	92.1%	**67**	100.0%	87.5%	100.0%	79.2%	90.7%
4	98.4%	96.2%	90.9%	63.5%	88.0%	**36**	95.8%	95.2%	100.0%	76.2%	87.1%	**68**	97.1%	97.3%	100.0%	66.8%	96.9%
5	100.0%	98.9%	99.4%	97.8%	99.5%	**37**	98.8%	100.0%	100.0%	76.5%	99.3%	**69**	85.4%	96.9%	100.0%	68.8%	96.3%
6	100.0%	96.8%	90.1%	71.2%	98.6%	**38**	95.2%	99.5%	100.0%	85.8%	98.4%	**70**	90.5%	96.8%	96.7%	75.9%	98.9%
7	91.8%	99.3%	92.9%	79.5%	97.7%	**39**	80.6%	87.8%	90.4%	63.0%	97.1%	**71**	98.2%	94.7%	98.5%	84.9%	92.6%
8	99.1%	95.9%	92.7%	76.0%	93.1%	**40**	88.6%	93.1%	99.0%	66.2%	94.2%	**72**	82.7%	85.5%	78.3%	61.4%	83.6%
9	87.9%	100.0%	83.7%	63.2%	94.3%	**41**	100.0%	97.7%	100.0%	94.2%	100.0%	**73**	90.9%	85.8%	91.6%	59.0%	87.3%
10	66.9%	84.2%	61.0%	55.2%	72.0%	**42**	96.2%	99.0%	95.1%	56.4%	100.0%	**74**	98.4%	99.5%	99.8%	87.7%	99.0%
11	97.8%	98.7%	97.4%	56.5%	96.2%	**43**	100.0%	100.0%	100.0%	84.4%	97.5%	**75**	100.0%	100.0%	100.0%	96.8%	100.0%
12	98.5%	100.0%	98.5%	79.6%	98.5%	**44**	99.6%	100.0%	100.0%	95.3%	99.9%	**76**	100.0%	100.0%	100.0%	69.4%	99.4%
13	100.0%	98.2%	100.0%	91.2%	100.0%	**45**	100.0%	100.0%	100.0%	95.2%	100.0%	**78**	100.0%	100.0%	100.0%	94.9%	100.0%
14	100.0%	100.0%	100.0%	90.5%	100.0%	**46**	100.0%	100.0%	100.0%	76.0%	100.0%	**79**	100.0%	100.0%	100.0%	89.2%	100.0%
15	96.4%	100.0%	97.8%	73.9%	98.0%	**47**	100.0%	100.0%	100.0%	97.3%	99.3%	**80**	100.0%	100.0%	100.0%	98.1%	100.0%
16	95.4%	97.5%	95.4%	76.5%	96.5%	**48**	98.7%	99.9%	100.0%	85.5%	100.0%	**81**	100.0%	100.0%	100.0%	100.0%	94.7%
17	82.6%	96.0%	81.8%	80.1%	86.2%	**49**	97.9%	100.0%	100.0%	90.5%	100.0%	**82**	100.0%	100.0%	100.0%	86.0%	98.5%
18	100.0%	100.0%	98.8%	80.2%	100.0%	**50**	93.3%	87.0%	97.8%	79.2%	98.5%	**83**	100.0%	99.7%	100.0%	83.3%	99.1%
19	100.0%	100.0%	100.0%	90.8%	100.0%	**51**	100.0%	100.0%	100.0%	93.4%	100.0%	**84**	94.8%	98.5%	99.3%	89.6%	98.5%
20	97.7%	99.5%	100.0%	79.4%	99.1%	**52**	97.7%	100.0%	100.0%	83.0%	99.8%	**85**	91.8%	94.1%	99.0%	71.8%	92.8%
21	94.1%	97.4%	93.5%	76.5%	92.2%	**53**	100.0%	100.0%	100.0%	94.0%	100.0%	**86**	100.0%	100.0%	100.0%	100.0%	100.0%
22	83.2%	72.4%	50.0%	41.0%	58.2%	**54**	99.5%	99.8%	100.0%	86.5%	100.0%	**87**	53.6%	67.9%	92.2%	46.2%	69.9%
23	91.7%	95.4%	97.6%	82.6%	97.7%	**55**	97.4%	99.2%	100.0%	84.9%	100.0%	**88**	100.0%	100.0%	100.0%	100.0%	100.0%
24	68.0%	83.3%	43.4%	40.6%	52.3%	**56**	95.7%	99.6%	99.0%	79.9%	100.0%	**89**	100.0%	100.0%	100.0%	99.7%	100.0%
25	95.9%	99.2%	98.8%	90.5%	98.4%	**57**	92.5%	98.3%	95.1%	39.0%	98.1%	**90**	99.7%	99.9%	100.0%	85.5%	99.3%
26	100.0%	100.0%	100.0%	100.0%	100.0%	**58**	99.3%	97.7%	100.0%	71.8%	100.0%	**91**	98.8%	100.0%	100.0%	77.1%	99.4%
27	98.9%	99.1%	95.7%	88.2%	98.1%	**59**	99.1%	100.0%	100.0%	73.9%	100.0%	**92**	100.0%	100.0%	100.0%	73.3%	100.0%
28	98.1%	98.0%	99.5%	91.3%	97.3%	**60**	97.3%	98.5%	100.0%	66.7%	100.0%	**93**	97.3%	92.6%	80.8%	82.8%	83.6%
29	99.0%	99.6%	100.0%	93.4%	99.5%	**61**	89.5%	94.6%	95.9%	55.9%	100.0%	**94**	94.0%	98.5%	99.3%	70.3%	96.0%
30	98.6%	98.8%	99.2%	81.5%	98.5%	**62**	93.4%	94.9%	96.7%	59.3%	100.0%	**95**	93.4%	99.1%	100.0%	73.3%	87.4%
31	100.0%	100.0%	100.0%	100.0%	100.0%	**63**	86.7%	99.6%	97.7%	46.7%	100.0%	**96**	99.6%	99.6%	99.8%	78.0%	97.1%
32	95.2%	94.3%	100.0%	72.5%	91.2%	**64**	69.4%	100.0%	94.9%	39.8%	99.6%	**97**	100.0%	98.6%	100.0%	93.1%	98.6%

Table 4: Average Level of Liberalization Achieved by ASEAN10 vis-à-vis Partners

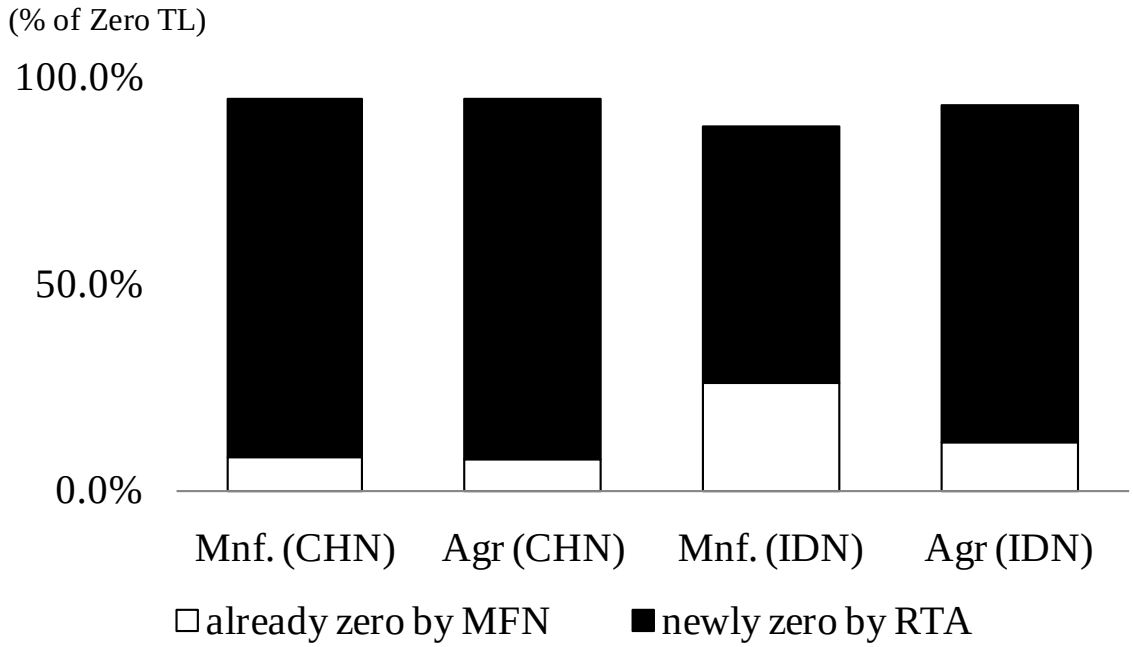
HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP	HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP	HS	ACFTA	AKFTA	AANZFTA	AIFTA	AJCEP
1	94.9%	91.6%	98.3%	79.4%	87.0%	**33**	91.1%	90.6%	90.4%	62.5%	87.1%	**65**	100.0%	96.2%	95.1%	72.3%	94.4%
2	86.6%	86.6%	91.2%	70.9%	79.0%	**34**	94.3%	91.0%	96.1%	65.8%	87.5%	**66**	95.2%	100.0%	95.2%	78.6%	95.6%
3	99.8%	95.2%	94.1%	80.5%	85.2%	**35**	96.1%	98.7%	98.9%	77.7%	91.7%	**67**	100.0%	90.0%	100.0%	76.3%	94.4%
4	97.4%	94.4%	87.5%	73.0%	87.3%	**36**	97.2%	85.3%	80.6%	62.4%	75.4%	**68**	95.7%	98.0%	99.6%	77.9%	96.6%
5	99.6%	98.4%	97.2%	93.3%	96.4%	**37**	98.7%	100.0%	99.4%	84.6%	97.6%	**69**	86.7%	95.5%	97.1%	71.3%	96.2%
6	100.0%	90.4%	90.6%	73.5%	90.9%	**38**	96.4%	98.6%	98.4%	87.2%	97.4%	**70**	91.6%	94.7%	97.8%	78.7%	95.1%
7	87.3%	92.4%	93.3%	75.9%	86.7%	**39**	79.2%	86.4%	92.3%	69.7%	91.9%	**71**	98.8%	95.9%	90.5%	76.8%	85.7%
8	93.1%	90.7%	91.1%	73.7%	85.2%	**40**	91.4%	85.5%	93.2%	69.5%	86.9%	**72**	87.9%	86.6%	81.0%	64.7%	86.9%
9	89.3%	93.1%	87.1%	63.6%	87.6%	**41**	100.0%	96.0%	94.6%	82.7%	97.1%	**73**	91.2%	87.3%	92.6%	65.7%	86.9%
10	63.6%	82.1%	68.9%	64.2%	69.2%	**42**	93.9%	95.2%	93.7%	64.5%	97.8%	**74**	98.4%	96.8%	96.1%	87.4%	96.4%
11	98.6%	97.4%	96.1%	71.0%	96.2%	**43**	99.3%	94.4%	93.8%	78.1%	96.5%	**75**	100.0%	100.0%	98.8%	98.1%	99.5%
12	97.9%	94.7%	98.1%	76.0%	91.8%	**44**	91.2%	99.6%	94.7%	83.4%	97.9%	**76**	97.9%	98.3%	99.0%	76.1%	97.9%
13	98.7%	92.8%	97.7%	83.2%	91.1%	**45**	100.0%	90.0%	92.1%	97.1%	100.0%	**78**	100.0%	100.0%	98.0%	94.2%	100.0%
14	100.0%	97.1%	100.0%	84.3%	97.5%	**46**	99.3%	100.0%	100.0%	75.6%	90.0%	**79**	98.3%	96.7%	97.2%	91.0%	98.7%
15	96.3%	94.8%	96.6%	77.9%	85.9%	**47**	100.0%	99.5%	90.5%	98.4%	97.7%	**80**	100.0%	98.8%	100.0%	88.9%	97.5%
16	89.6%	93.2%	75.4%	64.5%	80.7%	**48**	96.6%	94.7%	96.0%	82.7%	95.2%	**81**	100.0%	100.0%	100.0%	99.6%	96.7%
17	84.4%	92.6%	78.9%	79.8%	83.4%	**49**	96.6%	97.9%	96.8%	88.7%	94.8%	**82**	98.6%	98.3%	97.2%	83.2%	96.5%
18	93.5%	100.0%	86.8%	81.9%	93.5%	**50**	92.1%	88.9%	93.8%	83.1%	90.6%	**83**	97.6%	95.5%	92.9%	75.9%	96.7%
19	94.9%	93.3%	86.1%	82.1%	91.1%	**51**	100.0%	99.7%	100.0%	95.3%	98.5%	**84**	94.4%	93.2%	94.3%	84.6%	93.2%
20	87.1%	90.4%	82.8%	75.4%	79.9%	**52**	97.5%	97.8%	99.6%	82.1%	98.2%	**85**	92.4%	86.3%	92.2%	71.3%	86.8%
21	88.5%	96.2%	90.6%	71.1%	81.4%	**53**	99.5%	99.2%	100.0%	94.8%	99.7%	**86**	100.0%	98.8%	99.1%	96.9%	98.4%
22	69.6%	62.6%	39.4%	38.0%	49.0%	**54**	98.7%	95.6%	98.8%	87.3%	98.2%	**87**	56.4%	52.0%	78.2%	41.6%	56.2%
23	92.6%	96.0%	95.0%	82.3%	95.9%	**55**	97.6%	97.5%	99.5%	86.3%	98.7%	**88**	100.0%	100.0%	88.9%	89.5%	90.4%
24	70.3%	71.7%	49.4%	37.9%	40.7%	**56**	95.6%	97.4%	97.3%	83.7%	98.2%	**89**	100.0%	98.5%	85.9%	83.7%	96.3%
25	96.0%	96.8%	97.7%	90.9%	96.9%	**57**	93.6%	99.0%	97.3%	57.6%	98.6%	**90**	99.8%	98.2%	96.7%	87.9%	95.3%
26	99.7%	100.0%	99.5%	97.4%	100.0%	**58**	96.2%	93.8%	99.0%	76.6%	98.4%	**91**	99.0%	99.8%	99.8%	76.6%	99.2%
27	95.2%	91.5%	83.4%	80.0%	93.2%	**59**	98.5%	97.7%	98.0%	80.7%	98.1%	**92**	100.0%	99.0%	97.8%	73.2%	97.9%
28	98.1%	98.4%	98.5%	92.3%	97.8%	**60**	97.6%	97.0%	99.2%	75.4%	99.2%	**93**	98.2%	92.5%	64.1%	60.4%	67.6%
29	99.0%	99.1%	99.9%	92.5%	98.4%	**61**	91.9%	90.1%	97.2%	70.6%	99.7%	**94**	90.6%	93.5%	95.3%	71.6%	89.7%
30	99.1%	85.0%	97.5%	75.8%	91.5%	**62**	94.2%	96.3%	97.6%	71.8%	99.9%	**95**	94.6%	95.6%	95.8%	74.2%	88.3%
31	100.0%	97.7%	100.0%	96.6%	99.1%	**63**	89.1%	97.0%	96.8%	61.3%	96.6%	**96**	97.4%	96.5%	96.3%	73.1%	91.9%
32	93.1%	92.6%	98.3%	71.5%	90.3%	**64**	76.7%	95.7%	92.4%	58.2%	97.1%	**97**	100.0%	99.2%	88.9%	87.8%	87.5%

Figure 1: Decomposition of conventional index (AANZFTA)



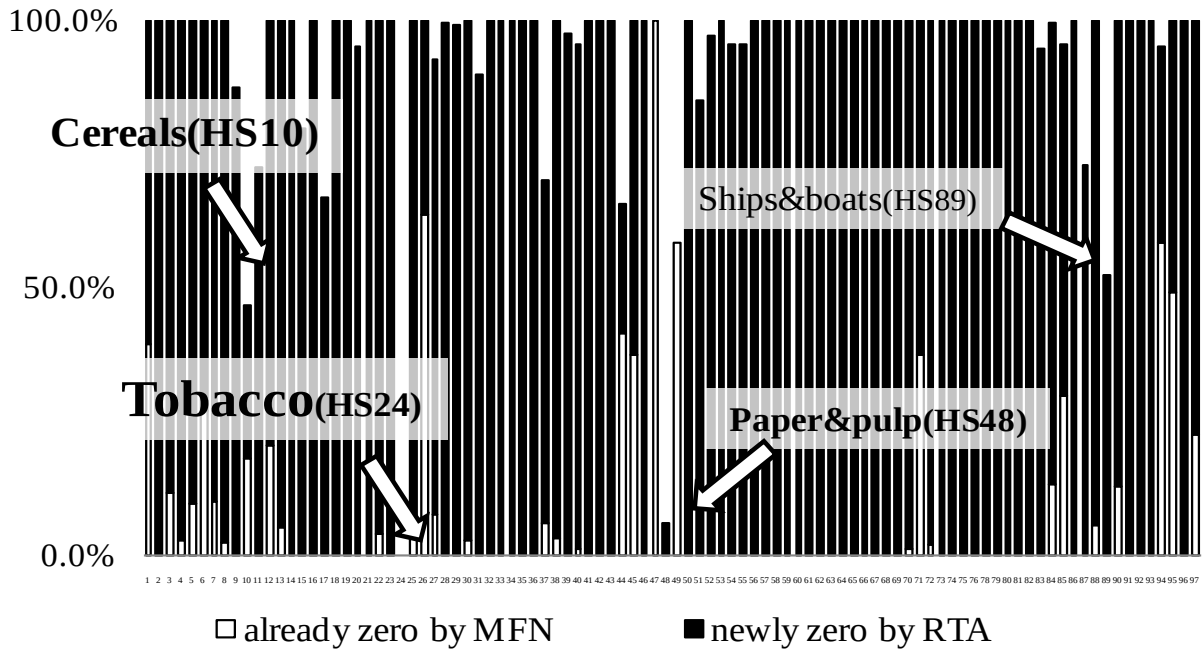
Source: author's calculation.

Figure 2: Decomposition of index by sector (ACFTA)



Source: author's calculation.

Figure 3: Decomposition of index by HS Chapter (China's commitment under the ACFTA)



Source: author's calculation.

4. Policy Implications

This chapter provides technical notes on the preferential tariff dataset in the ERIA FTA Database and briefly shows sample analyses that can be conducted with the dataset. A policy implication can be pointed out regarding the preparation and distribution of tariff data by East Asian countries. The countries could standardize the contents and the format of publicly available electronic data on MFN and preferential tariffs. We also observe the serious irregularity of data in terms of the shape of table, available information, and even language. Standardizing publicly available MFN and preferential tariff data could contribute to enhancing the transparency of tariff structures in the region for business and public sectors, and promote more effective and efficient FTA negotiations in this region in the future.

Our database could be extended in several directions in the future. Firstly, as mentioned above, the current version of our dataset is still incomplete in the sense that it only covers five "ASEAN+n" FTAs and Japan's seven bilateral FTAs. Our database should be extended to cover the rest of FTAs between/among ASEAN+6 countries, namely other bilateral FTAs in the region and the ASEAN Trade in Goods Agreement

(ATIGA), in order to make our database more comprehensive and usable for potential database users.

Secondly, a possible extension is to add into our database a new categorical variable "staging category" that indicates whether a particular tariff line is categorized by a member country as a "Normal Track (NT) item", "Sensitive List (SL) item", or "Highly Sensitive List (HSL) item" under a particular FTA. This qualitative information is very crucial in developing a politically feasible path to the creation of a region-wide and WTO consistent FTA.

Thirdly, the information of non tariff barriers (NTBs), such as "state trading", "quota", and "tariff-rate quota (TRQ)" should be incorporated into our database as much as possible, considering the fact that eliminating tariffs alone is not a sufficient condition for the free movement of goods between/among member countries. The market of a product can easily be distorted by the state trading or quota system, even if its tariff rate is totally eliminated.

Lastly, we observed that total number of tariff line of a tariff schedule is totally different depending on countries as well as versions of HS classification. In addition to the most disaggregated tariff dataset, a tariff dataset with HS 6-digit level, which is internationally standardized, should be developed and uniquely convert them into either HS2002 or HS2007 version, so that we can calculate more comparable liberalization index. This extension also enables researchers to easily merge our tariff data with data on ROOs to be published by the ERIA and trade data, and to conduct more rigorous empirical studies.

References

Medvedev, Denis (2010) "Preferential trade agreements and their role in world trade." *Review of World Economy* 146, no. 2: 199-222.

Annex

Table A-1: Level of Liberalization by FTA (ACFTA)

HS	CHN	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	84.3%	na	97.3%	77.3%	na
2	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	49.1%	na	89.9%	53.5%	na
3	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	98.7%	99.3%	na
4	100.0%	100.0%	100.0%	100.0%	90.6%	100.0%	100.0%	na	100.0%	88.9%	na
5	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	97.0%	na
6	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	na
7	100.0%	100.0%	100.0%	100.0%	90.3%	100.0%	60.4%	na	83.9%	63.7%	na
8	100.0%	100.0%	100.0%	100.0%	96.1%	100.0%	98.6%	na	86.3%	63.8%	na
9	87.5%	100.0%	100.0%	100.0%	34.2%	100.0%	93.2%	na	100.0%	95.7%	80.9%
10	46.4%	100.0%	100.0%	61.9%	38.9%	56.0%	44.4%	na	100.0%	45.7%	25.4%
11	72.2%	100.0%	100.0%	100.0%	94.7%	97.4%	94.9%	na	100.0%	100.0%	100.0%
12	100.0%	100.0%	100.0%	100.0%	91.2%	100.0%	100.0%	na	95.1%	94.8%	100.0%
13	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	88.2%
14	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
15	79.6%	100.0%	100.0%	100.0%	78.6%	100.0%	100.0%	na	100.0%	100.0%	88.2%
16	100.0%	100.0%	100.0%	100.0%	93.2%	93.4%	85.9%	na	100.0%	100.0%	33.8%
17	66.7%	100.0%	100.0%	100.0%	64.7%	75.9%	55.0%	na	82.1%	100.0%	81.8%
18	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	41.2%
19	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	88.9%	100.0%	65.6%
20	94.9%	100.0%	100.0%	100.0%	86.3%	100.0%	100.0%	na	90.4%	100.0%	7.1%
21	100.0%	100.0%	88.6%	100.0%	87.2%	88.6%	100.0%	na	31.8%	100.0%	100.0%
22	100.0%	100.0%	100.0%	100.0%	82.1%	16.9%	100.0%	na	91.5%	23.3%	12.9%
23	100.0%	100.0%	100.0%	100.0%	67.6%	100.0%	82.4%	na	100.0%	100.0%	83.8%
24	0.0%	100.0%	100.0%	0.0%	41.5%	66.7%	100.0%	na	34.5%	100.0%	90.2%
25	100.0%	100.0%	100.0%	94.9%	84.3%	96.4%	100.0%	na	90.1%	100.0%	97.9%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	97.4%	100.0%	100.0%
27	92.4%	100.0%	100.0%	100.0%	100.0%	93.6%	100.0%	na	62.8%	100.0%	100.0%
28	99.2%	100.0%	100.0%	92.4%	100.0%	96.9%	99.0%	na	94.8%	100.0%	100.0%
29	99.1%	100.0%	100.0%	99.7%	100.0%	94.2%	100.0%	na	97.7%	100.0%	99.3%
30	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%	96.5%	na	100.0%	100.0%	100.0%
31	89.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
32	100.0%	100.0%	100.0%	96.6%	74.7%	100.0%	100.0%	na	72.2%	94.5%	100.0%
33	100.0%	100.0%	95.6%	90.7%	100.0%	73.3%	100.0%	na	60.0%	100.0%	100.0%
34	100.0%	100.0%	100.0%	96.5%	100.0%	100.0%	100.0%	na	58.7%	100.0%	93.8%
35	100.0%	100.0%	100.0%	100.0%	90.0%	100.0%	100.0%	na	75.0%	100.0%	100.0%
36	100.0%	100.0%	93.8%	100.0%	100.0%	81.3%	100.0%	na	100.0%	100.0%	100.0%
37	70.1%	100.0%	100.0%	98.3%	100.0%	94.4%	100.0%	na	98.6%	100.0%	97.2%
38	100.0%	100.0%	100.0%	96.7%	99.1%	77.0%	98.2%	na	96.5%	100.0%	100.0%
39	97.5%	100.0%	100.0%	91.1%	100.0%	44.0%	48.7%	na	75.1%	99.7%	54.3%
40	95.5%	100.0%	99.4%	88.0%	80.9%	76.5%	86.5%	na	91.6%	100.0%	100.0%
41	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
42	100.0%	100.0%	96.8%	100.0%	100.0%	80.6%	100.0%	na	67.7%	100.0%	100.0%
43	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	93.8%	100.0%	100.0%
44	65.7%	100.0%	99.1%	98.3%	100.0%	100.0%	100.0%	na	83.9%	100.0%	39.6%
45	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
46	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	93.8%	100.0%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
48	6.0%	100.0%	100.0%	99.6%	92.3%	100.0%	100.0%	na	77.1%	100.0%	100.0%
49	58.3%	100.0%	100.0%	100.0%	87.5%	100.0%	100.0%	na	82.1%	100.0%	100.0%

Source: author's calculation

Table A-1: Level of Liberalization by FTA (ACFTA Cont.)

HS	CHN	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
50	100.0%	100.0%	100.0%	100.0%	60.0%	100.0%	100.0%	na	100.0%	100.0%	69.2%
51	84.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
52	96.9%	100.0%	100.0%	86.1%	100.0%	100.0%	100.0%	na	91.9%	100.0%	99.2%
53	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	95.8%	100.0%	100.0%
54	95.5%	100.0%	100.0%	97.2%	100.0%	100.0%	100.0%	na	90.7%	100.0%	100.0%
55	95.4%	100.0%	100.0%	84.7%	100.0%	100.0%	100.0%	na	93.5%	100.0%	100.0%
56	100.0%	100.0%	100.0%	100.0%	84.6%	100.0%	89.7%	na	86.5%	100.0%	100.0%
57	100.0%	100.0%	84.8%	100.0%	100.0%	100.0%	70.0%	na	87.9%	100.0%	100.0%
58	100.0%	100.0%	100.0%	99.4%	100.0%	100.0%	96.5%	na	69.6%	100.0%	100.0%
59	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	94.7%	na	92.1%	100.0%	100.0%
60	100.0%	100.0%	100.0%	83.7%	100.0%	100.0%	100.0%	na	94.3%	100.0%	100.0%
61	100.0%	100.0%	100.0%	83.2%	100.0%	78.0%	75.6%	na	90.2%	100.0%	100.0%
62	100.0%	100.0%	100.0%	93.8%	100.0%	85.7%	80.9%	na	87.0%	100.0%	100.0%
63	100.0%	100.0%	95.0%	100.0%	100.0%	79.1%	46.3%	na	81.3%	100.0%	100.0%
64	100.0%	100.0%	71.4%	95.9%	32.5%	71.4%	45.0%	na	74.3%	100.0%	100.0%
65	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
66	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	57.1%	100.0%	100.0%
67	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
68	100.0%	100.0%	100.0%	100.0%	85.7%	96.8%	100.0%	na	80.4%	100.0%	98.6%
69	100.0%	100.0%	100.0%	76.9%	80.6%	54.8%	100.0%	na	67.7%	100.0%	100.0%
70	100.0%	100.0%	100.0%	87.0%	82.7%	89.2%	84.2%	na	81.6%	100.0%	100.0%
71	100.0%	100.0%	100.0%	100.0%	96.0%	93.3%	100.0%	na	100.0%	100.0%	100.0%
72	100.0%	100.0%	100.0%	74.0%	61.5%	78.2%	82.8%	na	95.0%	99.8%	100.0%
73	100.0%	100.0%	100.0%	93.0%	75.8%	77.2%	99.1%	na	76.3%	100.0%	99.7%
74	100.0%	100.0%	100.0%	100.0%	90.3%	100.0%	100.0%	na	95.2%	100.0%	100.0%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
76	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	81.5%	100.0%	100.0%
78	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
79	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	91.7%	93.3%	100.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
81	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
82	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	87.5%	100.0%	100.0%
83	94.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	78.6%	100.0%	100.0%
84	99.5%	100.0%	99.1%	94.0%	88.9%	97.8%	89.2%	na	80.7%	100.0%	99.5%
85	95.6%	100.0%	85.9%	98.6%	76.0%	97.0%	93.2%	na	81.9%	99.6%	99.5%
86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
87	73.0%	100.0%	93.1%	45.6%	58.0%	12.9%	12.2%	na	76.9%	79.6%	28.9%
88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
89	52.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
90	100.0%	100.0%	100.0%	100.0%	99.2%	100.0%	98.9%	na	99.6%	100.0%	100.0%
91	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.9%	na	100.0%	100.0%	98.4%
92	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%
93	100.0%	100.0%	100.0%		100.0%	89.3%		na	100.0%	100.0%	
94	95.0%	100.0%	66.7%	100.0%	100.0%	100.0%	97.4%	na	51.4%	100.0%	100.0%
95	100.0%	100.0%	98.2%	100.0%	72.7%	89.3%	100.0%	na	100.0%	91.0%	100.0%
96	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	100.0%	na	78.8%	100.0%	100.0%
97	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	na	100.0%	100.0%	100.0%

Source: author's calculation

Table A-2: Level of Liberalization by FTA (AKFTA)

HS	KOR	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
1	96.4%	100.0%	100.0%	90.7%	100.0%	100.0%	82.0%	100.0%	81.1%	62.2%	100.0%
2	46.3%	100.0%	100.0%	86.2%	82.6%	98.6%	55.0%	100.0%	81.2%	62.3%	100.0%
3	65.8%	100.0%	100.0%	100.0%	100.0%	89.7%	100.0%	100.0%	93.7%	100.0%	68.6%
4	15.7%	100.0%	100.0%	77.2%	100.0%	100.0%	100.0%	94.2%	100.0%	87.5%	85.4%
5	94.1%	100.0%	100.0%	100.0%	96.9%	96.8%	100.0%	100.0%	100.0%	96.8%	93.5%
6	82.9%	100.0%	100.0%	100.0%	80.8%	100.0%	100.0%	100.0%	53.8%	76.9%	92.3%
7	60.9%	100.0%	100.0%	98.8%	100.0%	100.0%	96.9%	100.0%	82.8%	47.3%	97.8%
8	38.0%	100.0%	100.0%	76.9%	100.0%	98.7%	100.0%	100.0%	74.0%	57.5%	100.0%
9	86.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	83.7%	63.3%	83.7%
10	69.2%	100.0%	100.0%	61.9%	100.0%	60.0%	83.3%	100.0%	84.0%	64.0%	68.0%
11	18.2%	100.0%	100.0%	100.0%	94.7%	97.4%	100.0%	100.0%	86.8%	100.0%	94.7%
12	78.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.4%	82.0%	88.5%	78.3%
13	77.8%	100.0%	100.0%	100.0%	100.0%	89.5%	100.0%	89.5%	100.0%	84.2%	64.7%
14	85.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	71.4%
15	85.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.7%	100.0%	49.3%
16	59.3%	100.0%	100.0%	100.0%	84.7%	100.0%	100.0%	100.0%	100.0%	69.5%	78.0%
17	72.7%	100.0%	100.0%	100.0%	100.0%	75.9%	100.0%	78.6%	100.0%	78.6%	92.9%
18	90.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
19	70.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	82.4%	68.9%	93.3%	88.9%
20	60.6%	100.0%	100.0%	100.0%	97.3%	100.0%	100.0%	100.0%	93.2%	16.4%	97.3%
21	76.1%	100.0%	100.0%	100.0%	100.0%	88.6%	95.7%	89.4%	88.6%	100.0%	100.0%
22	69.2%	100.0%	100.0%	17.5%	100.0%	16.9%	100.0%	23.7%	76.3%	78.0%	13.8%
23	87.0%	100.0%	100.0%	100.0%	75.8%	100.0%	96.7%	97.0%	100.0%	100.0%	90.9%
24	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	0.0%	93.1%	51.7%	72.4%
25	97.2%	100.0%	100.0%	95.0%	100.0%	100.0%	100.0%	83.1%	95.1%	100.0%	95.1%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
27	91.0%	100.0%	100.0%	100.0%	100.0%	94.9%	100.0%	78.2%	62.8%	100.0%	79.5%
28	98.6%	100.0%	100.0%	92.4%	100.0%	95.3%	100.0%	99.0%	98.4%	100.0%	99.0%
29	96.3%	100.0%	100.0%	99.2%	100.0%	98.5%	100.0%	97.7%	99.5%	98.7%	97.2%
30	100.0%	100.0%	100.0%	100.0%	100.0%	92.8%	100.0%	86.3%	100.0%	35.4%	35.4%
31	94.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	76.7%	100.0%	100.0%	100.0%
32	100.0%	100.0%	100.0%	93.4%	72.2%	100.0%	100.0%	79.6%	93.7%	100.0%	87.3%
33	95.6%	100.0%	100.0%	96.7%	100.0%	95.6%	100.0%	73.9%	77.8%	100.0%	62.2%
34	94.3%	100.0%	100.0%	96.6%	100.0%	100.0%	96.7%	84.6%	57.1%	100.0%	74.6%
35	82.8%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	87.0%	100.0%	100.0%	100.0%
36	100.0%	100.0%	100.0%	76.9%	100.0%	100.0%	94.4%	81.3%	100.0%	100.0%	0.0%
37	97.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
38	98.6%	100.0%	100.0%	96.8%	100.0%	100.0%	100.0%	92.8%	96.5%	100.0%	100.0%
39	91.4%	100.0%	100.0%	90.0%	100.0%	50.0%	86.9%	77.6%	83.1%	88.3%	87.8%
40	98.6%	100.0%	96.6%	73.2%	88.8%	100.0%	100.0%	73.5%	84.9%	57.5%	80.4%
41	100.0%	100.0%	100.0%	100.0%	86.5%	100.0%	100.0%	100.0%	89.5%	100.0%	83.8%
42	100.0%	100.0%	100.0%	94.0%	100.0%	100.0%	100.0%	100.0%	100.0%	61.3%	96.8%
43	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	43.8%	100.0%
44	55.2%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.6%
45	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%
46	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%
48	100.0%	100.0%	100.0%	99.7%	100.0%	100.0%	100.0%	82.1%	78.3%	95.4%	92.0%
49	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.9%	100.0%	85.7%

Source: author's calculation

Table A-2: Level of Liberalization by FTA (AKFTA Cont.)

HS	KOR	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
50	100.0%	100.0%	100.0%	100.0%	22.2%	100.0%	100.0%	100.0%	100.0%	100.0%	66.7%
51	62.1%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.4%	100.0%	100.0%
52	82.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.5%	95.2%	100.0%	93.5%
53	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.8%	100.0%	95.8%
54	96.4%	100.0%	100.0%	99.0%	100.0%	100.0%	100.0%	96.1%	78.7%	100.0%	82.7%
55	100.0%	100.0%	100.0%	95.0%	100.0%	100.0%	100.0%	92.6%	91.6%	100.0%	96.3%
56	100.0%	100.0%	100.0%	97.8%	100.0%	100.0%	100.0%	94.7%	86.5%	100.0%	94.6%
57	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	90.0%	100.0%	100.0%	100.0%	100.0%
58	100.0%	100.0%	100.0%	86.5%	100.0%	100.0%	100.0%	96.5%	57.1%	100.0%	98.2%
59	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	92.1%	100.0%	86.8%
60	100.0%	100.0%	100.0%	90.9%	100.0%	100.0%	100.0%	94.3%	90.6%	100.0%	94.3%
61	95.0%	100.0%	100.0%	98.3%	100.0%	69.1%	100.0%	100.0%	98.4%	37.7%	97.5%
62	90.5%	100.0%	100.0%	97.0%	83.2%	89.4%	100.0%	100.0%	93.1%	100.0%	100.0%
63	100.0%	100.0%	100.0%	100.0%	97.5%	100.0%	100.0%	94.0%	86.3%	100.0%	92.5%
64	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.1%	91.4%	100.0%	68.6%
65	100.0%	100.0%	100.0%	100.0%	100.0%	84.6%	100.0%	100.0%	92.3%	100.0%	84.6%
66	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
67	100.0%	100.0%	100.0%	100.0%	100.0%	25.0%	100.0%	100.0%	100.0%	75.0%	100.0%
68	100.0%	100.0%	100.0%	100.0%	85.5%	98.4%	100.0%	98.3%	100.0%	100.0%	98.2%
69	91.9%	100.0%	100.0%	81.3%	100.0%	100.0%	100.0%	90.3%	83.9%	100.0%	100.0%
70	98.6%	100.0%	100.0%	86.7%	96.0%	100.0%	97.8%	67.6%	99.0%	100.0%	100.0%
71	100.0%	100.0%	100.0%	100.0%	89.3%	78.7%	100.0%	100.0%	100.0%	100.0%	90.7%
72	100.0%	100.0%	100.0%	77.3%	93.6%	41.9%	100.0%	59.7%	100.0%	100.0%	93.8%
73	100.0%	100.0%	100.0%	100.0%	87.3%	28.5%	99.0%	80.2%	82.9%	100.0%	94.8%
74	98.9%	100.0%	100.0%	100.0%	96.8%	100.0%	100.0%	97.0%	96.8%	100.0%	77.4%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
76	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.2%	87.7%	100.0%	98.5%
78	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
79	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	91.7%	100.0%	75.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	87.5%
81	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
82	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	94.4%	93.1%	95.8%	100.0%
83	100.0%	100.0%	100.0%	100.0%	98.2%	100.0%	100.0%	70.7%	89.3%	100.0%	96.4%
84	99.3%	100.0%	97.4%	100.0%	96.6%	97.4%	99.8%	84.5%	77.3%	85.3%	94.3%
85	99.2%	100.0%	91.9%	100.0%	79.0%	96.6%	97.2%	69.3%	79.1%	69.7%	80.1%
86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	88.5%	100.0%	100.0%
87	90.3%	100.0%	86.6%	40.6%	48.4%	65.1%	66.7%	25.3%	32.0%	14.8%	40.6%
88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
89	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	85.2%	100.0%	100.0%	100.0%
90	100.0%	100.0%	100.0%	100.0%	99.2%	100.0%	100.0%	100.0%	89.0%	100.0%	93.6%
91	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.2%	100.0%	100.0%
92	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	90.0%
93	100.0%	100.0%	100.0%	63.0%	100.0%	100.0%		76.7%	100.0%	100.0%	
94	98.9%	100.0%	91.1%	100.0%	100.0%	100.0%	100.0%	93.0%	59.7%	100.0%	91.7%
95	100.0%	100.0%	100.0%	100.0%	100.0%	94.6%	100.0%	100.0%	80.0%	83.6%	98.2%
96	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	100.0%	91.8%	88.2%	100.0%	87.1%
97	100.0%	100.0%	100.0%	100.0%	100.0%	91.7%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: author's calculation

Table A-3: Level of Liberalization by FTA (AANZFTA)

HS	AUS	NZ	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
1	100.0%	100.0%	100.0%	100.0%	93.2%	100.0%	95.5%	96.1%	100.0%	100.0%	100.0%	100.0%
2	100.0%	100.0%	100.0%	100.0%	92.2%	100.0%	87.5%	67.0%	81.4%	94.2%	100.0%	98.6%
3	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.3%	98.7%	82.6%	100.0%	100.0%	70.6%
4	100.0%	100.0%	100.0%	100.0%	88.3%	92.1%	77.8%	96.1%	100.0%	66.7%	100.0%	66.7%
5	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.0%	100.0%	100.0%	100.0%	83.9%	93.8%
6	100.0%	100.0%	100.0%	100.0%	100.0%	80.8%	69.6%	100.0%	100.0%	88.5%	100.0%	76.9%
7	100.0%	100.0%	100.0%	100.0%	100.0%	89.5%	86.8%	88.1%	100.0%	86.0%	100.0%	89.1%
8	100.0%	100.0%	100.0%	100.0%	78.0%	95.9%	89.6%	100.0%	98.6%	57.5%	100.0%	100.0%
9	100.0%	100.0%	100.0%	67.3%	100.0%	51.0%	100.0%	100.0%	100.0%	85.7%	100.0%	79.6%
10	100.0%	100.0%	100.0%	100.0%	61.9%	56.0%	42.9%	44.4%	100.0%	72.0%	100.0%	42.5%
11	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.4%	89.7%	100.0%	89.5%	100.0%	88.4%
12	100.0%	100.0%	100.0%	100.0%	100.0%	94.1%	98.5%	100.0%	98.4%	96.7%	96.3%	98.5%
13	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.5%	100.0%	100.0%	89.5%
14	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
15	100.0%	100.0%	100.0%	100.0%	100.0%	88.8%	100.0%	100.0%	100.0%	91.3%	100.0%	89.4%
16	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.3%	84.6%	25.4%	76.3%	100.0%	0.0%
17	100.0%	100.0%	100.0%	100.0%	100.0%	80.0%	74.1%	55.0%	78.6%	67.9%	100.0%	54.5%
18	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.8%	100.0%	87.5%	100.0%	0.0%
19	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	44.4%	100.0%	30.6%
20	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	68.5%	76.7%	0.0%
21	100.0%	100.0%	100.0%	88.6%	100.0%	93.3%	85.5%	100.0%	100.0%	77.3%	100.0%	70.5%
22	100.0%	100.0%	100.0%	22.0%	17.1%	94.1%	16.7%	100.0%	16.9%	66.1%	20.3%	1.6%
23	100.0%	100.0%	100.0%	100.0%	100.0%	97.1%	100.0%	91.2%	97.0%	100.0%	72.7%	97.2%
24	100.0%	100.0%	100.0%	13.8%	0.0%	58.6%	44.8%	100.0%	41.4%	93.1%	93.1%	0.0%
25	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.8%	96.4%	100.0%	98.8%	89.0%	97.6%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.1%
27	100.0%	100.0%	100.0%	83.3%	100.0%	100.0%	95.2%	100.0%	51.3%	61.5%	59.0%	100.0%
28	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	100.0%	99.0%	95.8%	94.0%
29	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.5%	99.7%	99.7%
30	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.2%	96.6%	94.1%	98.7%	89.9%	98.8%
31	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
32	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.2%	98.7%	90.0%
33	100.0%	100.0%	100.0%	95.6%	100.0%	100.0%	96.8%	100.0%	100.0%	75.6%	100.0%	45.8%
34	100.0%	100.0%	100.0%	77.8%	100.0%	100.0%	100.0%	100.0%	100.0%	88.9%	98.4%	100.0%
35	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.0%	95.0%	100.0%
36	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	81.3%	100.0%	43.8%	0.0%
37	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.2%	97.2%
38	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.8%	94.7%	98.2%	100.0%
39	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	88.5%	63.4%	97.3%	89.7%	97.2%	94.4%
40	100.0%	100.0%	100.0%	100.0%	96.1%	100.0%	100.0%	98.9%	73.5%	94.4%	97.2%	78.8%
41	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.3%	89.5%	64.9%
42	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.7%	100.0%	100.0%	93.5%	93.5%	80.6%
43	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	43.8%	100.0%
44	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.1%	85.8%	67.7%
45	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	28.6%	100.0%
46	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	23.8%	90.9%
48	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.4%	86.9%	88.6%	98.9%
49	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	82.1%	92.9%	96.6%

Source: author's calculation

Table A-3: Level of Liberalization by FTA (AANZFTA Cont.)

