



# The Northeast Asian Economic Review

Vol. 5 No. 1 March 2017

## Contents

---

Impacts of Import Tariff Reforms on Mongolia's Economy: CGE Analysis with the GTAP  
8.1 Data Base ..... Enkhbayar Shagdar  
Otgonsaikhan Nyamdaa

Korea's Countermeasures and their Implications for International Environmental  
Regulations ..... Jum Soon Lee  
Hye Young Joo

The TPP and East Asian Economic Community 2020: Integration or Disintegration?  
..... Min He

## *The Northeast Asian Economic Review*

### *Editorial Committee*

Hirofumi Arai	Economic Research Institute for Northeast Asia
Barry Bosworth	Brookings Institution
Yukiko Fukagawa	School of Political Science and Economics
Fan Gang	National Economic Research Institute
Masahiro Kawai	Economic Research Institute for Northeast Asia
Byung-Yeon Kim	Seoul National University
Kazuhiro Kumo	Hitotsubashi University
Jong-Wha Lee	Korea University
Yifu Lin	Peking University
Tomoo Marukawa	The University of Tokyo
Pavel Minakir	Russian Academy of Sciences
Tomoyoshi Nakajima*	Economic Research Institute for Northeast Asia
Batnasan Namsrai	National University of Mongolia
Yong-Won Seo	Chung-Ang University
Minghui Shen	Chinese Academy of Social Sciences
Shinichiro Tabata	Hokkaido university
Yunling Zhang	Chinese Academy of Social Sciences
Yuyan Zhang	Chinese Academy of Social Sciences

\* Head of the Committee

**The Northeast Asian Economic Review** is an ERINA English-language academic journal to be published twice annually, and we will accept a wide-range of contributions.

While it includes studies on all aspects of economy and society in Northeast Asia, research in areas related to ERINA's research activities is particularly welcome.

---

Economic Research Institute for Northeast Asia (ERINA)  
13<sup>th</sup> Floor, Bandaijima Building, Bandaijima 5-1, Chuo-ku, Niigata City,  
950-0078, Japan

Tel: +81-25-290-5545  
Fax: +81-25-249-7550  
E-mail: [economic-review@erina.or.jp](mailto:economic-review@erina.or.jp)

# *The Northeast Asian Economic Review*

---

**Vol. 5**

**March 2017**

**No. 1**

---

## **Contents**

	<i>Page</i>
Impacts of Import Tariff Reforms on Mongolia's Economy: CGE Analysis with the GTAP 8.1 Data Base .....	<i>Enkhbayar Shagdar</i> <i>Otgonsaikhan Nyamdaa</i> 1
Korea's Countermeasures and their Implications for International Environmental Regulations .....	<i>Jum Soon Lee</i> <i>Hye Young Joo</i> 27
The TPP and East Asian Economic Community 2020: Integration or Disintegration? .....	<i>Min He</i> 43

# Impacts of Import Tariff Reforms on Mongolia's Economy: CGE Analysis with the GTAP 8.1 Data Base

Enkhbayar Shagdar\*  
Otgonsaikhan Nyamdaa\*\*

## Abstract

*Foreign trade plays an essential role in Mongolia's economy and the country has been pursuing a relatively liberal foreign trade policy during the course of its transition toward a market economy. However, aiming at supporting domestic industries and encouraging manufacturing and higher value-added production in the country, Mongolia's recent trade policy favors raising its customs duty rates up to the WTO bound levels.*

*An analysis of the effects of Mongolia's import tariff reforms on the country's economy using the standard CGE Model and GTAP Data Base (Version 8.1) revealed that although the country's domestic production would expand as a result of the import tariff reforms, they would result in losses of the country's total welfare, as the allocative efficiency losses are greater than the terms-of-trade gains. Therefore, it is required to spend the additional import tax revenues properly in order to compensate for such losses.*

*In addition, the increased import tariffs had a similar effect to a real exchange rate appreciation and resulted in decreased exports. However, in the case of Mongolia raising import tariffs to its WTO bound rates, the country's industrial output would expand along with the increased exports of Mongolia's major manufacturing industries, such as leather, meat, dairy, cashmere and wool products.*

Keywords: trade policy; CGE analysis; GTAP Data Base

JEL classification codes: F13, F47, C68

## 1. Import Tariff Reforms in Mongolia

Foreign trade has a large presence in Mongolia's economy, and its role has especially intensified after the country's transition toward a market economy in the early 1990s and its opening-up to world markets. Mongolia has maintained an open and relatively liberal foreign trade policy since its transition toward a market economy and Mongolia currently trades with more than 150 countries. Import tariff reform is a key instrument of trade policy and the development of Mongolia's import tariff policies are discussed in this section. Prior to 1990, import tariffs or value-added tax were not imposed in Mongolia. Instead, a 10% transaction tax was imposed on all imported and domestic goods and services.

