Impact of liberalization and improved connectivity and facilitation in ASEAN

Ken Itakura *

Graduate School of Economics, Nagoya City University, 1 Yamanohata, Mizuho, Nagoya 467-8501, Japan

A R T I C L E   I N F O

A B S T R A C T

This study attempts to evaluate the potential economic effects of liberalization and improved connectivity and facilitation of trade in goods and services among the ASEAN member states (AMSs) by applying economy-wide simulation analysis based on a recursively dynamic computable general equilibrium (CGE) model. We conduct a set of simulations to capture the effects of establishing free trade agreements (FTAs) in which the AMSs participate. Three key components affecting the impacts of FTAs are reduction of tariffs on goods, lowering of barriers to trade in services, and saving time-costs arising from logistics. Simulation results revealed that reducing trade barriers has a significantly positive impact on economic welfare. Although there are differences in the magnitude of positive contributions to welfare, all of the FTAs in which the AMSs participate tend to raise welfare. Among the FTAs examined in this study, the Regional Comprehensive Economic Partnership (RCEP) leads to the largest positive effects on real GDP for most of the AMSs.

1. Introduction

This study attempts to evaluate the potential economic effects of liberalization and improved connectivity and facilitation of trade in goods and services among the ASEAN member states (AMSs) by applying economy-wide simulation analysis. The subjects of regionally interconnected liberalizations encompass reforms that have been implemented and will be implemented in the AMSs and neighboring countries. Impacts of liberalization of trade in goods and services arise from lowering barriers to trade: for example, reducing import tariffs, ameliorating custom procedures, removing barriers to trade in services, and improving logistics. Collecting information and estimates of tariffs and trade costs associated with liberalization is an essential part of this study to conduct quantitative evaluation. We relied on a number of databases and estimates obtained from international organizations, national research institutions, and researchers in this field of study.

The liberalization reforms will have economy-wide effects covering all of the AMSs for sectors including agriculture, natural resources, manufacturing, and service industries. To capture these economy-wide impacts of free trade agreements (FTAs), it is desirable to use a multi-country, multi-sector computable general equilibrium (CGE) model of international trade capable of handling changes in tariffs and trade costs for quantitative evaluation. There are a number of studies on applying CGE models to study FTAs in the ASEAN region. Kawai and Wignaraja (2008) examined FTAs such as the ASEAN-China FTA, ASEAN-Japan FTA, ASEAN-Korea FTA, ASEAN + 3 (China, Japan, Korea) FTA and the Regional Comprehensive

* Tel.: +81 52 872 5742; fax: +81 52 871 9429.
E-mail address: itakura@econ.nagoya-cu.ac.jp

Table 1
Regional aggregation of the GTAP Data Base.

No.	Region	GTAP 112 regions
1	Japan	Japan
2	China	China; Hong Kong
3	Korea	Korea
4	Taiwan	Taiwan
5	Singapore	Singapore
6	Indonesia	Indonesia
7	Malaysia	Malaysia
8	Philippines	Philippines
9	Thailand	Thailand
10	VietNam	Viet Nam
11	Lao PDR	Lao People's Democratic Republic
12	Cambodia	Cambodia
13	RoSEAsia	Rest of Southeast Asia
14	India	India
15	AusNzl	Australia; New Zealand
16	USA	United States of America
17	Canada	Canada
18	Mexico	Mexico
19	ChilePeru	Chile; Peru
20	Russia	Russian Federation
21	EU_27	Austria; Belgium; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Slovakia; Slovenia; Spain; Sweden; United Kingdom; Bulgaria; Romania
22	RestofWorld	Rest of the GTAP 112 regions

Source: GTAP Data Base version 7.1.

Economic Partnership (RCEP).[1] Lee and Plummer (2011), Lee and van der Mensbrugghe (2008), and Lee, Owen and van der Mensbrugghe (2009), Lee, Roland-Holst and van der Mensbrugghe (2004) provided quantitative analysis of the ASEAN Economic Community (AEC), ASEAN-China, ASEAN-Japan, ASEAN-Korea, ASEAN + 3 and RCEP, by applying a dynamic CGE model of global trade. Petri, Plummer and Zhai (2012) examined the effect on the AEC of deepening integration from the ASEAN Free Trade Area (AFTA) through expansion of the measures of liberalization.

These studies considered the liberalization effects of reducing and/or removing non-tariff barriers to trade, in addition to tariff-cuts in FTAs. They found that gains from liberalization would become larger if we incorporated the non-tariff components into evaluation. This draws attention to the degree of liberalization effect. However, except for Petri et al. (2012), there seems to be not enough information to infer the degree to which the non-tariff components of liberalization contribute to the total gain. Our study can shed some light on this quantitative evaluation as well as examine a number of AMSs' FTAs.

The next section provides an explanation of the database and some of the key estimates used in this study, and an overview of the recursively dynamic computable general equilibrium (CGE) model is given in Section 3. A brief description of the simulation design and policy scenarios is provided in Section 4, followed by simulation results in Section 5. The final section offers a summary of the paper.

2. Database and estimates

2.1. GTAP Data Base

In this paper, we utilized the GTAP Data Base version 7.1 (Narayanan and Walmsley, 2008) as a fundamental input to our analysis. The GTAP Data Base version 7.1 covers 112 countries/regions and 57 sectors in production, international trade, protection, and consumption. Thus, this database can serve as a bird's-eye view of the world economy corresponding to the year of 2004. We aggregated the GTAP Data Base to 22 countries/regions and 23 sectors, and the regional aggregation and sectoral aggregation mappings from the original data are reported in Tables 1 and 2, respectively. Among the ASEAN member states (AMSs), the GTAP Data Base has detailed economic data covering Singapore, Indonesia, Malaysia, the Philippines, Thailand, Viet Nam, Lao PDR, and Cambodia. Due to the data limitation, however, Brunei and Myanmar are included in the "Rest of Southeast Asia" along with Timor Leste.

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[1] Because the AMSs and six countries, China, Japan, Korea, India, Australia, and New Zealand, launched negotiations for the RCEP in November 2012, we refer to ASEAN + 6 FTA as RCEP.