HS	AUS	NZ	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
50	100.0%	100.0%	100.0%	100.0%	100.0%	88.9%	100.0%	100.0%	100.0%	100.0%	88.9%	66.7%
51	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
52	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.0%
53	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
54	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.3%
55	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.1%	96.3%
56	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	94.9%	100.0%	100.0%	97.3%	83.8%
57	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.6%	100.0%	100.0%	100.0%	100.0%
58	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.2%	92.9%
59	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.4%	84.2%
60	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.5%
61	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	79.4%	100.0%	100.0%	100.0%	97.5%	97.5%
62	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	83.3%	100.0%	100.0%	100.0%	97.7%	97.7%
63	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	88.7%	100.0%	94.0%	100.0%	96.3%	92.5%
64	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	74.4%	100.0%	97.1%	91.4%	68.6%
65	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	94.4%	100.0%	100.0%	76.9%	100.0%	84.6%
66	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	85.7%	100.0%	85.7%	100.0%	85.7%
67	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
68	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.4%
69	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.8%	77.4%	100.0%
70	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	83.5%	100.0%	100.0%	99.0%	98.1%
71	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.6%	100.0%	100.0%	100.0%	98.7%	23.5%
72	100.0%	100.0%	100.0%	100.0%	57.1%	100.0%	75.2%	59.3%	48.4%	95.4%	93.8%	100.0%
73	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	78.7%	79.6%	94.3%	94.3%	87.7%	98.6%
74	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.9%	100.0%	100.0%	95.2%	95.2%	75.8%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.5%	100.0%
76	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.8%	98.5%	98.5%
78	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	81.8%	100.0%
79	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%	100.0%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
81	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
82	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.6%	76.4%	100.0%
83	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	87.9%	78.6%	73.2%	96.4%
84	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.3%	99.2%	92.2%	75.7%	85.6%	99.1%
85	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.4%	97.6%	99.6%	58.9%	94.8%	81.4%
86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.3%	100.0%
87	100.0%	100.0%	100.0%	100.0%	80.7%	100.0%	84.9%	95.3%	53.0%	70.1%	58.9%	60.5%
88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%	4.8%	100.0%
89	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	85.2%	91.8%	93.9%	2.0%
90	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.4%	95.1%	100.0%
91	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.2%	100.0%	100.0%
92	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	80.0%
93	100.0%	100.0%	100.0%	100.0%	3.8%	100.0%	100.0%	100.0%	73.3%	100.0%	0.0%	0.0%
94	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.1%	97.4%	100.0%	63.9%	97.2%	100.0%
95	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	80.0%	92.7%	89.4%
96	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.9%	100.0%	100.0%	91.8%	89.4%	86.6%
97	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	80.0%	20.0%

Source: author's calculation

Table A-4: Level of Liberalization by FTA (AIFTA)

HS	IND	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
1	85.3%	100.0%	100.0%	90.9%	62.2%	100.0%	43.1%	100.0%	97.3%	0.0%	100.0%
2	91.8%	100.0%	100.0%	90.6%	24.6%	85.7%	28.3%	100.0%	79.7%	0.0%	100.0%
3	59.9%	100.0%	100.0%	100.0%	55.3%	58.8%	57.2%	73.7%	91.8%	91.8%	75.9%
4	25.0%	100.0%	100.0%	83.3%	20.8%	39.6%	37.3%	88.5%	100.0%	75.0%	85.4%
5	100.0%	100.0%	100.0%	100.0%	96.8%	90.3%	100.0%	100.0%	96.8%	80.6%	68.8%
6	62.5%	100.0%	100.0%	100.0%	46.2%	15.4%	65.4%	100.0%	65.4%	50.0%	92.3%
7	54.3%	100.0%	100.0%	98.8%	77.4%	58.1%	42.6%	100.0%	81.7%	1.1%	99.3%
8	50.0%	100.0%	100.0%	64.8%	87.7%	50.6%	52.7%	100.0%	82.2%	1.4%	97.6%
9	14.8%	100.0%	67.3%	94.6%	24.5%	51.9%	40.7%	81.6%	79.6%	16.3%	79.6%
10	32.4%	100.0%	100.0%	61.9%	0.0%	44.0%	25.0%	100.0%	80.0%	64.0%	67.5%
11	2.9%	100.0%	100.0%	100.0%	21.1%	15.4%	2.6%	100.0%	94.7%	100.0%	76.7%
12	73.2%	100.0%	100.0%	100.0%	41.3%	60.7%	75.8%	96.8%	67.2%	49.2%	68.7%
13	100.0%	100.0%	100.0%	100.0%	94.7%	52.6%	100.0%	89.5%	57.9%	63.2%	73.7%
14	87.5%	100.0%	100.0%	100.0%	71.4%	71.4%	100.0%	100.0%	100.0%	0.0%	100.0%
15	32.5%	100.0%	100.0%	100.0%	37.3%	66.7%	39.2%	89.4%	93.3%	92.7%	60.8%
16	64.7%	100.0%	100.0%	100.0%	67.8%	45.9%	45.3%	8.5%	93.2%	6.8%	77.6%
17	81.6%	100.0%	100.0%	100.0%	67.9%	65.5%	47.5%	64.3%	100.0%	85.7%	66.7%
18	29.6%	100.0%	100.0%	100.0%	81.3%	81.3%	18.8%	56.3%	100.0%	100.0%	81.3%
19	85.7%	100.0%	100.0%	100.0%	84.4%	87.0%	73.3%	25.5%	100.0%	66.7%	83.7%
20	48.6%	100.0%	100.0%	100.0%	52.1%	80.8%	43.2%	97.3%	86.3%	0.0%	94.0%
21	37.5%	100.0%	77.3%	100.0%	84.1%	63.6%	34.0%	38.8%	90.9%	84.1%	38.6%
22	23.1%	100.0%	100.0%	17.1%	6.8%	8.5%	13.6%	27.1%	96.6%	5.1%	4.9%
23	19.7%	100.0%	100.0%	100.0%	51.5%	93.9%	50.0%	75.8%	90.9%	100.0%	61.1%
24	0.0%	100.0%	100.0%	0.0%	0.0%	36.7%	6.7%	0.0%	37.9%	34.5%	63.4%
25	94.3%	100.0%	100.0%	91.1%	84.1%	71.1%	96.4%	83.1%	84.1%	100.0%	98.8%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	76.3%	100.0%	97.6%
27	55.4%	100.0%	80.8%	100.0%	65.4%	83.3%	100.0%	56.4%	55.1%	80.8%	77.8%
28	96.6%	100.0%	100.0%	87.6%	99.0%	64.2%	97.1%	99.0%	94.8%	99.0%	82.6%
29	75.3%	100.0%	100.0%	99.0%	100.0%	63.4%	97.8%	97.0%	80.9%	95.9%	90.6%
30	34.1%	100.0%	100.0%	100.0%	15.2%	75.9%	97.6%	59.7%	100.0%	55.7%	53.8%
31	37.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	65.6%	100.0%	100.0%	100.0%
32	94.7%	100.0%	100.0%	61.0%	65.8%	37.5%	70.9%	58.2%	88.6%	72.2%	61.3%
33	60.0%	100.0%	55.6%	88.9%	82.2%	15.6%	97.8%	47.8%	46.7%	75.6%	14.6%
34	72.9%	100.0%	31.7%	77.2%	84.1%	39.7%	87.7%	60.0%	93.7%	42.9%	41.5%
35	71.1%	100.0%	100.0%	78.9%	55.0%	45.0%	100.0%	82.6%	70.0%	100.0%	45.0%
36	92.0%	100.0%	87.5%	38.5%	100.0%	31.3%	100.0%	43.8%	75.0%	37.5%	10.5%
37	98.1%	100.0%	22.5%	100.0%	95.8%	40.8%	100.0%	100.0%	94.4%	100.0%	93.0%
38	78.6%	100.0%	100.0%	79.7%	96.5%	49.6%	89.0%	89.0%	85.0%	100.0%	83.5%
39	30.4%	100.0%	100.0%	28.5%	69.5%	27.1%	52.9%	61.2%	85.4%	91.5%	81.2%
40	52.9%	100.0%	67.6%	48.1%	82.1%	36.9%	62.7%	63.0%	69.3%	98.3%	67.0%
41	100.0%	100.0%	100.0%	100.0%	70.3%	94.7%	100.0%	94.7%	67.6%	10.5%	89.2%
42	3.2%	100.0%	77.4%	70.8%	9.7%	6.5%	74.2%	74.2%	58.1%	93.5%	80.6%
43	100.0%	100.0%	56.3%	100.0%	93.8%	56.3%	100.0%	68.8%	100.0%	6.3%	100.0%
44	98.8%	100.0%	97.3%	100.0%	99.1%	75.9%	99.1%	100.0%	99.1%	3.5%	60.2%
45	100.0%	100.0%	100.0%	100.0%	100.0%	71.4%	100.0%	100.0%	100.0%	100.0%	100.0%
46	100.0%	100.0%	75.0%	100.0%	100.0%	0.0%	81.3%	100.0%	100.0%	0.0%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	84.0%	100.0%	100.0%	100.0%	100.0%	100.0%
48	91.7%	100.0%	100.0%	99.3%	95.4%	67.6%	50.8%	63.8%	92.6%	94.3%	63.4%
49	79.4%	100.0%	100.0%	100.0%	100.0%	64.3%	78.6%	93.9%	78.6%	85.7%	86.2%

Source: author's calculation

Table A-4: Level of Liberalization by FTA (AIFTA Cont.)

HS	IND	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
50	100.0%	100.0%	100.0%	100.0%	0.0%	75.0%	100.0%	100.0%	77.8%	88.9%	88.9%
51	66.5%	100.0%	100.0%	100.0%	89.5%	71.1%	100.0%	100.0%	97.4%	100.0%	94.7%
52	27.9%	100.0%	100.0%	80.8%	82.3%	41.2%	93.5%	59.1%	75.8%	99.2%	88.7%
53	92.5%	100.0%	100.0%	100.0%	87.5%	76.7%	100.0%	95.8%	91.7%	100.0%	95.8%
54	70.0%	100.0%	100.0%	91.7%	86.7%	48.0%	92.7%	69.7%	89.3%	100.0%	94.6%
55	43.0%	100.0%	100.0%	79.3%	91.6%	45.4%	93.5%	67.9%	89.7%	100.0%	95.3%
56	100.0%	100.0%	100.0%	56.5%	97.4%	45.9%	79.5%	78.9%	100.0%	81.1%	97.3%
57	95.8%	100.0%	3.0%	48.8%	0.0%	3.0%	78.9%	100.0%	42.4%	100.0%	100.0%
58	100.0%	100.0%	100.0%	13.5%	100.0%	21.0%	96.5%	64.9%	91.1%	100.0%	78.6%
59	86.8%	100.0%	50.0%	56.8%	92.1%	44.7%	100.0%	79.1%	94.7%	100.0%	89.5%
60	100.0%	100.0%	100.0%	0.0%	100.0%	0.0%	100.0%	53.7%	100.0%	100.0%	100.0%
61	65.3%	100.0%	100.0%	9.3%	38.5%	0.0%	87.8%	99.2%	80.3%	100.0%	91.0%
62	64.3%	100.0%	100.0%	28.7%	34.8%	0.0%	92.5%	98.6%	69.7%	100.0%	93.9%
63	71.0%	100.0%	38.8%	5.4%	37.5%	2.2%	96.3%	89.3%	60.0%	83.8%	100.0%
64	4.2%	100.0%	11.4%	51.0%	34.3%	25.7%	16.2%	97.1%	80.0%	100.0%	65.7%
65	100.0%	100.0%	0.0%	100.0%	92.3%	15.4%	100.0%	92.3%	100.0%	53.8%	69.2%
66	100.0%	100.0%	28.6%	100.0%	100.0%	28.6%	100.0%	100.0%	100.0%	42.9%	85.7%
67	86.7%	100.0%	100.0%	100.0%	75.0%	0.0%	100.0%	87.5%	87.5%	12.5%	100.0%
68	97.8%	100.0%	100.0%	30.1%	87.5%	17.5%	65.5%	98.3%	87.5%	100.0%	92.9%
69	89.7%	100.0%	100.0%	25.6%	93.5%	25.8%	67.7%	29.0%	100.0%	93.5%	77.4%
70	84.0%	100.0%	99.0%	37.0%	71.4%	68.6%	79.2%	51.9%	93.9%	100.0%	85.8%
71	100.0%	100.0%	61.3%	100.0%	96.0%	52.0%	100.0%	74.7%	72.0%	100.0%	12.3%
72	100.0%	100.0%	100.0%	37.5%	41.7%	34.3%	55.1%	10.8%	96.5%	99.2%	72.2%
73	94.2%	100.0%	98.6%	67.5%	22.3%	9.8%	55.7%	56.4%	78.2%	97.6%	70.6%
74	80.0%	100.0%	100.0%	100.0%	90.3%	48.5%	87.3%	90.9%	79.0%	100.0%	77.4%
75	100.0%	100.0%	100.0%	100.0%	100.0%	81.0%	100.0%	100.0%	100.0%	100.0%	100.0%
76	92.7%	100.0%	100.0%	12.8%	100.0%	30.4%	73.1%	81.9%	95.4%	96.9%	70.8%
78	100.0%	100.0%	100.0%	100.0%	100.0%	69.2%	100.0%	100.0%	100.0%	100.0%	72.7%
79	100.0%	100.0%	100.0%	100.0%	100.0%	35.3%	100.0%	100.0%	100.0%	83.3%	91.7%
80	100.0%	100.0%	100.0%	100.0%	100.0%	88.9%	100.0%	100.0%	100.0%	0.0%	100.0%
81	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.0%
82	100.0%	100.0%	100.0%	90.2%	94.4%	31.2%	100.0%	75.0%	94.4%	95.8%	50.7%
83	95.2%	100.0%	100.0%	100.0%	92.9%	8.8%	98.2%	43.1%	67.9%	83.9%	64.3%
84	92.5%	100.0%	83.0%	96.4%	92.5%	77.7%	88.3%	71.5%	83.2%	94.0%	59.9%
85	86.3%	100.0%	14.3%	90.9%	89.4%	50.1%	86.1%	57.4%	79.6%	85.7%	59.1%
86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	69.2%
87	38.8%	100.0%	100.0%	31.7%	12.7%	7.8%	25.0%	8.4%	59.8%	16.0%	55.0%
88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%	0.0%	100.0%
89	100.0%	100.0%	100.0%	100.0%	100.0%	98.0%	100.0%	77.8%	100.0%	0.0%	61.2%
90	95.1%	100.0%	51.1%	100.0%	94.7%	69.4%	97.5%	100.0%	93.6%	83.7%	89.4%
91	100.0%	100.0%	3.6%	100.0%	100.0%	64.4%	94.6%	100.0%	100.0%	3.6%	100.0%
92	100.0%	100.0%	10.0%	100.0%	100.0%	30.0%	100.0%	100.0%	100.0%	0.0%	92.0%
93	100.0%	100.0%	100.0%	7.7%	100.0%	89.3%	100.0%	0.0%	100.0%	0.0%	7.1%
94	94.1%	100.0%	29.2%	96.4%	100.0%	25.0%	71.4%	57.0%	93.1%	44.4%	100.0%
95	83.9%	100.0%	78.2%	100.0%	56.4%	5.4%	100.0%	94.5%	70.9%	36.4%	100.0%
96	97.8%	100.0%	78.8%	95.2%	83.5%	15.3%	95.3%	63.5%	94.1%	28.2%	77.3%
97	100.0%	100.0%	100.0%	100.0%	100.0%	58.3%	100.0%	100.0%	100.0%	80.0%	40.0%

Source: author's calculation

Table A-5: Level of Liberalization by FTA (AJCEP)

HS	JPN	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
1	84.6%	100.0%	100.0%	100.0%	100.0%	65.1%	77.3%	100.0%	95.5%	31.8%	100.0%
2	42.5%	100.0%	100.0%	100.0%	100.0%	51.4%	56.7%	100.0%	81.7%	0.0%	100.0%
3	40.9%	100.0%	100.0%	100.0%	86.3%	97.3%	100.0%	98.5%	97.8%	4.4%	67.3%
4	9.7%	100.0%	100.0%	94.7%	75.8%	57.4%	100.0%	98.1%	100.0%	66.7%	80.0%
5	100.0%	100.0%	100.0%	100.0%	100.0%	97.0%	100.0%	100.0%	100.0%	81.8%	85.3%
6	100.0%	100.0%	100.0%	100.0%	91.7%	100.0%	100.0%	100.0%	69.6%	73.9%	73.9%
7	81.8%	100.0%	100.0%	99.0%	90.5%	100.0%	97.0%	100.0%	89.0%	1.1%	90.4%
8	81.8%	100.0%	100.0%	78.9%	94.5%	85.3%	100.0%	100.0%	93.1%	0.0%	100.0%
9	91.7%	100.0%	100.0%	100.0%	65.6%	100.0%	100.0%	100.0%	100.0%	29.8%	80.9%
10	68.9%	100.0%	100.0%	45.7%	70.6%	45.7%	70.0%	100.0%	94.3%	40.0%	25.4%
11	28.0%	100.0%	100.0%	100.0%	100.0%	76.9%	100.0%	100.0%	97.4%	92.3%	95.5%
12	82.4%	100.0%	100.0%	100.0%	92.5%	98.5%	100.0%	98.5%	100.0%	55.4%	73.2%
13	90.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	89.5%	100.0%	84.2%	36.8%
14	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	81.8%	92.9%
15	57.0%	100.0%	100.0%	100.0%	88.7%	99.4%	100.0%	100.0%	72.2%	53.0%	46.0%
16	25.0%	100.0%	100.0%	100.0%	100.0%	78.8%	100.0%	100.0%	96.2%	7.7%	23.9%
17	28.0%	100.0%	100.0%	100.0%	81.0%	74.1%	61.9%	76.9%	100.0%	61.5%	78.8%
18	23.3%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	35.3%
19	0.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	80.7%	64.9%	65.6%
20	51.6%	100.0%	100.0%	100.0%	100.0%	94.4%	100.0%	100.0%	95.5%	0.0%	9.1%
21	34.0%	100.0%	84.9%	100.0%	88.2%	80.0%	100.0%	98.1%	24.5%	66.0%	71.7%
22	52.7%	100.0%	21.7%	15.2%	95.7%	16.7%	100.0%	26.7%	96.7%	6.7%	11.3%
23	95.2%	100.0%	100.0%	100.0%	92.0%	94.3%	100.0%	100.0%	100.0%	97.1%	75.7%
24	54.5%	100.0%	13.8%	0.0%	0.0%	100.0%	100.0%	0.0%	93.1%	0.0%	0.0%
25	98.7%	100.0%	100.0%	95.6%	95.9%	100.0%	98.7%	94.6%	100.0%	92.2%	91.8%
26	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
27	100.0%	100.0%	100.0%	93.6%	100.0%	95.2%	100.0%	66.3%	77.1%	100.0%	100.0%
28	100.0%	100.0%	100.0%	88.8%	100.0%	100.0%	94.8%	100.0%	96.2%	100.0%	98.6%
29	99.3%	100.0%	100.0%	99.5%	100.0%	97.9%	99.7%	99.8%	91.7%	98.8%	96.6%
30	100.0%	100.0%	100.0%	100.0%	100.0%	91.2%	100.0%	98.4%	100.0%	100.0%	25.6%
31	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	90.6%	100.0%	100.0%	100.0%
32	100.0%	100.0%	100.0%	47.2%	100.0%	100.0%	100.0%	100.0%	72.4%	100.0%	83.7%
33	100.0%	100.0%	92.1%	87.3%	100.0%	50.8%	100.0%	98.4%	95.2%	98.4%	48.5%
34	100.0%	100.0%	98.4%	85.2%	100.0%	100.0%	100.0%	98.4%	63.5%	57.1%	72.3%
35	77.3%	100.0%	100.0%	71.4%	87.5%	100.0%	93.8%	90.5%	78.9%	100.0%	94.7%
36	100.0%	100.0%	89.5%	33.3%	100.0%	100.0%	100.0%	78.9%	100.0%	52.6%	0.0%
37	100.0%	100.0%	100.0%	95.7%	100.0%	100.0%	100.0%	100.0%	83.5%	100.0%	96.3%
38	100.0%	100.0%	100.0%	94.8%	100.0%	98.3%	97.4%	92.3%	91.3%	100.0%	100.0%
39	100.0%	100.0%	100.0%	93.4%	100.0%	95.3%	93.6%	99.2%	79.0%	98.2%	59.8%
40	100.0%	100.0%	95.7%	72.0%	100.0%	100.0%	97.2%	62.8%	74.4%	100.0%	67.1%
41	69.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	92.7%	100.0%	78.2%
42	87.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	86.5%	97.3%	94.6%
43	33.3%	100.0%	100.0%	100.0%	100.0%	85.0%	100.0%	100.0%	100.0%	100.0%	80.0%
44	78.8%	100.0%	99.1%	100.0%	100.0%	100.0%	100.0%	100.0%	99.1%	100.0%	80.4%
45	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
46	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%	100.0%
47	100.0%	100.0%	100.0%	100.0%	100.0%	96.0%	100.0%	100.0%	90.5%	100.0%	90.9%
48	100.0%	100.0%	100.0%	99.7%	100.0%	100.0%	100.0%	99.1%	81.4%	88.1%	83.3%
49	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	62.5%	100.0%	85.4%

Source: author's calculation

Table A-5: Level of Liberalization by FTA (AJCEP Cont.)

HS	JPN	SGP	BRN	MLS	THA	IDN	PHI	VTN	CAM	LAO	MYA
50	73.2%	100.0%	100.0%	100.0%	90.9%	100.0%	100.0%	92.3%	100.0%	53.8%	69.2%
51	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	97.9%	100.0%	100.0%	87.5%
52	100.0%	100.0%	100.0%	98.5%	100.0%	100.0%	100.0%	94.7%	100.0%	94.7%	94.0%
53	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.6%
54	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.2%	100.0%	100.0%	86.1%
55	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	91.3%	100.0%	100.0%	95.2%
56	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.0%	100.0%	100.0%	86.0%
57	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	88.5%	98.0%	100.0%	100.0%	100.0%
58	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	86.9%	100.0%	100.0%	96.7%
59	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.8%	100.0%	100.0%	85.1%
60	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.6%	100.0%	100.0%	94.9%
61	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	99.5%	100.0%	100.0%	97.9%
62	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.5%
63	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	94.8%	100.0%	83.5%	87.6%
64	37.2%	100.0%	100.0%	100.0%	100.0%	97.4%	100.0%	100.0%	100.0%	100.0%	73.7%
65	100.0%	100.0%	100.0%	100.0%	100.0%	66.7%	100.0%	100.0%	100.0%	100.0%	77.8%
66	100.0%	100.0%	100.0%	100.0%	100.0%	55.6%	100.0%	100.0%	100.0%	100.0%	100.0%
67	100.0%	100.0%	100.0%	100.0%	100.0%	44.4%	100.0%	100.0%	100.0%	100.0%	100.0%
68	100.0%	100.0%	100.0%	100.0%	81.6%	100.0%	100.0%	100.0%	89.7%	100.0%	94.4%
69	100.0%	100.0%	100.0%	77.5%	100.0%	100.0%	100.0%	100.0%	84.6%	100.0%	100.0%
70	100.0%	100.0%	100.0%	94.0%	100.0%	99.2%	100.0%	76.3%	81.6%	100.0%	100.0%
71	100.0%	100.0%	100.0%	100.0%	100.0%	55.8%	100.0%	100.0%	92.2%	100.0%	9.4%
72	100.0%	100.0%	100.0%	95.4%	100.0%	23.0%	83.2%	89.8%	82.7%	100.0%	94.6%
73	100.0%	100.0%	100.0%	100.0%	100.0%	24.5%	99.4%	93.9%	60.6%	99.6%	90.9%
74	100.0%	100.0%	100.0%	100.0%	94.8%	98.9%	100.0%	100.0%	91.5%	100.0%	78.7%
75	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.2%	100.0%	100.0%
76	100.0%	100.0%	100.0%	100.0%	100.0%	96.6%	100.0%	100.0%	83.5%	100.0%	98.8%
78	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
79	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	93.3%	100.0%	93.3%
80	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	75.0%
81	100.0%	100.0%	100.0%	100.0%	100.0%	68.3%	100.0%	100.0%	98.3%	100.0%	100.0%
82	100.0%	100.0%	100.0%	100.0%	100.0%	90.9%	100.0%	100.0%	79.2%	100.0%	95.0%
83	100.0%	100.0%	100.0%	100.0%	94.6%	100.0%	100.0%	90.9%	83.6%	100.0%	98.2%
84	100.0%	100.0%	96.8%	97.2%	97.9%	100.0%	99.2%	92.8%	55.0%	98.5%	94.5%
85	100.0%	100.0%	88.0%	75.1%	98.4%	97.0%	98.1%	94.9%	42.3%	100.0%	74.1%
86	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	83.9%	100.0%	100.0%
87	100.0%	100.0%	86.1%	58.7%	36.2%	85.0%	53.6%	14.2%	47.0%	36.0%	45.1%
88	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	96.2%	7.7%	100.0%
89	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	90.6%	71.9%	100.0%	100.0%
90	100.0%	100.0%	96.5%	100.0%	100.0%	100.0%	99.5%	100.0%	62.7%	100.0%	93.9%
91	100.0%	100.0%	98.4%	100.0%	100.0%	100.0%	98.1%	100.0%	95.2%	100.0%	100.0%
92	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	88.0%	100.0%	90.9%
93	100.0%	100.0%	100.0%	12.1%	100.0%	89.3%	100.0%	75.0%	100.0%	0.0%	0.0%
94	100.0%	100.0%	90.6%	96.6%	100.0%	91.5%	97.6%	100.0%	70.1%	58.1%	92.7%
95	100.0%	100.0%	100.0%	100.0%	100.0%	24.4%	100.0%	100.0%	82.1%	85.9%	90.3%
96	100.0%	100.0%	100.0%	100.0%	100.0%	82.6%	100.0%	95.7%	77.2%	95.7%	68.3%
97	100.0%	100.0%	100.0%	100.0%	100.0%	91.7%	100.0%	100.0%	100.0%	66.7%	16.7%

Source: author's calculation

CHAPTER 3

Taking Stock of the ROOs in the ASEAN + 1 FTAs: Toward Deepening East Asian Integration

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This study compiles a database on the Rules of Origin (ROOs) of the ASEAN plus 1 FTAs- namely ASEAN Trade in Goods Agreement, ASEAN-Korea FTA, ASEAN_China FTA, ASEAN-Japan Comprehensive Economic Partnership, ASEAN-Australia-New Zealand FTA. For further insights, database compilation is also done for the bilateral FTAs forged by Japan with individual ASEAN countries and India.

Multiple FTAs could create a complex web of rules. Using the database, this paper assesses the various ROO regimes of these FTAs, particularly with respect to their degree of commonality, convergence and relative restrictiveness. A methodology for measurement of the degree of restrictiveness is formulated and restrictiveness indices are computed. The paper then suggests recommendations for ROO reforms within the context of trade facilitation and deepening East Asian regional integration. The paper also suggests further methodologies for analysis, especially where the database from the ERIA FTA mapping project could be useful.

[1] The author acknowledges the patient and excellent support of Ms. Melalyn Mantaring in the compilation and cleaning of the database.

1. INTRODUCTION

Much has been said about the complex web created by the proliferation of FTAs that has been happening during the past decade. At the center of the problem is the resulting multiple Rules of Origin (ROOs) that necessarily accompany any preferential trading arrangement. ROOs are difficult enough to administer and comply with, even in the case of a single FTA. Having different ROOs across multiple FTAs makes it even more complicated. Take the case, for example, of an ASEAN producer exporting to another ASEAN country. Early on, there is just the AFTA-CEPT, and the only decision he has to make is whether the preferential margin of preference is worth complying with the ROO. Now he has multiple choices-- whether to use ATIGA, AKFTA, ACFTA, AJCEP, AANZFTA, etc. A lot more parameters enter into his decision making process, with as many ROOs, and even more applicable tariffs and margins of preference to take into account. The task of weighing preferential tariff benefits versus cost of ROO compliance becomes compounded. Hence, it is important to review the ROO systems across the multiple FTAs in the East Asia if one is to address regional integration and trade facilitation issues.

This component of the research project on comprehensive mapping of FTAs in East Asia aims to provide a useful base for addressing the ROO problem. To this end, this component has two major tasks. The first task is to build a database that compiles comprehensive and comparable information on the ROOs of the ASEAN plus 1 FTAs. The second is to perform an assessment of the various ROO regimes of these FTAs, particularly with regards to their degree of commonality and relative restrictiveness. The paper then suggests recommendations for ROO reforms and further methodologies for analysis, especially where the database from the ERIA FTA mapping project could be useful.

2. ROO Database Compilation

2.1 FTAs covered and the data-sources

The first task is data base compilation. The main output is the Matrix of ROOs. The 2002 Harmonized System (HS) Classification is generally used as base, but

concordance with the 2007 HS is also indicated. The first set of ROO Matrix contains the product specific rules (PSRs) for the different ASEAN plus 1 FTAs, building on an earlier compilation of PSRs by the ASEAN Secretariat. The Matrix was expanded to include all 6-digit HS lines, indicating the General Rule (GR) as applicable where no PSR is provided. This expansion will make it easier to link with other data and information sets (such as tariffs and trade data), aside from making readily available the information about what ROO is applicable for any specific product at the 6-digit level. A second set of ROO Matrix covers the different Japan bilateral FTAs with individual ASEAN countries.

This project compiles the ROO database for the following FTAs:

1. The ASEAN Trade in Goods (ATIGA);
2. The ASEAN plus 1 FTAs—
    a. ASEAN-China FTA (ACFTA),
    b. ASEAN-Korea FTA (AKFTA),
    c. ASEAN-Japan Comprehensive Economic Partnership (AJCEP), and
    d. ASEAN-Australia-New Zealand FTA (AANZFTA); and
3. The Japan bilateral FTAs—
    a. Japan-Brunei
    b. Japan-Indonesia
    c. Japan-Malaysia
    d. Japan-Philippines
    e. Japan-Singapore
    f. Japan-Thailand
    g. Japan-Vietnam,
    h. Japan-India

As the product specific ROOs (PSRs) are still under negotiations in the case of ASEAN-India, the ROO data set for the Japan-India Economic Partnership Agreement (EPA) could indicate the possible nature of PSRs for ASEAN-India FTA (AIFTA). Hopefully lessons will be learned from the earlier Japan bilateral FTAs and the ASEAN + 1 FTAs.

Accompanying the set of ROOs for these FTAs are additional provisions for the certification and verification process, and the agreed upon origin certification procedures. In terms of comparison of the main provisions regarding the ROOs and the origin certification procedures, the different ASEAN plus 1 FTAs, many similarities can be discerned at the outset. (A good comparison of the different operational certification procedures has been compiled in the AANZFTA primer.)

2.2 Originating Goods: Methods of Determination

There are four major methods of origin determination used in the various ASEAN plus one FTAs convered: Wholly obtained or produced (WO), Regional Value Content (RVC), Change in Tariff Classification (CTC) and Specific Process Rule (SPR). A general (basic) rule is provided in the main text of the agreement. Product specific rules (PSRs) are negotiated and attached as Annex. As such, the applicable ROO for a specific product is the General Rule unless specified in the Annex otherwise as subject to Product Specific Rule (PSR). The PSR could be a co-equal rule, combination, or variation of the different methods of determining origin. (Table 1)

Except for ACFTA and AIFTA, the basic rule used is a co-equal rule: RVC(40) or a change in tariff heading (CTH). RVC(40) requires a minimum 40 % regional value content (cumulated from parties of the agreement). CTH is equivalent to CTC at 4-digit level. For ACFTA, the general rule is RVC(40). As such, an exporter has a choice between the two 'co-equal' rules. In the case of ASEAN-India, the general rule is RVC(35) + CTSH, *i. e.*, two simultaneous rules to comply with. Hence, the required minimum regional value content is lower at 35 %, but it has an additional requirement of a change in tariff classification, albeit at a higher 6-digit level. At the time the project is undertaken, the PSRs for ASEAN-India FTA are still under negotiation.

Table 1 Originating Goods and Methods of Determination

Agreements	Methods of Determining Origin	General Rule
ASEAN Trade in Goods Agreement (ATIGA)	1. Wholly obtained or produced (WO)	RVC(40): RVC of at least 40 %, or
	2. Regional Value Content (RVC)	CTH: CTC at 4-digit
	3. Change in Tariff Classification (CTC)	
	4. Specific Process Rule (SPR)	
ASEAN-China Trade in Goods Agreement	1. WO	RVC(40)
	2. RVC	
	3. SPR	
ASEAN-Korea Trade in Goods Agreement (AKFTA)	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC	
	4. SPR	
ASEAN-Japan Comprehensive Economic Partnership	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC)	
	4. SPR	
ASEAN-Australia/New Zealand FTA (AANZFTA)	1. WO	RVC(40) or CTH
	2. RVC	
	3. CTC)	
	4. SPR	
ASEAN-India Trade in Goods	1. WO	35% RVC+ CTSH
	2. 35% RVC+ CTSH	

Notes:

1) Applicable ROO: General Rule or Product Specific Rule (PSR) where specified

2) PSR: co-equal, combination, or variation of the different methods of determining origin as agreed upon for certain products.

3) PSRs under negotiation for ASEAN-India

i. Minimal Operations and Processes

They have very similar provisions on what are considered minimal operations and processes (and as such would not be eligible to confer origin).

ii. Cumulation

All the ASEAN plus one FTAs allow for cumulation of inputs from parties provided inputs pass origin criteria. ATIGA further allows partial cumulation for products with less than 40 % but not lower than 20 % on a pro-rated basis.

iii. *De Minimis*

For the agreements using the CTC criterion, similar basic principles on *de minimis* are used, with slight variations across the various FTAs. (Table 2)

Table 2. Cumulation and De Minimis Rules

Agreements	Cumulation	De minimis
ASEAN Trade in Goods Agreement (ATIGA)	Cumulation permitted across ATIGA provided inputs each satisfy RVC or CTC rule Partial cumulation permitted in RVC calculation on pro rata basis where RVC is at least 20%	2 Rules: (1) For goods other than textiles and apparel in HS 50-63, non-CTC qualified inputs up to 10 percent of FOB value allowed (2) For textiles and apparel in HS 50-63, non-CTC qualified up to (a) 10 percent of value or (b) 10 percent of total weight allowed.
ASEAN-China Trade in Goods Agreement (ACFTA)	Cumulation permitted across all RTA parties provided inputseach satisfy RVC (40)	Not applicable
ASEAN-Korea Trade in Goods Agreement (AKFTA)	Cumulation permitted across participating countries provided inputs each satisfy RVC or CTC rule	2 Rules: (1) For goods other than textiles and apparel in HS 50-63, non-CTC qualified up to 10 % (2) For textiles and apparel in HS 50-63, non-CTC qualified up to 10% of value weight allowed.
ASEAN-Japan Comprehensive Economic Partnership (AJCEP)	Cumulation permitted across participating countries provided inputs each satisfy RVC or CTC rule	3 Rules: (1) For goods in HS 16, 19, 20, 22, 23, 28 through 49 and 64 through 97, non-CTC qualified inputs up to 10 percent of FOB value of final product allowed (2) For goods in HS 18, and 21, non-CTC qualified inputs allowed up to 10% or 7% of FOB value as per annex 2 (3) For textiles and apparel in HS 50-63, non-CTC qualified up to 10 percent of total weight allowed.
ASEAN-Australia/New Zealand FTA (AANZFTA)	Cumulation permitted across AANZFTA provided inputs each satisfy RVC or CTC rule	2 Rules: (1) For goods other than textiles and apparel in HS 50-63, non-CTC qualified inputs up to 10 percent of FOB value allowed (2) For textiles and apparel in HS 50-63, non-CTC qualified up to (a) 10 percent of value or (b) 10 percent of total weight allowed.
ASEAN-India Trade in Goods Agreement	Cumulation permitted across all RTA Parties provided inputs each satisfy RVC (35)+CTSH rule	Not applicable.

Source: Table 5 (Appendiz 3) of AANZFTA Primer on Rules of Origin

iv. Origin Certification Procedures (Tables 3-4)

a. Authorized bodies

For ASEAN, their corresponding Trade (Commerce) Ministry or Customs authorities are the authorized bodies for the ATIGA as well as the various ASEAN plus 1. For the Dialogue partners, the similar agencies would also be responsible, but in most cases, except for India, a private organization, usually their respective Industry Chambers, are also authorized bodies.

b. Treatment of intermediary trade: Back-to-back certificate and third party invoicing

Except for ACFTA, the OCPs for ATIGA and all the five ASEAN+1 FTAs allow back-to-back certificate and third party invoicing. However, for ACFTA, an agreement was reached in October 2010 to amend the OCP to accommodate intermediary trade using these instruments. By January 2011, except for Indonesia, Myanmar and Cambodia, member countries have signed the revised OCP.

v. Other ROO provisions

Similar provisions across these FTAs are also found in: Treatment of Accessories, Spare Parts and Tools; Treatment of Packing Materials and Containers; Determination of identical or interchangeable materials; Direct Consignment.

vi. Documents required

They have similar documents required. The Certificate of Origin (CO) forms have similar contents with a few variations.

Table 3. Certificate of Origin (CO) Issuing Authorities

ASEAN Partner(s)	Issuing Authority
Australia	Australian Chamber of Commerce and Industry
	Australian Industry Group
New Zealand	Auckland Regional Chamber of Commerce and Industry
	Canterbury Employers Chamber of Commerce
	Otago Chamber of Commerce
	Independent Verification Services Ltd
	Wellington Employers' Chamber of Commerce
China	China Customs (General Administration)
	China Council for the Promotion of International Trade (CCPIT)/
	China Chamber of International Commerce (CCOIC)
India	Export Inspection Council of India or any other agency authorized by the Government of India in accordance with laws and regulations
Japan	The Ministry of Economy, Trade and Industry
	* Designated Body: Japan Chambers of Commerce and Industry
Korea	Korea Customs Service, Korea Chamber of Commerce and
	Industry (KCCI) or any other agency authorized by the Government of Korea

ASEAN Member	Issuing Authority
Brunei	Ministry of Foreign Affairs and Trade
Cambodia	Ministry of Commerce
Indonesia	Ministry of Trade (Directorate General of International Trade)
Laos	Ministry of Commerce (Directorate of Import and Export (Office No. 1)
Malaysia	Ministry of International Trade and Industry (Trade Services Division)
Myanmar	Ministry of Commerce (Directorate of Trade)
Philippines	Bureau of Customs (Export Coordination Division)
Singapore	Singapore Customs (Documentation Specialist Branch)
Thailand	Ministry of Commerce (Department of Foreign Trade, Bureau of Trade
	Preference Development)
Vietnam	Ministry of International Trade (Management Office of Import-Export Administration Office)
Self Certification	All members by 2012
accepted	Started Nov 2010: Brunei, Malaysia and Singapore

Source: various FTA documents

Table 4. Comparison of Provisions in Operational Certification Procedures (OCPs) across Selected ASEAN Agreements

Agreement	ATIGA	ACFTA	AJCEP	AKFTA	AANZFTA	AIFTA
A. Similar provisions across all (text may vary)						
CO Form*	D	E	AJ	AK	AANZ	AI
Provision of specimen signatures and official seals of the issuing authorities	same					
Presentation of CO	Submit original CO at time of import declaration	Submit original CO & triplicate copy at time of import decalration; send back triplicate to issuing authority	Submit original CO at time of import declaration	Submit original CO at time of import declaration	Submit original CO at time of import declaration	Submit original CO & triplicate copy at time of import decalration; send back tripliate to issuing authority
Back-to-Back CO	Allowed as specified in OCP	Provision in the revised OCP, October 2010	Allowed	Allowed as specfied in Appendix 1 under Rule 7	Allowed as specified in OCP	allows for the issuance of back-to-back CO Form AI subject to conditions laid down in Article 11 of Appendix D
Third country invoicing *	Allowed as specified in OCP	Provision in the revised OCP, October 2010	Acceptable under certain conditions	Allowed	Allowed as specified in OCP	allows for third party invoicing as provided under Article 22 of Appendix D.
Record keepng requirement	Issuing body, exporter, importer to keep record for 3 years	Issuing body to keep record for at least 3 years, exporter to retain	Issuing body, exporter, importer to keep record for 3 years	Issuing body, exporter, importer to keep record for 3 years	Issuing body, exporter, importer to keep record for 3 years	Issuing body to keep record for at least 3 years, exporter to retain quadruplicate
Period of Validity	12 months	Normally 4 months	12 months	6 months	12 months	12 months
Waiver of CO	No CO required for goods valued at US $200 FOB					no exemption
Verification *	yes, where necessary					
Pre-export examination	Similar in substance but sometimes varies with regard to					
Confidentiality	Similar, e.g. Confidentiality of business information					
Treatment of erroneous declaration in the CO	Similar, e.g. Erasures are not allowed and CO to be replaced					
Action against fraudulent acts	Similar, eg. Parties should cooperate in such cases and member country shall provide legal sanctions					
Denial of preferential tariff treatment	Similar, eg. Authorities can deny preference with findings of non-compliance					
Documentation for implementing Direct	Similar provisions on treatment of goods passing through one or more non-member party					
B. Provisions with some variation across FTAs						
Treatment of minor discrepancies*	This is with regards to differences in HS classification and multiple goods declared in one CO but some similarity in substance across FTAs					
Special cases	Except for ATIGA and AJCEP, FTAs have provisions about cases where there is change in destination					
Minimum data requirements*	This is with regards to company details, product information and others, there is a little variation in details required					

Under AP-WGROO discussion for possible scope forimprovement to facilitate trade in the region and to enhance utilization of the various ASEAN Plus FTAs.

Source: Table 6 from AANZFTA Primer on Rules of Origin, revised by author based on Interview with Philppine BOC Official and new information

3. Comparison and analyses using the databese

3.1. Comparison of ROOs in ASEAN and ASEAN+1 FTAs

In general, there are four basic rules used to determine origin in preferential trading agreements. First and most obvious criterion is where the good is wholly-obtained (WO) or produced. Prime examples are in the early chapters of the HS code, *e. g*. covering plants and animals. Second is regional value content (RVC), that is, how much of the value-added comes from member parties. In ATIGA and the various ASEAN plus 1 FTAs, the usual norm is a regional value content of not less than 40 percent of value-added, or RVC(40), for the good to be considered originating. The third is a change in tariff classification (CTC), that is, the inputs from non-member parties have been 'sufficiently transformed' in production thereby acquiring a change in classification in the output according to the HS code. The usual requirement is for a change in classification at the 4-digit level, but chapter and tariff sub-heading levels (6-digit) are also sometimes used. The fourth is on the basis of specific process requirement (SPR), that is, a certain process is required for the good to be considered originating. These basic rules could be used singly, or in combination whether as alternative or plus condition, and with some variation regarding cut-off and disaggregation levels, or process type. Agreements would provide a general ROO, and some variations of the basic rules could be adopted across products, according to negotiation outcomes.

At the early stage of AFTA, the RVC rule was almost uniformly adopted, intended to be liberal enough, as the rule is theoretically straightforward and seemingly fair, compared for instance to the SPR, which could be very limiting. However, overtime, practical problems about utilizing RVC became apparent. The CTC has become a viable alternative. Increasingly, in more recent FTAs and in ROO reforms, the use of co-equal rules is becoming applicable. Exporters are given a choice of what rule to use. Indeed, reforms and improvements towards simplification have been introduced but judging from surveys on FTA utilization, more needs to be done.

Table 5 summarizes the frequency use of the different ROO types for ATIGA and the ASEAN+1 FTAs. ATIGA, ASEAN-Korea (AKFTA), ASEAN-Japan (AJCEP), and ASEAN-Australia-New Zealand(AANZFTA) use the same General Rule (GR) – a co-

equal rule of RVC(40) or CTH. ASEAN-China (ACFTA) uses RVC(40) as the general rule, patterned after the early version AFTA ROO. ASEAN-India FTA (AIFTA), uses the dual rule, RVC(35) + CTSH as its general rule. ACFTA stays closest to its GR of RVC(40). It concedes only around 565 out of 5224 HS lines outside RVC(40). AKFTA is next, in terms of deviating from its GR. It applies the GR of RVC(40) or CTH for around 80 % of the total number of (6-digit) HS lines. AJCEP keeps the general co-equal rule for around 3000 HS lines but relies more on CTC outside the general rule. ATIGA has been undertaking ROO reforms, coming up with product specific rules (PSRs) that are generally intended to encourage better utilization of the FTA. As of the writing of this paper, PSRs for India are still under negotiation, such that only the general rule is currently applicable.

Table 5. Frequency by type of ROOs Used in ASEAN +1 FTAs; # of 6-digit HS lines

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA
Single Rule					
WO	185	458	8	3	294
CC		61	1	735	248
CTH		4		137	107
CTSH				8	
RVC(<40)		36			
RVC(40)	147	22	4659	219	68
RVC(>40)		6			
CC with exception*				258	3
CTH with exception*				20	10
Various**		3			43
Co-equal Rule					
RVC(40) or CTH	2782	4076	122	3057	2204
RVC(40) or CTH or SPR					24
RCV(40) or CTSH	706	61		33	1072
RVC(40) or CTH or RVC(35) + CTSH	125				195
RVC(40) or CTH or Textile Rule	340				6
Sub-total	3953	4137	122	3090	3501
% share in total	75.7%	79.2%	2.3%	59.2%	67.0%
RVC(40) or CC or Textile Rule	453				
RVC(40) or CC	437	487	7	126	583
Various**	49	10	427	628	367
Total # of 6-digit HS(2002) Lines	5224	5224	5224	5224	5224

WO- wholly obtained; CC- change in commodity classification; CTH- change in tariff heading; CTSH- change in tariff subheading; RVC- regional value content; GR-General ROO rule
* excludes specific HS lines where CTC cannot come from a/ in lieu of ASEAN-India FTA (PSR)\
**Other various rules include *e. g.* : for Dual Rules-- CTH + RVC(40), CC + RVC(40), CC + Textile Rule; for Co-equal Rules-- RVC(40)+Textile Rule or CC, RVC(>40) or CTH
Source of basic data: ASEAN Secretariat; encoded Annex2 PSR for AANZFTA and Japan-India CEP from agreements.