Mongolia's import tariff policy development since the early 1990s can be classified into four phases:<sup>1</sup>

- (i) Transitional period (1991–1996);
- (ii) Period of multilateral regulations (1997–2007);
- (iii) Period of enhancing the regulatory functions of custom tariffs (2008–2014);
- (iv) Period of supporting domestic manufacturing industry by customs tariff policy (since 2015).

(i) Transitional period (1991–1996)

Mongolia's trade prior to 1990 was characterized by a state monopoly on trade, a centrally-planned pricing system, and the trading partners were limited to those of the former Council for Mutual Economic Assistance (CMEA or Comecon) member countries under the dominance of the former Soviet Union (FSU). Trade liberalization was one of the immediate priorities for establishing the basis of a market economy (Enkhbayar, Sh. and Nakajima, T., 2013).

Due to the break-up of the CMEA and FSU in 1991, Mongolia needed to completely reform its trade policy, with the introduction of new customs tariff regulations an essential part thereof. The Customs General Administration, which is a state administrative authority and in charge of implementing state policy on customs, was established in October 1990 as part of the government. The Customs Law of Mongolia was adopted in January 1991 and became effective on 1 March 1991. The State Great Khural Resolution No. 45 of 21 June 1991 established a uniform customs tariff rate of 15% and the government was given authority to exempt some import goods from customs duties if necessary. This resolution is considered to have been the main document for formulating Mongolia's customs tariff policy at the beginning of the transition period and became a basis for developing the contemporary customs tariff regulations.

Mongolia acceded to the International Convention on the Harmonized Commodity Description and Coding System (HS) on 17 September 1991 and started implementing it on 1 January 1993. Mongolia submitted a request to join into the General Agreement on Tariffs and Trade (GATT) in 1991 and it became necessary to make the national tariff regulations consistent with the international rules. In line with this requirement, the Mongolian Parliament (State Great Khural) passed the Law of Mongolia on Customs Tariffs and Customs Duty on 20 May 1996, which became effective on 1 July 1996. It legalized the usage of the HS system in setting and changing customs tariffs.

(ii) Period of multilateral regulations (1997–2007)

Mongolia joined the World Trade Organization (WTO) on 29 January 1997 as its 130th member. As a member of the WTO, Mongolia had an obligation to reform its customs tariff policy in compliance with the multilateral regulations of the WTO and introduce the most-favored-nation (MFN) tariff on commodities originating from WTO member countries.

Clause 4.3 of the Law on Customs Tariffs and Customs Duty of 1996 stated that "Customs tariffs consist of general, most-favored-nation (MFN) and preferential rates" and Clause 4.4 stated that the "MFN tariff rate can be applied for commodities originating from countries which recommend the most-favored-nation status for Mongolia". Therefore, it can be considered that Mongolia was already compliant with the above-mentioned requirements.

Furthermore, in order to fully comply with the principles of multilateral trade regulations the Customs Tariff Law was amended eight times in 1998, 1999, 2000, 2004 and 2005.

According to the negotiations with the WTO on import tariffs, Mongolia had a commitment to set its bound rate at 20%, but tariffs could be 25% or over for some commodities that can be manufactured domestically. When Mongolia joined the WTO, the import tariff was 15%, and in accordance with its commitments to the WTO, Mongolia had an opportunity to decrease custom tariffs on some commodities step by step and increase tariffs on some commodities. However, a few months after becoming a WTO member, customs tariffs on all types of import commodities was set to zero unilaterally by the decision of the Mongolian Parliament.<sup>2</sup>

This decision was a heavy blow for local manufacturers and many factories had to cease operation. Therefore, it was a "stimulus" for turning Mongolia from a producer toward a raw-materials supplier. During the 1980s Mongolia produced more than 3 million pairs of shoes per

annum, but after setting the custom tariffs to zero, it became hard for local manufacturers to compete with cheap imports, and eventually they had to cease production.

Aiming at addressing this issue, customs tariffs were reintroduced and were set at a uniform rate of 5% in June 1999 by Resolution No. 27 of the State Great Khural. Thereafter, the rates were changed four times up to 2007:

- ✓ Resolution No. 51 on 17 November 2000 set the customs tariff to 7%;
- ✓ Resolution No. 90 on 16 November 2001 changed the customs tariff from 7% to 5% and was applied from 1 January 2002;
- ✓ Resolution No. 44 on 4 July 2002 changed the date for applying seasonal tariff rates on imported flour (HS-11.01; 11.02) from 1 August to 1 July, and this became effective from 5 July 2002.