Without further analysis, it is not clear which FTA has more or less restrictive ROO regime on the whole, since restrictiveness would differ depending on the type of ROO used. For example, in general, a change in tariff classification at the 6-digit level (CTSH- a change in tariff subheading) is more liberal compared to CTH, a change at four-digit level. (This is further discussed below.) As with AFTA, ACFTA started using 'RVC (40) only' for almost all lines but has made a few reforms in recent years to introduce more flexibility, especially in textile products. In general, there appears a trend towards a more liberal ROO regime in recent years, with reforms in AFTA, and

more liberal ROOs in the more recent agreement between ASEAN and Australia-New Zealand.

Further analysis is done below to assess the ROO regimes of these FTAs with regards to their degree of commonality and relative restrictiveness.

3.2 Assessing Commonality and Convergence of ROOs in the ASEAN and ASEAN plus 1 FTAs

To extend the analysis, we assess how much commonality and divergence exist in the ROOs of the different ASEAN + 1 FTAs. This could help evaluate how much harmonization effort is necessary to bring about consistency if not consolidation of the different ASEAN + 1 FTAs.

We went over the ROOs of the five different FTAs (ASEAN India FTA was excluded as the PSR are still under negotiations at the time of the data gathering) by 6-digit HS lines and counted how many HS lines there are where all 5 FTAs share at least one rule. This is an indication of degree of commonality. We then counted the frequency of HS lines where only 4 FTAs share at least one common ROO (for the particular HS line, etc), and so on down the line. When down to 1, the frequency indicates how many HS lines have no common ROO used at all. Table 6 provides a summary.

Table 6. Commonality of ROOs across FTAs

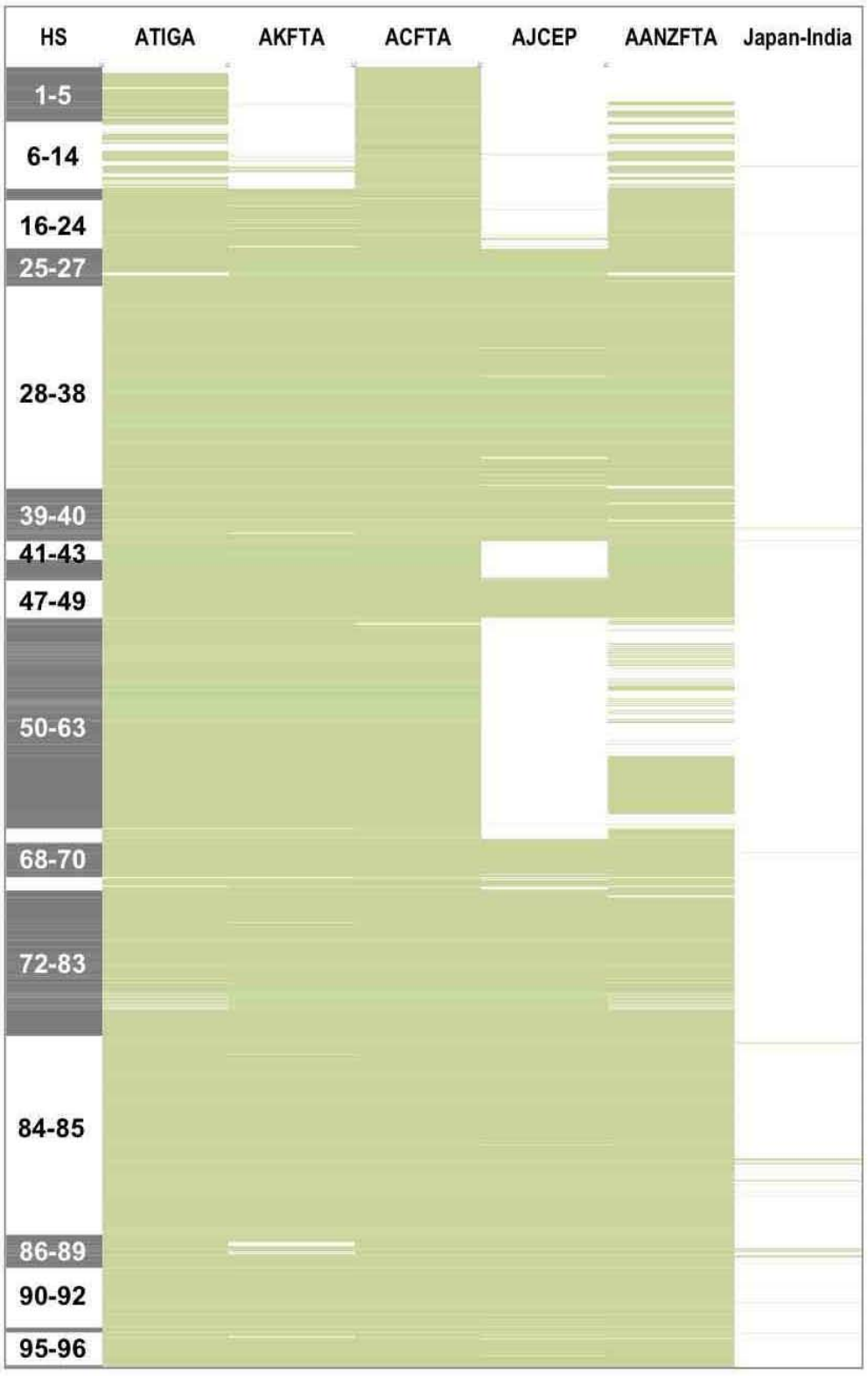
	distribution of HS lines (6-digit HS2002)	
Degree of commonality	No.	%
t one common ROO In all 5 FTAs	3318	64.00%
In only 4 FTAs	766	14.80%
In only 3 FTAs	825	15.90%
In only 2 FTAs	255	4.90%
No common ROO	23	0.40%

We find that in 64 percent of all tariff lines, all five FTAs have at least one ROO in common.[2] However, most of the commonality is in the use of the RVC(40). If we count only those with almost the same ROO (treating a co-equal rule as just one rule), the frequency count of lines with common ROO is more than halved. Nonetheless, it is encouraging to note that in 90 percent of the time, three or more FTAs (out of the five covered) share a common ROO. In most cases, the ASEAN China FTA would be the odd FTA out. This excludes the ASEAN-India Trade in Good Agreement, for which, at the time of this project completion, only a general rule of 'CTSH or RVC(35)' applies for all, while PSRs are still being negotiated.

Figure 1 provides a graphical representation showing this more clearly by product groups. It shows how RVC(40) is used in ATIGA and the ASEAN+1 FTAs. CTH is also widely used in these FTAs except for ACFTA. This is graphically represented in Figure 2.

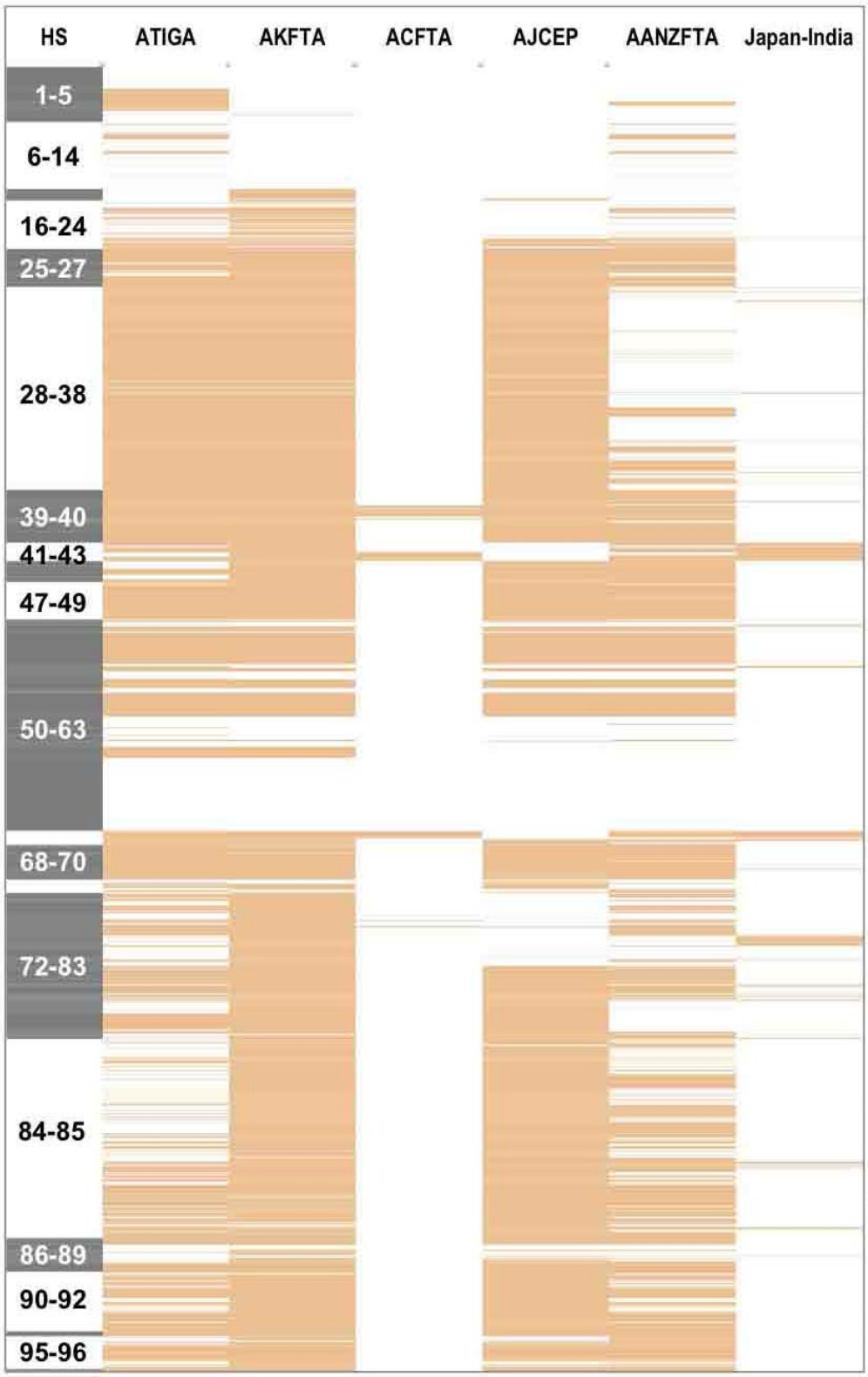
[2] Where the ROO provision of the FTA uses a 'plus' rule is used, the dual rule is treated as one ROO. When co-equal rule is used, they are treated as separate rules.

Figure 1. RVC(40) in ATIGA and ASEAN+1 Ftas



Source: Provided by Ukumo Isono, Eonomist, Economic Research Institute for ASEAN and East Asia, based on ROO database

Figure 2. CTH in ATIGA and ASEAN+1 FTAs



Source: Provided by Ikumo Isono, Economist, Economic Research Institute for ASEAN and East Asia (ERIA)

The next step is to assess how much convergence exists among these FTAs in terms of product lines. That is, looking at each 6-digit HS lines (the most disaggregated level of classification usually used for ROOs), how many of these FTAs share exact (or nearly the same) ROO. RVC(40) maybe applicable for more than half of the total (6-digit) HS lines, but the applicable rules may still differ in that for some, there be other co-equal ROO options. This is important because it may matter to exporters if they have other ROO options they could use. As such, closer examination of the ROOs by product across FTAs is done to assess the prevalence of ROO convergence.

A summary is presented in Table 7. There are only a few cases of convergence (only 44 HS lines, or out of 5224) for all the 5 FTAs covered (ATIGA, AKFTA, ACFTA, AJCEP an AANZFTA, arising from the different general rule (RVC-40) used by ACFTA. Counting cases where ROOs are almost the same except for more liberal options in some, the number of lines we can consider as near convergence rises to 181 HS lines, but this is still a small percentage of total. However, the degree of convergence becomes very significant for 4 FTAs[3]-- 1464 (6-digit) HS lines out of 5224. There is near convergence for 1407 more lines. Together, this represents around 55 % of the total number of tariff lines.

[3] In almost all cases, the 4 FTAs are ATIGA, AKFTA, AJCEP and AANZFTA.

Table 7. Summary:ROO Convergence Incidence in ATIGA, AKFTA, ACFTA, AJCEP & AANZFTA

	# of HS lines (6-digit)	% of Total	Cumulative % share
For all 5 FTAs	181	3.5%	3.5%
Near Convergence (with more liberal options in some cases)	137		
Convergent for 5 FTAs	44		
For 4 FTAs	2871	55.0%	58.4%
Near Convergence (with more liberal options in some cases)	1407		
Convergent for 4 FTAs	1464		
For 3 FTAs	630	12.1%	70.5%
Near Convergence (with more liberal options in some cases)	312		
Convergent for 3 FTAs	318		
For 2 FTAs	1027	19.7%	90.1%
Near Convergence (with more liberal options in some cases)	728		
Convergent for 2 FTAs	299		
Different ROOs across FTAs	515	9.9%	
Total # of HS Lines (6-digit)	5224	100.0%	

Tables 8 and 9 provide more details. Convergence for the 4 FTAs are found most predominantly in the latter chapters (around 77 % of the total HS lines in Chapters 66 and upwards). This includes the automotive and electronic sectors) and in some chemical products for the earlier chapters. The divergence, with so many process specific rules, is evident in the middle chapters, especially in the textile and garments sectors.

Harmonization of ROOs could be a goal that we can set. There are likely to be other issues and impediments, but identifying sectors where there is near convergence, or where there is convergence for the majority of the FTAs, would suggest cases where reforms could perhaps be more easily done.

Table 8. Degree of ROO Convergence: Chapters1-65

Chapters 1-27	# of HS Lines
Convergent for 4 FTAs	
Convergent at GR for ATIGA, AANZFTA, AKFTA and AJCEP	132
Near convergence at GR for the 4 FTAs, with ATIGA more liberal co-equal CTSH	5
Convergent for 3 FTAs	
Convergence at GR for ATIGA, AKFTA, AANZFTA, AJCEP	3
Convergence at WO for ATIGA, AKFTA and AANZFTA, CC for AJCEP	145
Convergent for 2 FTAs	
Convergence at GR for ATIGA and AANZFTA	4
Convergent at RVC or CC for ATIGA and ANZFTA	210
Different ROOs across FTAs	382
Chapters 28-65	
Convergent for 5 FTAS	
Convergent at RVC(40) or CTH for ATIGA, AKFTA, ACFTA, AJCEP & AANZFTA	44
Convergent for 4 FTAs	
Convergent at GR for ATIGA, AKFTA, AJCEP & AANZFTA with more liberal co-equal CTSH for AANZFTA	618
Convergent at RVC(40) or CTSH for ATIGA, AANZFTA, AKFTA & GR for AJCEP	7
Convergent at RVC(40) or CTH fpr ATIGA, AKFTA, AJCEP & AANZFTA	472
Convergent at RVC(40) or CTH for ATGA, AKFTA, ACFTA & AANZFTA	10
Convergence for 3 FTAs	
Near Convergence at RVC(40) or CTH for ATIGA, AKFTA & AANZFTA, with additional co-equal Textile Rule option for ATIGA	95
Convergent at GR for ATIGA, AKFTA, AANZFTA, with more liberla co-equal CTSH for ATIGA	45
Convergent at RVC(40) or CTSH for ATIGA & AANZFTA, and RVC(40) or CTH for AKFTA	8
Convergent at RVC(40) or CTH for ATIGA, AKFTA & AANZFTA	113
Convergent at RVC(40) or CTH for ATIGA, AKFTA & AJCEP	19
Convergent at RVC(40) or CTH for ATIGA, AKFTA & ACFTA	4
Convergent at RVC(40) or CTH for ATIGA, AJCEP & AANZFTA	3
Convergent at WO for ATIGA, AKFTA & AJCEP	3
Convergent for 2 FTAs	
Convergent at RVC(40) or CTSH for ATIGA/AANZFTA, & GR for AKFTA/AJCEP	6
Convergent at RVC or Textile Rule For ATIGA & ACFTA (in some with additional option for ATIGA)	290
Near Convergence at RVC or CTH for ATIGA & AKFTA, with additional co-equal Textile Rule option for ATIGA	240
Near Convergence at RVC or CC for ATIGA & AKFTA, with additional co-equal Textile Rule option for ATIGA	183
Convergent at RVC(40) or CC for AKFTA & AANZFTA	15
Convergent for 2 FTAs (various)	22
Different ROOs across FTAs	22
Total # of (6-digit) HS Lines	3100

Table 9. Degree of ROO Convergence: Chapters 66 Upwards

	# of HS Lines (6-digit)
Convergent for 5 FTAs	
Near Convergence at RVC(40) for the 5 FTAs (in some cases with co-equal CTH rule for AKFTA)	137
Coonvergent for 4 FTAs	**1632**
Convergent at RVC(40) or CTH for ATIGA, AKFTA, AJCEP & AANZFTA	853
Convergent to at least RVC(40) or CTH for ATIGA, AKFTA, AJCEP & AANZFTA, with more liberal option for ATIGA & AANZFTA	508
Convergent to at least RVC(40) or CTH for ATIGA, AKFTA, AJCEP & AANZFTA, with more liberal option for ATIGA	197
Convergent to at least RVC(40) or CTH for ATIGA, AKFTA, AJCEP & AANZFTA, with more liberal option for AANZFTA	70
Convergent to at least RVC(40) or CTH for ATIGA, AKFTA, AJCEP & AANZFTA, with more liberal co-equal CTSH for AKFTA	2
Convergent at WO for ATIGA, AKFTA, AJCEP & AANZFTA	2
Convergent for 3 FTAs	
Convergent at RVC(40) or CTH For AKFTA, AJCEP & AANZFTA	15
Convergent at RVC(40) or CTH For ATIGA, AKFTA & AJCEP	163
Convergent at GR For ATIGA, AKFTA & AJCEP, in some cases with liberal co-equal CTSH for ATIGA	6
Convergent at GR For ATIGA, AKFTA & AANZFTA, in some cases with liberal co-equal CTSH for ATIGA & AANZFTA	11
Convergent for 2 FTAs	
Convergent at GR for AKFTA & AJCEP and at RVC(40) for ATIGA & ACFTA	39
Convergent for 2 FTAs- various	26
Different ROOs across FTAs	92
Total # of HS lines (6-digit)	2121

3.3 Assessing the ROO Restrictiveness in ASEAN and ASEAN + 1 FTAs

ROOs are, by nature, restrictions. However, the degree of restrictiveness varies by type of rules used. While some commonality can be discerned from the FTAs covered, considerable variation still exists across products, across FTAs. As such, at the outset, it is difficult to make an assessment of the relative overall ROO restrictiveness of these FTAs.

For a more objective comparison, we device an index/point system by type of ROO and then compute a weighted average using frequency of tariff lines as weights. A systematic way is to first assign points to the four basic methods of origin determination listed above (that is, make some arbitrary assumption about their relative restrictiveness). Then, we adjust the points according to how these basic rules are used (what variations are made, and how these might differ according to products).

The first pass point assignments are as follows. We start with the most basic rule, RVC(40), and assign it a score of 4 (another number could be used, but this just sets some sort of a numeraire). We assign the same score of 4 for CTH, for now. This pointing system is more of an illustration, but it should already provide a more objective comparison and insights about how the FTAs compare with each other on the whole. A sectoral analysis (computation) could also be made to make comparisons across products, both within or across FTAs. In the future, perhaps a survey of exporters, or those who administer and issue Certificates of Origin, could be done to make a more accurate assessment or scoring of the restrictiveness of particular ROOs.

The points are higher the more restrictive the ROO. We move up and down the scale for level of classification for CTC and for cut-off rate for RVC. As such, we have the initial points system as follows:

CTSH === 3

RVC(40), CTH === 4

CC === 5

WO === 6

For the second pass, we use the following observations.

a. In general, it is expected that an ROO regime that allows alternative rules would be preferable to exporters and would be more liberal. At the other extreme, most restrictive would be a requirement to comply with more than one rule (plus rather than either/or), for example, both a CTC and VA rule. Of course, within these two types of hybrid rules, the degree of restrictiveness could vary depending on the restrictiveness of the individual rules included. The 'plus'' test with the most restrictive individual rules is the most restrictive, and the alternative test with the most liberal options would be the most liberal.

This suggests the following. In the case of alternative rules, we take the score of the less restrictive ROO (the lower score) and deduct 10 %, as bonus for having a choice, then add 10 % of the difference between the scores of the alternate rules.[4] For the restrictive plus rule, we take the lower value plus half of the score of the other additional rule. (The assumption is that likely, there is "economies of scale" in obtaining additional information and complying with additional requirement).

b. Primary production would generally entail one major production stage, with value-added coming mainly from primary factors, such as land, labor and capital. However, production in most other manufactured goods, is usually multi-stage, multi-input, and even multi-country.

This poses problems with using CTC to determine 'substantial transformation' occurring within country/region. The different product categories in the HS code, even within the same level of classification, could represent different stages or intermediate inputs in production. Thus, while in general, the more disaggregated the level of

[4] For three or more co-equal rules, we use the scoring in the case of 2 co-equal rules and make further deduction of .1.

classification required for CTC is, the more liberal the ROO, the degree of restrictiveness of CTC, could be different for different product groups or classification. Indeed, CTH in one sector could be more restrictive compared to that in another sector. This is more likely to happen the more stages of production and more number of intermediate inputs are involved.

For similar reasons, while in general, the value content requirement is more restrictive the higher the cut-off rate, the same RVC cut-off level could be more restrictive for certain product groups than others. For instance, arguably, the most restrictive ROO criterion is 100 % RVC, which is basically the WO criterion. However, for primary products, the requirement might not be as restrictive as it seems, since many of these products appear to be "naturally" wholly-obtained. In any case, products in these primary group usually have higher value-added, and fewer (even single) stages of production.

With these in mind, we suggest to at least differentiate between primary products and secondary products. The primary products would generally be in the earlier Chapters 1-24 (agriculture) and Chapters 25-27 (mineral products). The general rule (again for now) we suggest is to adjust the first pass points generated above in the case of Chapters 1-27 by deducting 1 point from the initial score of whatever is the applicable ROO in the particular FTA. Hence CC would be assigned 4 points instead of 5. Some refinement from this general adjustment might be needed. For example, for primary agriculture, fishery and mining products, WO is considered to be no more restrictive than either RVC(40) or CTH, and is assigned an index point of 4. In the case of RVC, the adjustment will be lower, at only half a point deduction for RVC (40), tapering to zero adjustment as the cut-off level goes down. This is because the value-added rule is similar in terms of documentary requirements regardless of chapter.[5]

The result of the point system described above is given in Table 10. For sure, there are questions about arbitrariness of points assigned and the use of the weighting system. Nonetheless, this would provide one measure of relative restrictiveness, as they are applied consistently across FTAs. Changes in the index used and using other weights such as trade weights could be done in the future, where more information and analysis would so permit or require.

[5] Similar documentary requirements account for similar restrictiveness.

Table 10. Restrictiveness Index by ROO Type

	Index Points	
	Higher Chapters	Chapters 1-27
WO	6	4
CC	5	4
CTH	4	3
CTSH	3	2
RVC(<40)*	3.75	3.25
RVC(40)	4	3.5
RVC(>40)**	5	4
CC with exception***	5.1	4.1
CTH with exception***	4.1	3.1
SPR (Textile Rule)	4	4
CC + RVC(40)	6.5	6
CTH + RVC(<40)	5.75	4.75
CTH + RVC(40)	6	5
CTH + RVC(>40) **	6.5	5.5
CTSH + RVC(<40)	4.875	3.875
CTSH + RVC(40)	5	4
CTSH + RVC(>40)	5.5	4.5
RVC(40) or CC	3.7	3.2
RVC(40) or CC or SPR	3.5	3.1
RVC(>40)** or CTH	3.7	2.8
RVC(40) or CTH	3.6	2.75
RVC(40) or CTH or SPR	3.5	2.65
RCV(40) or CTSH	2.8	1.95
RVC(>40)** or CTSH	2.9	2
CC or SPR	3.7	3.6
CTH or SPR	3.6	2.8
RVC(40) or SPR	3.6	3.2
RVC(40) or CC or SPR	3.5	3.1
RVC(40) or CTH or SPR	3.4	2.5
RVC(40) or CTH or [RVC(35) + CTSH]	3.5	2.5
WO or CTSH	3	2
WO or RVC(>40)**	4.6	3.6

* RVC cut-off level mostly at 35%
** RVC cut-off level ranges from 45-70%
*** Usually by excluding specific HS lines (or adding stipulations) where CTC cannot come from
Author's computation based on method and assumptions outlined. See text. Additional note: WO for primary sectors are considered to be not more restrictive than the norm (CTH, RVC40)

Applying the resulting point system and using the frequency use by tariff line as weights, we come up with a rough index of restrictiveness of the ROO regime by FTA. The results are provided below in Table 11.

Table 11. ROO Restrictiveness Index: ASEAN +1 FTAs

FTA	Overall ROO Restrictiveness Index
ATIGA	3.416
AKFTA	3.595
ACFTA	3.876
AJCEP	3.726
AANZFTA	3.510
Japan-India	4.339

The results show small differences across the ASEAN FTAs mainly because of the unitary interval used in the scoring among the basic rules and the large number of products. The differences are more apparent in terms of percentage difference. In terms of percentage, the difference between the highest and the lowest is around 13.5 percent, which is not insignificant, considering that the indices are weighted averages for more than 5000 HS lines. The results are also not very surprising, as reforms are sought and implemented. The ATIGA ROO regime appears the most liberal, indicative of the continued reforms it is undertaking. This is followed by AANZFTA, considered to have a relatively liberal ROO regime. The ACFTA appears to be the most restrictive. The main reason is that it followed the original ASEAN ROO, with only a few changes.

The discussion above does not include the ASEAN-India FTA. AIFTA appears to have an even more different ROO regime than the rest, with its general rule of RVC(35)+CTSH. This has the advantage of being uniform, and requiring less value added content, but having a combination of two rules makes it more stringent as well. How much of an advantage the lower cut off rate offers is an empirical question and the practical difficulties related to the RVC ROO regime remain an issue. Indeed, in combining the RVC requirement with the CTSH, it is unclear how many products would become eligible. In other words, the combined rules could be very restrictive. We could apply the same methodology suggested above on restrictiveness measurement to gauge the relative restrictiveness of AIFTA compared with the others. Scoring RVA with 3.5 (this is 4 which is the index for RVC40 less 0.5 as bonus for lower cut-off) and CTSH with a score of 3, would yield an overall restrictiveness index of 4.75 (=3+1.75). Hence, AIFTA, would be the most restrictive among the ASEAN+1 FTAs. Hopefully, the negotiated PSRs will be a substantial improvement over the ROOs under the Japan-

India EPA, which liberalized this strict rule only for a few products. The ROO restrictiveness index for the Japan-India EPA is not much lower than the general ROO regime, at 4.48.

3.4. Sectoral Analysis

It will also be interesting to find out how the different sectors fare in terms of ROO restrictiveness across FTAs. The table below presents results for the primary sector HS Chapters 01-27 covering agriculture and the mining sector. The results show the relative restrictiveness of the primary sectors to be very close to average. Except for ATIGA and AJCEP, the sector's relative restrictiveness varies across FTAs. Except for ACFTA and AKFTA the restrictiveness index for the primary sector is slightly higher than overall restrictiveness. ATIGA ROO remains the most liberal, followed by AJCEP. See Table 12. There is also a relatively wider variety of type of ROO used, both within and across FTAs for this sector. For agriculture chapters alone, the restrictiveness is higher than the overall index for all the FTAs, especially in the case of AKFTA, where the ROO for the sector is most restrictive across FTAs.

Table 12. Primary Sectors (Chapters 1- 27): ROO used and Restrictiveness Index

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA	Japan-India [a/]
WO	157	452	1		240	717
CC		4	1	667	75	
CTH		1		40		2
CTSH				8		5
RVC(<40)*		2				
RVC(40)	3	22	872	7		
RVC(>40)**		6				
CC + RVC(40)		2				
CTH + RVC(<40)						
CTH + RVC(40)						
CTH + RVC(>40) **		1				
CTSH + RVC(<40)*						151
CTSH + RVC(40)						3
CTSH + RVC(>40)						
RVC(40) or CC	284	41	7		214	
RVC(40) or CC or SPR	33				33	
RVC(>40)** or CTH		3				
RVC(40) or CTH	345	341		159	261	
RVC(40) or CTH or SPR						
RCV(40) or CTSH	59				58	
RVC(>40)** or CTSH						2
CC or Textile Rule						
CTH or Textile Rule						
RVC(40) or Textile Rule						
RVC(40) or CC or Textile Rule						
RVC(40) or CTH or Textile Rule						
RVC(40) or CTH or RVC(35) + CTSH						
WO or CTSH						1
WO or RVC(>40)**		6				
Total # of HS lines	881	881	881	881	881	881
Sector (Agriculture and Mining) Restrictiveness	3.080	3.463	3.499	3.707	3.267	3.958
Overall Restrictiveness Index	3.416	3.595	3.876	3.726	3.510	4.339

In the case of the automotive sector (HS 87), in all the FTAs, the sector's restrictiveness index is higher than overall restrictiveness index. At first glance, this appears surprising, given that the automotive industry relies heavily on the global production network. However, this is probably to be expected, even for ATIGA, since almost all of the

ASEAN countries have very high protection for the sector. In the case of AJCEP and AKFTA, Japan and Korea are leading car manufacturers, mindful of their own rivalry. Comparing across FTAs, the ROO restrictiveness index is lowest for AJCEP while AKFTA has considerable number of lines requiring higher value content ranging from 45-70 percent. This is also one sector where at least 4 of the FTAs would have at least one applicable ROO in common, specifically RVC (40). Indeed, a single rule of RVC is predominantly used in all the 5 ASEAN FTAs. See Tables 13.)

Table 13. Automotive Products (covering Chapter 87)- ROO frequency and Restrictiveness Index

ROO type	**ATIGA**	**AKFTA**	**ACFTA**	**AJCEP**	**AANZFTA**
RVC(40)	66		76	47	50
RVC(>40)**		25			
CTSH + RVC(40)					3
RVC(40) or CC					1
RVC(40) or CTH	10	51		29	22
Total # of Tariff Lines (HS 2002)	76	76	76	76	76
Sector ROO Restrictiveness Index	3.934	3.993	4.000	3.809	3.889
Overall Restrictiveness Index	3.416	3.595	3.876	3.726	3.510

WO- wholly obtained; CC- change in chapter (2 digit); CTH- change in tariff heading (4-digit) ; CTSH- change in tariff subheading (6 digit); RVC- regional value content, SPR-specific process requirement.

* RVC is usually 35%.

** RVC range from 45-70%.

Source of basic data: ASEAN Secretariat, encoded Annex2 PSR of AANZFTA taken from http://www.dfat.gov.au/fta/aanzfta/annexes/annex2_psr.html (accessed September 2, 2010)

In the case of the Chemical Sector, the relative restrictiveness is higher for all FTAs except in the case of AANZFTA where it is substantially lower which uses the co-equal rule of CTSH or RVC(40) for most HS lines in this sector. This suggests potential areas for ROO reforms in the other FTAs, following the example from AANZFTA. ATIGA and AKFTA both rely most heavily on CTH or RVC(40), while ACFTA and AJCEP rely more heavily on just RVC(40). See Table 14.

Table 14. Chemicals (covering Chapters 28-40)- ROO frequency and Restrictiveness Index

ROO type	ATIGA	AKFTA	ACFTA	AJCEP	AANZFTA
WO					20
CTH				5	
RVC(40)			977	1011	
CC with exception in product coverage				5	
CTH with exception in product coverage				4	
CTH + RVC(>40) **		3			
RVC(40) or CC					1
RVC(40) or CTH	1017	1015	48		379
RCV(40) or CTSH	7	7			625
RVC(40) or CTH or Textile Rule	1				
Total # of Tariff Lines (HS 2002)	1025	1025	1025	1025	1025
Sector ROO Restrictiveness Index	3.593	3.600	3.981	4.005	3.037
Overall Restrictiveness Index	3.416	3.595	3.876	3.726	3.510

WO- wholly obtained; CC- change in chapter (2 digit); CTH- change in tariff heading (4-digit) ; CTSH- change in tariff subheading (6 digit); RVC- regional value content, SPR-specific process requirement.
* RVC is usually 35%.
** RVC range from 45-70%.
Source of basic data: ASEAN Secretariat , encoded Annex2 PSR of AANZFTA taken from http://www.dfat.gov.au/fta/aanzfta/annexes/annex2_psr.html (accessed September 2, 2010)

In the case of textiles in terms of the Restrictiveness index, standing out is AANZFTA, although ROO is generally restrictive for all. Across FTA, the AJCEP is most restrictive for this sector. See Table 15. This arise mainly from heavier use of CC, which, in practice might not be as difficult to comply with compared to other sectors (Note the number of chapters covering textile and garments. A change in the Chapter heading is thus more possible.) The garment and textile sector also has substantial variation in the types of ROO used across FTAs and across sectors. ATIGA is the most liberal with majority allowing three co-equal rules, followed by AKFTA with majority allowing two co-equal rules. This is also where ACFTA relaxed its ROO rules most.

Table 15. Textile and Garments (covering Chapters 50-83)- ROO frequency and Restrictiveness Index

Textiles & Garments Products (covering Chapter 50-63)					
ROO type	**ATIGA**	**AKFTA**	**ACFTA**	**AJCEP**	**AANZFTA**
WO	3	3	6	3	10
CC				71	213
CTH				21	105
RVC(40)			415		218
CC with exception in product coverage				120	3
CTH with exception in product coverage				5	10
RVC(40) or CC	26	500			79
RVC(40) or CTH	28	345			104
CC or Textile Rule				350	15
CTH or Textile Rule				277	91
RVC(40) or Textile Rule			427	1	
RVC(40) or CC or Textile Rule	453				
RVC(40) or CTH or Textile Rule	338				
Total# of Tariff Lines (HS 2002)	848	848	848	848	848
Sector ROO restrictiveness Index	3.472	3.568	3.762	3.903	4.119
Overall Restrictiveness Index	3.416	3.595	3.876	3.726	3.510

WO- wholly obtained; CC- change in chapter (2 digit); CTH- change in tariff heading (4-digit) ; CTSH- change in tariff subheading (6 digit); RVC- regional value content, SPR-specific process requirement.
* RVC is usually 35%.
** RVC range from 45-70%.
Source of basic data: ASEAN Secretariat , encoded Annex2 PSR of AANZFTA taken from http://www.dfat.gov.au/fta/aanzfta/annexes/annex2_psr.html (accessed September 2, 2010)

In sum, there is substantial commonality in ROOs across the 5 FTAs including ATIGA, ACFTA, AKFA and AANZFTA although considerable variation still exists. ASEAN-India is still to come up with PSRs, which should benefit from experiences of the earlier agreements. Needless to say, convergence should be towards best practice. Reforms during the past decade have been made to simplify and liberalize the ROO regimes. More can still be done in terms of convergence and easing of rules.

4. ROOs of the Japan Bilateral FTAs with individual ASEAN countries

ROO database compilation is also done for the bilateral FTAs forged by Japan with individual ASEAN countries to provide further insights. Similar analysis is performed, especially with regards to measuring relative restrictiveness.

Unlike the other dialogue partners, Japan has bilateral FTAs with the majority of the ASEAN countries, most formed ahead of AJCEP. Mindful of the two-track approach, the resulting bilateral ROO regimes have broad commonality, but still contain many variations depending on some factors particular to the ASEAN partner. Table 16 presents a summary table showing the frequency (in terms of the number of 6-digit HS lines) by type of ROOs used in Japan Bilateral FTA.

Table 16. Frequency by type of ROOs used in Japan Bilateral FTAs with ATIGA and AJCEP; # of HS lines (6-digit)

			Japan Bilateral EPA with						
ROO type	**ATIGA**	**AJCEP**	**Philippines (JPEPA)**	**Singapore (JSEPA)**	**Thailand (JTEPA)**	**Malaysia (JMEPA)**	**Indonesia (JIEPA)**	**Brunei (JBEPA)**	**Vietnam (JVEPA)**
WO	185	3	77	40	70	9	9	67	74
CC		735	768	685	765	598	723	710	792
CTH		137	145	164	242	165	125	162	130
CTSH		8	13	10	65	9	4	17	16
QVC(40)*	147	219	30	3	17	7	3	4	35
QVC(>40)**						24	1		
CC with exception wher		258	216	177	254	190	278	155	181
CTH with exception whe		20	91	27	186	95	34	16	44
CC with additional re			16	24	37	25		48	
CC with exception and a			433	389	294	374	392	233	391
CTH with additional reqt where change is comi			1	8	4			9	
CTH with additional r				1	10	20			
CTH with exception and			81	81		290	81	81	77
CTH with additional r			6		1	8	1		
QVC(40) or CC	437	126	476	55	257	111	55	43	150
QVC(40) or CTH	2782	3057	1590	33	1206	593	20	19	2218
QVC(>40)** or CTH with exception where change is coming from						1			
QVC(40) or CTSH	706	33	1074	2317	604	2659	2288	2284	868
CC; CTH			6		1				
CC; QVC(40) or SPR	33			5	10		63		
CTH; QVC(40) or SPR	16		1	576	595		517	34	
CTSH; QVC(40) or SPR				385	332		386	941	
CTH or SPR					30	1		1	
CC with exception and additional re		350		44	44	44	44	200	44
CTH with additional reqt where char		277	200	200	200		200	200	204
QVC(40) or Textile Rule		1							
QVC(40) or CC or Textil	453								
QVC(40) or CTH or Text	340								
QVC(40) or CTH or QV(	125								
CTH; CTSH or QVC(40)						1			
Total Tariff Lines (HS	**5224**	**5224**	**5224**	**5224**	**5224**	**5224**	**5224**	**5224**	**5224**

WO- wholly obtained; CC- change in chapter (2 digit); CTH- change in tariff heading (4-digit) ; CTSH- change in tariff subheading (6 digit); RVC- regional value content, QVC-qualifying value content , LVC-local value content, SPR-specific process requirement

WO- wholly obtained; CC- change in chapter (2 digit); CTH- change in tariff heading (4-digit) ; CTSH- change in tariff subheading (6 digit); RVC- regional value content, QVC-qualifying value content , LVC-local value content, SPR-specific process requirement

* RVC; QVC or LVC is usually 35%

** RVC; QVC or LVC range from 45-70%

Source of basic data: Relevant Annexes on Product Specific Rules (PSRs) of the respective Japan Bilateral EPAs.

The main difference in comparison with AJCEP (and ATIGA) is the use of regional value content (RVC) versus Qualified value content (QVC) or local value content (LVC) for the bilateral FTAs. Otherwise, the general rules are similar, with co-equal rule of QVC or CTH. Nonetheless, there are still many specific deviations from the general rule found. The most common deviations of the bilateral FTAs from AJCEP are usually in the form of exceptions, found especially in the textile and garments sector. However, for the rest of the sectors, the deviations from the general rule and from the AJCEP, tended to be more liberal (if one assumes that the QVC is not more restrictive than the RVC). This can be discerned in the lower half of Table 17.

The next question is how do they compare in terms of relative restrictiveness? The same methodology is used as in the case of the ASEAN + 1 FTAs covered earlier. The results are presented in Table 17. The relative restrictiveness indices are very close. There appears some clustering with Thailand, the Philippines and Vietnam close together (more restrictive) at one end and Brunei, Malaysia and Singapore at the other (less restrictive).

Table 17. ROO Retrictiveness Index: Japan Bilateral FTAs

FTA Partner	Overall ROO Restrictiveness Index
Brunei	**3.396**
Indonesia	**3.475**
Malaysia	**3.345**
Philippines	**3.684**
Singapore	**3.436**
Thailand	**3.777**
Vietnam	**3.697**
AJCEP	3.726

The restrictiveness used for RVC and QVC are the same in computation, which is a generous assumption for the bilateral FTAs. This yields generally lower restrictiveness indices for bilateral FTAs viz-a-vis AJCEP (except marginally for Thailand). If the QVC is at least 10 % more restrictive than RVC, then, the bilateral FTA ROOs are more restrictive than the AJCEP.

To take the example of the Philippines, the bilateral Japan FTAs appear to be prefered by exporters,[6] indicating either that the margin of preference is higher for the bilateral (deeper tariff cuts conceded by Japan) and/or QVC of 40 percent or is not difficult to comply with. Indeed, the former argument is more likely the case, as tariffs have been intensively negotiated bilaterally. (Arata's paper will shed more light on this).

The Japan-Vietnam Economic Partnership Agreement (JVEPA) forged and ratified later appears to be the most harmonized with AJCEP

There is broader commonality, among the Japan bilateral FTAs. Nonetheless, even just considering the bilateral FTA and AJCEP, the noodle bowl syndrome is still very apparent. Consider for example an ASEAN countriy exporting to Japan, or another ASEAN country. What should the exporter use? – AJCEP or JBFTA (Japan bilateral FTA)? The decision will generally depend on 2 main factors:

- Difference in the margin of preference (MOP)
- Ease/cost of ROO compliance

The (rational) exporter would balance the benefits from MOP with the difference in ROO compliance costs. Everything being equal for one, the advantage in the other will determine the decision.

Eventually, however, the FTAs will all be completed and there will be zero difference in MOP. Hence, eventually the only consideration is how costly is the ROO. In other words, eventually, the best ROO will prevail.

This suggests a strong case, not only for ROO harmonization , but harmonization at the least restrictive ROO. In the case of bilateral FTAs and ASEAN + 1 FTAs, this may initially, in many cases mean simply translating QVC = RVC, i..e., alllowing diagonal cumulation for the bilateral FTAs, or the interchangeable use of the CO for the bilateral and the CO for the related ASEAN+1 FTA. Another suggested reforms that should be considered sooner than later is the use of co-equal rule at RVC(40) or CTSH as the General Rule.

[6] Forthcoming paper by the author included in the ERIA project on FTAs and Global value chain.

5. Conclusion and Future Direction of this study

5.1 Summary and Conclusion

The main objective of reforms in the ROO regimes governing the East Asia FTAs is to facilitate trade and promote regional integration. To this end, this study first compiles a database of comprehensive and comparable information on the ROOs of the ASEAN plus 1 FTAs. For further insights, database compilation is also done for the bilateral FTAs forged by Japan with individual ASEAN countries.

Using the database, this study first assesses how much commonality (or divergence) exists across these FTAs. Finding commonalities or divergence is the first step in identifying areas where reforms are needed. As expected, we find numerous types of ROOs used. This is even after grouping together similar types under one category. A lot more variations exist within each grouping. The variations come from the following:

- Combining different rules, as co-equal or joint rules
- For SPR, requiring different specific processes
- For RVC, using different cut-off levels
- For CTC, using different levels of classification where change is required, *e.g.*, change in chapter (CC), change in tariff heading (CTH), change in tariff subheading (CTSH)
- Adding specific requirements, *e. g,* CTSH 'except change coming from some classification, or provided the materials are sourced' accordingly, et al.

Nonetheless, there is still a substantial degree of commonality in the ROOs across FTAs. In the first place, except for ACFTA and AIFTA, the basic rule used is the same-- a co-equal rule of RVC(40) or a change in tariff heading (CTH). In addition, it appears that in 64 percent of all tariff lines, all five FTAs have at least one ROO in common. However, most of the commonality is in the use of the RVC(40). In terms of ROO convergence of the product lines across the ASEAN and ASEAN+1 FTAs, we find exact convergence in AFTA, AKFTA, AJCEP and AANZFTA, for 1464 out of 5224 (6-digit) HS lines. If we consider the cases where ROOs are almost the same except for more liberal options, in addition there are 1407 more lines with near convergence. The convergence is more predominant in the latter chapters (which

includes the automotive and electronic sectors) and in some chemical products for the earlier chapters. The divergence, with so many process specific rules, is more evident in the middle chapters, especially in the textile and garments sectors.

The study also provides a measure of the relative restrictiveness of the various ROO regimes of these FTAs. Which country is more restrictive, for what products? This is important to do if only to promote transparency in the ROO policy of the FTA trading partners. The results are also not very surprising. The ATIGA ROO regime appears the most liberal, indicative of the continued reforms it has been undertaking. This is followed by AANZFTA, considered to have a relatively liberal ROO regime. The ACFTA appears to be the most restrictive. The main reason is that it followed the original ASEAN ROO, with only a few changes. This does not include the ASEAN-India FTA. Applying the same methodology and parameters, AIFTA would be the most restrictive. Hopefully, the negotiated PSRs will be a substantial improvement over the ROOs under the Japan-India EPA, which liberalized the dual rule only for a few products.

How the ROO provisions are implemented -- the rules, guidelines, process and procedures -- is a key factor in how much the ROO system could become a trade barrier. The first task is to simplify the procedure. Towards this end, ASEAN working groups are seeking ways to make this happen.

In looking at the various ROO administration procedures (particularly the certification process) we find convergence in substance for many provisions in the OCP across these FTAs. In addition, most countries would generally have only one set of procedures in the ROO administration of all their FTAs. This is not surprising since the same competencies are needed to perform the required tasks. Hence, the noodle bowl of FTAs might not be as messy as it may seem. However, it would still be cumbersome for Customs authorities to be processing different Certificate of Origin (CO) forms. Further convergence in the OCP would simplify not just administration but compliance of exporters dealing with multiple markets.

Self-certification would avoid much of the compliance and administration costs of ROOs. With proper provisions regarding verification and data and information systems, this could be a viable option. Indeed, there is a positive development in the case of

ATIGA. All member countries will be using self-certification by 2012. Brunei Darussalam, Malaysia and Singapore have started ahead of the others, beginning November 2010. A hybrid form is already effectively utilized by Australia and New Zealand.

If moving toward East Asian integration is the end scenario, the ultimate direction in ROO reforms should be toward ROO harmonization. This will also greatly simplify the process aside from encouraging greater cumulation in the region. However, harmonization should not lead to adopting the least common denominator. Rather, there should be harmonization upwards, toward best practice, in line with the goal of deepened regional integration. In the interim, practical steps should already be sought towards convergence.

With regards to OCP, further streamlining could focus on facilitating the use of cumulation. One possibility is the inter-FTA use of COs among these East Asian FTAs (some form of mutual recognition of ROOs). It is true that the ROOs are not completely harmonized. However, (excluding ASEAN-India FTA) substantial commonality already exists. Indeed the ASEAN + 1 FTAs (again excluding AIFTA) have the same basic (General) rule. In addition, if adopted, this would actually be a very concrete step to ROO harmonization. The MRA, could be done in stages, by product, and/or by FTA.

For example, MRA by FTA could possibly already be done between ASEAN + 1 FTA and bilateral FTA involving the same countries, for example between AJCEP and PJEPA (Forms AJ and JP used interchangeably for originating inputs). In the end, only the ‘best’ FTA will be used by exporters (the one with easiest and highest margin of preference). This is already being allowed in the case of New Zealand and Singapore (AANZFTA and Singapore-New Zealand FTA).

The compilation of the database, assessment of commonalities, and measurement of restrictiveness are just the initial steps towards creating a regime of ROOs that would be most favorable to deepening regional integration. ROO reforms, not unlike other trade liberalization measures, are often difficult to undertake. More needs to be done to help

clarify the issues, buttress arguments for reforms, and guide policy makers about what type of reforms are needed.

5.2 Suggested methodologies/indicators to aid decisions on ROO reforms

The main purpose of the ROOs in FTAs is to avoid trade deflection and to ensure that preferential treatment is mainly enjoyed by member parties.[7] But some ROOs are more restrictive than others, and could go beyond the purposes of avoiding trade deflection, into 'avoiding competition' from preferential imports from member countries (protection purposes). Indeed, in the ROO negotiation process, the latter appears to be an important consideration for most governments, at least for some key sectors considered crucial domestically. Nonetheless, liberalizing ROOs have become increasingly important with the growing interdependence among economies, along with the need for trade facilitation.

A first step is to delineate between these two purposes- trade deflection and protection. Strictly speaking, avoiding trade deflection is the primary rationale, with the decision to enter into FTA with partner countries and hence opening up the domestic economy to increased competition. Nonetheless, the policy space for strategic use of ROO as protection could not realistically be removed. In practice, governments would likely continue to at least include this among its concerns, although more selectively.

The next step is to look for methodologies and indicators that could shed light on first, the possible impact on trade deflection, and second, on the impact on very selective strategic industries. Considering the thousands of products involved, it will be difficult

[7] Trade deflection occurs when imports into the free trade area from a third party, could in effect also enjoy duty-free or preferential treatment by entering first the member country with lowest MFN tariff rate, which then goes around and this member country export it to other member countries duty free.

to have precise indicators. However, at least as a first cut, there are indicators that could be useful.

One is the application of principal supplier approach (argument). This entails looking at trade data and determining where the region is a principal supplier. Where the region is a major supplier, the risk of trade deflection would be low. The implication is that for all the commodities passing the criteria, a liberal ROO should be used. This means the use of co-equal rules, lower RVC requirement, CTSH (and liberal *de minimis*).

For this, one could use simple indicators like export and import shares. In terms of exports, the share of the region's exports of product X to total world exports could easily be computed, *e. g*. as follows:

$X_R = \sum X_i$(where *i* belongs to countries in the region R) /$\sum X$ (total world export)

Where X_i is country *i*'s export of commodity X.

A ranking of commodities can then be made according to this share index. Decision would then have to be made about the cut-off level to use.

Another would be the share of intraregional export, X_{RR}

$X_{RR} = \sum X_{ij}$(where *i, j* belong to countries in the region R) /$\sum X_i$

Where X_{ij} is country *i*'s export of commodity X to country *j*.

This means that most of the member trade is also with other members, and the benefits of trade facilitation, including ROO facilitation are expected to be high. This implies a strong case for more liberal ROO for these goods.

Alternatively, the share of imports of the region of commodity, M_R, from the Region to the total imports of the region of commodity, M, from the world could also be computed. The same decision making process applies. The larger the region sources from itself, the lower the risk of trade deflection.

Another indicator that can be used, which also provide an indicator of ability to compete is the Revealed Comparative Advantage (RCA) index. This is the ratio of the export share of the commodity in the total regional export to the export share of commodity in world export. This is the more tedious to compute, but still methodologically simple. Where the ratio is greater than one, the implication is that there is revealed comparative advantage as the region is able to export more compared to the rest of the world. Hence, the ROO can be more liberal

Finally, where the MFN tariffs are already very low, restrictive ROOs are superfluous. In such cases, importers would usually not bother to avail of the FTA preference because of the higher cost of ROO compliance than the MOP. Member countries should seriously consider to automatically grant an ROO waiver for products with very low tariffs, *e. g.,* less than 5 percent. As the tariff protection is already low, local producers are already likely able to compete. At the same time, bringing down the duties effectively to zero could be a big incentive for intraregional trade. To provide a better picture about what this could mean in terms of the breadth of product coverage (and potential revenue impact), Table 18 shows the frequency distribution of tariff lines by duty range. For the majority of countries in East Asia, more than 70 percent of tariff lines for non-agricultural products fall below 5 percent (either by tariff lines or by import share). Extreme cases are Cambodia, with only 5.6 percent of tariff lines and China, with only 28 percent of tariff lines within the range of less than 5 percent. Even in these cases, more than 80 percent would have less than 15 percent duties.

Table 18. Simple average MFN tariffs and Frequency distribution over duty ranges, agriculture and non-agriculture,for East Asian countries

			Simple average (	Frequency Distribution (in %)				
				Duty-free	0 <= 5	5 <= 10	10 <= 15	> 15
A. ASEAN Countries:								
1) *Brunei Darussalem (2008)*								
	Agricultural products							
	MFN applied	2008	0.1	98.4	1.3	0.3	0	0
	Imports							
	Non-agricultural products							
	MFN applied	2008	2.9	78.4	8.7	1.5	0.7	10.6
	Imports							
	Total (all range)		2.5					
2) *Cambodia (2008)*								
	Agricultural products							
	MFN applied	2008	18.1	5.1	0	39.5	20.3	35.1
	Imports							
	Non-agricultural products							
	MFN applied	2008	13.6	5.6	0	48.3	29.5	16.6
	Imports							
	Total (all range)		14.2					
3) *Indonesia (2009)*								
	Agricultural products							
	MFN applied	2009	8.4	13.5	71.6	7.3	3.0	3.3
	Imports	2008		57.5	32.6	2.7	2.0	0.7
	Non-agricultural products							
	MFN applied	2009	6.6	23.7	41.6	17.0	15.7	2
	Imports	2008		61.2	20.0	8.7	8.3	1.6
	Total (all range)		6.8					
4) ***Lao People's Democratic Republic (2008)***								
	Agricultural products							
	MFN applied	2008	19.5	0	27.3	20.8	0	51.9
	Imports							
	Non-agricultural products							
	MFN applied	2008	8.2	0	59.0	33.2	0.1	7.7
	Imports							
	Total (all range)		9.7					
5) *Malaysia (2009)*								
	Agricultural products							
	MFN applied	2009	13.5	74.6	10.4	4.7	1.7	3.6
	Imports	2008		75.1	8.2	2.6	1.6	6.4
	Non-agricultural products							
	MFN applied	2009	7.6	56.9	7.7	8.5	3.6	23.2
	Imports	2008		64.6	14.6	2.1	5.0	13.7
	Total (all range)		8.4					

Table 18 (Continued). Simple average MFN tariffs and Frequency distribution over duty ranges, agriculture and non-agriculture,for East Asian countries

			Simple average (	Frequency Distribution (in %)				
				Duty-free	0 <= 5	5 <= 10	10 <= 15	> 15
6) *Myanmar (2008)*								
	Agricultural products							
	MFN applied	2008	8.7	7.6	46.2	2.1	40.2	3.9
	Imports							
	Non-agricultural products							
	MFN applied	2008	5.1	2.8	67.0	15.0	9.5	5.7
	Imports							
	Total (all range)		5.6					
7) *Philippines (2009)*								
	Agricultural products							
	MFN applied	2009	9.8	0.1	49.3	28.0	9.5	13.1
	Imports	2008		0.0	44.1	20.7	2.4	32.8
	Non-agricultural products		5.8					
	MFN applied	2009		2.6	59.9	22.7	13.2	1.6
	Imports	2008		22.2	60.8	9.1	4.5	3.4
	Total (all range)		6.3					
8) *Singapore (2009)*								
	Agricultural products							
	MFN applied	2009	0.2	99.8	0	0	0	0
	Imports	2008		98.6	0	0	0	0
	Non-agricultural products							
	MFN applied	2009	0.0	100.0	0	0	0	0
	Imports	2008		100.0	0	0	0	0
	Total (all range)		0.0					
9) *Thailand (2009)*								
	Agricultural products							
	MFN applied	2009	22.6	5.4	21.3	11.7	2.6	28
	Imports	2008		15.5	37.6	22.4	0.6	0
	Non-agricultural products							
	MFN applied	2009	8.0	24.2	43.0	15.2	0.2	10.5
	Imports	2008		50.8	29.6	14.7	0.0	1.9
	Total (all range)		9.9					
10) *Vietnam (2009)*								
	Agricultural products							
	MFN applied	2009	18.9	13.5	18.0	12.0	7.7	48.6
	Imports	2008		36.4	27.1	5.8	2.8	27.9
	Non-agricultural products							
	MFN applied	2009	9.7	37.8	19.6	7.3	9.3	25.4
	Imports	2008		44.6	23.5	10.8	10.2	10.9
	Total (all range)		10.9					

Table 18 (Continued). Simple average MFN tariffs and Frequency distribution over duty ranges, agriculture and non-agriculture,for East Asian countries

			Simple average (	Frequency Distribution (in %)				
				Duty-free	0 <= 5	5 <= 10	10 <= 15	> 15
B. Other ASIAN countries								
1) *Australia (2009)*								
	Agricultural products							
	MFN applied	2009	1.3	74.9	24.5	0	0.1	0
	Imports	2008		48.1	47.8	0	0	0
	Non-agricultural products							
	MFN applied	2009	3.8	44.9	40.5	9.9	0	4.7
	Imports	2008		52.2	36.0	9.3	0	2.4
	Total (all range)		3.5					
2) *China (2009)*								
	Agricultural products							
	MFN applied	2009	15.6	5.9	8.1	26.3	24.6	34.6
	Imports	2008		0.7	46.1	31.2	6.7	13.3
	Non-agricultural products							
	MFN applied	2009	8.7	7.8	19.9	46.5	14.3	11
	Imports	2008		48.4	18.2	27.8	2.9	2.6
	Total (all range)		9.6					
3) *Korea (2009)*								
	Agricultural products							
	MFN applied	2009	48.6	6.2	14.5	26.6	1.2	48.8
	Imports	2008		4.8	27.0	14.8	1.2	46.1
	Non-agricultural products							
	MFN applied	2009	6.6	17.3	10.3	63.6	6.9	1.8
	Imports	2008		38.8	33.8	25.5	1.5	0.3
	Total (all range)		12.1					
4) *Japan (2009)*								
	Agricultural products							
	MFN applied	2009	21.0	35.1	17.5	16.2	8.1	8.5
	Imports	2008		50.7	12.5	12.0	8.9	9.2
	Non-agricultural products							
	MFN applied	2009	2.5	56.5	25.8	15.0	2.0	0
	Imports	2008		84.0	9.0	5.6	1.2	0
	Total (all range)		4.9					
5) *New Zealand* (2009)								
	Agricultural products							
	MFN applied	2009	1.4	71.0	28.9	0.0	0	0
	Imports	2008		53.3	46.7	0	0	0
	Non-agricultural products							
	MFN applied	2009	2.2	61.9	31.8	5.8	0.0	0
	Imports	2008		67.6	28.6	0	3.7	0
	Total (all range)		2.1					

Source: World Trade Organization, Statistics Database, Tariff Profiles (http://stat.wto.org)

Where MFN tariffs are not minimal, a strong argument for easing ROOs could still be made, by simply looking at the MFN tariff pattern by HS line across countries. The more uniform the MFN tariffs are across member countries, the lower the risk of trade deflection.

For these indicators (regional export or import share, intraregional trade, et al), a ranking of the products according to the shares as index could readily be made. This could be linked with the ROO or tariff data sets to draw some patterns. For example, with the ROO data set (and tariff schedule), a descriptive analysis could then be made about how the share corresponds to restrictiveness of ROO used and the MFN and preferential tariff schedule. Are there overly restrictive ROOs remaining in the top (high share)? Are there high tariffs standing out? This would indicate a need to look further into the possibility of relaxing (if not waiving) the ROO requirements for these cases.

These approaches offer only a first cut in the decision-making process, especially in terms of broad identification of trade deflection risks and fast track areas, but they could already yield clear areas for reforms. In many other cases, they would need to be supplemented by more focused studies for more particular concerns of an industry. Nonetheless this highlights the potential usefulness of a comprehensive data set which is readily available.

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CHAPTER 4

Liberalization of Trade in Services under ASEAN+n and Bilaterals: A Mapping Exercise*

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This study maps out the degree of liberalization of trade in services under four ASEAN+n frameworks (Part 1) and some bilateral FTAs (Part 2). After constructing a database showing the existence of limitations on market access and/or national treatment by each service sector, the study (Part 1) finds that the commitment level differs greatly between sensitive and less sensitive sectors, and that the commitment level under the ASEAN Framework Agreement (AFAS) is the highest among the four FTAs studied. It also finds that there are cross-country and sector-wide similarities in the pattern of service sector commitment under and across each of the FTAs; this implies that the shared domestic sensitivities can be overcome by a shared economic cooperation scheme for enhancing competitiveness (through FTA provisions). The study (Part I) further highlights that, overall, Mode 4 (movement of people) gains least commitment, whereas Mode 2 (consumption abroad) gains most commitment under all the four FTAs studied. Turning to policy implications, there are two possibilities on the sequence of further streamlining the four FTAs: (1)Start within the same "clusters" among similarly committed countries under a particular FTA; then harmonize the level of commitments across all the signatory countries to the FTA; or (2) Start with harmonizing rather dissimilar countries from different "clusters" of commitments under a particular FTA, which provides small-scale "social experimenting"; then scale up this line of effort at an acceptably later stage to the level of the whole FTA, then eventually attempt to harmonize across all the FTAs centering on ASEAN. Further study along these lines is needed. Part II of this research addresses Japan's bilateral FTAs as a case study, and reveals that (1) Japan is more deeply committed than its partner, especially in mode 3 and mode 4 (with the exception of Japan-Singapore EPA); (2) the partner countries' commitments are polarized into below-AFAS and above-AFAS levels and (3) The wedge between well-committed sectors and not so well-committed sectors indicates that harmonizing commitment levels across all the sectors is still beyond reach in the short run. Similarly clustered sectors, therefore, could be harmonized first for a smoother supply linkage.

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Part I: ASEAN+n

1. Introduction

While there has been a delay in the WTO-based liberalization of trade in services[1], East Asian countries are in the process of establishing preferential pluri-lateral free trade agreements (FTAs) with a wide coverage fit for regional community building.[2] They have the potential of merging into a consolidated region-wide free trade framework. This study undertakes a mapping exercise of the ASEAN+n type FTAs (where "n" can be zero one or two countries) in terms of trade in services, which is an important and growing mode of international economic transaction. The study focuses on the four ASEAN-related free trade agreements covering the service sector, namely (1) the ASEAN Framework Agreement on Services (AFAS), (2) the ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA), (3) the ASEAN-China Free Trade Agreement (ACFTA), and (4) the ASEAN-Korea Free Trade Agreement (AKFTA). The structure of this paper is as follows. The next section makes an overview of GATS commitment tables. Section 3 addresses the method of indexing service trade liberalization from the database constructed. Section 4 presents correlation among the participating countries. Section 5 makes a cluster analysis of the commitment pattern. Section 6 is dedicated to indexation of commitments by country, by mode and by aspect. Section 7 concludes the paper with some policy implications.

2. An overview of WTO/GATS Commitment Tables

Whereas WTO's General Agreement on Trade in Services (GATS) is still ongoing under the current Doha Development Agenda for further multilateral liberalization, its basic framework of negotiation is fully taken into consideration and implemented under the four FTAs in the Asia Pacific region. It is therefore necessary first to give an overview of the framework of GATS. The most recent updated version of the GATS Commitment Tables available on-line is dated January 2003. In the case of "Revised Offer 2006", only

[1] Hoekman, Martin and Mattoo (2009) address this issue in detail.

[2] Fink and Molinuevo (2008), and Gootiiz and Mattoo (2009) are recent examples of study into preferential agreements covering trade in services.

a limited number of countries have submitted their revised offers.[3] Therefore the former tables are used in this study.

In a commitment table under GATS, four Modes[4] i.e., Mode 1 up to Mode 4, and two aspects of liberalization, i.e., market access (MA) and national treatment (NT), are listed in tabular formats. In each service sector (see APPENDIX I for the the GATS-based classification of service sectors), the four modes and two aspects of liberalization make eight "cells", for each of which the existence of limitations is indicated in text. Such indication is created by filling in one of the following three indications: (1) "none" (in the case of no limitation), or (2) "unbound" (in the case where there is no legally binding commitment made), or (3) description of the limitation.

For the sake of analytical tractability, this study adopts the level of 55 sub-sectors. The further disaggregated 155 sectors have been considered at the database construction stage.[5] Also, this study considers specific-commitments only. "Horizontal commitments", or commitments applied to all the GATS service sectors are not considered in this study. This is because the way horizontal commitments are described is oftentimes rather complicated, making a clear-cut and consistent database construction extremely difficult.

The following three-fold symbolic classification is used for constructing a database for the commitment by each sub-sector, by mode and by aspect of liberalization, in each FTA

N: No limitation (and bound);

L: Limited (or restricted) but bound;

U: Unbound.

Since there are sub-categories with slightly different patterns of commitments in each of the most disaggregated 155 service categories, one "conservative" (i.e., most

[3] GATS Commitment Tables submitted in 2003 are downloadable at: http://tsdb.wto.org/default.aspx (accessed on 1 March 2011).

[4] Mode 1 refers to cross-border service provision; Mode 2, consumption abroad; Mode 3, service provision through establishing commercial presence; and Mode 4, service provision through movement of people (as suppliers).

[5] At the stage of reporting the Hoekman Index (mentioned in the next section), aggregation up to the 55 sectors is used. While each of the 155 sub-sectors has further sub-divisions, the way each commitment table is described is not comparable with others due to idiosyncrasy in actual offer documents at the most detailed level (e.g., branching out with incomplete indications, incomplete listings, partial merging of different sub-divisions and the like).

restrictive) pattern is listed in the database[6] constructed. In the case where the word "Unbound", or “None” is followed by such phrases as "except...", the label "U" or “N”, respectively, is simply applied. The situation of no description exists is considered as "U". This simplified categorization allows for a "bird's-eye view" analysis of an otherwise analytically intractable style of reporting observed in the original GATS commitment tables. The database has been constructed for the four East Asian free trade agreements, i.e., (1) the ASEAN Framework Agreement on Services (AFAS), (2) the ASEAN-Australia-New Zealand FTA, (3) the ASEAN-China FTA, and (4) the ASEAN-Korea FTA.

3. Indexation of service trade liberalization from the database

Hoekman (1995) proposes an indexation method for measuring the GATS-style degree of commitment in the service sector. This method assigns values to each of 8 cells (4 modes and 2 aspects--market access (MA) or National Treatment (NT)--), as follows: N=1, L=0.5, U=0; then calculates the average value by service sector and by country. Using the database constructed, the “Hoekman Index” has been calculated for each 155 sub-sectors. Then the simple average at the level of the 55 sectors is calculated. Tables 1-4 report the results by FTA.

[6] The data will be published as part of ERIA FTA database at ERIA’s website (www.eria.org).

Table 1. Hoekman Index for the ASEAN Framework Agreement on Services (AFAS) by country and by sector

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Brunei	0.4	0.69	0.56	0	0.31	0.34	0	0	0.52	0	0	0.31	0.31	0.31	0.31	0.31	0	0
Cambodia	0.53	0.75	0	0	0.1	0.35	0	0.75	0.75	0	0	0.5	0.5	0.5	0.5	0.5	0.75	0.75
Indonesia	0.39	0.41	0.23	0	0.25	0.3	0	0	0.79	0	0	0.5	0.5	0.5	0.5	0.5	0	0.56
Laos	0.3	0.7	0.56	0	0.3	0.2	0	0.88	0.3	0.28	0	0.75	0.75	0.75	0.75	0.69	0.56	0.56
Malaysia	0.43	0.75	0.69	0	0.41	0.32	0	0	0.78	0.17	0	0.5	0.5	0.5	0.5	0.5	0.69	0.38
Myanmar	0.28	0.75	0	0	0.15	0.2	0	0.75	0.43	0.5	0	0.63	0.63	0.63	0.63	0.63	0.63	0.63
Philippines	0.34	0.86	0.5	0.25	0.16	0.23	0.69	0.94	0.73	0.25	0	0.31	0.31	0.31	0.31	0.31	0.88	0
Singapore	0.38	0.6	0.75	0.38	0.4	0.49	0	0.5	0.63	0.75	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Thailand	0.35	0.88	0.83	0.75	0.55	0.5	0	0	0.44	0.46	0	0.63	0.63	0.63	0.63	0.63	0.75	0.75
Vietnam	0.49	0.15	0.25	0	0.1	0.37	0	0.75	0.75	0.15	0	0.56	0.56	0.56	0.56	0.56	0.5	0
ASEAN Avera	0.39	0.65	0.44	0.14	0.27	0.33	0.07	0.46	0.61	0.26	0	0.54	0.54	0.54	0.54	0.54	0.55	0.44

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Brunei	0	0	0	0.56	0.56	0	0.56	0.56	0	0	0	0	0	0	0	0.5	0	0
Cambodia	0.75	0.75	0.75	0	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0	0	0	0	0	0
Indonesia	0.5	0	0	0	0.63	0.63	0.56	0.56	0.5	0.69	0	0.5	0	0	0	0.63	0.75	0.63
Laos	0	0.56	0	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0	0	0	0.56	0	0
Malaysia	0.38	0.69	0	0.44	0.44	0.19	0.44	0.44	0.69	0	0	0.69	0	0	0	0.63	0	0.69
Myanmar	0.63	0	0	0	0	0.63	0.63	0.63	0.63	0.63	0.63	0	0	0	0	0.63	0.63	0.75
Philippines	0.25	0	0.25	0	0	0	0	0	0.56	0	0	0.5	0	0	0	0.25	0	0
Singapore	0.75	0.75	0	0	0	0	0.75	0	0	0	0.5	0.5	0	0	0	0.25	0.25	0.5
Thailand	0	0.75	0.75	0.63	0.81	0.63	0.63	0	0.88	0.63	0.63	0.63	0	0	0	0.75	0.63	0
Vietnam	0	0.75	0	0	0.25	0.5	0.5	0.5	0.63	0.63	0	0.63	0	0	0	0.69	0.69	0.56
ASEAN Average	0.33	0.43	0.18	0.22	0.33	0.39	0.54	0.4	0.52	0.39	0.31	0.48	0	0	0	0.49	0.29	0.31

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Brunei	0	0.56	0	0	0	0.56	0	0	0	0	0.28	0	0	0.56	0.45	0	0	0.42	0	0.18
Cambodia	0	0.56	0.75	0.75	0	0.75	0	0	0.63	0	0.09	0	0	0	0	0.75	0.63	0.09	0	0.36
Indonesia	0.63	0.63	0.69	0.5	0.56	0	0	0	0.69	0.5	0.6	0.63	0	0	0.75	0.56	0	0.45	0	0.35
Laos	0.56	0.56	0.56	0	0.56	0	0	0	0	0	0.63	0.31	0	0	0	0.13	0	0.31	0	0.33
Malaysia	0.56	0.69	0.75	0	0	0.44	0	0	0.69	0	0.49	0	0	0	0	0.14	0	0.52	0	0.31
Myanmar	0.56	0.75	0.63	0	0.63	0.63	0	0.63	0	0	0.11	0	0	0	0	0	0	0.56	0	0.33
Philippines	0	0.88	0.88	0	0	0.5	0.5	0.25	0.25	0	0.79	0	0	0	0.56	0.61	0.56	0.73	0	0.29
Singapore	0.5	0.5	0.63	0.75	0.63	0.75	0	0.75	0	0	0.38	0	0	0	0	0.38	0	0.19	0	0.36
Thailand	0	0.88	0.56	0	0.88	0.63	0.75	0.75	0.63	0.63	0.48	0	0	0	0.34	0.53	0	0.58	0	0.46
Vietnam	0.69	0.75	0.75	0	0.56	0.38	0	0	0.44	0	0.54	0.15	0	0	0.2	0.2	0	0.45	0.44	0.33
ASEAN Average	0.35	0.68	0.62	0.2	0.38	0.46	0.13	0.24	0.33	0.11	0.44	0.11	0	0.06	0.23	0.33	0.12	0.43	0.04	0.33

Table 2. Hoekman Index for the ASEAN-Australia-New Zealand Free Trade Agreement by country and by sector

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Australia	0.61	0.6	0.25	0.63	0.6	0.54	0	0	0.7	0	0	0.5	0.5	0.5	0.5	0.5	0.75	0.75
Brunei	0.15	0.75	0	0	0.09	0	0	0	0.24	0	0	0.31	0.31	0.31	0.31	0	0	0
Cambodia	0.51	1	0	0	0.15	0.38	0	0.75	0.75	0	0	0.5	0.5	0.5	0.5	0.5	0.75	0.75
Indonesia	0.27	0.35	0.21	0	0	0.13	0	0	0.32	0	0	0.5	0.5	0.5	0.5	0.5	0	0
Laos	0.14	0.8	0	0	0	0	0	0	0.18	0	0	0.75	0	0	0	0.63	0	0
Malaysia	0.49	0.8	0.23	0	0.14	0.27	0	0	0.65	0.04	0	0.44	0.44	0.44	0.44	0.44	0	0
Myanmar	0.24	0.88	0	0	0	0.1	0	0	0	0.09	0	0.5	0.5	0.5	0.5	0.5	0	0
New Zealand	0.55	1	0	0.75	0.6	0.32	0	0	0.72	0.29	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Philippines	0.17	0	0	0	0.14	0.04	0	0.69	0.36	0.17	0	0	0.38	0	0	0	0	0
Singapore	0.45	1	0.75	0.38	0.3	0.33	0	0.5	0.63	0.25	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Thailand	0.23	1	0	0	0.1	0.31	0	0	0.27	0.33	0	0.5	0.5	0.5	0	0	0.5	0
Vietnam	0.53	0.2	0.25	0	0.2	0.36	0	0.75	0.75	0.15	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ASEAN Avera	0.32	0.68	0.14	0.04	0.11	0.19	0	0.27	0.42	0.10	0.00	0.48	0.44	0.40	0.35	0.38	0.25	0.20
Total Average	0.36	0.7	0.14	0.15	0.19	0.23	0	0.22	0.46	0.11	0	0.5	0.47	0.44	0.4	0.42	0.33	0.29

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Australia	0.63	0.75	0	0	0.63	0.63	0	0.63	0.75	0.75	0.75	0.75	0.13	0.25	0	0	0.5	0
Brunei	0	0	0	0	0	0	0	0	0	0	0	0	0.39	0.01	0	0	0	0
Cambodia	0.75	0.75	0.75	0	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.72	0.56	0	0.75	0	0
Indonesia	0	0	0	0	0.56	0.56	0.56	0.56	0	0	0	0	0.28	0.18	0	0.63	0	0
Laos	0	0	0	0	0.63	0.13	0.13	0.13	0.63	0.63	0.63	0	0	0.31	0	0	0	0
Malaysia	0	0	0	0.44	0.44	0.19	0	0.44	0	0	0	0	0.36	0.43	0	0	0	0
Myanmar	0	0	0	0	0.5	0.5	0	0.5	0	0	0	0	0	0	0	0	0	0
New Zealand	0.75	0	0	0.75	0.75	0.75	0	0.75	0.75	0.75	0.75	0.75	0.2	0.25	0	0	0	0
Philippines	0	0	0	0	0	0.25	0	0	0.44	0	0	0	0.42	0.47	0	0	0	0
Singapore	0	0	0	0	0	0	0.75	0	0	0	0.5	0.5	0.47	0.53	0	0	0.5	0.5
Thailand	0	0	0	0.5	0.5	0.25	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.03	0	0	0	0
Vietnam	0.5	0.75	0	0	0.25	0.38	0.38	0.38	0.5	0.38	0	0.5	0.75	0.47	0.44	0.69	0.69	0
ASEAN Average	0.13	0.15	0.08	0.09	0.29	0.30	0.31	0.33	0.28	0.23	0.24	0.23	0.37	0.30	0.04	0.21	0.12	0.05
Total Average	0.22	0.19	0.06	0.14	0.35	0.36	0.26	0.39	0.36	0.31	0.32	0.31	0.33	0.29	0.04	0.17	0.14	0.04

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Australia	0	0.5	0.63	0.75	0	0	0.75	0	0.75	0	0.17	0	0.1	0	0.41	0.4	0.75	0.63	0	0.38
Brunei	0	0.44	0	0	0	0	0	0	0	0	0.19	0	0.1	0	0	0	0	0	0	0.07
Cambodia	0	0.31	0.75	0.75	0	0.75	0	0	0	0	0	0	0.15	0	0	0.75	0.63	0	0	0.38
Indonesia	0	0.63	0.56	0	0	0	0	0	0	0	0.19	0	0.41	0	0	0	0	0	0	0.16
Laos	0	0.63	0.56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
Malaysia	0	0.63	0.63	0	0	0.44	0	0	0	0	0.23	0	0	0	0	0	0	0	0	0.16
Myanmar	0	0	0	0	0	0	0	0	0	0	0.14	0	0.25	0	0	0	0	0.38	0	0.11
New Zealand	0	0.75	0.75	0.75	0	0	0	0	0	0	0.17	0	0.08	0	0.75	0.75	0.38	0.31	0	0.39
Philippines	0	0.38	0.75	0	0	0	0	0	0	0	0.45	0	0	0	0.3	0.28	0.22	0.38	0	0.11
Singapore	0	0.63	0.75	0.75	0	0.63	0	0.75	0	0	0.38	0	0	0	0	0	0	0	0	0.32
Thailand	0	0.5	0.44	0	0.5	0	0	0	0.5	0	0.34	0	0.24	0	0.2	0.18	0	0.13	0	0.22
Vietnam	0	0.75	0.75	0	0	0.38	0	0	0.44	0	0.15	0.15	0.43	0	0.1	0.2	0	0.47	0	0.32
ASEAN Average	0.00	0.49	0.52	0.15	0.05	0.22	0.00	0.08	0.09	0.00	0.21	0.02	0.16	0.00	0.06	0.14	0.09	0.14	0.00	0.20
Total Average	0	0.51	0.55	0.25	0.04	0.18	0.06	0.06	0.14	0	0.2	0.01	0.15	0	0.15	0.21	0.16	0.19	0	0.23

Table 3. Hoekman Index for the ASEAN-China Free Trade Agreement by country and by sector

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Brunei	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambodia	0.51	0.75	0	0	0.15	0.34	0	0.75	0.63	0	0	0.5	0.5	0.5	0.5	0.5	0.75	0.75
Indonesia	0	0	0	0	0	0	0	0	0	0	0	0.5	0.38	0.38	0	0.38	0	0
Laos	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malaysia	0.19	0.6	0	0	0	0	0	0	0.69	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0.03	0	0	0	0.44	0	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0.15	0	0	0.04	0	0	0	0	0	0	0	0	0
China	0	0.46	0	0.69	0	0.15	0	0	0	0	0	0.44	0.44	0.44	0.44	0.44	0	0
Singapore	0.2	0.15	0	0.38	0.45	0.29	0	0	0.04	0	0	0	0	0	0	0	0.5	0.5
Thailand	0.22	0	0	0	0	0	0	0	0.17	0	0	0	0	0	0	0	0	0
Vietnam	0.53	0.75	0.25	0	0.2	0.36	0	0.75	0.65	0.15	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ASEAN Avera	0.17	0.26	0.03	0.04	0.08	0.12	0.00	0.15	0.22	0.06	0.00	0.15	0.14	0.14	0.10	0.14	0.18	0.18
Total Average	0.15	0.27	0.02	0.1	0.07	0.12	0	0.14	0.2	0.05	0	0.18	0.16	0.16	0.13	0.16	0.16	0.16

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Brunei	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cambodia	0.75	0.75	0.75	0	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.73	0.52	0	0.75	0	0
Indonesia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Laos	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.19	0	0	0	0
Malaysia	0	0	0	0	0	0.06	0	0	0	0	0	0	0.19	0.69	0	0.63	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0	0	0.44	0	0	0	0	0	0	0	0	0
China	0	0	0	0	0	0	0	0	0.56	0.56	0.56	0.56	0	0	0	0	0	0
Singapore	0.5	0.75	0	0	0	0	0.75	0.75	0	0	0.5	0.5	0.48	0.51	0	0	0.5	0.5
Thailand	0	0	0	0	0.56	0.31	0	0.31	0	0	0	0	0	0	0	0	0	0
Vietnam	0.5	0.75	0	0	0.25	0.44	0.44	0.44	0.5	0.63	0	0.5	0.75	0.46	0.44	0.69	0.69	0
ASEAN Average	0.18	0.23	0.08	0.00	0.08	0.16	0.19	0.23	0.17	0.14	0.13	0.18	0.27	0.24	0.04	0.21	0.12	0.05
Total Average	0.16	0.2	0.07	0	0.07	0.14	0.18	0.2	0.2	0.18	0.16	0.21	0.24	0.21	0.04	0.19	0.11	0.05

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Brunei	0	0.06	0	0	0	0	0	0	0	0	0.25	0	0.15	0	0	0.75	0	0	0	0.02
Cambodia	0	0.31	0.75	0.75	0	0.75	0	0	0	0	0	0	0.15	0	0	0	0.63	0	0	0.36
Indonesia	0	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Laos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Malaysia	0	0	0	0	0.19	0	0	0	0	0	0.11	0	0.1	0	0	0	0	0	0	0.06
Myanmar	0	0	0	0	0	0	0	0	0	0	0.15	0	0.21	0	0	0	0	0.13	0	0.02
Philippines	0	0.63	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
China	0	0	0	0	0	0	0	0	0.06	0	0	0	0.08	0	0	0.69	0	0.44	0	0.13
Singapore	0	0	0.75	0.75	0	0.75	0	0.75	0.5	0	0	0	0	0.5	0	0.5	0	0	0	0.23
Thailand	0	0.56	0.5	0	0.81	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
Vietnam	0	0.75	0.75	0	0	0.38	0	0	0.44	0	0.15	0.15	0.41	0	0.1	0.2	0	0.47	0	0.33
ASEAN Average	0.00	0.29	0.38	0.15	0.10	0.19	0.00	0.08	0.09	0.00	0.07	0.02	0.10	0.05	0.01	0.15	0.06	0.06	0.00	0.12
Total Average	0	0.27	0.34	0.14	0.09	0.17	0	0.07	0.09	0	0.06	0.01	0.1	0.05	0.01	0.19	0.06	0.09	0	0.12

Table 4. Hoekman Index for the ASEAN-Korea Free Trade Agreement by country and by sector

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Brunei	0.1	0.55	0	0	0.09	0	0	0	0.28	0	0	0.31	0.31	0.31	0.31	0.31	0	0
Cambodia	0.51	0.75	0	0	0.15	0.19	0	0.75	0.5	0	0	0.5	0.5	0.5	0.5	0.5	0.75	0.75
Indonesia	0.32	0.41	0.23	0	0	0.14	0	0	0.65	0	0	0.5	0.5	0.5	0.5	0.5	0	0
Korea	0.45	0.75	0.58	0.25	0.68	0.62	0	0.5	0.68	0.25	0	0.5	0	0	0	0	0.63	0
Laos	0.08	0	0	0	0	0.02	0	0	0	0	0	0.31	0.56	0.56	0.31	0.31	0	0.19
Malaysia	0.49	0.6	0.23	0	0.41	0.28	0	0	0.55	0.14	0	0.44	0.44	0.44	0.44	0.44	0	0.38
Myanmar	0.11	0	0	0	0	0.08	0	0	0.1	0.11	0	0	0.63	0	0	0	0	0
Philippines	0.15	0	0.75	0	0	0.03	0.69	0.69	0.26	0	0	0	0.56	0	0	0	0	0
Singapore	0.45	0.6	0.25	0.38	0.45	0.5	0	0.5	0.46	0.63	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Thailand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vietnam	0.53	0.75	0	0	0.2	0.36	0	0.75	0.75	0.15	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ASEAN Avera	0.30	0.41	0.16	0.04	0.14	0.18	0.08	0.30	0.39	0.11	0.00	0.37	0.53	0.40	0.37	0.37	0.22	0.29
Total Average	0.32	0.44	0.2	0.06	0.2	0.22	0.07	0.32	0.42	0.13	0	0.38	0.48	0.36	0.33	0.33	0.26	0.26

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Brunei	0	0	0	0	0	0	0	0	0	0	0	0	0.39	0	0	0.75	0	0
Cambodia	0.75	0.75	0.75	0	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.73	0.56	0	0	0	0
Indonesia	0	0	0	0	0.63	0.56	0.56	0.56	0	0	0	0	0.19	0.32	0	0.63	0	0
Korea	0.56	0.75	0	0	0	0.31	0.31	0	0.63	0.63	0	0.63	0.31	0.17	0	0	0	0
Laos	0	0	0	0	0.56	0.44	0	0	0.06	0.06	0.06	0.06	0	0.03	0	0.5	0	0
Malaysia	0.5	0	0	0	0	0.19	0	0	0	0	0	0	0.33	0.05	0	0	0.63	0
Myanmar	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0	0	0
Philippines	0	0	0	0	0	0	0	0	0.44	0	0	0	0.42	0.58	0	0	0	0
Singapore	0	0.75	0	0	0	0	0.75	0	0	0	0.5	0.5	0.47	0.52	0	0	0.5	0.5
Thailand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vietnam	0.5	0.75	0	0	0.25	0.25	0.25	0.25	0.5	0.63	0	0.5	0.75	0.29	0.44	0.69	0.69	0
ASEAN Average (excl.Thailand)	0.19	0.25	0.08	0.00	0.16	0.24	0.26	0.17	0.19	0.16	0.15	0.20	0.36	0.26	0.05	0.29	0.20	0.06
Total Average (excl. Thailand)	0.23	0.3	0.08	0	0.14	0.25	0.26	0.16	0.24	0.21	0.13	0.24	0.36	0.25	0.04	0.26	0.18	0.05

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Brunei	0	0.44	0	0	0	0	0	0	0	0	0.25	0	0.25	0	0	0	0	0	0	0.08
Cambodia	0	0.31	0.75	0.75	0	0.75	0	0	0	0	0	0	0.15	0	0	0.75	0.63	0	0	0.36
Indonesia	0	0.69	0.63	0.63	0	0	0	0	0	0	0.23	0	0.14	0	0	0	0	0.13	0	0.18
Korea	0	0.5	0.75	0.75	0	0.38	0	0	0	0	0.52	0	0.5	0	0.05	0.38	0.25	0.59	0.5	0.28
Laos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07
Malaysia	0	0.69	0.63	0	0.69	0.44	0	0	0.44	0	0.53	0	0.1	0	0	0	0	0.17	0	0.19
Myanmar	0	0	0	0	0	0	0	0	0	0	0.19	0	0.21	0	0	0	0	0.25	0	0.03
Philippines	0	0.63	1	0	0	0	0	0	0	0	0.57	0	0.53	0	0.45	0.43	0.28	0.63	0	0.16
Singapore	0	0.63	0.5	0.75	0	0.75	0	0	0	0	0.38	0	0	0	0	0	0	0	0	0.31
Thailand	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-
Vietnam	0	0.75	0.75	0	0	0.38	0	0	0.44	0	0.15	0.13	0.43	0	0.1	0.2	0	0.19	0	0.31
ASEAN Average (excl.Thailand)	0.00	0.46	0.47	0.24	0.08	0.26	0.00	0.00	0.10	0.00	0.26	0.01	0.20	0.00	0.06	0.15	0.10	0.15	0.00	0.19
Total Average (excl. Thailand)	0	0.46	0.5	0.29	0.07	0.27	0	0	0.09	0	0.28	0.01	0.23	0	0.06	0.18	0.12	0.2	0.05	0.2

Some observations can be made for each of the four FTAs, as follows.

The ASEAN Framework Agreement on Services (AFAS) by country and by sector

AFAS[7] has the highest level of commitment among the ASEAN+n FTAs: Its average level of commitment by all the ASEAN member countries is 0.33. The sector 09A (Hotels and Restaurants) has the highest average commitment by participating countries, at 0.68. Following are the observations by country.

Brunei: 01B (Computer and Related Services) has the largest degree of commitment of 0.69. The average level of commitment at 0.18.

Cambodia: 01B (Computer and Related Services), 02B (Courier Services), 02C (Telecommunication Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 06A (Sewage Services), 06B (Refuse Disposal Services), 06C (Sanitation and Similar Services), 06D (Other Environmental Services), 09B (Travel Agencies and Tour Operators Services), 09C (Tourist Guides Services), and 11F (Road Transport Services), all have the largest degree of commitment at 0.75. The average level of commitment is 0.36.

Indonesia: 02C (Telecommunication Services) has the largest degree of commitment at 0.79. The average level of commitment is 0.35.

Laos: 02B (Courier Services) has the largest degree of commitment at 0.88. The average level of commitment is 0.33.

Malaysia: 01B (Computer and Related Services) and 09B (Travel Agencies and Tour Operators Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.31.

Myanmar: 01B (Computer and Related Services), 02B (Courier Services), 08C (Social Services) and 09A (Hotels and Restaurants) have the largest degree of

[7] Eighth Package (2010) (information available at: http://www.aseansec.org/19087.htm, accessed 31 March 2011) is used in the database construction. Mutual Recognition Agreements in specific service sectors (Accountancy Services, Medical Practitioners, Dental Practitioners, Engineering Services, Nursing Services and Architectural services) exist under AFAS, giving these respective sectors more liberalization commitments. In this study, this aspect has not been covered.

commitment at 0.75. The average level of commitment is 0.33.

Philippines: 02B (Courier Services) has the largest degree of commitment at 0.94. The average level of commitment is 0.29.

Singapore: 01C (Research and Development Services), 2D (Audiovisual Services), 03A (General Construction Work for Building), 03B (General Construction work for Civil Engineering), 03C (Installation and Assembly Work), 03D (Building Completion and Finishing Work), 03E (Other), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 05D (Adult Education), 09C (Tourist Guides Services), 10A (Entertainment Services), 10C (Libraries, archives, museums and other cultural services), all have the largest degree of commitment at 0.75. The average level of commitment is 0.36.

Thailand: 01B (Computer and Related Services), 06A (Sewage Services), 09A (Hotels and Restaurants) and 09D (Other Health Related and Social Services) have the largest degree of commitment at 0.88. The average level of commitment is 0.46.

Vietnam: 02B (Courier Services), 02C (Telecommunication Services), 04D (Franchising), 09A (Hotels and Restaurants) and 09B (Travel Agencies and Tour Operators Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.33.

As for ASEAN-wide integration of trade in services, it has "Declaration on the ASEAN Economic Community Blueprint[8]", in which targeting of some specific service sub-sectors and some aspects (including logistics services, market access limitations for Mode 3 and foreign equity participation for some sub-sectors) is made. It is expected that the use of Hoekman Index provides at least partial, but tangible information in this context.

The ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA) by country and by sector

The sector 01B (Computer and Related Services) has the highest average commitment by participating countries, at 0.70. The ASEAN average is 0.20. The total average of commitment by country under AANZFTA is 0.23. Following are the

[8] Available at: http://www.aseansec.org/5187-10.pdf (accessed on 4 July 2011).

observations by country.

Australia: 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04D (Franchising), 06A (Sewage Services), 06B (Refuse Disposal Services), 06C (Sanitation and Similar Services), 06D (Other Environmental Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.38.

Brunei: 01B (Computer and Related Services) has the largest degree of commitment at 0.75. The average level of commitment is 0.07.

Cambodia: 01B (Computer and Related Services) has the largest degree of commitment at 1.0 (full score). The average level of commitment is 0.38.

Indonesia: 08A (Hospital Services) and 09A (Hotels and Restaurants) have the largest degree of commitment at 0.63. The average level of commitment is 0.16.

Laos: 01B (Computer and Related Services) has the largest degree of commitment at 0.80. The average level of commitment is 0.12.

Malaysia: 01B (Computer and Related Services) has the largest degree of commitment at 0.80. The average level of commitment is 0.16.

Myanmar: 01B (Computer and Related Services) has the largest degree of commitment at 0.88. The average level of commitment is 0.11.

New Zealand: 01B (Computer and Related Services) has the largest degree of commitment at 1.0 (full score). The average level of commitment is 0.39.

Philippines: 09B (Travel Agencies and Tour Operators Services) has the largest degree of commitment at 0.75. The average level of commitment is 0.11.

Singapore: 01B (Computer and Related Services) has the largest degree of commitment at 1.0 (full score). The average level of commitment is 0.32.

Thailand: 01B (Computer and Related Services) has the largest degree of commitment at 1.0 (full score). The average level of commitment is 0.22.

Vietnam: 02B (Courier Services), 02C (Telecommunication Services), 04D (Franchising), 07A (All Insurance and Insurance-related Services), 09A (Hotels and Restaurants), 09B (Travel Agencies and Tour Operators Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.32.

ASEAN-China Free Trade Agreement (ACFTA) by country and by sector

The sector 09B (Travel Agencies and Tour Operators Services) has the highest average commitment by participating countries, at 0.34. The ASEAN average is 0.12. The total average of commitment by country under ACFTA is 0.12. Following are the observations by country.

Brunei: 11F (Road Transport Services) has the largest degree of commitment at 0.75. The average level of commitment is 0.02.

Cambodia: 01B (Computer and Related Services), 02B (Courier Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 04E (Other Distribution Services), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 06A (Sewage Services), 06B (Refuse Disposal Services), 06C (Sanitation and Similar Services), 06D (Other Environmental Services), 08A (Hospital Services), 09B (Travel Agencies and Tour Operators Services), 09C (Tourist Guides Services), 10A (Entertainment Services), all have the largest degree of commitment at 0.75. The average level of commitment is 0.36.

Indonesia: 09A (Hotels and Restaurants) has the largest degree of commitment at 0.63. The average level of commitment is 0.04.

Laos: 07A (All Insurance and Insurance-related Services) has the largest degree of commitment at 0.50. The average level of commitment is 0.02.

Malaysia: 02C (Telecommunication Services) and 07B (Banking and Other Financial Services) have the largest degree of commitment at 0.69. The average level of commitment is 0.06.

Myanmar: 02D (Audiovisual Services) has the largest degree of commitment at 0.44. The average level of commitment is 0.02.

Philippines: 09B (Travel Agencies and Tour Operators Services) has the largest degree of commitment at 1.0. The average level of commitment is 0.04.

China[9]: 01D (Real Estate Services) and 11F (Road Transport Services) have the largest

[9] It should be noted that China seems to omit, in the reporting under this FTA, its commitments already made under the GATS (as mentioned in section 7). A fair comparison among the participating countries can therefore be made only after making some adjustment or reconciliation work between the GATS commitment and the FTA commitment by China. (The same sort of reconciliatory work

degree of commitment at 0.69. The average level of commitment is 0.13.

Singapore: 04D (Franchising), 05D (Adult Education), 05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), 09C (Tourist Guides Services), 10A (Entertainment Services) and 10C (Libraries, archives, museums and other cultural services) have the largest degree of commitment at 0.75. The average level of commitment is 0.23.

Thailand: 09D (Tourist Guides Services) has the largest degree of commitment at 0.81. The average level of commitment is 0.06.

Vietnam: 01B (Computer and Related Services), 02B (Courier Services), 04D (Franchising), 07A (All Insurance and Insurance-related Services), 09A (Hotels and Restaurants), 09B (Travel Agencies and Tour Operators Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.33.

ASEAN-Korea Free Trade Agreement (AKFTA) by country and by sector

The sector 09B (Travel Agencies and Tour Operators Services) has the highest average commitment by participating countries, at 0.50. The ASEAN average is 0.19. The total average of commitment by country under AKFTA is 0.20. Following are the observations by country.

Brunei: 08A (Hospital Services) has the largest degree of commitment at 0.75. The average level of commitment is 0.08.

Cambodia: 01B (Computer and Related Services), 02B (Courier Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 04E (Other Distribution Services), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 06A (Sewage Services), 06B (Refuse Disposal Services), 06C (Sanitation and Similar Services), 06D (Other Environmental Services), 09B (Travel Agencies and Tour Operators Services), 09C (Tourist Guides Services), 10A (Entertainment Services), 11F (Road Transport Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.36.

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might possibly be needed for the other countries.)

Indonesia: 09A (Hotels and Restaurants) has the largest degree of commitment at 0.69. The average level of commitment is 0.18.

Korea: 01B (Computer and Related Services), 04D (Franchising), 09B (Travel Agencies and Tour Operators Services), and 09C (Tourist Guides Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.28.

Laos: 03B (General Construction work for Civil Engineering), 03C (Installation and Assembly Work), and 05B (Secondary Education Services) have the largest degree of commitment at 0.56. The average level of commitment is 0.07.

Malaysia: 09A (Hotels and Restaurants) and 09D (Other Tourism and Travel Related Services) have the largest degree of commitment at 0.69. The average level of commitment is 0.19.

Myanmar: 03B (General Construction work for Civil Engineering) has the largest degree of commitment at 0.63. The average level of commitment is 0.03.

Philippines: 09B (Travel Agencies and Tour Operators Services) has the largest degree of commitment at 1.0. The average level of commitment is 0.16.

Singapore: 03A (General Construction Work for Building), 03B (General Construction work for Civil Engineering), 03C (Installation and Assembly Work), 03D (Building Completion and Finishing Work), 03E (Other Construction and Related Engineering Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04D (Franchising) 05D (Adult Education), 09C (Tourist Guides Services), 10A (Entertainment Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.31.

Thailand: NA

Vietnam: 01B (Computer and Related Services), 02B (Courier Services), 02C (Telecommunication Services), 04D (Franchising), 07A (All Insurance and Insurance-related Services), 09A (Hotels and Restaurants), 09B (Travel Agencies and Tour Operators Services) have the largest degree of commitment at 0.75. The average level of commitment is 0.31.

4. Analysis using database: Correlation among the participating countries

After calculating the Hoekman Index, similarities among participating countries have been measured in the form of correlation coefficients. This has been done by comparing the calculated Hoekman Indices by country and by sector (as in Tables 1-4). The results are presented in Table 5-8.

Under AFAS (as shown in Table 5), high correlations can be observed between (1) Malaysia and Vietnam (correlation coefficient=0.609); (2) Laos and Vietnam (correlation coefficient=0.608). There is no negative correlation observed among the ten ASEAN countries, indicating that they all have concern for common sensitive sectors as well as less-sensitive ones. Malaysia has the strongest positive correlation with the ASEAN average (correlation coefficient of 0.791). The simple average of all of the coefficients between different countries listed in the Table is calculated as 0.341 (not shown in the Table). This is the second highest among the four FTAs under coverage in this study, as seen below.

Under the ASEAN-Australia-New Zealand FTA (results are shown in Table 6), there is no correlation coefficient higher than 0.700, showing that under this FTA, each country has its own individual sensitivities. All the correlation coefficients are positive (with the highest one being 0.688 between Australia and New Zealand), with just one exception (between Myanmar and the Philippines, yet the coefficient, -0.053 is low in magnitude). Malaysia has the strongest positive correlation with the ASEAN average (correlation coefficient of 0.805). The simple average of all of the coefficients between different countries listed in the Table is calculated as 0.349 (not shown in the Table). This average is the highest, and a little higher than that for AFAS (i.e., 0.341), indicating that, relatively speaking, the member countries are similar in their service sector commitments.

Under the ASEAN-China FTA (results are shown in Table 7), there is no correlation coefficient higher than 0.700, just as in the case of the ASEAN-Australia-New Zealand FTA. The highest coefficient is 0.588 (between Vietnam and Cambodia). Vietnam has the strongest positive correlation with the ASEAN average (correlation coefficient of 0.789). The simple average of all of the coefficients between different countries listed in the Table is calculated as 0.059 (not shown in the Table). This

is the lowest among the four FTAs investigated in this study. This seems to signify that the participation by China as a big supplier and market for trade in services, is rather "sensitive" and therefore the commitments by individual countries are diverse, reflecting intensified sensitivities.

Under the ASEAN-Korea FTA (results are shown in Table 8), there is no correlation coefficient higher than 0.700, as in the ASEAN-Australia-New Zealand FTA and the ASEAN-China FTA. The highest coefficient is 0.572 (between Brunei and Indonesia). Vietnam has the strongest positive correlation with the ASEAN average (correlation coefficient of 0.780). The simple average of all of the coefficients between different countries listed in the Table is calculated as 0.241 (not shown in the Table). This is the second lowest correlation among the four FTAs at issue in this study.

Table 5. Correlation coefficients for the ASEAN Framework Agreement on Services (AFAS)

	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	ASEAN Averag
Brunei	1										
Cambodia	0.027	1									
Indonesia	0.221	0.222	1								
Laos	0.336	0.391	0.346	1							
Malaysia	0.458	0.371	0.433	0.554	1						
Myanmar	0.173	0.403	0.375	0.556	0.402	1					
Philippines	0.213	0.313	0.063	0.242	0.395	0.213	1				
Singapore	0.151	0.38	0.144	0.443	0.468	0.542	0.245	1			
Thailand	0.264	0.237	0.228	0.446	0.417	0.298	0.248	0.339	1		
Vietnam	0.188	0.339	0.554	0.608	0.609	0.56	0.295	0.338	0.28	1	
ASEAN Averag	0.443	0.602	0.551	0.769	0.791	0.717	0.51	0.649	0.595	0.743	1

Source: Calculated from Table 1.

Table 6. Correlation coefficients for the ASEAN-Australia-New Zealand FTA

	Australia	New Zealand	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	ASEAN-Ave.	Total-Ave.
Australia	1													
New Zealand	0.688	1												
Brunei	0.134	0.366	1											
Cambodia	0.43	0.479	0.249	1										
Indonesia	0.121	0.342	0.479	0.305	1									
Laos	0.362	0.514	0.371	0.334	0.423	1								
Malaysia	0.194	0.483	0.68	0.287	0.664	0.505	1							
Myanmar	0.254	0.462	0.574	0.186	0.622	0.397	0.576	1						
Philippines	0.091	0.166	0.161	0.218	0.177	0.163	0.291	-0.053	1					
Singapore	0.194	0.336	0.499	0.365	0.355	0.279	0.519	0.277	0.13	1				
Thailand	0.329	0.53	0.502	0.295	0.39	0.552	0.466	0.442	0.121	0.24	1			
Vietnam	0.33	0.221	0.287	0.498	0.482	0.219	0.39	0.159	0.424	0.333	0.188	1		
ASEAN-Ave.	0.4	0.61	0.701	0.638	0.739	0.651	0.805	0.61	0.388	0.652	0.631	0.635	1	
Total-Ave.	0.597	0.772	0.644	0.66	0.668	0.666	0.757	0.608	0.353	0.609	0.648	0.596	0.967	1

Source: Calculated from Table 2.

Table 7. Correlation coefficients for the ASEAN-China FTA

	China	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	ASEAN-Ave.	Total-Ave.
China	1												
Brunei	0.286	1											
Cambodia	0.157	-0.202	1										
Indonesia	0.262	-0.014	0.077	1									
Laos	0.013	-0.046	0.222	-0.069	1								
Malaysia	-0.073	-0.032	0.239	-0.112	0.449	1							
Myanmar	-0.055	0.118	-0.239	-0.077	-0.056	-0.033	1						
Philippines	-0.009	-0.011	0.173	0.246	-0.055	-0.072	-0.056	1					
Singapore	-0.09	0.056	0.312	-0.25	0.121	-0.076	-0.198	0.105	1				
Thailand	-0.211	-0.041	-0.005	0.169	-0.082	0.069	-0.092	0.462	-0.052	1			
Vietnam	0.145	-0.071	0.583	0.273	0.302	0.326	-0.076	0.316	0.12	0.113	1		
ASEAN-Ave.	0.092	0.028	0.752	0.233	0.36	0.39	-0.142	0.502	0.454	0.326	0.789	1	
Total-Ave.	0.334	0.098	0.75	0.285	0.344	0.351	-0.148	0.473	0.408	0.257	0.783	0.969	1

Source: Calculated from Table 3.

Table 8. Correlation coefficients for the ASEAN-Korea FTA

	Korea	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Vietnam	ASEAN-Ave.	Total-Ave.
Korea	1											
Brunei	0.065	1										
Cambodia	0.422	0.06	1									
Indonesia	0.144	0.572	0.262	1								
Laos	-0.274	0.455	0.089	0.554	1							
Malaysia	0.212	0.431	0.105	0.369	0.14	1						
Myanmar	0.052	0.217	-0.074	0.165	0.274	0.204	1					
Philippines	0.304	0.087	0.048	0.166	-0.127	0.165	0.345	1				
Singapore	0.293	0.289	0.447	0.366	0.192	0.422	0.138	-0.008	1			
Vietnam	0.406	0.523	0.483	0.391	0.243	0.499	0.09	0.181	0.459	1		
ASEAN-Ave.	0.386	0.623	0.581	0.711	0.444	0.631	0.322	0.352	0.694	0.78	1	
Total-Ave.	0.553	0.577	0.611	0.671	0.345	0.613	0.301	0.38	0.686	0.788	0.982	1

Source: Calculated from Table 4.

Correlation among the ASEAN+n FTAs has also been measured, using the sector-average value of Hoekman Index in Tables 1-4. The result is shown in Table 9. The highest positive correlation of 0.870 is observed between the ASEAN-Australia-New Zealand FTA and the ASEAN-Korea FTA. The lowest correlation of 0.615 is observed between the ASEAN Framework Agreement on Services and the ASEAN-China FTA. This, though, is also a positive value. There is no negative correlation observed among the four FTAs. Since country-difference is not considered in this analysis (due to differing membership across different FTAs), sector-specific factors are relevant here: Sectors with open orientation and those with domestic sensitivities are more or less shared across all the four FTAs.

Overall, strong correlations (coefficients of over 0.8) are observed among the following three FTAs, i.e., among (1) the ASEAN-Australia-New Zealand FTA, (2) the ASEAN-China FTA, and (3) the ASEAN-Korea FTA. In other words, the ASEAN Framework Agreement on Services has an unusual commitment pattern, reflecting some degree of a unified ASEAN membership.

Table 9. Correlation coefficients among the four FTAs

	ASEAN Framework Agreement on Services	ASEAN-Australia-New Zealand FTA	ASEAN-China FTA	ASEAN-Korea FTA (Data for Thailand missing)
ASEAN Framework Agreement on Services	1			
ASEAN-Australia-New Zealand FTA	0.718	1		
ASEAN-China FTA	0.615	0.826	1	
ASEAN-Korea FTA (Data for Thailand missing)	0.704	0.870	0.830	1

Source: Calculated from Tables 1-4.

Next, correlation of commitments by the same country under different FTAs is calculated, as in Table 10-19. These Tables reveal that there is no “convergence” of country-level commitments under different FTAs observed as they currently stand, and that the degree of similarity differs greatly across different countries and also across different pairs of FTAs. Overall, however, most correlation coefficients are positive, revealing that each country generally expresses similar domestic concerns under the different FTAs.

Table 10. Correlation of commitments by Brunei under the four different FTAs

	Brunei (AFAS)	Brunei (AANZ)	Brunei (ASEAN-China)	Brunei (ASEAN-Korea)
Brunei (AFAS)	1			
Brunei (AANZ)	0.401	1		
Brunei (ASEAN-China)	-0.084	0.011	1	
Brunei (ASEAN-Korea)	0.43	0.742	0.026	1

Source: Calculated from Tables 1-4.

Table 11. Correlation of commitments by Cambodia under the four different FTAs

	Cambodia (AFAS)	Cambodia (AANZ)	Cambodia (ASEAN-China)	Cambodia (ASEAN-Korea)
Cambodia (AFAS)	1			
Cambodia (AANZ)	0.852	1		
Cambodia (ASEAN-China)	0.807	0.952	1	
Cambodia (ASEAN-Korea)	0.886	0.947	0.907	1

Source: Calculated from Tables 1-4.

Table 12. Correlation of commitments by Indonesia under the four different FTAs

	Indonesia (AFAS)	Indonesia (AANZ)	Indonesia (ASEAN-China)	Indonesia (ASEAN-Korea)
Indonesia (AFAS)	1			
Indonesia (AANZ)	0.383	1		
Indonesia (ASEAN-China)	0.203	0.505	1	
Indonesia (ASEAN-Korea)	0.457	0.905	0.459	1

Source: Calculated from Tables 1-4.

Table 13. Correlation of commitments by Laos under the four different FTAs

	Laos (AFAS)	Laos (AANZ)	Laos (ASEAN-China)	Laos (ASEAN-Korea)
Laos (AFAS)	1			
Laos (AANZ)	0.431	1		
Laos (ASEAN-China)	-0.09	0.164	1	
Laos (ASEAN-Korea)	0.493	0.216	-0.095	1

Source: Calculated from Tables 1-4.

Table 14. Correlation of commitments by Malaysia under the four different FTAs

	Malaysia (AFAS)	Malaysia (AANZ)	Malaysia (ASEAN-China)	Malaysia (ASEAN-Korea)
Malaysia (AFAS)	1			
Malaysia (AANZ)	0.484	1		
Malaysia (ASEAN-China)	0.171	0.397	1	
Malaysia (ASEAN-Korea)	0.396	0.599	0.211	1

Source: Calculated from Tables 1-4.

Table 15. Correlation of commitments by Myanmar under the four different FTAs

	Myanmar (AFAS)	Myanmar (AANZ)	Myanmar (ASEAN-China)	Myanmar (ASEAN-Korea)
Myanmar (AFAS)	1			
Myanmar (AANZ)	0.336	1		
Myanmar (ASEAN-China)	-0.004	0.075	1	
Myanmar (ASEAN-Korea)	0.085	0.308	0.345	1

Source: Calculated from Tables 1-4.

Table 16. Correlation of commitments by the Philippines under the four different FTAs

	Philippines (AFAS)	Philippines (AANZ)	Philippines (ASEAN-China)	Philippines (ASEAN-Korea)
Philippines (AFAS)	1			
Philippines (AANZ)	0.529	1		
Philippines (ASEAN-China)	0.394	0.538	1	
Philippines (ASEAN-Korea)	0.576	0.778	0.5	1

Source: Calculated from Tables 1-4.

Table 17. Correlation of commitments by Singapore under the four different FTAs

	Singapore (AFAS)	Singapore (AANZ)	Singapore (ASEAN-China)	Singapore (ASEAN-Korea)
Singapore (AFAS)	1			
Singapore (AANZ)	0.739	1		
Singapore (ASEAN-China)	0.31	0.303	1	
Singapore (ASEAN-Korea)	0.746	0.837	0.333	1

Source: Calculated from Tables 1-4.

Table 18. Correlation of commitments by Thailand under the three different FTAs

	Thailand (AFAS)	Thailand (AANZ)	Thailand (ASEAN-China)
Thailand (AFAS)	1		
Thailand (AANZ)	0.408	1	
Thailand (ASEAN-China)	0.237	0.345	1

Note: Thailand's commitment table under ASEAN-Korea is not available.
Source: Calculated from Tables 1-4.

Table 19. Correlation of commitments by Vietnam under the four different FTAs

	Vietnam (AFAS)	Vietnam (AANZ)	Vietnam (ASEAN-China)	Vietnam (ASEAN-Korea)
Vietnam (AFAS)	1			
Vietnam (AANZ)	0.59	1		
Vietnam (ASEAN-China)	0.567	0.951	1	
Vietnam (ASEAN-Korea)	0.554	0.925	0.967	1

Source: Calculated from Tables 1-4.

5. Cluster analysis

The next attempt is to highlight similarities in commitments among individual participating members by FTA. The standard pair-wise clustering method[10] has been applied to the calculated Hoekman Indices (as in Tables 1-4). Figures 1-4 show the results of pair-wise clustering. Figure 1 shows the clustering of countries under AFAS in the form of a “dendrogram” (tree-shaped categorization). As shown, Malaysia is closest to the simple-average of commitments by all the signatory countries (labeled as “ASEAN Ave.” in the Figure). The commitment patterns do not seem to be categorized perfectly according to the level of economic development (in terms of per-capita GDP). Also, Cambodia, Laos, Myanmar and Vietnam (so-called “CLMV” countries as latecomer members of ASEAN) are not clustered close to one another, reflecting individual commitment patterns for each of them. Judging from the “distance” (measured by the horizontal axis in the Figure), the distances between ASEAN countries are closest under AFAS among the four FTAs studied, since all the ASEAN countries are clustered together within the distance of 2, whereas in the other Figures, the final clustering is done beyond the distance of 2. Figure 2 reveals that Australia and New Zealand are closest to the “Average”, which indicates that their commitment patterns are, interestingly, “typical” of ASEAN members. Figure 3 for the ASEAN-China FTA shows that China is clustered rather away from the “Average” commitment pattern. Vietnam is closest to the “Average” just as in the case of Figure 1 (for the AFAS). Figure 4 for the ASEAN-Korea FTA shows that Korea is categorized rather close to the “Average” commitment pattern (although Vietnam is closest to the “Average”).

Clustering by sector of the country-average commitment under each FTA is shown in Figures 5-8. The upper part of the Figures show a group (or “cluster”) of rather highly committed sectors, while the bottom part groups those sectors less committed. Overall, idiosyncratic clustering of the neatly categorized 55 service sectors is observed, indicating that sensitivities differ even among similar service sectors. Since the more left-hand side of the Figures indicate shorter “distance” among the clustered pairs), so-called “cluster meeting” as seen in the GATS-based negotiations at the WTO, could also take place under these FTAs with a view to achieving cross-sector convergence in the future.

[10] Cluster analysis is a method of grouping observations into subgroups (called clusters) so that observations in the same cluster are similar in terms of "distance", which is Euclidean distance. The concrete method of clustering is illustrated in APPENDIX II.

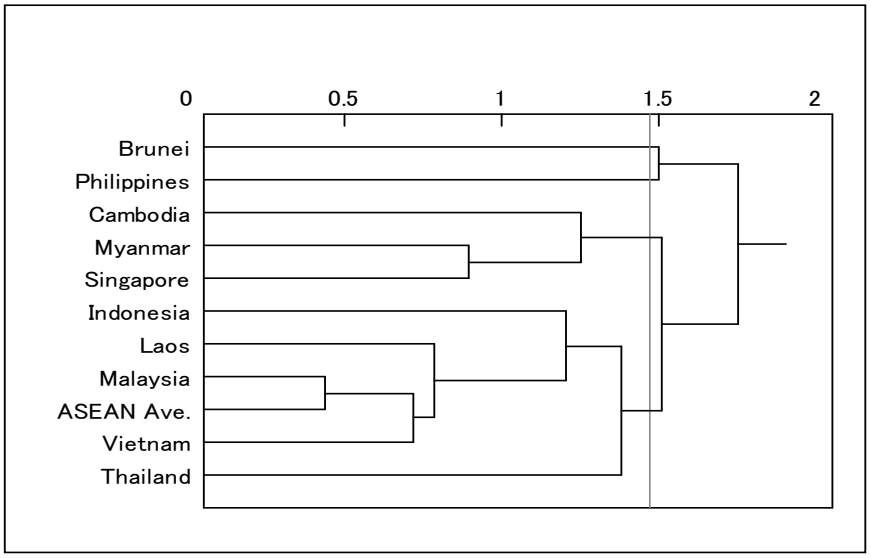


Figure 1. Clustering of countries under AFAS (in the form of a dendrogram)
Source: Made from Table 1.

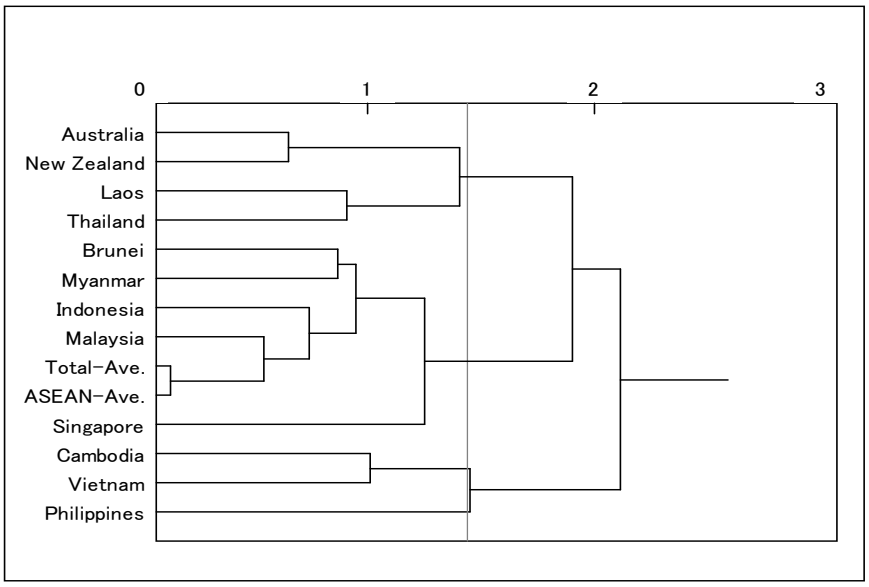


Figure 2. Clustering of countries under ASEAN-Australia-New Zealand FTA (in the form of a dendrogram)
Source: Made from Table 2.

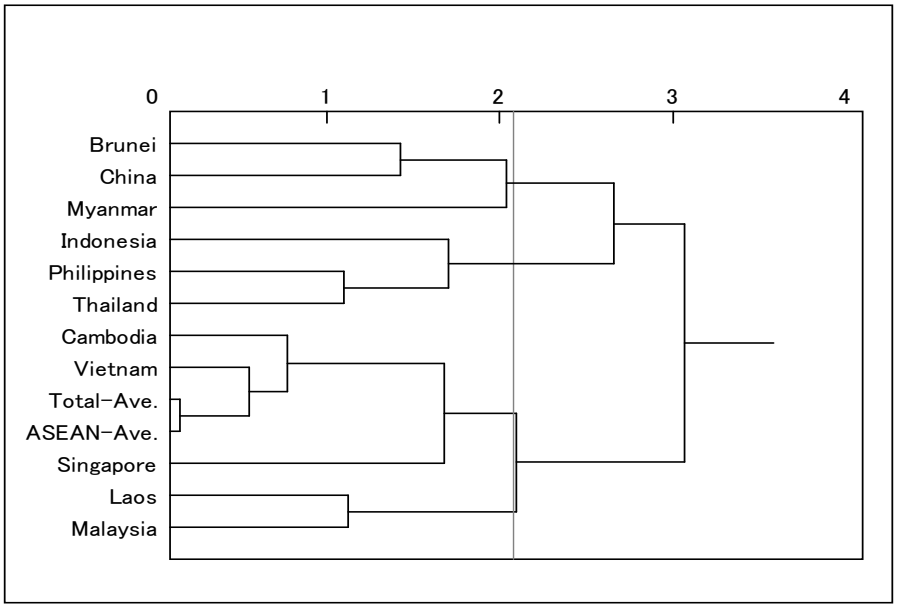


Figure 3. Clustering of countries under ASEAN-China FTA (in the form of a dendrogram)

Source: Made from Table 3.

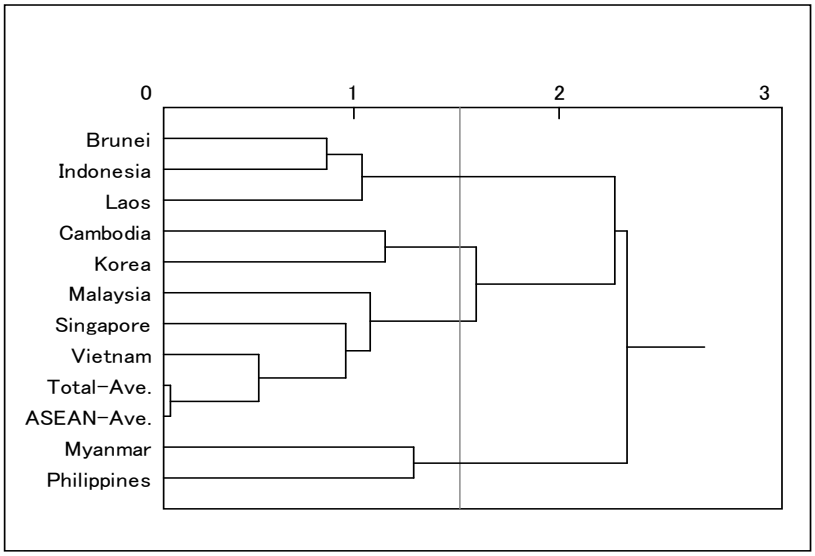


Figure 4. Clustering of countries under ASEAN-Korea FTA (in the form of a dendrogram)

Source: Made from Table 4.

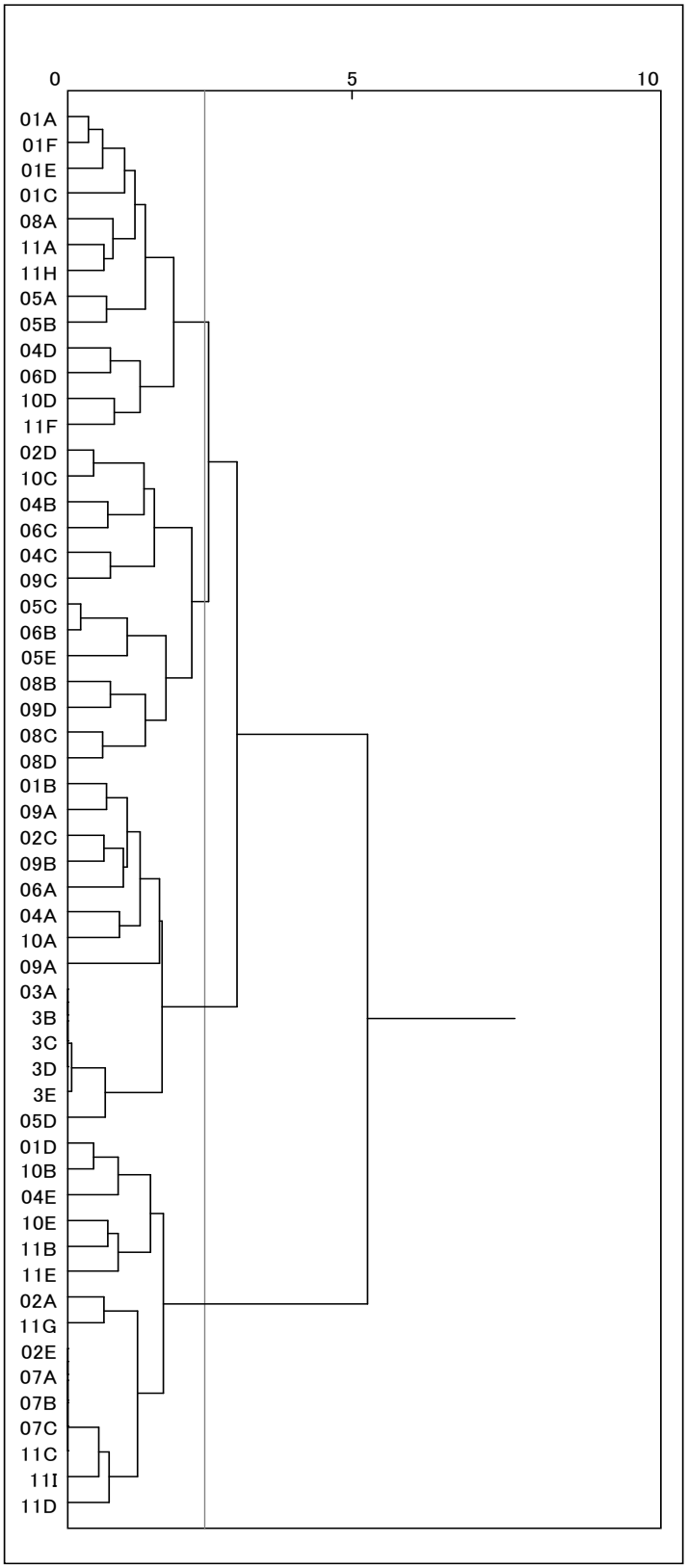


Figure 5. Clustering of sectors under AFAS (in the form of a dendrogram)

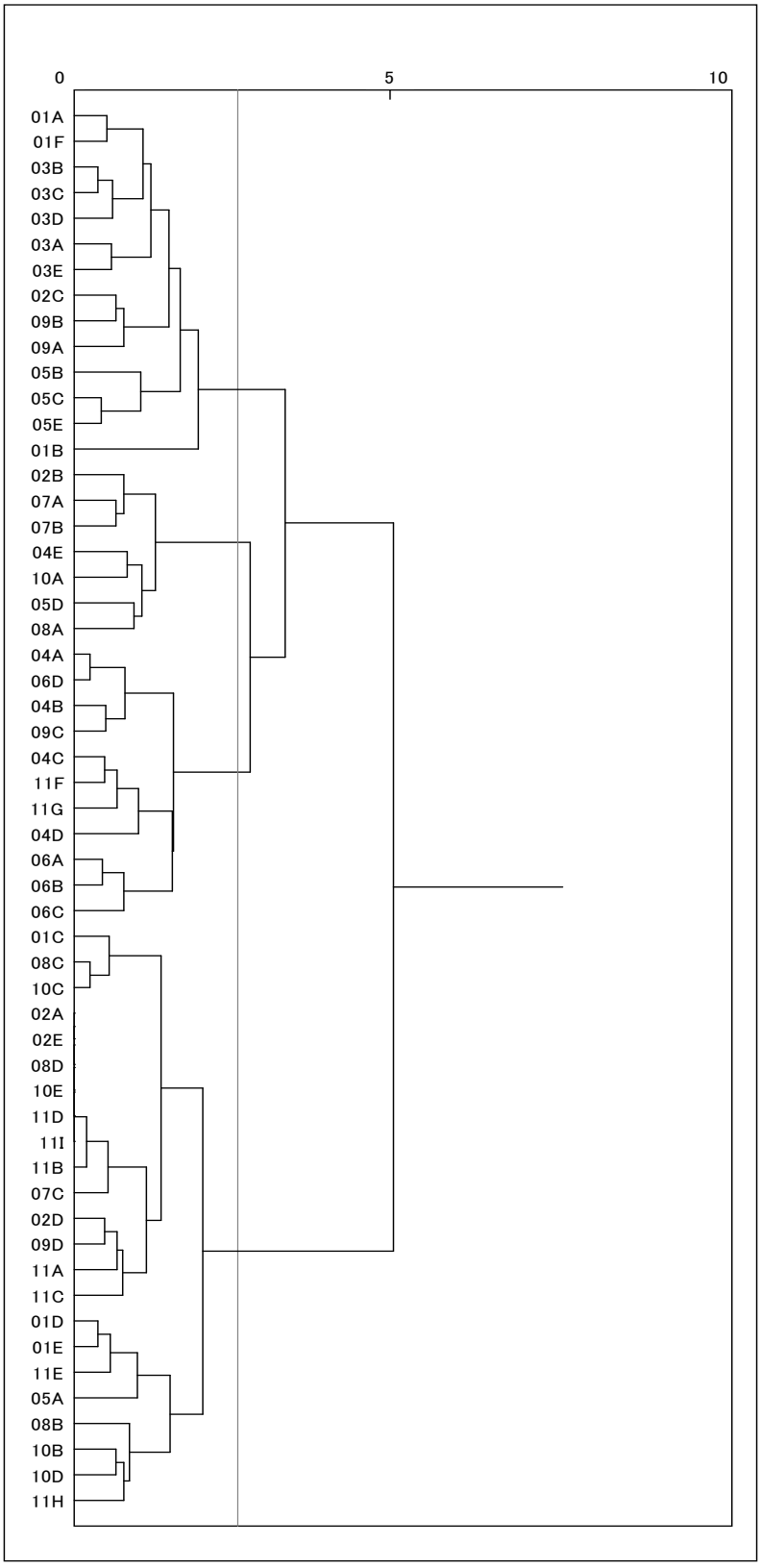


Figure 6. Clustering of sectors under ASEAN-Australia-New Zealand FTA (in the form of a dendrogram)

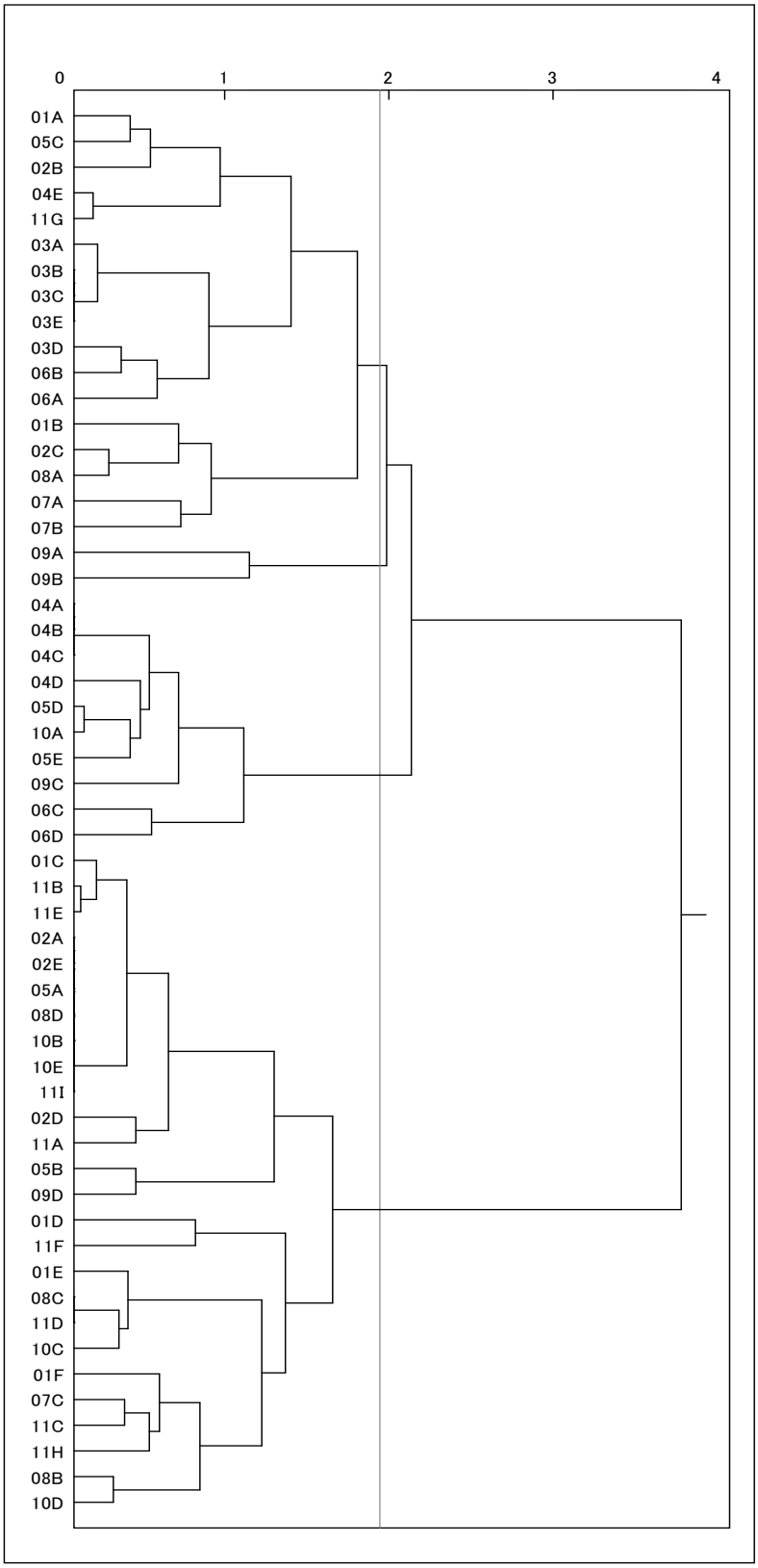


Figure 7. Clustering of sectors under ASEAN-China FTA (in the form of a dendrogram)

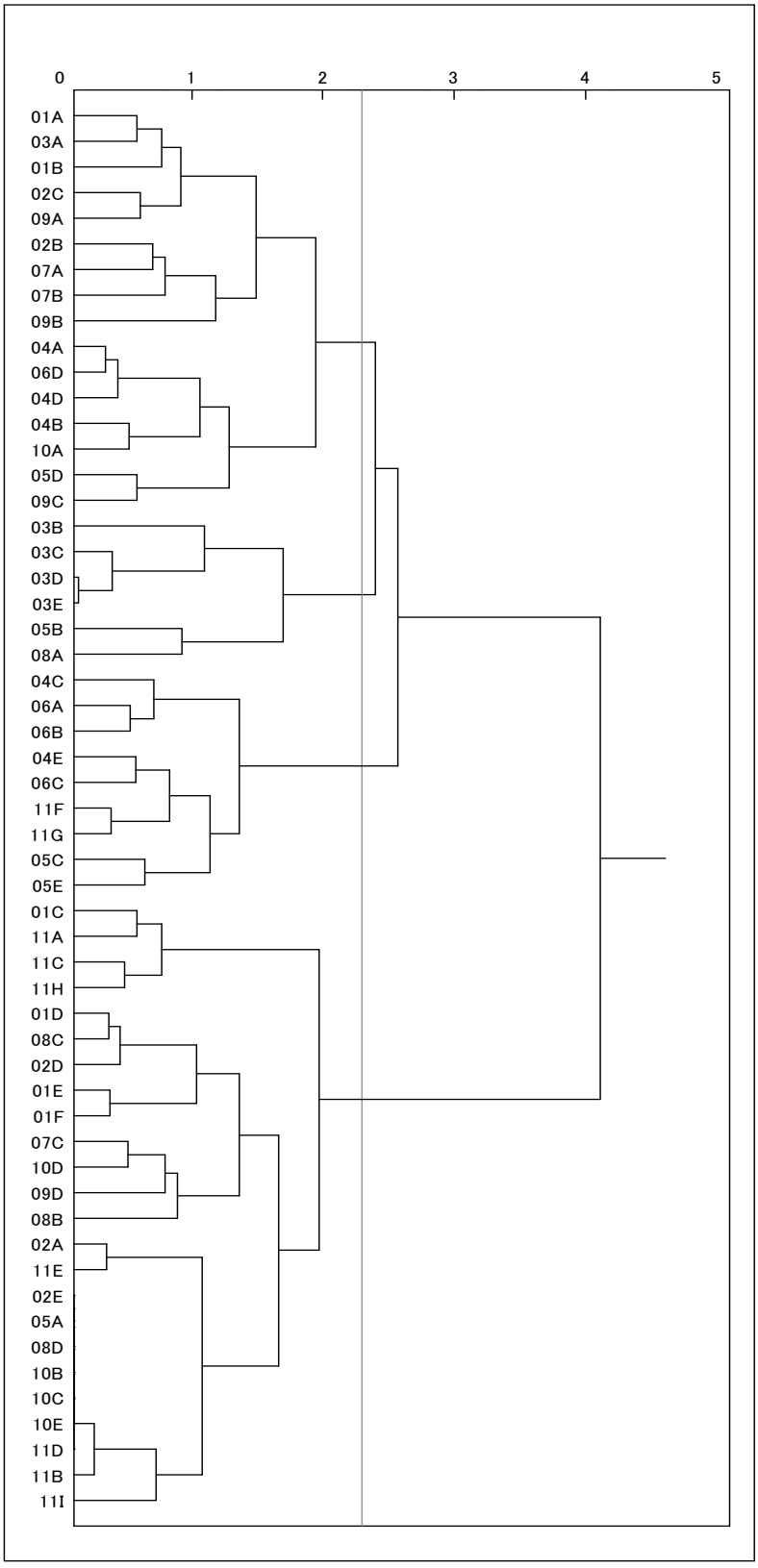


Figure 8. Clustering of sectors under ASEAN-Korea FTA (in the form of a dendrogram)

6. Hoekman Index by country, by mode and by aspect

The Hoekman Index has also been calculated by country, by Mode and by aspect. Results are shown in Tables 20-23. A cross-cutting observation on the level of commitment by Mode is that while Mode 1 through Mode 3 have various country- and sector-specific commitment patterns, Mode 4 shows least commitments among the four Modes (except for the case of the ASEAN-Korea FTA, under which Mode 3 is least committed). Mode 2 shows most commitment overall. And there is not much difference between MA and NT for all the countries. While this study focuses on the mapping aspect, a detailed analysis of the determinants of service liberalization by mode would be desirable as a future research agenda.[11]

Table 20. Hoekman Index for the ASEAN Framework Agreement on Services (AFAS) by country, by mode and by aspect

	Aspect, i.e., Market Acccess (MA) or National Treatment (NT)	Hoekman Index for Mode 1	Hoekman Index for Mode 2	Hoekman Index for Mode 3	Hoekman Index for Mode 4	Mode average
Indonesia	MA	0.24	0.36	0.19	0.01	0.2
	NT	0.25	0.36	0.05	0.01	0.17
Malaysia	MA	0.41	0.53	0.51	0	0.36
	NT	0.42	0.53	0.48	0	0.36
Philippines	MA	0.48	0.57	0.24	0.11	0.35
	NT	0.48	0.57	0.19	0.15	0.35
Singapore	MA	0.54	0.54	0.28	0.06	0.35
	NT	0.54	0.53	0.1	0.07	0.31
Thailand	MA	0.3	0.54	0.32	0.04	0.3
	NT	0.3	0.52	0.43	0.03	0.32
Brunei	MA	0.4	0.51	0.3	0.13	0.34
	NT	0.5	0.51	0.22	0.11	0.33
Cambodia	MA	0.22	0.54	0.19	0.16	0.27
	NT	0.24	0.54	0.21	0.19	0.3
Laos	MA	0.39	0.56	0.43	0	0.34
	NT	0.46	0.56	0.5	0	0.38
Vietnam	MA	0.41	0.66	0.58	0.2	0.46
	NT	0.4	0.66	0.59	0.19	0.46
Myanmar	MA	0.24	0.56	0.43	0.05	0.32
	NT	0.3	0.56	0.5	0	0.34
Country ave	MA	0.36	0.54	0.35	0.08	0.33
	NT	0.39	0.53	0.33	0.07	0.33

Source: Calculated from the database constructed.

[11] In the context of mode-by-mode determinants of trade in services, Urata *et al.* (2011) indicate that endowment-based trade models (of Heckscher-Ohlin type) could explain Mode 1–based trade in services; Mode 2 tend to be determined by supply-side considerations as featured in the Ricardo model; Modes 3 and 4, being flow of factors of production, might be explained by the theory of foreign direct investment.

Table 21. Hoekman Index for the ASEAN-Australia-New Zealand FTA by country, by mode and by aspect

	Aspect, i.e., Market Acccess (MA) or National Treatment (NT)	Mode 1	Mode 2	Mode 3	Mode 4	Mode average
Australia	MA	0.39	0.55	0.57	0.01	0.38
	NT	0.42	0.56	0.52	0.01	0.38
Brunei	MA	0.03	0.12	0.06	0.02	0.06
	NT	0.05	0.12	0.02	0.01	0.05
Cambodia	MA	0.41	0.54	0.51	0.02	0.37
	NT	0.43	0.54	0.52	0.02	0.38
Indonesia	MA	0.17	0.27	0.13	0.01	0.14
	NT	0.26	0.27	0.09	0.01	0.16
Laos	MA	0.17	0.17	0.22	0.01	0.14
	NT	0.17	0.17	0.04	0.02	0.1
Malaysia	MA	0.1	0.28	0.15	0.01	0.13
	NT	0.1	0.26	0.24	0.01	0.15
Myanmar	MA	0.1	0.2	0.07	0.02	0.1
	NT	0.2	0.2	0.07	0.02	0.12
New Zealand	MA	0.49	0.5	0.51	0.02	0.38
	NT	0.49	0.5	0.51	0.02	0.38
Philippines	MA	0.05	0.19	0.12	0	0.09
	NT	0.07	0.19	0.15	0	0.1
Singapore	MA	0.3	0.43	0.38	0.02	0.28
	NT	0.35	0.43	0.42	0.02	0.3
Thailand	MA	0.04	0.41	0.36	0.02	0.21
	NT	0.03	0.4	0.38	0.02	0.21
Vietnam	MA	0.16	0.58	0.44	0	0.3
	NT	0.19	0.56	0.49	0	0.31
Country average	MA	0.2	0.35	0.29	0.01	0.21
	NT	0.23	0.35	0.29	0.01	0.22

Source: Calculated from the database constructed.

Table 22. Hoekman Index for the ASEAN-China FTA by country, by mode and by aspect

Country	Aspect, i.e., Market Acccess (MA) or National Treatment (NT)	Mode 1	Mode 2	Mode 3	Mode 4	Mode average
Brunei	MA	0.03	0.03	0.03	0.01	0.02
	NT	0.03	0.03	0.02	0.01	0.02
Cambodia	MA	0.4	0.54	0.5	0	0.36
	NT	0.42	0.54	0.51	0	0.37
Indonesia	MA	0.02	0.09	0.05	0.04	0.05
	NT	0.02	0.04	0.05	0.04	0.03
Laos	MA	0.01	0.03	0.03	0	0.02
	NT	0.01	0.03	0.03	0	0.02
Malaysia	MA	0.07	0.07	0.07	0.01	0.06
	NT	0.08	0.08	0.1	0.01	0.07
Myanmar	MA	0.01	0.04	0.01	0.01	0.02
	NT	0.01	0.04	0	0.01	0.02
Philippines	MA	0.02	0.06	0.04	0.04	0.04
	NT	0.02	0.06	0.05	0.04	0.04
China	MA	0.05	0.24	0.13	0	0.1
	NT	0.12	0.24	0.23	0.01	0.15
Singapore	MA	0.19	0.38	0.35	0	0.23
	NT	0.2	0.38	0.36	0	0.23
Thailand	MA	0.03	0.12	0.07	0.06	0.07
	NT	0.02	0.12	0.08	0	0.06
Vietnam	MA	0.2	0.6	0.5	0	0.33
	NT	0.22	0.6	0.55	0	0.34
Country average	MA	0.09	0.2	0.16	0.01	0.12
	NT	0.1	0.2	0.18	0.01	0.12

Source: Calculated from the database constructed.

Table 23. Hoekman Index for the ASEAN-Korea FTA by country, by mode and by aspect

Country	Aspect, i.e., Market Acccess (MA) or National Treatment (NT)	Mode 1	Mode 2	Mode 3	Mode 4	Mode average
Brunei	MA	0.18	0.09	0.01	0.06	0.08
	NT	0.19	0.05	0.01	0.08	0.08
Cambodia	MA	0.53	0.49	0	0.38	0.35
	NT	0.53	0.51	0	0.4	0.36
Indonesia	MA	0.3	0.15	0.06	0.2	0.18
	NT	0.3	0.12	0.12	0.2	0.19
Korea	MA	0.46	0.41	0	0.17	0.26
	NT	0.48	0.42	0	0.28	0.29
Laos	MA	0.15	0.1	0	0.09	0.09
	NT	0.17	0.01	0	0.07	0.06
Malaysia	MA	0.34	0.2	0.01	0.19	0.19
	NT	0.32	0.3	0	0.16	0.2
Myanmar	MA	0.05	0.02	0.02	0.02	0.03
	NT	0.05	0.02	0.02	0.03	0.03
Philippines	MA	0.22	0.17	0.12	0.09	0.15
	NT	0.22	0.22	0.14	0.14	0.18
Singapore	MA	0.46	0.42	0	0.31	0.3
	NT	0.47	0.44	0	0.34	0.31
Vietnam	MA	0.01	0.01	0	0	0.01
	NT	0.01	0.01	0	0	0.01
Country average	MA	0.27	0.21	0.02	0.15	0.16
	NT	0.27	0.21	0.03	0.17	0.17

Source: Calculated from the database constructed.

7. Conclusions and policy implications

This study focuses on mapping the degree of liberalization of trade in services under four ASEAN+n FTAs. There remains much need to investigate causal links between restrictions on trade in services and the actual performances of service trade.[12]

There are several caveats to be made in interpreting the mapped data. Most notably, there should be a distinction drawn between actual policy provisions and the noted commitments: the former might be well above the latter, indicating that in the actual business setting, a particular country's openness is more than the way the country makes its commitment under certain FTAs.

In addition, "enforcement" of the bound commitments is quite another issue: however deeply committed one country may be at the level of an FTA, such commitment might not be actually realized (enforced). Further, there is also a need to compare each country's commitment under GATS with that under each of the FTAs. This comparison

[12] OECD (2003, 2009), for example, make systemic analyses of causal and/or correlation linkages between the restrictiveness and actual performance of trade in services.

of GATS-based commitments and the FTA-based commitments would reveal whether the so-called "WTO-plus" feature exists or not.[13]

And finally, this study exclusively focuses on the "outline description", in the sense that the "Limitation" of individual service sectors is not quantified but simply denoted (in the database) as "L". Measuring the contents of limitations out of the commitment tables (characterized by "positive lists" rather than negative ones) requires an overall picture of each sector's legal framework. In this study, these aspects have not been considered, posing a limitation and at the same time providing an agenda for further study.[14]

The mapping exercise in this study has overall revealed that:

(1) The commitment level differs greatly between "sensitive" sectors and "less sensitive" sectors; this means that there is much scope for further enhancing international division of labor in terms of trade in services, through utilizing FTAs;

(2) The commitment level under the ASEAN Framework Agreement (AFAS) is the highest among the four FTAs studied; this means that the ASEAN member countries are rather highly consolidated among themselves, leading up to the formation of an ASEAN Economic Community (AEC);

(3) There are cross-country similarities in the pattern of service sector commitment under each of the FTAs; this implies that the shared domestic sensitivities can be overcome by a shared economic cooperation scheme for enhancing competitiveness (through FTA provisions);

(4) There are sector-specific similarities (high correlations) among the three FTAs, i.e., the ASEAN-Australia-New Zealand FTA, the ASEAN-China FTA and the ASEAN-Korea FTA; this signifies that in the face of extra-ASEAN market opening,

[13] While all the pluri-lateral FTAs are expected to have the WTO-plus feature, China's commitment under the ASEAN-China FTA omits its commitment under the GATS, thus leading to the under-estimation of China's bilateral commitment. There are, however, incidences in which China reports in its bilateral FTA the same commitment made under the GATS. A preliminary investigation has revealed this sort of "discrepancy" being observed with several other countries including Thailand. There is thus a need to make some "reconciliation work" between the GATS commitment and FTA commitment overall, as part of the sequel research project.

[14] As a separate undertaking, the often used "coverage index" has been calculated (for the use of this index, see, e.g., Adlung and Roy, 2005). This index measures "the ratio of countries committed in particular sectors (as N or L) to the total number of countries". After calculating this index for each sector under each of the four FTAs at issue in this study, correlation coefficients between the Hoekman Index and the coverage index under each of the FTAs has been calculated. As a result, it is found that there is a high correlation of a little over 0.90 between these two indices, which implies that the Hoekman Index can serve as a representative index for measuring the commitment level of trade in services.

the ASEAN members become more consolidated in terms of the pattern of service commitment;

(5) Overall, Mode 4 (movement of people) is least committed, whereas Mode 2 (consumption abroad) is most committed under all the four FTAs studied.

There are two possibilities on the sequence of further streamlining the four FTAs:

(1)Start within the same "clusters" among similarly committed countries under a particular FTA; then harmonize the level of commitments across all the signatory countries to the FTA; or

(2) Start with harmonizing rather dissimilar countries from different "clusters" of commitments under a particular FTA, which provides small-scale "social experimenting"; then scale up this line of effort at an acceptably later stage to the level of the whole FTA, then eventually attempt to harmonize across all the FTAs centering on ASEAN, if the region covered by ASEAN+n FTAs is to become a more seamless market in terms of trade in services.

Either avenue would generate some degree of domestic concern. Overall, though, the absolute degree of commitment in service sectors remains rather low, even under the FTAs with a preferential nature. Given that there are more benefits than costs arising from deepening trade in services, further harmonization of the service chapters under the four FTAs studied is economically valid for bringing about more benefit to the ASEAN members, as well as all the other participating countries in the Asia Pacific region. As for the near-future research agenda, mapping of other FTAs involving some ASEAN member countries should be done as a sequel research effort, with a view to elucidating similarities and differences among existing FTAs in the Asia Pacific region.[15]

[15] Detailed sector-wise analysis with more elaborated and multi-dimensional quantification attempts (e.g., Ochiai, Dee and Findlay, 2007, and Dee, 2009) could also be an important future research agenda alongside the outline-mapping efforts made in this study. In the context of Ochiai, Dee and Findlay (2007), for example, the criteria for sorting out the extent of liberalization in service trade under each of some 80 FTAs studied are quite wide-ranging, as below: Scope, MFN, MFN Exemption, National Treatment, Market Access, Local Presence, Domestic Regulations, Transparency, Recognition, Monopolies, Business Practices, Transfer and Payments, Denial of Benefits, Safeguard, Subsidies, Government Procurement, Ratchet Mechanism, Telecommunication, Financial Services (in terms of form of FTAs); and Excluded Modes, Excluded Form, Sectoral Exclusions, Regional Measures, Land Acquisitions, Minority Affairs, and Number of Domestic Employees (in terms of contents of FTAs). Although appropriate selection of criteria and their scores for weighting is always a contentions issue, this sort of analytical effort with a more focus on recently forged FTAs involving ASEAN and East Asia should be a useful next step.

APPENDIX I: List of 11 sectors and 55 sub-sectors of service trade administered by GATS

01. Business Services

01.A. Professional Services
01.B. Computer and Related Services
01.C. Research and Development Services
01.D. Real Estate Services
01.E. Rental/Leasing Services without Operators
01.F. Other Business Services

02. Communication Services

02.A. Postal Services
02.B. Courier Services
02.C. Telecommunication Services
02.D. Audiovisual Services
02.E. Other

03. Construction and Related Engineering Services

03.A. General Construction Work for Building
03.B. General Construction work for Civil Engineering
03.C. Installation and Assembly Work
03.D. Building Completion and Finishing Work
03.E. Other

04. Distribution Services

04.A. Commission Agents' Services
04.B. Wholesale Trade Services
04.C. Retailing Services
04.D. Franchising
04.E. Other

05. Educational Services

05.A. Primary Education Services
05.B. Secondary Education Services
05.C. Higher Education Services
05.D. Adult Education
05.E. Other Education Services

06. Environmental Services

06.A. Sewage Services
06.B. Refuse Disposal Services
06.C. Sanitation and Similar Services
06.D. Other

07. Financial Services

07.A. All Insurance and Insurance-related Services
07.B. Banking and Other Financial Services
07.C. Other

08. Health Related and Social Services

08.A. Hospital Services
08.B. Other Human Health Services
08.C. Social Services
08.D. Other

09. Tourism and Travel Related Services

09.A. Hotels and Restaurants
09.B. Travel Agencies and Tour Operators Services
09.C. Tourist Guides Services
09.D. Other

10. Recreational, Cultural and Sporting Services

10.A. Entertainment Services
10.B. News Agency Services
10.C. Libraries, archives, museums and other cultural services
10.D. Sporting and Other Recreational Services
10.E. Other

11. Transport Services

11.A. Maritime Transport Services
11.B. Internal Waterways Transport
11.C. Air Transport Services
11.D. Space Transport
11.E. Rail Transport Services
11.F. Road Transport Services
11.G. Pipeline Transport
11.H. Services Auxiliary to All Modes of Transport
11.I. Other Transport Services

APPENDIX II: Method of cluster analysis

The concrete method of clustering (or "hierarchical clustering" more formally) is as follows. First, the distances are calculated among individual countries' commitment "vectors" (rows of average Hoekman commitment indices at the bottom of the Tables are used as the vectors); then closest pairs have been merged together and considered as one cluster; then afterwards similarly, merge the closest pairs and redo the calculation of ordinary distance and repeat the process.

A numerical example is as follows: suppose there are 5 vectors of type (x, y) –or two dimensional--, A, B, C, D, E, as in Table AII-1. (In the present study, each country has a vector of dimension 55.)

Table AII-1. Numerical example

Data vector	Value of x	Value of y
A	2	5
B	4	1
C	1	1
D	5	3
E	0	2

Then the Euclidian (standard) distance among the five vectors can be calculated as in Table AII-2.

Table AII-2. Euclidian distance among the five vectors

	A	B	C	D	E
A	-				
B	4.472	-			
C	4.123	3.000	-		
D	3.606	2.236	4.472	-	
E	3.606	4.123	1.414	5.099	-

Since the distance between C and E (1.414) is the shortest, C and E should be merged together to form one combined cluster [C, E]. Then again, distances among these can be calculated as in Table AII-3. Note here that in the calculation of the distance between a vector and a combined cluster, the simple average of the vectors in the combined cluster (called centroid) is used.

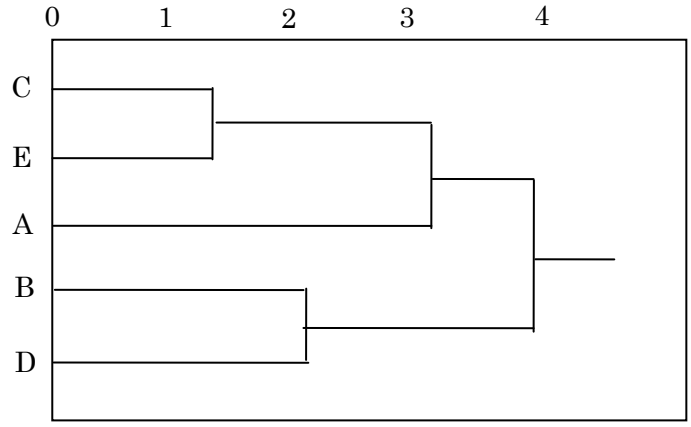
Table AII-3. Euclidian distance among the three vectors and one combined cluster

	A	B	D	[C, E]
A	-			
B	4.472	-		
D	3.606	2.236	-	
[C, E]	3.808	3.536	4.743	-

Since the distance between B and D (2.236) is the shortest, these two should be merged together to form one combined cluster [B, D]. Likewise, this merging process is repeated until all the vectors are merged into one combined cluster. Then

the vectors A, B, C, D and E can be located in the dendrogram (tree figure) as in Figure 1A, with its horizontal axis measuring the distance at which each pair of vectors and/or clusters are merged.

Figure AII-1



Part II: Some Bilateral FTAs

1. Focus of Part II

Part II of this paper maps out some bilateral FTAs. More specifically, its focus is placed upon Japan's bilateral FTAs, namely, (1) The Japan-Indonesia Economic Partnership Agreement (EPA), (2) The Japan-Malaysia EPA, (3) The Japan-Philippines EPA, (4) The Japan-Singapore EPA, (5) The Japan-Thailand EPA, and (6) The Japan-Vietnam EPA (alphabetical order of Japan's partner countries). While the ASEAN-Japan FTA does not include service chapters, these bilateral FTAs do cover commitments to trade in services. The analytical method applied is basically the same as that in Part I.

2. Results of outline mapping

The results of outline mapping are listed as Tables 1-6 below.

Table 1. Hoekman Index under Indonesia-Japan EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.75	1.00	1.00	1.00	0.95	0.81	1.00	1.00	0.95	0.58	0.00	0.75	0.75	0.75	0.75	0.75	1.00	1.00
Indonesia	0.25	0.53	0.23	0.66	0.00	0.00	0.00	0.00	0.65	0.27	0.00	0.38	0.38	0.38	0.38	0.00	0.00	0.00
Average	0.50	0.76	0.61	0.83	0.48	0.41	0.50	0.50	0.80	0.43	0.00	0.56	0.56	0.56	0.56	0.38	0.50	0.50
(Continued)																		
	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	1.00	0.50	1.00	0.25	0.25	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.38	0.00	0.38
Indonesia	0.00	0.00	0.00	0.00	0.63	0.56	0.56	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.63	0.00	0.00
Average	0.50	0.25	0.50	0.13	0.44	0.78	0.78	0.50	0.38	0.38	0.38	0.38	0.55	0.38	0.00	0.50	0.00	0.19
(Continued)																		
	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	0.75	1.00	0.75	0.00	1.00	1.00	1.00	0.75	0.00	0.75	0.42	0.35	0.25	0.80	0.85	0.75	0.88	0.00	0.68
Indonesia	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Average	0.00	0.69	0.50	0.38	0.00	0.50	0.50	0.50	0.38	0.00	0.63	0.21	0.18	0.13	0.40	0.43	0.38	0.44	0.00	0.41

Source: Calculated from the database constructed.

Table 2. Hoekman Index under Japan-Malaysia EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.75	1.00	0.33	1.00	0.95	0.81	0.00	1.00	0.95	0.58	0.00	0.75	0.75	0.75	0.75	0.75	1.00	1.00
Malaysia	0.46	0.60	0.25	0.00	0.34	0.32	0.00	0.00	0.69	0.08	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00
Average	0.61	0.80	0.29	0.50	0.64	0.56	0.00	0.50	0.82	0.33	0.00	0.53	0.38	0.38	0.38	0.38	0.50	0.50
(Continued)																		
	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	1.00	1.00	1.00	0.25	0.25	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.38	0.13	0.25
Malaysia	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.59	0.00	0.63	0.00	0.00
Average	0.50	0.50	0.50	0.13	0.13	0.53	0.50	0.50	0.38	0.38	0.38	0.38	0.54	0.67	0.00	0.50	0.06	0.13
(Continued)																		
	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	0.75	1.00	0.75	0.00	1.00	1.00	1.00	0.75	0.00	0.75	0.42	0.35	0.25	0.80	0.85	0.75	0.88	0.00	0.66
Malaysia	0.00	0.56	0.31	0.00	0.00	0.44	0.00	0.00	0.44	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Average	0.00	0.66	0.66	0.38	0.00	0.72	0.50	0.50	0.59	0.00	0.59	0.21	0.18	0.13	0.40	0.43	0.38	0.44	0.00	0.39

Source: Calculated from the database constructed.

Table 3. Hoekman Index under Japan-Philippines EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.75	1.00	1.00	1.00	0.95	0.83	0.00	1.00	0.95	0.58	0.00	0.50	0.50	0.50	0.50	0.50	1.00	1.00
Philippines	0.45	0.51	0.00	0.00	0.19	0.10	0.69	0.69	0.63	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00
Average	0.60	0.76	0.50	0.50	0.57	0.46	0.34	0.84	0.79	0.36	0.00	0.25	0.25	0.25	0.25	0.25	0.91	0.50

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	1.00	0.50	1.00	0.25	0.25	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.38	0.13	0.38
Philippines	0.00	0.00	0.00	0.75	0.75	0.75	0.75	0.81	0.56	0.00	0.00	0.00	0.13	0.75	0.00	0.63	0.00	0.00
Average	0.50	0.25	0.50	0.50	0.50	0.88	0.88	0.91	0.66	0.38	0.38	0.38	0.44	0.75	0.00	0.50	0.06	0.19

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	1.00	1.00	0.75	0.00	1.00	1.00	1.00	0.75	0.00	0.75	0.42	0.35	0.25	0.80	0.85	0.75	0.88	0.00	0.65
Philippines	0.00	0.50	1.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.14	0.00	0.41	0.41	0.56	0.64	0.00	0.27
Average	0.00	0.75	1.00	0.69	0.00	0.50	0.50	0.50	0.38	0.00	0.69	0.21	0.24	0.13	0.61	0.63	0.66	0.76	0.00	0.46

Source: Calculated from the database constructed.

Table 4. Hoekman Index under Japan-Singapore EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.43	0.75	0.75	0.63	0.60	0.50	0.00	0.00	0.66	0.46	0.00	0.38	0.00	0.38	0.38	0.38	0.25	0.25
Singapore	0.59	0.75	0.75	0.75	0.75	0.63	0.00	0.75	0.40	0.38	0.00	0.75	0.75	0.75	0.75	0.75	0.50	0.75
Average	0.51	0.75	0.75	0.69	0.68	0.56	0.00	0.38	0.53	0.42	0.00	0.56	0.38	0.56	0.56	0.56	0.38	0.50

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	0.25	0.25	0.00	0.19	0.19	0.69	0.69	0.75	0.50	0.50	0.50	0.50	0.56	0.63	0.00	0.25	0.25	0.25
Singapore	0.50	0.75	0.00	0.00	0.75	0.75	0.75	0.75	0.25	0.00	0.00	0.00	0.50	0.51	0.00	0.25	0.25	0.50
Average	0.38	0.50	0.00	0.09	0.47	0.72	0.72	0.75	0.38	0.25	0.25	0.25	0.53	0.57	0.00	0.25	0.25	0.38

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	0.50	0.75	0.50	0.00	0.75	0.75	0.25	0.50	0.00	0.45	0.27	0.23	0.25	0.30	0.39	0.56	0.34	0.00	0.37
Singapore	0.25	0.50	0.75	0.75	0.25	0.75	0.00	0.25	0.50	0.25	0.46	0.17	0.15	0.25	0.30	0.45	0.25	0.41	0.00	0.44
Average	0.13	0.50	0.75	0.63	0.13	0.75	0.38	0.25	0.50	0.13	0.45	0.22	0.19	0.25	0.30	0.42	0.41	0.38	0.00	0.40

Source: Calculated from the database constructed.

Table 5. Hoekman Index under Japan-Thailand EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.70	1.00	1.00	1.00	0.95	0.59	0.00	0.00	0.95	0.58	0.00	0.75	0.75	0.75	0.75	0.75	1.00	1.00
Thailand	0.23	0.40	0.00	0.00	0.11	0.10	0.00	0.00	0.32	0.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00
Average	0.47	0.70	0.50	0.50	0.53	0.35	0.00	0.00	0.64	0.29	0.00	0.63	0.63	0.38	0.38	0.38	0.50	0.50

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	1.00	1.00	0.00	0.25	0.00	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.25	0.00	0.38
Thailand	0.00	0.00	0.00	0.00	0.81	0.50	0.56	0.00	0.56	0.56	0.56	0.56	0.45	0.07	0.00	0.00	0.00	0.00
Average	0.50	0.50	0.00	0.13	0.41	0.75	0.78	0.50	0.66	0.66	0.66	0.66	0.60	0.41	0.00	0.13	0.00	0.19

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	0.75	1.00	0.75	0.00	1.00	1.00	1.00	0.00	0.00	0.63	0.25	0.35	0.25	0.85	0.70	0.75	0.56	0.00	0.60
Thailand	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.11	0.00	0.21	0.20	0.00	0.14	0.00	0.15
Average	0.00	0.38	0.75	0.38	0.00	0.50	0.50	0.50	0.00	0.00	0.45	0.13	0.23	0.13	0.53	0.45	0.38	0.35	0.00	0.37

Source: Calculated from the database constructed.

Table 6. Hoekman Index under Japan-Vietnam EPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
Japan	0.64	1.00	0.33	1.00	0.80	0.78	1.00	1.00	0.93	0.50	0.00	0.75	0.75	0.75	0.75	0.75	1.00	0.00
Vietnam	0.53	.	0.25	0.00	0.20	0.36	0.00	0.75	0.75	0.15	0.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Average	0.58	0.88	0.29	0.50	0.50	0.57	0.50	0.88	0.84	0.32	0.00	0.63	0.63	0.63	0.63	0.63	0.75	0.25

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
Japan	0.00	0.25	0.00	0.25	0.25	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.00	0.25	0.00	0.00
Vietnam	0.50	0.75	0.00	0.00	0.25	0.44	0.44	0.44	0.50	0.63	0.00	0.50	0.75	0.47	0.00	0.69	0.69	0.00
Average	0.25	0.50	0.00	0.13	0.25	0.72	0.72	0.72	0.63	0.69	0.38	0.63	0.75	0.61	0.00	0.47	0.34	0.00

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
Japan	0.00	0.75	1.00	0.75	0.00	1.00	1.00	1.00	0.75	0.00	0.58	0.42	0.35	0.00	0.15	0.30	0.50	0.44	0.00	0.55
Vietnam	0.00	0.75	0.75	0.00	0.00	0.38	0.00	0.00	0.44	0.00	0.15	0.07	0.43	0.00	0.10	0.20	0.00	0.47	0.00	0.33
Average	0.00	0.75	0.88	0.38	0.00	0.69	0.50	0.50	0.59	0.00	0.36	0.24	0.39	0.00	0.13	0.25	0.25	0.45	0.00	0.44

Source: Calculated from the database constructed.

Of the 6 bilateral FTAs signed between Japan and its partner countries, the Japan-Philippines EPA is most committed, and the Japan-Thailand EPA is least committed overall (with an average score of the Hoekman Index as a benchmark). Following are some observations on each EPA.

The **Japan-Indonesia EPA**

The average level of commitment by both Japan and Indonesia is 0.41. The sector 01D (Real Estate Services) has the highest average commitment by both countries, standing at 0.83. Following are observations by country.

Japan: 01B (Computer and Related Services), 01C (Research and Development Services), 01D (Real Estate Services), 02A (Postal Services), 02B (Courier Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04E (Other under “Distribution Services”), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), 10A (Entertainment Services), 10B (News Agency Services), and 10C (Libraries, archives, museums and other cultural services), all have the largest degree of commitment of 1.00 (i.e., full score). The average level of commitment is 0.68.

Indonesia: 01D (Real Estate Services) has the largest degree of commitment of. The average level of commitment is 0.14.

The correlation coefficient between Japan’s commitments and Indonesia’s commitments is calculated as 0.17, which indicates that there is little cross-sector sensitivity shared by both Japan and Indonesia.

The **Japan-Malaysia EPA**

The average level of commitment by both Japan and Malaysia is 0.39. The sector 02C (Telecommunication Services) has the highest average commitment by both countries, standing at 0.82. Following are observations by country.

Japan: 01B (Computer and Related Services), 01C (Research and Development Services), 02B (Courier Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 04E (Other under Distribution Services), 05C (Higher Education Services), 05D (Adult Education),

05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), 10A (Entertainment Services), 10B (News Agency Services), and 10C (Libraries, archives, museums and other cultural services), all have the largest degree of commitment of 1.0 (i.e., full score). The average level of commitment is 0.66.

Malaysia: 08A (Hospital Services) has the largest degree of commitment of 0.63. The average level of commitment is 0.12.

The correlation coefficient between Japan's commitments and Malaysia's commitments is calculated as 0.22, which indicates that there is little cross-sector sensitivity shared by both Japan and Malaysia.

The **Japan-Philippines EPA**

The average level of commitment by both Japan and the Philippines is 0.46. The sector 09B (Travel Agencies and Tour Operators Services) has the highest average commitment by both countries, standing at 1.0. Following are observations by country.

Japan: 01B (Computer and Related Services), 01C (Research and Development Services), 01D (Real Estate Services), 02B (Courier Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04E (Other under Distribution Services), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), all have the largest degree of commitment of. The average level of commitment is 0.65.

Philippines: 09B (Travel Agencies and Tour Operators Services) has the largest degree of commitment of 1.0. The average level of commitment is 0.27.

The correlation coefficient between Japan's commitments and the Philippines' commitments is calculated as 0.29, which indicates that there is little cross-sector sensitivity shared by both Japan and the Philippines.

The **Japan-Singapore EPA**

The average level of commitment by both Japan and Singapore is 0.40. The sectors 01B (Computer and Related Services), 01C (Research and Development Services), 05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), and 10A (Entertainment Services) have the highest average commitment by

both countries, standing at 0.75. Following are the observations by country.

Japan: 01B (Computer and Related Services), 01C (Research and Development Services), 05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), 10A (Entertainment Services), and 10B (News Agency Services) have the largest degree of commitment of 0.75. The average level of commitment is 0.37.

Singapore: 01B (Computer and Related Services), 01C (Research and Development Services), 01D (Real Estate Services), and 01E (Rental/Leasing Services without Operators) have the largest degree of commitment of 0.75. The average level of commitment is 0.44.

The correlation coefficient between Japan's commitments and Singapore's commitments is calculated as 0.41, which indicates that there is some cross-sector sensitivity shared by both Japan and Singapore.

The **Japan-Thailand EPA**

The average level of commitment by both Japan and Thailand is 0.37. The sectors 05C (Higher Education Services) and 09B (Travel Agencies and Tour Operators Services) have the highest average commitment by both countries, standing at 0.75. Following are observations by country.

Japan: 01B (Computer and Related Services), 01C (Research and Development Services), 01D (Real Estate Services), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 04C (Retailing Services), 04D (Franchising), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 10A (Entertainment Services), 10B (News Agency Services), and 10C (Libraries, archives, museums and other cultural services), all have the largest degree of commitment of 1.0. The average level of commitment is 0.60.

Thailand: 05B (Secondary Education Services) has the largest degree of commitment of 0.81. The average level of commitment is 0.15.

The correlation coefficient between Japan's commitments and Thailand's commitments is calculated as 0.24, which indicates that there is little cross-sector sensitivity shared by both Japan and Thailand.

The **Japan-Vietnam EPA**

The average level of commitment by both Japan and the Vietnam is 0.44. The sectors 01B (Computer and Related Services), 2B (Courier Services) and 09B (Travel Agencies and Tour Operators Services) have the highest average commitment by both countries, standing at 0.88. Following are observations by country.

Japan: 01B (Computer and Related Services), 01D (Real Estate Services), 02A (Postal Services), 02B (Courier Services), 04A (Commission Agents' Services), 05C (Higher Education Services), 05D (Adult Education), 05E (Other Education Services), 09B (Travel Agencies and Tour Operators Services), 10A (Entertainment Services), 10B (News Agency Services), and 10C (Libraries, archives, museums and other cultural services) all have the largest degree of commitment of 1.0. The average level of commitment is 0.55.

Vietnam: 01B (Computer and Related Services), 02B (Courier Services), 02C (Telecommunication Services), 04D (Franchising), 07A (All Insurance and Insurance-related Services), 09A (Hotels and Restaurants) and 09B (Travel Agencies and Tour Operators Services) all have the largest degree of commitment of 0.75. The average level of commitment is 0.33.

The correlation coefficient between Japan's commitments and Vietnam's commitments is calculated as 0.37, which indicates that there is not much cross-sector sensitivity shared by both Japan and Vietnam.

3. Some cross-EPA analyses

The six bilateral FTAs signed by Japan and 6 ASEAN countries are naturally expected to possess some similarities. In this context, correlation coefficients have been calculated between Japan's commitment patterns (measured by a 55 dimension vector, each of its component being the average Hoekman Index of a particular service sector) under the 6 different bilateral EPAs. Table 7 shows the result.

Table 7. Inter-FTA correlation coefficients (for Japan)

	With Indonesia	With Malaysia	With Philippines	With Singapore	With Thailand	With Vietnam
With Indonesia	1.00					
With Malaysia	0.87	1.00				
With Philippines	0.90	0.92	1.00			
With Singapore	0.61	0.61	0.70	1.00		
With Thailand	0.74	0.79	0.77	0.75	1.00	
With Vietnam	0.72	0.64	0.60	0.64	0.57	1.00

Source: Calculated from the database constructed.

As shown in the Table, there are high positive correlations among Japan's EPAs with Indonesia, Malaysia and the Philippines. The other pairs are less highly correlated, yet still correlated positively. Correlation coefficients among Japan's partner countries have also been calculated, as shown in Table 8. It can be seen that the correlations are positive, yet their absolute levels are not high.

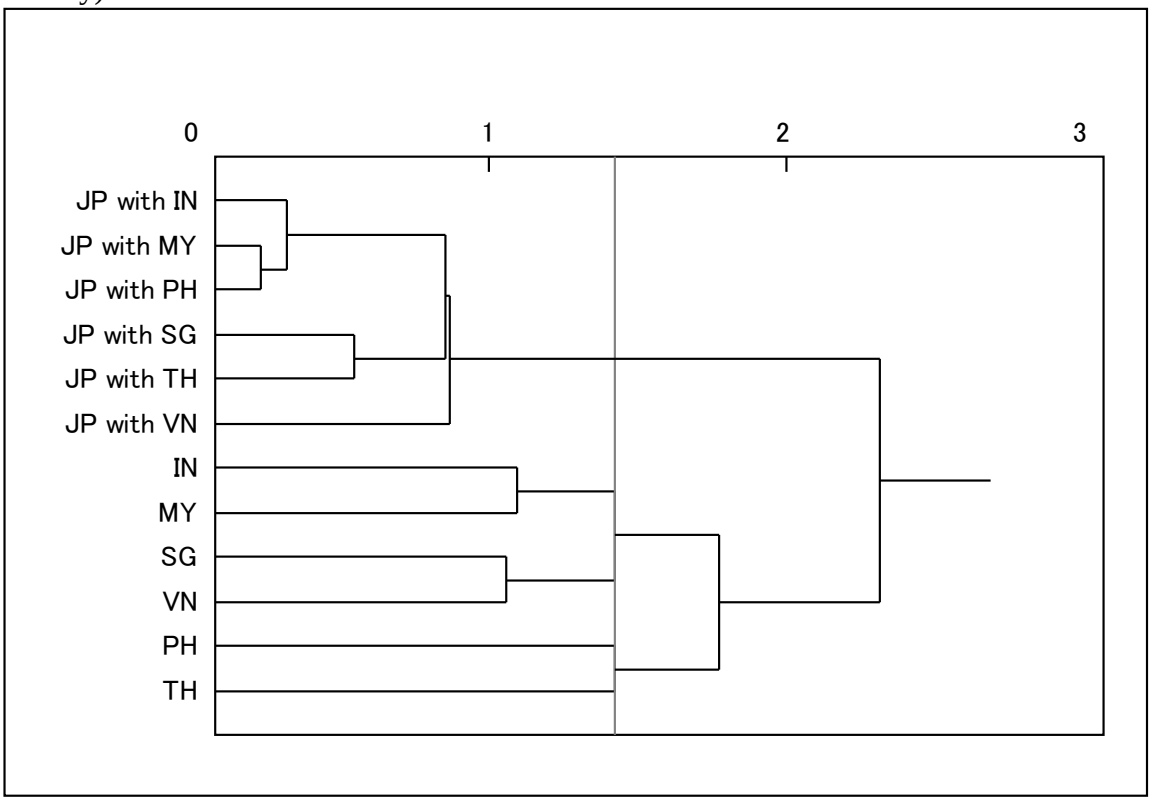
Table 8. Inter-FTA correlation coefficients (among partners)

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Indonesia	1.00					
Malaysia	0.45	1.00				
Philippines	0.25	0.26	1.00			
Singapore	0.40	0.26	0.22	1.00		
Thailand	0.38	0.10	0.27	0.12	1.00	
Vietnam	0.33	0.46	0.26	0.47	0.32	1.00

Source: Calculated from the database constructed.

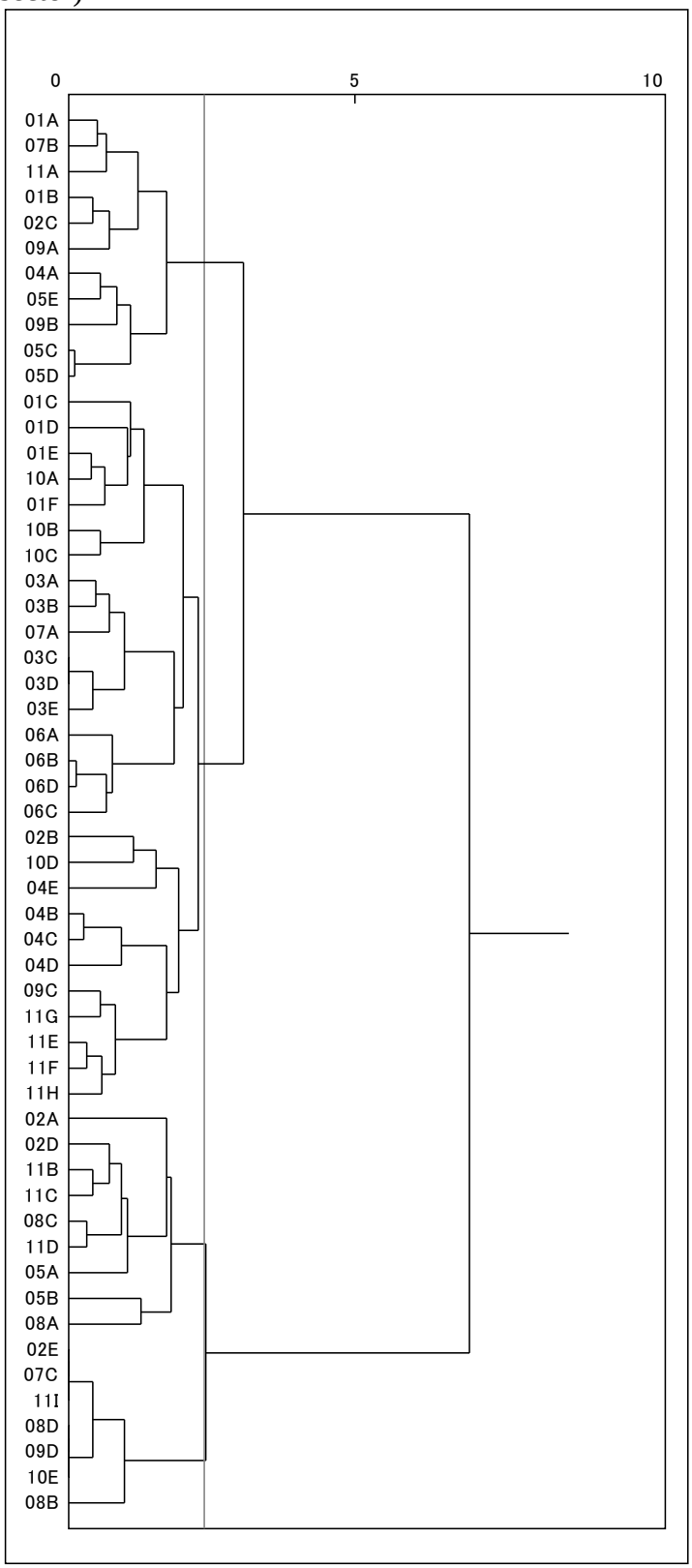
Cluster analyses have been carried out (Figures 1 and 2). As shown in Figure 1, Japan's commitment pattern with Malaysia has the closest semblance with that with the Philippines. Overall, Japan's commitment patterns are similar to each other, in contrast with the partner countries' dissimilarity with each other. Figure 2, which clusters similarly committed sectors, reveals that, judging from the relative distance (measured by the horizontal axis), there is a wedge between the upper part cluster (fairly well committed) and the bottom part cluster (not well committed).

Figure 1. Cluster analysis of signatory countries under Japan's six bilateral FTAs (by country)



Note: Symbols denote countries as follows. JP: Japan; ID: Indonesia; MY: Malaysia; PH: Philippines; SG: Singapore; TH: Thailand; VN: Vietnam.
Source: Calculated from the database constructed.

Figure 2. Cluster analysis of signatory countries under Japan's six bilateral FTAs (by sector)



Note: Symbols denote 55 service sectors.
Source: Calculated from the database constructed.

Finally, a Hoekman Index is calculated by mode (Table 9). This Table shows that (1) Japan is well committed to Mode 4 under its EPAs with Indonesia, Malaysia, the Philippines, Thailand and Vietnam, as compared with its commitment under the Japan-Singapore EPA; (2) the order of the degree of commitment, on average and from the highest, is mode 2, mode 3, mode 4 and mode 1 in the case of Japan; (3) the order of the degree of commitment, on average and from the highest, is mode 2, mode 3, mode 1 and mode 4 in the case of Japan's partner countries (note the difference in the position of mode 4). In the case of WTO members' average commitment to the GATS (studied in Adlung and Roy, 2005), the ordering is reported to be mode 2, mode 1 and mode 3 (the position of mode 4 unspecified, yet presumably the last). In this light, Japan's bilateral FTAs emphasize the role of mode 3 and mode 4.

Table 9. Hoekman Index of Japan's bilateral FTAs by mode

Country (paired by FTA)	Aspect, i.e., Market Acccess (MA) or National Treatment (NT)	Mode 1	Mode 2	Mode 3	Mode 4	Mode average
Japan	MA	0.43	0.78	0.77	0.68	0.67
	NT	0.43	0.78	0.77	0.72	0.68
Indonesia	MA	0.16	0.25	0.12	0.07	0.15
	NT	0.17	0.17	0.11	0.10	0.14
Japan	MA	0.42	0.77	0.73	0.67	0.65
	NT	0.41	0.76	0.73	0.68	0.65
Malaysia	MA	0.12	0.19	0.12	0.01	0.11
	NT	0.11	0.19	0.12	0.01	0.11
Japan	MA	0.41	0.76	0.75	0.59	0.63
	NT	0.41	0.76	0.74	0.64	0.64
Philippines	MA	0.15	0.35	0.20	0.23	0.23
	NT	0.24	0.36	0.32	0.25	0.29
Japan	MA	0.25	0.70	0.46	0.02	0.36
	NT	0.27	0.72	0.50	0.01	0.38
Singapore	MA	0.42	0.75	0.55	0.01	0.43
	NT	0.43	0.75	0.55	0.01	0.43
Japan	MA	0.37	0.69	0.64	0.58	0.57
	NT	0.39	0.70	0.65	0.62	0.59
Thailand	MA	0.04	0.24	0.19	0.11	0.15
	NT	0.04	0.26	0.25	0.04	0.15
Japan	MA	0.34	0.61	0.64	0.57	0.54
	NT	0.35	0.61	0.64	0.57	0.54
Vietnam	MA	0.21	0.57	0.48	0.01	0.32
	NT	0.23	0.57	0.51	0.01	0.33
Japan average	MA	0.37	0.72	0.67	0.52	0.57
	NT	0.38	0.72	0.67	0.54	0.58
Partner average	MA	0.19	0.39	0.28	0.07	0.23
	NT	0.20	0.38	0.31	0.07	0.24

Source: Calculated from the database constructed.

4. Comparison with India's bilateral FTAs

It is useful to make a comparison between Japan's and another country's bilateral FTAs. In this section, India's two bilateral FTAs, i.e., The India-Korea Comprehensive Economic Partnership Agreement (CEPA) and The India-Singapore Comprehensive Economic Cooperation Agreement (CECA) are taken as references.

Tables 10 and 11 show the results of Hoekman Index calculations for each of the two bilateral agreements, and some observations of these Tables follow.

Table 10. Hoekman Index under India-Korea CEPA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
India	0.51	0.75	0.33	0.38	0.45	0.53	0.00	0.00	0.33	0.03	0.00	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Korea	0.45	0.75	0.58	0.25	0.73	0.63	0.00	0.50	0.68	0.25	0.00	0.44	0.44	0.44	0.44	0.44	0.63	0.56
Average	0.48	0.75	0.46	0.31	0.59	0.58	0.00	0.25	0.51	0.14	0.00	0.59	0.59	0.59	0.59	0.59	0.69	0.66

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
India	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.75	0.75	0.00	0.30	0.16	0.00	0.75	0.00	0.00
Korea	0.56	0.75	0.00	0.00	0.00	0.31	0.31	0.00	0.63	0.63	0.00	0.75	0.38	0.17	0.00	0.00	0.00	0.00
Average	0.28	0.38	0.00	0.00	0.00	0.53	0.16	0.00	0.31	0.69	0.38	0.38	0.34	0.17	0.00	0.38	0.00	0.00

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
India	0.00	0.75	0.75	0.50	0.00	0.50	0.00	0.00	0.75	0.00	0.40	0.00	0.15	0.00	0.00	0.00	0.00	0.38	0.00	0.29
Korea	0.00	0.75	0.75	0.75	0.00	0.38	0.00	0.00	0.38	0.00	0.64	0.00	0.10	0.00	0.10	0.08	0.25	0.42	0.50	0.32
Average	0.00	0.75	0.75	0.63	0.00	0.44	0.00	0.00	0.56	0.00	0.52	0.00	0.13	0.00	0.05	0.04	0.13	0.40	0.25	0.31

Source: Calculated from the database constructed.

Table 11. Hoekman Index under India-Singapore CECA (55 sectors)

	01A	01B	01C	01D	01E	01F	02A	02B	02C	02D	02E	03A	03B	03C	03D	03E	04A	04B
India	0.53	0.63	1.00	0.06	0.45	0.46	0.00	0.00	0.25	0.02	0.00	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Singapore	0.59	0.75	1.00	0.75	0.75	0.64	0.00	0.50	0.50	0.38	0.00	0.75	0.75	0.75	0.75	0.75	0.75	0.50
Average	0.56	0.69	1.00	0.41	0.60	0.55	0.00	0.25	0.38	0.20	0.00	0.75	0.75	0.75	0.75	0.75	0.75	0.63

(Continued)

	04C	04D	04E	05A	05B	05C	05D	05E	06A	06B	06C	06D	07A	07B	07C	08A	08B	08C
India	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.08	0.00	0.69	0.00	0.00
Singapore	0.25	0.75	0.00	0.00	0.75	0.75	0.75	0.75	0.25	0.50	0.50	0.50	0.48	0.51	0.00	0.25	0.25	0.50
Average	0.13	0.38	0.00	0.00	0.38	0.38	0.38	0.38	0.13	0.25	0.25	0.25	0.31	0.30	0.00	0.47	0.13	0.25

(Continued)

	08D	09A	09B	09C	09D	10A	10B	10C	10D	10E	11A	11B	11C	11D	11E	11F	11G	11H	11I	Average
India	0.00	0.75	0.75	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.15	0.00	0.05	0.00	0.00	0.00	0.00	0.56	0.00	0.23
Singapore	0.25	0.25	0.75	0.75	0.25	0.75	0.00	0.25	0.50	0.25	0.44	0.17	0.25	0.25	0.25	0.50	0.25	0.25	0.00	0.45
Average	0.13	0.50	0.75	0.38	0.13	0.38	0.00	0.50	0.25	0.13	0.29	0.08	0.15	0.13	0.13	0.25	0.13	0.41	0.00	0.34

Source: Calculated from the database constructed.

The **India-Korea CEPA**

The average level of commitment by both India and Korea is 0.31. The sectors 01B (Computer and Related Services), 09A (Hotels and Restaurants) and 09B (Travel Agencies and Tour Operators Services) have the highest average commitment by both countries, standing at 0.75. Following are observations by country.

India: 01B (Computer and Related Services), 03A (General Construction Work for Building), 03B (General Construction work for Civil Engineering), 03C (Installation and Assembly Work), 03D (Building Completion and Finishing Work), 03E (Other under “Construction and Related Engineering Services”), 04A (Commission Agents' Services), 04B (Wholesale Trade Services), 05C (Higher Education Services), 06B (Refuse Disposal Services), 06C (Sanitation and Similar Services), 08A (Hospital Services), 09A (Hotels and Restaurants), 09B (Travel Agencies and Tour Operators Services), 10D (Sporting and Other Recreational Services), all have the largest degree of commitment of 0.75. The average level of commitment is 0.29.

Korea: 01B (Computer and Related Services), 04D (Franchising), 06D (Other under “Environmental Services”), 09A (Hotels and Restaurants), 09B (Travel Agencies and Tour Operators Services) and 09C (Tourist Guides Services) have the largest degree of commitment of 0.75. The average level of commitment is 0.32.

The correlation coefficient between India’s commitments and Korea’s commitments is calculated as 0.51, which indicates that there is some cross-sector sensitivity shared by both India and Korea.

The **India-Singapore CECA**

The average level of commitment by both India and Singapore is 0.34. The sector 01C (Research and Development Services) has the highest average commitment by both countries, standing at 1.0. Following are the observations by country.

India: 01C (Research and Development Services) has the largest degree of commitment of 1.0 (i.e., full score). The average level of commitment is 0.23.

Singapore: 01C (Research and Development Services) has the largest degree of commitment of 1.0 (i.e., full score). The average level of commitment is 0.45.

The correlation coefficient between India’s commitments and Singapore’s commitments is calculated as 0.43, which indicates that there is some cross-sector sensitivity shared by both India and Singapore.

Major differences between Japan’s bilateral agreements and India’s bilateral agreements are that (1) overall, Japan’s commitment levels are significantly higher than India’s; (2) the commitment patterns of the two signatory parties are more similar in the

case of India's agreements than in the case of Japan's agreements.

5. Conclusions and policy implications

Part II of this paper addresses Japan's bilateral FTAs as a case study, and reveals that (1) Japan is more deeply committed than its partners especially in mode 3 and mode 4 (with the exception of the Japan-Singapore EPA); (2) the partner ASEAN countries' commitments are polarized into below-AFAS and above-AFAS levels; (3) The wedge between well-committed sectors and less well-committed sectors indicates that harmonizing commitment levels across *all* the sectors is still beyond reach in the short run.

A logical policy implication therefore would be that similarly clustered sectors should be harmonized first. As discussed in Part I, however, the "social-experiment" aspect should also be recognized: the small scale feature (indeed, the smallest-scale feature) of bilateral agreements would allow for some bold opening up of service trade markets. The convergence scenario in East Asia's service sector could actually start with some bold policy initiatives in terms of bilaterally opening up service sectors for further trade. A resulting harmonization of service sector commitments would surely contribute to a smoother regional supply chain and hence provide a platform more fitting for further enhanced commodity trade and investment.

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CHAPTER 5

Comprehensive Mapping of FTAs in ASEAN and East Asia: FDI Restrictiveness Index for ASEAN Free Trade Area (AFTA)

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In this paper, we analyze the restrictiveness of FDI activities in ASEAN countries by creating the FDI Restrictiveness Index. The objective of the paper is to study the FDI policy impediments of the ASEAN countries with a view that the identification of FDI restrictiveness would provide useful information to policy makers in making ASEAN a competitive investment region as outlined in the ASEAN Economic Community blueprint. The restrictiveness of FDI were evaluated in six areas: foreign ownership or market access, national treatment, screening and approval procedure, board of directors and management composition, movement of investors, and performance requirements. The higher the scores, the more open the FDI rules and regulations. The results indicate that there is further capacity to liberalize the manufacturing sector. In particular, the emerging ASEAN countries such as Thailand and Vietnam could further liberalize their manufacturing sector to increase their returns on FDI investment. The result also indicates that services sector is lagging behind the manufacturing sector in terms of liberalizing it for more multinational activities.

1. Introduction

Foreign direct investment (FDI) has become an important component of economic growth for both developed and developing in terms of transferring technology, creating output, driving export growth and linking to the global activities. FDI flows have increased in recent years and its growth has overtaken the global trade flow (Urata and Sasuya, 2007). In fact, FDI activities are seen as crucial factor global network and production value-chain. As reported by the United Nations Conference on Trade and Development (UNCTAD), flows of FDI in 2005 have grown for two years consecutively, with inflows rising by 29% and reaching a value of $916 billion. Outward FDI, on the other hand, amounted to $779 billion with the developed countries still leading as sources of FDI outflows. However, recent evidence suggests that developing and transition economies are becoming important sources of outward FDI, with a global share of 17% of outflows in 2005. Asia has been seen as the major recipient of FDI inflow and China is seen as the key country to attract FDI since it liberalized its economy in the 1908s. The pre-Asian crisis era was characterized by increasing net FDI inflows into the East and South-East Asian regions, however we are observing decline in FDI inflows in the post crisis period (see Thangavelu et al, 2009).

Given the importance of FDI, most economies undertake FDI policies to liberalize their economy for multinational activities. Liberalization towards investment have taken up the majority of regulatory changes, facilitating FDI through lowered taxes, increased openness to foreign investments, greater incentives and simplified business procedures. Several studies have highlighted the importance of FDI, where FDI activities contributes to recipient countries through the channels of higher exports, global networks, transfers of technology, increased government revenues and improved job opportunities. At the aggregate level, these channels create strong and positive externalities for domestic economic growth. For developing countries, the lacks of local technology as well as participation in global networks have led to much dependence on foreign investments. As such, governments of these developing countries have found it necessary to design policies to improve the attractiveness of the economy to foreign investors, especially towards specific critical economic sectors.

However, there have also been restrictive moves (for example, in the EU and the United States) in a bid to protect economies against foreign competition or to enhance governmental influence in particular sectors (WIR, 2006). For instance, FDI has been viewed in certain situations as encroaching on the sovereignty of a host country through a foreign control over resources, and also as a possible danger to the promotion of domestic investment and domestic

industries. Besides being questioned as a threat to national security and accused of undermining national industries, multinational firms are also highlighted to involve in enclave activities with little benefit to domestic economy.

Recent developments indicates that FTAs (Free Trade Agreements) are used as a strategy to liberalize FDI activities with partner countries to increase the access to multinational activities to the domestic economy. In this paper, we analyze the restrictiveness of FDI activities in ASEAN countries by creating the FDI Restrictiveness Index based on the methodology proposed by Golub (2003), OECD (2003, 2010), and Urata and Sasuya (2007). The restrictiveness of FDI were evaluated in six areas: foreign ownership or market access, national treatment, screening and approval procedure, board of directors and management composition, movement of investors, and performance requirements. The higher the scores, the more open the FDI rules[1].

Recently OECD updated its FDI Restrictiveness Index (created in 2003 and updated in 2006) by expanding the study more sectors and with more updated information on the regulatory requirements for FDI activities in OECD countries [2] (OECD, 2010). The OECD FDI restrictiveness index is used as a basis to assess the restrictiveness of FDI policies in OECD countries; reviews of candidates for accession, OECD Investment Policy Reviews; new adherents to the OECD Declaration on International Investments and Multinational Enterprises and of other non-OECD partner countries; the relative positions of the OECD countries on FDI policies and updating countries' reservations to the OECD Codes and exceptions to the OECD National Treatment instrument (NTI). It is expected the ASEAN FDI Restrictiveness Index could also provide more policy dimension to increase multinational activities in the region.

Several studies have used to study the openness of economies to FDI activities. Golub (2003) examined the openness of OECD countries to FDI by creating the FDI restrictiveness Index and highlighted that United Kingdom as the most liberal, and United States as more liberal than Korea and Japan. Recently OECD updated its FDI Restrictiveness Index by expanding the study more sectors and with more updated information on the regulatory requirements for FDI activities in OECD countries (OECD, 2010). It also reevaluated the various weight adopted in the early study. The OECD 2010 report highlights interesting results with respect to Asian countries: (1) China and Indonesia is listed as with the top 5 countries with very restrictive FDI policies.

[1] OECD FDI Restrictiveness Index is given in descending order, where open economies are given lower scores.

[2] The updated OECD FDI restrictiveness Index is expanded to include all primary sectors (agriculture, forestry, fishing and mining), as well as investments in real estate, are now included. Subsectors have been added to cover services other than banking and insurance (under finance), as well as media services (TV and radio broadcasting, as well as printed and other media). There is greater detail in manufacturing (five subsectors), in electricity (generation and distribution), distribution (retail and wholesale) and transport (added international/domestic breakdown for air and road transport).

Russia and Iceland are the other two countries with very restrictive policies. (2) The Latin American countries of Brazil, Chile and Argentina has more liberal FDI policies as compared to Asian countries of China, India, Indonesia, Japan, and Korea. (3) The Eastern European countries of Estonia, Latvia, Slovenia, Lithuania, Slovak Republic, and Czech Republic are more liberal with respect to FDI activities as compared to the Asian countries. Recently, Urata and Sasuya (2007) studied the quality of FDI rules in the FTA and created the FDI Restrictiveness Index for seven FTAs. The study also covers 21 sectors and 158 ISIC three-digit subsectors. The results show that US-Australia and US-Singapore FTA as high quality rules and more liberal FDI policies. The ranking of the FTAs as follows: US-Australia, US-Singapore, Japan-Singapore, Korea-Singapore, NAFTA, Korea-Chile, and Japan-Mexico. They also found that there are greater restrictions on primary and services sectors such as transportation, communications, electricity, financial and insurance, as compared to manufacturing sectors.

In a more recent study by Urata and Ando (2009) analyzed the FDI environment of the ASEAN countries that covers not only the FDI implements but also the enforcement and implementation of the FDI policies. They found wide variations among the ASEAN countries and the most serious implements are due to the lack of transparency and complicated/delayed processing in screening and appraisal procedures regarding FDI application. They suggest further need for further liberalization of FDI policies and promotion of facilitation measures in order to successfully attract FDI.

Institutional environment for domestic and foreign investment is critical for sustained productivity and growth of ASEAN and East Asian economies. Investment promotion has thus been a key policy instrument used by all member states to steer investment into strategic sectors that complement national comparative advantage, promote export activity and create domestic employment. The objective of ASEAN Investment Area is to grow intra-ASEAN as a proportion of total investment flows to the region, to facilitate greater ease of movement of capital, technology and knowledge skills and thus promote equitable development among Member States as a means of achieving longer term economic integration by enhancing economic complementarities across countries. By 2007, intra-ASEAN investment accounted around 10 per cent of total FDI inflows. The predominance of inflows to Singapore, Malaysia and Thailand is indicated by two-thirds of intra-regional investment, and Singapore and Malaysia accounting for nearly 80 per cent of investment capital flowing into the rest of ASEAN. The composition and distribution of intra-regional investment flows manifests clearly the need for a more effective ASEAN-wide investment policy and environment as spelled out in the ASEAN Economic Community blueprint. Despite ASEAN's lackluster achievement in intra-regional investment

liberalization, individual member states have nonetheless displayed a keen interest in liberalization principally through a spate of bilateral investment treaties (BITs), which might lead to overlapping BITs and the consequent of investment distortion and productivity decline in ASEAN. Since the Asian Financial crisis in 1998, ASEAN has not been able to regain its competitiveness as the dominant FDI destination in relation to China as it continues to attract about two-thirds of FDI destination to East Asia. An effective integrated ASEAN Investment Area would be vital towards making ASEAN a strong competitor to China in attracting FDI into the region. A number of factors generate a good investment environment and economic growth, including a sound macroeconomic framework consisting of prudent fiscal and monetary policies and flexible exchange rates. Other factors include strong domestic institutions, good governance, enforced property rights and the rule of law, a quality regulatory framework. These behind-the-border barriers can generate economic gains by boosting investment and more importantly quality investment. Evidence of the importance of behind-the-border barriers is also becoming well known. In addition, it is increasingly realized by policy makers that investment incentives to promote FDI have become less useful as domestic policy environment assumes more important role in attracting FDI. However, quantifying the impacts of these barriers is difficult and rarely done. This lack of understanding and knowledge leads to poor transparency and insufficient policy measures and actions in addressing the shortcomings of the institutional and policy environments.

The structure of the paper as follows. The next section discusses the methodology adopted to create the FDI restrictiveness index. In section 3, we provide the results for the ASEAN countries. In section 4, the sectoral analysis is given. The conclusion is given in section 5.

2. Methodology

The restrictiveness of FDI rules in the ASEAN free trade agreement was quantified using the methodology of Urata and Sasuya (2007). As the ASEAN FTA contains only negative lists, the data used in this study comes from the Temporary Exclusion Lists and Sensitive Lists provided by each country, as well as their more recent Individual Action Plans which list the removal of some FDI restrictions.

The quality of the FDI rules (restrictiveness) were evaluated in six areas: foreign ownership or market access, national treatment, screening and approval procedure, board of directors and management composition, movement of investors, and performance requirements.

The higher the scores, the more open the FDI rules. Following the methodology of Urata and Sasuya (2007), different weights are given on different areas. For example, foreign ownership or market access receives a weight of 0.4, national treatment receives a weight of 0.2, and the other areas receive a weight of 0.1 each for the computation of the overall score, which lies between 0 and 1.

The study also covers sectors based on the classification given in Urata and Sasuya (2007). In total we have aggregated the analysis into 10 sectors: manufacturing, services incidental to manufacturing, agriculture, services incidental to agriculture, fishery, services incidental to fishery, forestry, services incidental to forestry, mining and quarrying, and services incidental to mining and quarrying. As highlighted by Urata and Sasuya (2007) that the above method has its limitations as it is subjective to random and arbitrary weights. However, by careful usage of weights across all the sectors and consistently applied across the countries, we hope to reduce the biasness in the scores. Further, we do not include the private sector business practices in the study. In this study, we cover as many sectors as possible given the availability of information on FDI restrictions.

Table 1 show the weights adopted in computing the FDI restrictiveness index. Tables 2-4 show the results. The weights follow closely that of Urata and Sasuya (2007). The restriction on ownership and market access is given a greater weightage of 0.4 to reflect the importance of foreign ownership and market access as key drivers of multinational activities. To capture the activities of governments in protecting domestic industries, we give a weightage of 0.2 to national treatment of foreign firms, where foreign firms are treated in equal terms to domestic firms.

Table 1: Assessment of FDI Restrictions

(Maximum of 1.0 = fully liberalized)

Weight	Restriction	Score on restriction
0.4	**Restriction on Ownership and Market Access**	
	No foreign equity allowed	0
	1-19% allowed	0.1
	Reservation on ownership and market access	0.25
	20-24% allowed	0.4
	35-49% allowed	0.5
	50-74% allowed	0.7
	75-99% allowed	0.8
	No restriction but unbound	0.9
	Commercial presence required, no land ownership, or 100% foreign equity with fulfillment of some conditions	0.9
	No restriction	1.0
	Note: Scores were adjusted upwards by 0.05 if more foreign equity is allowed under additional conditions	
0.2	**National Treatment**	
	No national treatment	0
	Reservation on national treatment	0.25
	No government subsidies/supports	0.5
	Incentives not granted in certain sectors/limited to locals	0.9
	No restrictions	1
0.1	**Screening and Approval**	
	Objections in case the investment is contrary to national interest	0
	Required to show economic benefits before approval	0.1
	Reservations for future limitations	0.25
	Objections based on the size of investment	0.5
	Investment limited to companies with good brand name/restricted to certain locations/require local partnership	0.8
	Prior or post notification	0.9
	No restrictions	1
0.1	**Board of Directors and Management Composition**	
	All members of the management should be local	0
	Reservations for future restrictions	0.25
	Majority should be local	0.5
	Minority local allowed with some conditions	0.6
	At least one is local	0.75
	At least one local required after a certain number of years	0.85
	Should be locally licensed	0.9
	No restrictions	1
0.1	**Movement of Investors**	
	No entry	0
	Less than one year	0.1
	Reservations for further measures on entry	0.25
	One to two years	0.4
	One year, extensions possible	0.5
	Three to four years	0.5
	More than four years but less than 10	0.8
	No restrictions or work visa required according to immigration laws	1
0.1	**Performance Requirements**	
	Local contents or technology or export requirements	0.75
	Others	0.9

A new index for ASEAN is created to act as comparison to the base level FDI Restrictiveness Index (overall) upon which the effects of the specific free trade agreements can be examined. This FDI Restrictiveness level index (GATs) is created using the FDI commitments listed by the ASEAN countries in the World Trade Organization's General Agreement on Trade in Services (GATS) as a primary data source. The baseline FDI Restrictiveness Index (Overall) is created with both the individual legislations of the ASEAN countries in addition to the respective FDI commitments in GATS. The WTO's GATS is a suitable data source since it is a binding international agreement that covers trade in services for all WTO countries. In ASEAN, only the Lao People's Democratic Republic is currently not part of the WTO, thus the legislation of the country was consulted in creating the base level index.

3. Results

3.1 Ranking of Countries

The results of the mapping and the respective scores are given at Table 2. The full results of the FDI restrictiveness Index by the respective countries is given in Appendix I. The results seems to be in line with the expectations that countries such as Singapore, which is driven by export growth, tends to have more liberal FDI policies to attract multinational activities in the economy and the region. The scores for Cambodia, Indonesia, and Vietnam indicate that they have also adopting liberal FDI policies to attract multinational activities. It is quite surprising to see key ASEAN countries such as Malaysia, Philippines and Thailand ranked lower among the key ASEAN 5 countries, which clearly indicates that there is an urgent need to remove some of the restrictions to FDI flows in the economy. The FDI Restrictiveness Index (GATs) that accounts for respective ASEAN countries commitment to GATs also reveal similar ranks except for Thailand the ranking improved from 8 at the overall index to rank of 4 in the GATs ranking. The ranking of Philippines and Malaysia did not improve much under the GATs ranking and Laos and Myanmar declined in the ranking. Among the ASEAN countries, the ranking reveals that Brunei is the most restrictive country for FDI investment.

Table 2: Restrictiveness Index of ASEAN Countries

	Average Score (Overall)	Rank	Average Score (GATs)	Rank
Brunei	0.399	10	0.163	9
Cambodia	0.524	3	0.488	3
Indonesia	0.496	4	0.275	6
Laos	0.469	6	0.252	7
Malaysia	0.489	5	0.298	5
Myanmar	0.442	7	0.069	10
Philippines	0.434	8	0.200	8
Singapore	0.595	1	0.499	1
Thailand	0.430	9	0.322	4
Vietnam	0.529	2	0.482	2

It is also quite interesting to observe that emerging countries such as Vietnam and Cambodia tend to have adopted key FDI policies to maintain their momentum of economic liberalization and integration in the region. In fact, Cambodia is ranked higher in terms of FDI liberalization index as compared to Indonesia and Malaysia.

3.2 Results by Sectors

The results of the mapping by sectors are given in Tables 3 and 4 (the detail of the index at the sectoral level is given in Appendix I). We also study the restrictiveness of FDI using only the information given at GATs[3]. As compared to agreements of GATs, the agreement of AFTA is more liberal in the services sector as the scores are much higher. The results clearly indicate that the ASEAN countries are using the manufacturing sector to attract FDI into the domestic economy and the region. It is clear that there is still greater opportunity to liberalize the

[3] The score for manufacturing is same as at Tables 3 and 4 as GATs affected only the services sectors.

manufacturing sector in ASEAN. The results indicate that Thailand, Philippines and Vietnam could further liberalize their manufacturing sector to multinational activities. Again, Malaysia is ranked lower than Indonesia in the manufacturing sector indicating that there is some urgent need to address the restrictiveness of the manufacturing sector in Malaysia. Singapore tends to have very liberal FDI policies among the ASEAN countries. As compared to manufacturing sector, most ASEAN countries tend to have very restrictive FDI policies for agricultural and resources sectors.

The results also indicate that manufacturing sector is more liberalized as compared to the services sector for FDI activities. The scores for services are much lower as compared to the manufacturing sector, thereby indicating a greater need to liberalize the services sector in ASEAN. As compared to the manufacturing sector, liberalization of the services sector for FDI activities requires greater coordination among the ASEAN countries as the key driver will be the mobility of human capital across the region. As indicated by the Movement of Investors category, most of the ASEAN countries tend to be ranked lower in this category due to restrictions on the movement of human capital in the region. In particular, the communication services and transport services tend to register very low FDI restrictiveness index indicating a further need to liberalize these sectors.

Table 3: ASEAN FDI Restrictiveness Index for AFTA, by country and sector (maximum of 1 = fully liberalised)

Sectors \ Countries	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Business Services	0.535	0.33	0.333	0.474	0.513	0.322	0.454	0.649	0.499	0.529
Communication Services	0.297	0.348	0.416	0.481	0.29	0.413	0.479	0.645	0.213	0.426
Construction Services	0.585	0.715	0.635	0.675	0.635	0.675	0.48	0.68	0.525	0.69
Distribution Services	0.405	0.611	0.429	0.3	0.528	0.506	0.36	0.68	0.525	0.698
Educational Services	0.5	0.611	0.529	0.66	0.549	0.405	0.48	0.68	0.48	0.572
Environmental Services	0	0.715	0.524	0.675	0.278	0.675	0.32	0.34	0.525	0.534
Financial Services	0.535	0.447	0.618	0.513	0.613	0.2	0.473	0.619	0.435	0.704
Health Services	0.443	0.428	0.505	0.31	0.659	0.615	0.32	0.66	0.172	0.608
Tourism Services	0.493	0.675	0.588	0.48	0.685	0.45	0.45	0.66	0.49	0.505
Recreational Services	0.146	0.471	0.492	0.104	0.351	0.338	0.531	0.544	0.42	0.254
Transport Services	0.285	0.248	0.358	0.363	0.149	0.144	0.375	0.31	0.238	0.245
Manufacturing	0.569	0.696	0.527	0.597	0.618	0.563	0.48	0.669	0.637	0.588
Overall Score	**0.399**	**0.525**	**0.496**	**0.469**	**0.489**	**0.442**	**0.434**	**0.595**	**0.430**	**0.529**

1) The highest score for each sector is highlighted in red.

Table 4: ASEAN FDI Restrictiveness Index for GATS, by country and sector (maximum of 1 = fully liberalised)

Sectors \ Countries	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Business Services	0.153	0.308	0.159	0.0832	0.247	0	0.00442	0.452	0.216	0.51
Communication Services	0.263	0.339	0.205	0.394	0.288	0	0.413	0.593	0.213	0.426
Construction Services	0	0.715	0.525	0.415	0.515	0	0.419	0.68	0.525	0.69
Distribution Services	0	0.611	0	0	0	0	0	0.42	0.131	0.698
Educational Services	0.38	0.611	0.425	0.104	0.114	0	0	0.68	0.48	0.572
Environmental Services	0	0.715	0	0	0	0	0	0.21	0.525	0.534
Financial Services	0.535	0.447	0.588	0.448	0.608	0.2	0.473	0.619	0.435	0.704
Health Services	0	0.23	0	0.415	0.401	0	0	0.42	0	0.238
Tourism Services	0	0.675	0.313	0.277	0.41	0	0.37	0.51	0.381	0.349
Recreational Services	0	0.293	0.434	0.104	0.351	0	0	0.544	0.131	0.254
Transport Services	0.0501	0.221	0.127	0.19	0.0215	0.0591	0.245	0.19	0.19	0.223
Manufacturing	0.569	0.696	0.527	0.597	0.618	0.563	0.48	0.669	0.637	0.588
Overall Score	**0.163**	**0.488**	**0.275**	**0.252**	**0.298**	**0.0685**	**0.200**	**0.499**	**0.322**	**0.482**

4. FDI Restrictiveness Index for China-ASEAN FTA and Korea-ASEAN FTA

The FDI Restrictiveness Index is also created for China-ASEAN FTA and Korea-ASEAN FTA (see Tables 5 and 6). As compared to the AFTA which was established in 1992, the AKFTA and ACFTA were only concluded in 2009 and 2010 respectively, thus the FDI commitments listed by the ASEAN countries in both AKFTA and ACFTA reflect higher levels of FDI restrictions. However the levels of FDI restrictions in the indices for AKFTA and ACFTA are still expectedly lower than in the base level index, pointing to the observation that ASEAN countries do build on the FDI commitments listed in GATS and propose more favorable terms during the initial rounds of FDI negotiations. The sectoral analysis also reveals that manufacturing tends to have more liberal FDI policy as compared to services in both China-ASEAN and Korea-ASEAN FTAs. This suggests that we need more FDI liberalization policy for services for greater flow of services and labour in the region.

In fact, we obtained similar score for manufacturing for both CAFTA and KAFTA indicating same treatment of the manufacturing sector in both agreements and with the baseline index from AFTA. This indicates that new agreements of FTAs are build from existing and completed FTAs.

In the China-ASEAN FTA, Cambodia, Malaysia, Singapore and Vietnam tend to have more liberal FDI restrictions as compared to other ASEAN countries. In comparison, China tend to have less FDI restrictiveness as compared to the other ASEAN countries indicating the commitment for more regional FDI flows from China.

As compared to China-ASEAN FTA, the Korea-ASEAN FTA tends to indicate a higher index for Indonesia, Laos, Malaysia, and Philippines. This indicates that these ASEAN countries tend to adopt more open FDI policy with Korean FTA to increase the greater access and flow of technology and investment from Korean multinationals. This also reflects greater cautiousness for Chinese FDI into ASEAN countries. In contrast, Singapore has a higher FDI restrictiveness index in China-ASEAN FTA. This might indicate the strategy to have greater access for Singapore FDI into Chinese markets.

Table 5: ASEAN FDI Restrictiveness Index for China-ASEAN (CAFTA) FTA, by country and sector (maximum of 1 = fully liberalised)

Sectors \ Countries	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	China
Business Services	0.155	0.318	0.168	0.0832	0.3	0.0118	0.00803	0.537	0.216	0.51	0.406
Communication Services	0.263	0.348	0.217	0.394	0.288	0.053	0.419	0.593	0.213	0.426	0.364
Construction Services	0	0.715	0.635	0.675	0.515	0	0.179	0.68	0.525	0.69	0.605
Distribution Services	0	0.611	0	0	0	0	0	0.68	0.131	0.698	0.685
Educational Services	0.38	0.611	0.455	0.104	0.135	0	0	0.68	0.48	0.572	0.605
Environmental Services	0	0.715	0	0	0	0	0.263	0.34	0.525	0.534	0.685
Financial Services	0.535	0.447	0.618	0.448	0.608	0.2	0.473	0.619	0.435	0.704	0.659
Health Services	0	0.23	0	0.415	0.415	0	0	0.51	0	0.238	0
Tourism Services	0.146	0.675	0.333	0.277	0.41	0	0.45	0.51	0.381	0.349	0.457
Recreational Services	0	0.293	0.456	0.104	0.351	0	0	0.544	0.131	0.254	0.299
Transport Services	0.061	0.225	0.134	0.19	0.0265	0.0591	0.245	0.289	0.19	0.225	0.215
Manufacturing	0.569	0.696	0.527	0.597	0.618	0.563	0.48	0.669	0.637	0.588	0.527
Overall Score	**0.176**	**0.490**	**0.295**	**0.274**	**0.306**	**0.074**	**0.210**	**0.554**	**0.322**	**0.482**	**0.459**

1) The highest score for each sector is highlighted in red.

Table 6: ASEAN FDI Restrictiveness Index for Korea-ASEAN (KAFTA) FTA, by country and sector (maximum of 1 = fully liberalised)

Sectors \ Countries	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	Korea
Business Services	0.155	0.318	0.199	0.0989	0.295	0.0268	0.00803	0.613	0.22	0.51	0.648
Communication Services	0.263	0.348	0.217	0.394	0.288	0.053	0.419	0.593	0.213	0.426	0.39
Construction Services	0.56	0.715	0.635	0.595	0.515	0.169	0.179	0.68	0.525	0.69	0.685
Distribution Services	0	0.611	0	0	0.258	0	0	0.51	0.131	0.698	0.678
Educational Services	0.38	0.611	0.529	0.273	0.135	0	0	0.68	0.48	0.572	0.085
Environmental Services	0	0.715	0	0.675	0	0	0.263	0.34	0.525	0.534	0.514
Financial Services	0.535	0.447	0.618	0.448	0.608	0.2	0.473	0.619	0.435	0.704	0.675
Health Services	0	0.23	0.135	0.415	0.415	0	0	0.51	0	0.238	0
Tourism Services	0.146	0.675	0.391	0.363	0.41	0	0.45	0.51	0.381	0.349	0.685
Recreational Services	0	0.293	0.456	0.104	0.351	0	0	0.544	0.131	0.254	0.293
Transport Services	0.128	0.225	0.134	0.19	0.0843	0.0591	0.305	0.204	0.19	0.225	0.315
Manufacturing	0.569	0.696	0.527	0.597	0.618	0.563	0.48	0.669	0.637	0.588	0.636
Overall Score	**0.228**	**0.490**	**0.320**	**0.346**	**0.331**	**0.089**	**0.215**	**0.539**	**0.322**	**0.482**	**0.467**

1) The highest score for each sector is highlighted in red.

5. Conclusion

In this paper, we analyze the restrictiveness of FDI activities in ASEAN countries by creating the FDI Restrictiveness Index. The restrictiveness of FDI were evaluated in six areas: foreign ownership or market access, national treatment, screening and approval procedure, board of directors and management composition, movement of investors, and performance requirements. The higher the scores, the more open the FDI rules.

The results indicate that there is further capacity to liberalize the manufacturing sector. In particular, the emerging ASEAN countries such as Thailand and Vietnam could liberalize their manufacturing sector. The result also indicates that services sector is lagging behind the manufacturing sector in terms of liberalizing it for more multinational activities. However, the liberalization of the services sector requires greater coordination among the ASEAN countries as it requires more mobile human capital and FDI in the region.

The member countries of ASEAN have been quite successful in attracting FDI in recent years and the FDI inflows to ASEAN quadrupled between 2002 to2007. However, their performance has fallen behind China. The rising momentum and acceleration of ASEAN Economic Community was to a great extent motivated by a sense of anxiety about losing attractiveness of FDI in the ASEAN. Thus one of the principal pillars of the AEC is to boost ASEAN's regional competitiveness on attracting FDI.

Assessment of the FDI policy regimes in ASEAN countries is equally important in the overall process of making ASEAN an important FDI destination. Based on examination of legal documents relating to FDI and additional information collected from ASEAN countries, This study correlates and confirms Urata and Ando (2010) study which assesses the FDI policy regimes in each country and construct scores to evaluate the degree of their openness. As Urata and Ando (2009) point out, ASEAN countries have restrictive FDI regimes in the areas of the movement of investors and the screening and appraisal procedures and there are wide variations in scores for these areas and for national treatment among countries. Restriction on market access is considered to be the most important policy towards inward FDI. And regulations are rather relaxed in manufacturing sector compared to the high levels of restriction found in the public and service sectors. The examination on FDI regimes by Urata and Ando (2010) clearly shows that the degree of restrictiveness varies widely by country and sectors. They suggest that screening and appraisal which are found to be serious impediments in many countries and market access regulations which are more restrictive in service sectors should be improved. Service sectors, in particular, have taken up an important role in economic activity in ASEAN countries in view of

the importance of regional production network. Therefore, provision of greater market access should be improved, thereby given a high priority n order to promote allocative and technical efficiency among the member countries. The results from Urata and Ando (2010) show that various forms of indirect barriers to FDI exist in ASEAN and the main problems are concerned with FDI facilitation. They point out the result indicates that there is plenty of room to improve FDI facilitation in order to promote inward FDI in ASEAN. In particular, institutional problems such as lack of transparency and implementation problems, complicated procedures, access to necessary infrastructure, human resources and investment incentives are important factors. Compared to the results of their previous studies, it is found that seven countries as ASEAN as a whole experienced a decline in the number of issues directly hindering FDI, while they identified the increase in the number of issues indirectly doing so. In their words, they point out that this result suggests that improvement of the FDI investment climate has been achieved in ASEAN, but that more indirect barriers to FDI have emerged. Addressing these challenges and confirming bilateral investment treaties with ASEAN Comprehensive Investment Area agreement and The ASEAN Agreement for the Promotion and Protection of Investment (AAPPI) (ACIA) are steps toward s the realization of the ASEAN's short and middle term objectives of effective investment policy and environment in ASEAN countries.

In addition, ASEAN countries should not only concentrate on how to invite a greater flow of FDI but also to ensure the existence of technology spillovers. Evidence from empirical studies suggests that the important stimulating policies are those that improve a country's absorptive capability which largely depends on the quality of human capital.

Policy implications from research on the free flow of investment indicate that policy maker should use various existing framework, In particular, ASEAN should use the ASEAN Comprehensive Investment Agreement (ACIA). In this context, to overcome obstacles concerning FDI facilitation, the ASEAN countries should actively use various cooperation programs with developed countries to improve human resources engaged in the implementation and enforcement of FDI policies. In the end, to achieve maximum results of FDI policy and environment, monitoring of the achievement of FDI liberalization and facilitation has to be given a high policy priority.

This study could be extended in several directions. There is a need to develop FDI restrictiveness index that accounts for ASEAN plus 1, ASEAN plus 3, and ASEAN plus 6 FTAs. The extension will allow us to understand if FTAs created greater access for FDI activities in the region and analysis and evaluation on the degree of liberalization and FDI policy environment in each FTA This will be done in the second stage of this study. Comparative analysis on the degree

of restrictiveness and liberalization of investment rules of ASEAN and its six dialogue partners on the basis of FTA agreements and industrial sector covered will provide multidimensional measures for comparative evaluation among FTAs and contribute as a basis of discussion on feasible investment rules of a region-wide FTA

One area for future research is an assessment of the implementation of FDI rules. While we have examined the quality of FDI rules, setting rules is one thing, implementing them is another. Even if one country sets up liberal FDI rules, FDI may be restricted if these are not implemented effectively. Very often, a lack of transparency in the implementation of the rules and regulations discourages FDI. Thus, an assessment of the implementation of FDI rules should be seriously considered. Another item on the research agenda could be the impact of FDI rules on FDI flows. A country with a liberal FDI policy regime should attract FDI successfully. However, a study by UNCTAD (1998) found statistically no evidence on the effect of bilateral investment treaties (BITs) on increased FDI flows. On the contrary, Urata and Kawai (2000) found that governance and the rules of law have a positive impact on Japanese FDI.

While the OECD and UNCTAD work has emerged as the dominant measure of FDI barriers, this issue has been considered by others, particularly by Australia's Productivity Commission. A broader definition of barriers has been taken in other work, such as the World Bank Investment Climates surveys. Measuring barriers to FDI is difficult as current measures have some conceptual drawbacks. These measures can be improved by considering country-specific, weighing schemes and through estimation of the impact of barriers at the micro level. Despite limitations in measurement, it is obvious that direct barriers to FDI as measured in restrictiveness index in this study provide important elements for policy makers to consider.

Due to the time constraint, the scope of this study involves ASEAN Free Trade Area in measuring FDI restrictiveness index. In the next phase, this study will extend to examine and analyze FDI policy and environment with respect to ASEAN FTA with its six dialogue partners.

In short, there have been significant improvements on direct measures to improve and facilitate FDI in ASEAN, especially on cross borders investment. At the same time, indirect measures such as the time required to open and close investment establishments have deteriorated much. This could be due to the absence of permanent improvement in administrative and institutional capabilities, non-transparency of rules and regulations and good governance. Therefore, to secure sustainable liberalization and facilitation in FDI, it is critically important that a system of reliable monitoring mechanism is initiated and established in ASEAN. In addition, FDI policy requires the right policies and effective implementation and enforcement. Based on

the empirical data and analysis, it is clear that implementation and enforcement are much more relevant and critical for ASEAN FDI regime.

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Appendix I

Brunei							
	Limitation of Foreign Ownership/Market Access	**National Treatment**	**Screening and Approval**	**Board of Directors**	**Movement of People**	**Performance Requirements**	**Total for the Sector**
	[0.4]	**[0.2]**	**[0.1]**	**[0.1]**	**[0.1]**	**[0.1]**	**[1]**
Specific commitments							
Business (46 subsectors)							**0.535**
A. Professional Services (11 subsectors)	[0.36*7+0.28*2+0.2]/10=0.328	0.05	[0.025*9+0.01]/10=0.0235	0.05	0.08	[0.1*8+0.075+0.09]/10=0.0965	0.628
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.05	0.08	0.1	0.665
C. Research and Development Services (3 subsectors)	0.5*0.4=0.2	0.05	0.025	0.05	0.08	0.1	0.505
D. Real Estate Services (2 subsectors)	0.1	0.05	0.025	0.05	0.08	0.1	0.405
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36*3+0.2*2]/5=0.296	0.05	0.025	0.05	0.08	0.1	0.601
F. Other Business Services (20 subsectors)	[0.2*12+0.1*5]/20=0.145	[0.05*17]/20=0.0425	[0.025*17]/20=0.0213	[0.05*17]/20=0.0425	[0.08*17]/20=0.068	[0.1*17]/20=0.085	0.404
Communication (24 subsectors)							**0.297**
A. Postal Services	0	0	0	0	0	0	0
B. Courier Services	0.1	0.05	0.025	0.05	0.08	0.1	0.405
C. Telecommunication Services (15 subsectors)	[0.36*7+0.28]/15=0.187	[0.05*8]/15=0.08	[0.025*8]/15=0.0133	[0.05*8]/15=0.0267	[0.08*8]/15=0.0427	[0.1*8]/15=0.0533	0.403
D. Audiovisual Services (6	0.1	0.05	0.025	0.05	0.08	0.075	0.38

subsectors)							
Construction (5 subsectors)	0.7*0.4 = 0.28	0.25*0.2=0.05	0.025	0.5*0.1 = 0.05	0.8*0.1 = 0.08	0.1	0.585
Distribution (5 subsectors)	0.1	0.05	0.025	0.05	0.08	0.1	0.405
Education (5 subsectors)	0.5*0.4 = 0.2	0.25*0.2=0.05	0.025	0.5*0.1 = 0.05	0.8*0.1 = 0.08	[0.1*4+0.075]/5=0.095	0.5
Environmental (4 subsectors)	0	0	0	0	0	0	0
Financial (17 subsectors)							**0.535**
A. All Insurance and insurance-related Services (4 subsectors)	0.36	0.05	0.025	0.05	0.08	0.1	0.665
B. Banking and other Financial Services (12 subsectors)	0.1	0.05	0.025	0.05	0.08	0.1	0.405
Health (4 subsectors)	[0.36*2]/3=0.24	[0.05*2]/3=0.0333	[0.025*2]/3=0.0167	[0.05*2]/3=0.0333	[0.08*2]/3=0.0533	[0.1*2]/3=0.0667	0.443
Tourism (4 subsectors)	[0.28*2+0.1*2]/4=0.19	0.05	0.025	0.05	0.08	[0.1*3+0.09]/4=0.0975	0.493
Recreational (5 subsectors)	[0.28]/4=0.07	[0.05]/4=0.0125	[0.025]/4=0.00625	[0.05]/4=0.0125	[0.08]/4=0.02	[0.1]/4=0.025	0.146
Transport (35 subsectors)							**0.285**
A. Maritime Transport Services (6 subsectors)	[0.2*3]/6=0.1	[0.05*3]/6=0.025	[0.025*3]/6=0.0125	[0.05*3]/6=0.025	[0.08*3]/6=0.04	[0.1*3]/6=0.05	0.253
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	[0.1*3+0.36*2]/5=0.204	0.05	0.025	0.05	0.08	0.1	0.509
D. Space Transport	0.5*0.4=0.2	0.05	0.025	0.05	0.08	0.1	0.505
E. Rail Transport Services (5 subsectors)	0.5*0.4=0.2	0.05	0.025	0.05	0.08	0.1	0.505

F. Road Transport Services (5 subsectors)	0	0	0	0	0	0	0
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	0.5*0.4=0.2	0.05	0.025	0.05	0.08	0.1	0.505
Manufacturing Source: AIA council							**0.569**
A. Food, beverage and tobacco manufacturing	[0.1+0.28*8]/9=0.26	0.05	0.025	0.05	0.08	0.1	0.565
B. Textile, wearing apparel and leather manufacturing	[0.1+0.28*2]/3=0.22	0.05	0.025	0.05	0.08	0.1	0.525
C. Wood and paper manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585
D. Petroleum, chemical and pharmaceutical product manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585
E. Rubber, plastic and other non-metallic mineral product manufacturing	[0.1+0.28*2]/3=0.22	0.05	0.025	0.05	0.08	0.1	0.525
F. Basic metal manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585
G. Fabricated metal product, machinery and equipment manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585
H. Transport equipment manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585
I Other manufacturing	0.28	0.05	0.025	0.05	0.08	0.1	0.585

Philippines	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.454**
B. Computer and Related Services (5 subsectors)	0.5*0.4=0.2	0.05	0.025	0.05	0.08	0.075	0.48
C. Research and Development Services (3 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
D. Real Estate Services (2 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
E. Rental/Leasing Services Without Operators (5 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
F. Other Business Services (20 subsectors)	[0.2*10+0.1*4+0.16+0.28]/20=0.142	[0.05*16]/20=0.04	[0.025*16]/20=0.02	[0.05*15+0.1]/20=0.0425	[0.08*16]/20=0.064	[0.075*15+0.1]/20=0.0613	0.367
Communication (24 subsectors)							**0.479**
A. Postal Services	0.2	0.05	0.025	0.05	0.08	0.075	0.48
B. Courier Services	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Telecommunication Services (15 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
D. Audiovisual Services (6 subsectors)	[0.2*3]/6=0.1	[0.05*3]/6=0.025	[0.025*3]/6=0.0125	[0.05*3]/6=0.025	[0.08*3]/6=0.04	[0.075*3]/6=0.0375	0.24
Construction (5 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
Distribution (5 subsectors)	[0.2*3]/4=0.15	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.05*3]/4=0.0375	[0.08*3]/4=0.06	[0.075*3]/4=0.0563	0.36
Education (5 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48

Environmental (4 subsectors)	[0.2*2]/3=0.133	[0.05*2]/3=0.0333	[0.025*2]/3=0.0167	[0.05*2]/3=0.0333	[0.08*2]/3=0.0533	[0.075*2]/3=0.05	0.32
Financial (17 subsectors)							**0.473**
A. All Insurance and insurance-related Services (4 subsectors)	0.2	0.05	0.01	0.05	0.08	0.075	0.465
B. Banking and other Financial Services (12 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
C. Other							
Health (4 subsectors)	[0.2*2]/3=0.133	[0.05*2]/3=0.0333	[0.025*2]/3=0.0167	[0.05*2]/3=0.0333	[0.08*2]/3=0.0533	[0.075*2]/3=0.05	0.32
Tourism (4 subsectors)	[0.28+0.36]/3=0.213	[0.05*2]/3=0.0333	[0.025*2]/3=0.0167	[0.1*2]/3=0.0667	[0.08*2]/3=0.0533	[0.1*2]/3=0.0667	0.45
Recreational (5 subsectors)	[0.36*3]/4=0.27	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.1*3]/4=0.075	[0.08*3]/4=0.06	[0.1+0.09*2]/4=0.07	0.531
Transport (35 subsectors)							**0.375**
A. Maritime Transport Services (6 subsectors)	[0.36*5+0.2]/6=0.333	0.05	0.025	[0.1*5+0.05]/6=0.0917	0.08	[0.075+0.09+0.1*4]/6=0.0942	0.674
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	[0.36*2]/5=0.144	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.032	[0.1*2]/5=0.04	0.286
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	[0.36+0.2*3]/5=0.192	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.05*3+0.1]/5=0.05	[0.08*4]/5=0.064	[0.075*3+0.1]/5=0.065	0.431
F. Road Transport Services (5 subsectors)	[0.2*4+0.36]/5=0.232	0.05	0.025	[0.05*4+0.1]/5=0.06	0.08	[0.075*4+0.1]/5=0.08	0.527
G. Pipeline Transport (2 subsectors)	0.2	0.05	0.025	0.05	0.08	0.075	0.48
H. Services Auxiliary to all modes of Transport (4 subsectors)	[0.36*2+0.2*2]/4=0.28	0.05	0.025	[0.05*2+0.1*2]/4=0.075	0.08	[0.075*2+0.1*2]/4=0.0875	0.6
Manufacturing Source: AIA council	0.2	0.05	0.025	0.05	0.08	0.075	**0.48**
A. Food, beverage and tobacco manufacturing							

B. Textile, wearing apparel and leather manufacturing							
C. Wood and paper manufacturing							
D. Petroleum, chemical and pharmaceutical product manufacturing							
E. Rubber, plastic and other non-metallic mineral product manufacturing							
F. Basic metal manufacturing							
G. Fabricated metal product, machinery and equipment manufacturing							
H. Transport equipment manufacturing							
I Other manufacturing							

Myanmar							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.322**
A. Professional Services (11 subsectors)	[0.36*8+0.28*2]/10=0.344	0.05	0.025	0.1	0.04	[0.09*3+0.1*7]/10=0.097	0.656
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
C. Research and Development Services (3 subsectors)	0	0	0	0	0	0	0
D. Real Estate Services (2 subsectors)	0	0	0	0	0	0	0
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36]/4=0.09	[0.05]/4=0.0125	[0.025]/4=0.00625	[0.1]/4=0.025	[0.04]/4=0.01	[0.1]/4=0.025	0.169
F. Other Business Services (20 subsectors)	[0.36*5+0.1*5]/2	0.05	0.025	0.1	0.04	0.1	0.43

	0=0.115						
Communication (24 subsectors)							**0.413**
A. Postal Services	0	0	0	0	0	0	0
B. Courier Services	0.36	0.05	0.025	0.1	0.04	0.1	0.675
C. Telecommunication Services (15 subsectors)	[0.36*12]/15=0.288	[0.05*12]/15=0.04	[0.025*12]/15=0.02	[0.1*12]/15=0.08	[0.04*12]/15=0.032	[0.1*12]/15=0.08	0.54
D. Audiovisual Services (6 subsectors)	[0.36*3+0.28]/6=0.227	[0.05*4]/6=0.0333	[0.025*4]/6=0.0167	[0.1*4]/6=0.0667	[0.04*4]/6=0.0267	[0.1*4]/6=0.0667	0.437
Construction (5 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
Distribution (5 subsectors)	[0.36*3]/4=0.27	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.1*3]/4=0.075	[0.04*3]/4=0.03	[0.1*3]/4=0.075	0.506
Education (5 subsectors)	[0.36*3]/5=0.216	[0.05*3]/5=0.03	[0.025*3]/5=0.015	[0.1*3]/5=0.06	[0.04*3]/5=0.024	[0.1*3]/5=0.06	0.405
Environmental (4 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
Financial (17 subsectors)							**0.2**
A. All Insurance and insurance-related Services (4 subsectors)	0	0	0	0	0	0	0
B. Banking and other Financial Services (12 subsectors)	0.1	0.05	0.01	0.1	0.04	0.1	0.4
Health (4 subsectors)	[0.36+0.28*3]/4=0.3	0.05	0.025	0.1	0.04	0.1	0.615
Tourism (4 subsectors)	[0.36*2]/3=0.24	[0.05*2]/3=0.0333	[0.025*2]/3=0.0167	[0.1*2]/3=0.0667	[0.04*2]/3=0.0267	[0.1*2]/3=0.0667	0.45
Recreational (5 subsectors)	[0.36*2]/4=0.18	[0.05*2]/4=0.025	[0.025*2]/4=0.0125	[0.1*2]/4=0.05	[0.04*2]/4=0.02	[0.1*2]/4=0.05	0.338
Transport (35 subsectors)							**0.144**
A. Maritime Transport Services (6 subsectors)	[0.36*3]/6=0.18	[0.05*3]/6=0.025	[0.025*3]/6=0.0125	[0.1*3]/6=0.05	[0.04*3]/6=0.02	[0.1*3]/6=0.05	0.338
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	0	0	0	0	0	0	0
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	0	0	0	0	0	0	0
F. Road Transport Services (5 subsectors)	[0.36]/5=0.072	[0.05]/5=0.01	[0.025]/5=0.005	[0.1]/5=0.02	[0.04]/5=0.008	[0.1]/5=0.02	0.135
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0

H. Services Auxiliary to all modes of Transport (4 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
I Other Transport Services							
Manufacturing Source: AIA council							**0.563**
A. Food, beverage and tobacco manufacturing	[0.36*6+0.1*2]/9=0.262	[0.05*8]/9=0.0444	[0.025*8]/9=0.0222	[0.1*8]/9=0.0889	[0.04*8]/9=0.0356	[0.1*8]/9=0.0889	0.542
B. Textile, wearing apparel and leather manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675
C. Wood and paper manufacturing	0.1	0.05	0.025	0.1	0.04	0.1	0.415
D. Petroleum, chemical and pharmaceutical product manufacturing	0.1	0.05	0.025	0.1	0.04	0.1	0.415
E. Rubber, plastic and other non-metallic mineral product manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675
F. Basic metal manufacturing	0.1	0.05	0.025	0.1	0.04	0.1	0.415
G. Fabricated metal product, machinery and equipment manufacturing	[0.36*6]/7=0.309	[0.05*6]/7=0.0429	[0.025*6]/7=0.0214	[0.1*6]/7=0.0857	[0.04*6]/7=0.0343	[0.1*6]/7=0.0857	0.579
H. Transport equipment manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675
I Other manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675

Malaysia							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.513**
A. Professional Services (11 subsectors)	[0.2*5+0.16*4+0.36]/10=0.2	0.05	0.025	[0.075*3+0.1*7]/10=0.0925	0.08	[0.09*2+0.1*8]/10=0.098	0.546
B. Computer and Related Services (5	0.36	0.05	0.025	0.1	0.08	0.1	0.715

subsectors)							
C. Research and Development Services (3 subsectors)	0.2	0.05	0.025	0.1	0.08	0.1	0.555
D. Real Estate Services (2 subsectors)	0.1	0.05	0.025	0.1	0.08	0.1	0.455
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36+0.2+0.16]/5 =0.144	[0.05*3]/5=0.03	[0.025*3]/5=0.01 5	[0.1*3]/5=0.06	[0.08*3]/5=0.04 8	[0.1*3]/5=0.06	0.357
F. Other Business Services (20 subsectors)	[0.2*6+0.28*2+0. 36*3+0.1*5]/20= 0.167	[0.05*16]/20=0.0 4	[0.025*16]/20=0. 02	[0.1*16]/20=0.08	[0.08*16]/20=0. 064	[0.075+0.1*15]/20=0 .0788	0.45
Communication (24 subsectors)							**0.29**
A. Postal Services	0	0	0	0	0	0	0
B. Courier Services	0.1	0.05	0.025	0.1	0.08	0.1	0.455
C. Telecommunication Services (15 subsectors)	0.25*0.4=0.1	0.05	0.025	0.1	0.08	0.1	0.455
D. Audiovisual Services (6 subsectors)	[0.36+0.2]/5=0.11 2	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.03 2	[0.075+0.1]/5=0.035	0.249
Construction (5 subsectors)	0.28	0.05	0.025	0.1	0.08	0.1	0.635
Distribution (5 subsectors)	[0.2*2+0.16*2]/4 =0.18	0.05	[0.025*2+0.01*2] /4=0.0175	0.1	0.08	0.1	0.528
Education (5 subsectors)	0.2	0.05	[0.01*2+0.025*3] /5=0.019	0.1	0.08	0.1	0.549
Environmental (4 subsectors)	[0.2*2]/4=0.1	[0.05*2]/4=0.025	[0.025*2]/4=0.01 25	[0.1*2]/4=0.05	[0.08*2]/4=0.04	[0.1*2]/4=0.05	0.278
Financial (17 subsectors)							**0.613**
A. All Insurance and insurance-related Services (4 subsectors)	0.28	0.05	0.025	0.1	0.08	0.1	0.635
B. Banking and other Financial Services (12 subsectors)	[0.16*7+0.28+0.3 6*4]/12=0.237	0.05	0.025	0.1	0.08	[0.09*2+0.1*10]/12= 0.0983	0.59
Health (4 subsectors)	[0.28*2+0.36]/3= 0.307	0.05	0.025	0.1	0.08	[0.09+0.1*2]/3=0.09 67	0.659
Tourism (4 subsectors)	[0.28+0.36*2]/3= 0.333	0.05	0.025	0.1	0.08	[0.09+0.1*2]/3=0.09 67	0.685
Recreational (5 subsectors)	[0.36*2]/4=0.18	[0.05*2]/4=0.025	[0.025*2]/4=0.01 25	[0.1*2]/4=0.05	[0.08*2]/4=0.04	[0.1+0.075]/4=0.043 8	0.351
Transport (35 subsectors)							**0.149**

A. Maritime Transport Services (6 subsectors)	[0.2*3+0.28+0.36]/6=0.207	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.1*5]/6=0.0833	[0.08*5]/6=0.0667	[0.1*5]/6=0.0833	0.503
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	0	0	0	0	0	0	0
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	0	0	0	0	0	0	0
F. Road Transport Services (5 subsectors)	[0.2]/5=0.04	[0.05]/5=0.01	[0.025]/5=0.005	[0.1]/5=0.02	[0.08]/5=0.016	[0.1]/5=0.02	0.111
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	[0.2*3+0.28]/4=0.22	0.05	0.025	0.1	0.08	0.1	0.575
Manufacturing Source: AIA council							**0.618**
A. Food, beverage and tobacco manufacturing	[0.1*5+0.36*4]/9=0.216	0.05	0.025	0.1	0.08	0.1	0.571
B. Textile, wearing apparel and leather manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Wood and paper manufacturing	[0.1+0.36]/2=0.23	0.05	0.025	0.1	0.08	0.1	0.585
D. Petroleum, chemical and pharmaceutical product manufacturing	[0.1+0.36*2]/3=0.273	0.05	0.025	0.1	0.08	0.1	0.628
Chemical product manufacturing services							
Pharmaceutical product manufacturing services							
E. Rubber, plastic and other non-metallic mineral product manufacturing	[0.1+0.36*2]/3=0.273	0.05	0.025	0.1	0.08	0.1	0.628
F. Basic metal manufacturing	0.1	0.05	0.025	0.1	0.08	0.1	0.455
G. Fabricated metal product, machinery and equipment manufacturing	[0.36*6+0.1]/7=0.323	0.05	0.025	0.1	0.08	0.1	0.678
H. Transport equipment manufacturing	[0.1+0.36]/2=0.23	0.05	0.025	0.1	0.08	0.1	0.585
I Other manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715

Laos							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.493**
A. Professional Services (11 subsectors)	[0.36*6+0.28+0.2]/10=0.264	[0.05*8]/10=0.04	[0.025*8]/10=0.02	[0.1*8]/10=0.08	[0.04*8]/10=0.032	[0.09*2+0.1*6]/10=0.078	0.514
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
C. Research and Development Services (3 subsectors)	0.28	0.05	0.025	0.1	0.04	0.1	0.595
D. Real Estate Services (2 subsectors)	0	0	0	0	0	0	0
E. Rental/Leasing Services Without Operators (5 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
F. Other Business Services (20 subsectors)	[0.36*11+0.1*5]/19=0.235	[0.05*16]/19=0.0421	[0.025*16]/19=0.0211	[0.1*16]/19=0.0842	[0.04*16]/19=0.0337	[0.1*16]/19=0.0842	0.5
Communication (24 subsectors)							**0.481**
A. Postal Services	0.1	0.05	0.025	0.1	0.04	0.1	0.415
B. Courier Services	0.36	0.05	0.025	0.1	0.04	0.1	0.675
C. Telecommunication Services (15 subsectors)	[0.1*12+0.36*3]/15=0.152	0.05	0.025	0.1	0.04	[0.09*8+0.1*7]/15=0.0947	0.462
D. Audiovisual Services (6 subsectors)	[0.1*2+0.2*2]/5=0.12	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.1*4]/5=0.08	[0.04*4]/5=0.032	[0.1*4]/5=0.08	0.372
Construction (5 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
Distribution (5 subsectors)	0.2	0.05	0.01	0.1	0.04	0.1	0.5
Education (5 subsectors)	0.36	0.05	0.01	0.1	0.04	0.1	0.66
Environmental (4 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
Financial (17 subsectors)							**0.513**
A. All Insurance and insurance-related Services (4 subsectors)	[0.36*2+0.1*2]/4=0.23	0.05	0.025	0.1	0.04	0.1	0.545
B. Banking and other Financial Services (12 subsectors)	[0.36*3+0.1*9]/12=0.165	0.05	0.025	0.1	0.04	0.1	0.48

Health (4 subsectors)	[0.2+0.1*2]/3=0.133	0.05	0.025	0.1	0.04	0.1	0.448
Tourism (4 subsectors)	[0.28+0.36*2]/4=0.25	[0.05*3]/4=0.0375	[0.01+0.025*2]/4=0.015	[0.1*3]/4=0.075	[0.04*3]/4=0.03	[0.09+0.1*2]/4=0.0725	0.48
Recreational (5 subsectors)	[0.1]/4=0.025	[0.05]/4=0.0125	[0.025]/4=0.00625	[0.1]/4=0.025	[0.04]/4=0.01	[0.1]/4=0.025	0.104
Transport (35 subsectors)							**0.363**
A. Maritime Transport Services (6 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
B. Internal Waterways Transport (6 subsectors)	[0.36*4]/6=0.24	[0.05*4]/6=0.0333	[0.025*4]/6=0.01667	[0.1*4]/6=0.0667	[0.04*4]/6=0.0267	[0.1*4]/6=0.0667	0.45
C. Air Transport Services (5 subsectors)	0.1	0.05	0.025	0.1	0.04	0.1	0.415
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	[0.1*2]/6=0.0333	[0.05*2]/6=0.0167	[0.025*2]/6=0.00833	[0.1*2]/6=0.0333	[0.04*2]/6=0.0133	[0.1*2]/6=0.0333	0.138
F. Road Transport Services (5 subsectors)	[0.1*2]/6=0.0333	[0.05*2]/6=0.0167	[0.025*2]/6=0.00833	[0.1*2]/6=0.0333	[0.04*2]/6=0.0133	[0.1*2]/6=0.0333	0.138
G. Pipeline Transport (2 subsectors)	0.1	0.05	0.025	0.1	0.04	0.1	0.415
H. Services Auxiliary to all modes of Transport (4 subsectors)	0.36	0.05	0.025	0.1	0.04	0.1	0.675
I Other Transport Services							
Manufacturing							**0.597**
A. Food, beverage and tobacco manufacturing	[0.36*7+0.1*2]/9=0.302	0.05	0.025	0.1	0.04	[0.075*2+0.09+0.1*6]/9=0.0933	0.61
B. Textile, wearing apparel and leather manufacturing	[0.36*2+0.1]/3=0.273	0.05	0.025	0.1	0.04	0.1	0.588
C. Wood and paper manufacturing	[0.36+0.1]/2=0.23	0.05	0.025	0.1	0.04	0.1	0.545
D. Petroleum, chemical and pharmaceutical product manufacturing	[0.36+0.1*2]/3=0.187	0.05	0.025	0.1	0.04	[0.1*2+0.075]/3=0.0917	0.494
E. Rubber, plastic and other non-metallic mineral product manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675
F. Basic metal manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675
G. Fabricated metal product, machinery and	[0.36*6]/7=0.309	[0.05*6]/7=0.0429	[0.025*6]/7=0.0214	[0.1*6]/7=0.0857	[0.04*6]/7=0.0343	[0.1*6]/7=0.0857	0.579

equipment manufacturing							
H. Transport equipment manufacturing	[0.36+0.1]/2=0.23	0.05	0.025	0.1	0.045	[0.075+0.1]/2=0.0875	0.533
I Other manufacturing	0.36	0.05	0.025	0.1	0.04	0.1	0.675

Indonesia							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.333**
A. Professional Services (11 subsectors)	[0.2*5+0.1+0.16+0.28*2]/10=0.182	[0.05*9]/10=0.045	[0.025*8+0.01]/10=0.021	[0.1*9]/10=0.09	[0.08*9]/10=0.072	[0.1*5+0.09*2+0.075*2]/10 =0.083	0.493
B. Computer and Related Services (5 subsectors)	0.2	0.05	0.025	0.1	0.08	0.1	0.555
C. Research and Development Services (3 subsectors)	[0.2]/3=0.0667	[0.05]/3=0.0167	[0.025]/3=0.00833	[0.1]/3=0.0333	[0.08]/3=0.0267	[0.1]/3=0.0333	0.185
D. Real Estate Services (2 subsectors)	0	0	0	0	0	0	0
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.28+0.36]/4=0.16	[0.05*2]/4=0.025	[0.025*2]/4=0.0125	[0.1*2]/4=0.05	[0.08*2]/4=0.04	[0.1*2]/4=0.05	0.338

F. Other Business Services (20 subsectors)	[0.2*8+0.1*5+0.36*2]/19=0.148	[0.05*15]/19=0.0395	[0.025*15]/19=0.0197	[0.1*15]/19=0.0789	[0.08*15]/19=0.0632	[0.1*15]/19=0.0789	0.428
Communication (24 subsectors)							**0.416**
A. Postal Services	0.2	0.05	0.025	0.1	0.08	0.1	0.555
B. Courier Services	0.2	0.05	0.025	0.1	0.08	0.09	0.545
C. Telecommunication Services (15 subsectors)	0.28*5+0.1*3+0.2*7]/15=0.207	0.05	0.025	0.1	0.08	0.1	0.562
D. Audiovisual Services (6 subsectors)	0	0	0	0	0	0	0
Construction (5 subsectors)	0.28	0.05	0.025	0.1	0.08	0.1	0.635
Distribution (5 subsectors)	[0.28+0.2*2]/4=0.17	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.1*3]/4=0.075	[0.08*3]/4=0.06	[0.09*3]/4=0.0675	0.429
Education (5 subsectors)	[0.2*4+0.1]/5=0.18	0.05	0.025	0.1	0.08	[0.09*3+0.1*2]/5=0.094	0.529
Environmental (4 subsectors)	0.2	0.05	0.025	[0.075+0.1*3]/4=0.0938	0.08	0.075	0.524
Financial (17 subsectors)							**0.618**
A. All Insurance and insurance-related Services (4 subsectors)	0.8*0.4=0.32	0.05	0.025	0.1	0.08	0.1	0.675
B. Banking and other Financial Services (12 subsectors)	[0.2*11+0.32]/12=0.21	0.05	0.025	0.1	0.08	[0.1*7+0.09*5]/12=0.0958	0.561
Health (4 subsectors)	[0.1+0.2*2]/3=0.167	0.05	0.025	[0.075+0.1*2]/3	0.08	[0.075+0.1*2]/3	0.505

				=0.0917		=0.0917	
Tourism (4 subsectors)	[0.36+0.2+0.1+0.28]/4=0.235	0.05	0.025	0.1	0.08	[0.1*3+0.09]/4=0.0975	0.588
Recreational (5 subsectors)	[0.28*3+0.2]/5=0.208	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.1*4]/5=0.08	[0.08*4]/5=0.064	[0.1*4]/5=0.08	0.492
Transport (35 subsectors)							**0.358**
A. Maritime Transport Services (6 subsectors)	[0.28*2+0.2*3]/6=0.193	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.1*5]/6=0.0833	[0.08*5]/6=0.0667	[0.1*5]/6=0.0833	0.489
B. Internal Waterways Transport (6 subsectors)	[0.2*5]/6=0.167	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.1*5]/6=0.0833	[0.08*5]/6=0.0667	[0.1*5]/6=0.0833	0.463
C. Air Transport Services (5 subsectors)	[0.2*3]/5=0.12	[0.05*3]/5=0.03	[0.025*3]/5=0.015	[0.1*3]/5=0.06	[0.08*3]/5=0.048	[0.1*3]/5=0.06	0.333
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	0.2	0.05	0.025	0.1	0.08	0.1	0.555
F. Road Transport Services (5 subsectors)	[0.2*4]/5=0.16	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.1*4]/5=0.08	[0.08*4]/5=0.064	[0.1*4]/5=0.08	0.444
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	[0.28+0.2*2/3=0.227	0.05	0.025	0.1	0.08	0.1	0.582
Manufacturing Source: AIA council							**0.527**

A. Food, beverage and tobacco manufacturing	[0.1*4+0.2*5]/9=0.156	0.05	0.025	0.1	0.08	[0.09*4+0.1*5]/9=0.0956	0.507
B. Textile, wearing apparel and leather manufacturing	[0.1+0.2*2]/3=0.167	0.05	0.025	0.1	0.08	[0.09+0.1*2]/3=0.0967	0.519
C. Wood and paper manufacturing	[0.2+0.1]/2=0.15	0.05	0.025	0.1	0.08	[0.09+0.1]/2=0.095	0.5
D. Petroleum, chemical and pharmaceutical product manufacturing	[0.1+0.2*2]/3=0.167	0.05	0.025	0.1	0.08	0.1	0.522
E. Rubber, plastic and other non-metallic mineral product manufacturing	[0.1+0.2*2]/3=0.167	0.05	0.025	0.1	0.08	[0.09*2+0.1]/3=0.0933	0.515
F. Basic metal manufacturing	0.2	0.05	0.025	0.1	0.08	0.1	0.555
G. Fabricated metal product, machinery and equipment manufacturing	[0.1*2+0.2*5]/7=0.171	0.05	0.025	0.1	0.08	[0.09*4+0.1*3]/7=0.0943	0.52
H. Transport equipment manufacturing	0.2	0.05	0.025	0.1	0.08	[0.09+0.1]/2=0.095	0.55
I Other manufacturing	0.2	0.05	0.025	0.1	0.08	0.1	0.555

Cambodia							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector

	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.343**
A. Professional Services (11 subsectors)	[0.36*8+0.28]/10=0.316	[0.05*9]/10=0.045	[0.01+0.025*8]/10=0.021	[0.075+0.1*8]/10=0.0875	[0.08*9]/10=0.072	[0.1*8+0.09]/10=0.089	0.631
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Research and Development Services (3 subsectors)	0	0	0	0	0	0	0
D. Real Estate Services (2 subsectors)	0	0	0	0	0	0	0
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36]/4=0.09	[0.05]/4=0.0125	[0.025]/4=0.00625	[0.1]/4=0.025	[0.08]/4=0.02	[0.1]/4=0.025	0.179
F. Other Business Services (20 subsectors)	[0.36*15]/20=0.27	[0.05*15]/20=0.0375	[0.025*15]/20=0.0188	[0.1*15]/20=0.075	[0.08*15]/20=0.06	[0.075+0.1*14]/20=0.0738	0.535
Communication (24 subsectors)							**0.348**
A. Postal Services	0	0	0	0	0	0	0
B. Courier Services	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Telecommunication Services (15 subsectors)	[0.28*7+0.36*8]/15=0.323	0.05	0.025	0.1	0.08	0.1	0.678
D. Audiovisual Services (6 subsectors)	0	0	0	0	0	0	0
Construction (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
Distribution (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
Education (5 subsectors)	[0.36*3+0.1*2]/5=0.256	0.05	0.025	0.1	0.08	0.1	0.611
Environmental (4 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
Financial (17 subsectors)							**0.715**
A. All Insurance and insurance-related Services (4 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
B. Banking and other Financial Services (12 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
Health (4 subsectors)	[0.36*2]/3=0.24	[0.05*2]/3=0.0333	[0.025+0.01]/3=0.0117	[0.075*2]/3=0.05	[0.08*2]/3=0.0533	[0.1*2]/3=0.0667	0.455
Tourism (4 subsectors)	[0.28+0.36*2]/3=0.333	0.05	[0.025*2+0.01]/3=0.02	0.1	0.08	[0.1*2+0.075]/3=0.0917	0.675
Recreational (5 subsectors)	[0.36*2+0.1]/4=0.205	[0.05*3]/4=0.03	[0.025*3]/4=0.0	[0.1*3]/4=0.075	[0.08*3]/4=0.	[0.1*3]/4=0.075	0.471

		75	188		06		
Transport (35 subsectors)							**0.28**
A. Maritime Transport Services (6 subsectors)	[0.2*2]/6=0.0667	[0.05*2]/6=0.0167	[0.025*2]/6=0.00833	[0.1*2]/6=0.0333	[0.08*2]/6=0.0267	[0.09*2]/6=0.03	0.182
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	[0.36*2+0.1*2]/5=0.184	[0.05*4]/5=0.04	[0.025*2+0.01*2]/5=0.014	[0.1*4]/5=0.08	[0.08*4]/5=0.064	[0.1*4]/5=0.08	0.462
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	0	0	0	0	0	0	0
F. Road Transport Services (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
G. Pipeline Transport (2 subsectors)	0.36	0.05	0.01	0.1	0.08	0.1	0.7
H. Services Auxiliary to all modes of Transport (4 subsectors)	[0.2]/3=0.0667	[0.05]/3=0.0167	[0.025]/3=0.00833	[0.1]/3=0.0333	[0.08]/3=0.0267	[0.09]/3=0.03	0.182
Manufacturing Source: AIA council							**0.705**
A. Food, beverage and tobacco manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
B. Textile, wearing apparel and leather manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Wood and paper manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
D. Petroleum, chemical and pharmaceutical product manufacturing	[0.36*2+0.1]/3=0.273	0.05	0.025	0.1	0.08	0.1	0.628
E. Rubber, plastic and other non-metallic mineral product manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
F. Basic metal manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
G. Fabricated metal product, machinery and equipment manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
H. Transport equipment manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715
I Other manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715

Singapore							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.649**
A. Professional Services (11 subsectors)	[0.36*7+0.16*2+0.28]/10=0.312	0.05	0.025	0.075	0.08	0.09	0.632
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
C. Research and Development Services (3 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
D. Real Estate Services (2 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36*4+0.16]/5=0.32	0.05	0.025	0.075	0.08	0.09	0.64
F. Other Business Services (20 subsectors)	[0.36*14+0.1+0.1*4]/20=0.277	[0.05*19]/20=0.0475	[0.025*19]/20=0.0238	[0.075*19]/20=0.0713	[0.08*19]/20=0.076	[0.09*19]/20=0.0855	0.581
Communication (24 subsectors)							**0.645**
A. Postal Services	0.36	0.05	0.025	0.075	0.08	0.09	0.68
B. Courier Services	0.36	0.05	0.025	0.075	0.08	0.09	0.68
C. Telecommunication Services (15 subsectors)	[0.2*7+0.36*8]/15=0.285	0.05	0.025	0.075	0.08	0.09	0.605
D. Audiovisual Services (6 subsectors)	[0.36*3+0.2*2]/5=0.296	0.05	0.025	0.075	0.08	0.09	0.616
E. Other							
Construction (5 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
Distribution (5 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
Education (5 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
Environmental (4 subsectors)	[0.36*2]/4=0.18	[0.05*2]/4=0.025	[0.025*2]/4=0.0125	[0.075*2]/4=0.0375	[0.08*2]/4=0.04	[0.09*2]/4=0.045	0.34
Financial (17 subsectors)							**0.619**
A. All Insurance and insurance-related Services (4 subsectors)	[0.2*2+0.36*2]/4=0.28	0.05	0.025	0.075	0.08	0.09	0.6
B. Banking and other Financial Services (12	[0.1*2+0.36*10]/12=0.	0.05	0.025	0.075	0.08	0.09	0.637

subsectors)	317						
C. Other							
Health (4 subsectors)	[0.28+0.36*3]/4=0.34	0.05	0.025	0.075	0.08	0.09	0.66
Tourism (4 subsectors)	[0.36*3+0.28]/4=0.34	0.05	0.025	0.075	0.08	0.09	0.66
Recreational (5 subsectors)	[0.36*4]/5=0.288	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.075*4]/5=0.06	[0.08*4]/5=0.064	[0.09*4]/5=0.072	0.544
Transport (35 subsectors)							**0.25**
A. Maritime Transport Services (6 subsectors)	[0.36*3+0.16+0.2]/6=0.24	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.075*5]/6=0.0625	[0.08*5]/6=0.0667	[0.09*5]/6=0.075	0.507
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	[0.36]/5=0.072	[0.05]/5=0.01	[0.025]/5=0.005	[0.075]/5=0.015	[0.08]/5=0.016	[0.09]/5=0.018	0.136
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	0	0	0	0	0	0	0
F. Road Transport Services (5 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	0.36	0.05	0.025	0.075	0.08	0.09	0.68
Manufacturing Source: AIA council							**0.669**
A. Food, beverage and tobacco manufacturing	[0.36*7+0.1*2]/9=0.302	0.05	0.025	0.075	0.08	0.09	0.622
B. Textile, wearing apparel and leather manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68
C. Wood and paper manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68
D. Petroleum, chemical and pharmaceutical product manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68
E. Rubber, plastic and other non-metallic mineral product manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68
F. Basic metal manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68
G. Fabricated metal product, machinery and equipment manufacturing	[0.36*6+0.1]/7=0.323	0.05	0.025	0.075	0.08	0.09	0.643
H. Transport equipment manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68

I Other manufacturing	0.36	0.05	0.025	0.075	0.08	0.09	0.68

Thailand							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.453**
A. Professional Services (11 subsectors)	0.2	0.05	0.025	[0.075*6+0.05*4]/10=0.065	0.05	0.075	0.465
B. Computer and Related Services (5 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
C. Research and Development Services (3 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
D. Real Estate Services (2 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.2*4]/5=0.16	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.075*4]/5=0.06	[0.05*4]/5=0.04	[0.075*4]/5=0.06	0.38
F. Other Business Services (20 subsectors)	[0.2*15+0.1*5]/20=0.175	0.05	0.025	0.075	0.05	0.075	0.45
Communication (24 subsectors)							**0.195**
A. Postal Services	0	0	0	0	0	0	0
B. Courier Services	0	0	0	0	0	0	0
C. Telecommunication Services (15 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
D. Audiovisual Services (6 subsectors)	[0.16+0.2*3]/6=0.127	[0.05*4]/6=0.0333	[0.025*4]/6=0.0167	[0.05+0.075*3]/6=0.0458	[0.05*4]/6=0.0333	[0.075*4]/6=0.05	0.306
Construction (5 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
Distribution (5 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
Education (5 subsectors)	0.2	0.05	0.025	[0.05*2+0.075*3]/5=0.065	0.05	0.075	0.465
Environmental (4 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
Financial (17 subsectors)							**0.41**
A. All Insurance and insurance-related Services	0.16	0.05	0.025	0.05	0.05	0.075	0.41

(4 subsectors)							
B. Banking and other Financial Services (12 subsectors)	0.16	0.05	0.025	0.05	0.05	0.075	0.41
Health (4 subsectors)	[0.2]/3=0.0667	[0.05]/3=0.0167	[0.025]/3=0.00833	[0.075]/3=0.025	[0.05]/3=0.0167	[0.075]/3=0.025	0.158
Tourism (4 subsectors)	0.2	0.05	[0.025*3+0.01]/4=0.0213	[0.05*2+0.075*2]/4=0.0625	0.05	0.075	0.459
Recreational (5 subsectors)	[0.2*4]/5=0.16	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.075*4]/5=0.06	[0.05*4]/5=0.04	[0.075*4]/5=0.06	0.38
Transport (35 subsectors)							**0.219**
A. Maritime Transport Services (6 subsectors)	[0.2*5]/6=0.167	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.075*5]/6=0.0625	[0.05*5]/6=0.0417	[0.075*5]/6=0.0625	0.396
B. Internal Waterways Transport (6 subsectors)	0	0	0	0	0	0	0
C. Air Transport Services (5 subsectors)	[0.36+0.2]/5=0.112	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.075*2]/5=0.03	[0.05*2]/5=0.02	[0.075*2]/5=0.03	0.222
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	[0.2*2]/5=0.08	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.075*2]/5=0.03	[0.05*2]/5=0.02	[0.075*2]/5=0.03	0.19
F. Road Transport Services (5 subsectors)	0.2	0.05	0.025	[0.05*2+0.075*3]/5=0.065	0.05	0.075	0.465
G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	0.2	0.05	0.025	0.075	0.05	0.075	0.475
I Other Transport Services							
	NA						
Manufacturing Source: AIA council							**0.516**
A. Food, beverage and tobacco manufacturing	[0.1*2+0.36*7]/9=0.302	0.05	0.025	0.075	0.05	0.075	0.577
B. Textile, wearing apparel and leather manufacturing	[0.1+0.36*2]/3=0.273	0.05	0.025	0.075	0.05	0.075	0.548
C. Wood and paper manufacturing	[0.36+0.1]/2=0.23	0.05	0.025	0.075	0.05	0.075	0.505
D. Petroleum, chemical and pharmaceutical product manufacturing	0.36	0.05	0.025	0.075	0.05	0.075	0.635

E. Rubber, plastic and other non-metallic mineral product manufacturing	[0.36*2+0.1]/3=0.273	0.05	0.025	0.075	0.05	0.075	0.548
F. Basic metal manufacturing							
G. Fabricated metal product, machinery and equipment manufacturing	[0.36*5+0.1*2]/7=0.286	0.05	0.025	0.075	0.05	0.075	0.561
H. Transport equipment manufacturing	0.36	0.05	0.025	0.075	0.05	0.075	0.635
I Other manufacturing	0.36	0.05	0.025	0.075	0.05	0.075	0.635

Vietnam							
	Limitation of Foreign Ownership/Market Access	National Treatment	Screening and Approval	Board of Directors	Movement of People	Performance Requirements	Total for the Sector
	[0.4]	[0.2]	[0.1]	[0.1]	[0.1]	[0.1]	[1]
Specific commitments							
Business (46 subsectors)							**0.529**
A. Professional Services (11 subsectors)	0.36	0.05	0.025	0.1	0.08	[0.09+0.1*9]/10=0.099	0.714
B. Computer and Related Services (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.075	0.69
C. Research and Development Services (3 subsectors)	[0.36]/3=0.12	[0.05]/3=0.0167	[0.025]/3=0.00833	[0.1]/3=0.0333	[0.08]/3=0.0267	[0.1]/3=0.0333	0.238
D. Real Estate Services (2 subsectors)	0.36	0.05	0.01	0.1	0.08	0.1	0.7
E. Rental/Leasing Services Without Operators (5 subsectors)	[0.36*2]/4=0.18	[0.05*2]/4=0.025	0.025*2]/4=0.0125	[0.1*2]/4=0.05	[0.08*2]/4=0.04	[0.1*2]/4=0.05	0.358
F. Other Business Services (20 subsectors)	[0.2*2+0.28+0.36*7+0.1*5]/19=0.195	[0.05*15]/19=0.0395	[0.025*15]/19=0.0197	[0.1*15]/19=0.0789	[0.08*15]/19=0.0632	[0.1*14+0.075]/19=0.0776	0.474
Communication (24 subsectors)							**0.426**
A. Postal Services	0	0	0	0	0	0	0
	assumed closed to foreign investment						
B. Courier Services	0.36	0.05	0.025	0.1	0.08	0.1	0.715
C. Telecommunication Services (15 subsectors)	[0.2*8+0.28*7]/15=0.237	0.05	0.025	0.1	0.08	0.1	0.592

D. Audiovisual Services (6 subsectors)	[0.28*2+0.36]/5=0.184	[0.05*3]/5=0.03	[0.025*3]/5=0.015	[0.1*3]/5=0.06	[0.08*3]/5=0.048	[0.1*3]/5=0.06	0.397
E. Other							
	NA						
Construction (5 subsectors)	0.36	0.05	0.025	0.1	0.08	0.075	0.69
Distribution (5 subsectors)	0.36	0.05	[0.01*3+0.025]/4=0.0138	0.1	0.08	[0.075+0.1*3]/4=0.0938	0.698
Education (5 subsectors)	[0.36*4]/5=0.288	[0.05*4]/5=0.04	[0.025*4]/5=0.02	[0.1*4]/5=0.08	[0.08*4]/5=0.064	[0.1*4]/5=0.08	0.572
Environmental (4 subsectors)	[0.36*3]/4=0.27	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.1*3]/4=0.075	[0.08*3]/4=0.06	[0.09+0.1*2]/4=0.0725	0.534
Financial (17 subsectors)							**0.704**
A. All Insurance and insurance-related Services (4 subsectors)	0.36	0.05	0.025	0.1	0.08	0.1	0.715
B. Banking and other Financial Services (12 subsectors)	[0.36*11+0.2]/12=0.347	0.05	0.025	0.1	0.08	0.09	0.692
C. Other							
	NA						
Health (4 subsectors)	[0.36+0.2*2]/3=0.253	0.05	0.025	0.1	0.08	0.1	0.608
Tourism (4 subsectors)	[0.28+0.36*2]/4=0.25	[0.05*3]/4=0.0375	[0.025*3]/4=0.0188	[0.1*3]/4=0.075	[0.08*3]/4=0.06	[0.075+0.09*2]/4=0.0638	0.505
Recreational (5 subsectors)	[0.2+0.36]/5=0.112	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.032	[0.1*2]/5=0.04	0.254
Transport (35 subsectors)							**0.245**
A. Maritime Transport Services (6 subsectors)	[0.1*2+0.2*3]/6=0.133	[0.05*5]/6=0.0417	[0.025*5]/6=0.0208	[0.1*5]/6=0.0833	[0.08*5]/6=0.0667	[0.09*2+0.1*3]/6=0.08	0.426
B. Internal Waterways Transport (6 subsectors)	[0.2*2]/6=0.0667	[0.05*2]/6=0.0167	[0.025*2]/6=0.00833	[0.1*2]/6=0.0333	[0.08*2]/6=0.0267	[0.1*2]/6=0.0333	0.185
C. Air Transport Services (5 subsectors)	[0.36*2]/5=0.144	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.032	[0.1*2]/5=0.04	0.286
D. Space Transport	0	0	0	0	0	0	0
E. Rail Transport Services (5 subsectors)	[0.2*2]/5=0.08	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.032	[0.1*2]/5=0.04	0.222
F. Road Transport Services (5 subsectors)	[0.2*2]/5=0.08	[0.05*2]/5=0.02	[0.025*2]/5=0.01	[0.1*2]/5=0.04	[0.08*2]/5=0.032	[0.1*2]/5=0.04	0.222

G. Pipeline Transport (2 subsectors)	0	0	0	0	0	0	0
H. Services Auxiliary to all modes of Transport (4 subsectors)	[0.28*3+0.2]/4=0.26	0.05	0.025	0.1	0.08	0.1	0.615
I Other Transport Services							
	NA						
Manufacturing							**0.588**
A. Food, beverage and tobacco manufacturing	[0.36*6+0.1*2]/9=0.262	0.05	0.025	0.1	0.08	[0.075*5+0.1*3]/9=0.075	0.592
B. Textile, wearing apparel and leather manufacturing	[0.1+0.36*2]/3=0.273	0.05	0.025	0.1	0.08	[0.075+0.1*2]/3=0.0917	0.62
C. Wood and paper manufacturing	0.36	0.05	0.025	0.1	0.08	[0.075+0.1]/2=0.0875	0.703
D. Petroleum, chemical and pharmaceutical product manufacturing	[0.1*2+0.36]/3=0.187	0.05	0.025	0.1	0.08	[0.09*2+0.1]/3=0.0933	0.535
E. Rubber, plastic and other non-metallic mineral product manufacturing	[0.1+0.36*2]/3=0.273	0.05	0.025	0.1	0.08	[0.09*2+0.1]/3=0.0933	0.621
F. Basic metal manufacturing	0.1	0.05	0.025	0.1	0.08	0.09	0.445
G. Fabricated metal product, machinery and equipment manufacturing	[0.1*2+0.36*5]/7=0.286	0.05	0.025	0.1	0.08	[0.075*4+0.09+0.1*2]/7=0.0843	0.625
H. Transport equipment manufacturing	0.1	0.05	0.025	0.1	0.08	[0.075+0.09]/2=0.0825	0.438
I Other manufacturing	0.36	0.05	0.025	0.1	0.08	0.1	0.715