Mongolia had its first trade policy review under the WTO rules in March 2005. The report indicated that Mongolia has considerable room to raise its tariffs within the existing bounds under the WTO (WTO, 2005a).

### (iii) Period of enhancing the regulatory function of custom tariffs (2008–2014)

This period is characterized by the ways for developing the national economy by enhancing the regulatory functions of customs tariffs which have been included in state policy documents.

In 2008, the Millennium Development Goals-Based Comprehensive National Development Strategy of Mongolia for the period 2008–2021 was adopted by the State Great Khural. It had some important sections, such as: “Promoting Small-to-Medium Entrepreneurs with Export Orientation by Customs Tariff Policy”; “Promoting Production of Some Import Substitution Products by Customs Tariff Policy”; and “Promoting Imports of High Technology and Knowledge Intensive Machinery and Equipment by Customs Tariff Policy”.

Based on this Strategy, in 2009 the Mongolian government adopted the “Industrialization Program for Mongolia for 2009–2016”. This program includes some important issues, such as: the possibility of postponing payments of customs duties on equipment imported for industrial purposes, raw materials which cannot be substituted for in Mongolia, and the final products made by those raw materials, until a certain period or when a plant using this kind of equipment is in normal operation; and exemption or later application of customs duties on equipment to be used for developing core technologies.

In July 2010, the State Great Khural newly adopted the National Security Concept of Mongolia. It states the reduction of foreign trade deficits and the proper use of tariff and non-tariff measures to promote domestic production.

Furthermore, several amendments have been made to legal acts in order to enhance the regulatory functions of customs tariffs. The Law on Customs Tariffs and Customs Duty was renewed in 2008 and amended eight times between 2012 and 2014. The purpose of these amendments was to enhance and implement the regulatory functions of the customs tariffs for promoting domestic industry and investment.

The second Trade Policy Review of Mongolia under the WTO rules was conducted in September 2014. Its main aim was to inform WTO members about significant developments in Mongolia's foreign trade policy between 2005 and 2014, and the country's current economic situation along with governmental policies and actions. However, these efforts to improve the regulatory functions of customs tariffs and their enforcement has not been as effective as expected.

(iv) Period of supporting domestic manufacturing industry by customs tariff policy (since 2015)

The State Great Khural of Mongolia approved the “Law on Supporting Manufacturing” on 9 July 2015. It brought new opportunities for supporting national manufacturing industry by tariff policy. The new law’s aim is to promote export-oriented, import-substituting, competitive, value-added and environmentally friendly domestic production and to regulate government support.<sup>3</sup>

Following the new law, other laws were amended, accordingly. In particular, the Law on Customs Tariffs and Customs Duty was amended in December 2015 and the equipment and spare parts to be used for research and production of renewable energy were exempted from customs duty. In addition, several changes were made to the customs duty rates of import commodities, as follows:

- ✓ Tariffs on meat, edible meat offal, natural honey, canned products, cement and trolleybuses increased to the WTO bound rates in August 2015;
- ✓ Tariffs on vodka and wine increased to the WTO bound rates in February 2016;
- ✓ Tariffs on over 100 products which can be manufactured domestically were increased to the WTO bound rates in March 2016.

Moreover, according to the Mongolia–Japan Economic Partnership Agreement, the Law on Customs Tariffs and Customs Duty was amended<sup>4</sup> to address the issues of providing preferential tariffs for goods originating from Japan.

It was considered that imposing and raising import tariffs would encourage domestic production and reduce the import of similar commodities, increase exports, competitiveness and employment, and thereby increase the disposable income of consumers. However, accurate studies are needed to shed light on these issues. Accordingly, the effects of Mongolia’s ongoing and expected import tariff reforms on the country’s economy were analyzed using the general equilibrium approach.

## 2. The Analysis

### 2.1 The Model and Aggregation

In analyzing the effects of Mongolia’s import tariff reforms on the country’s economy, the Global Trade Analysis Project (GTAP) Data Base (Version 8.1) and the standard GTAP Model were employed. The GTAP Model is a multi-region and multi-sector Computable General Equilibrium (CGE) model<sup>5</sup> with perfect competition and constant returns to scale. A CGE model is a system of mathematical equations that describes an economy as a whole and the interactions among its agents. Bilateral trade is handled via the Armington assumption, which provides the possibility to distinguish imports by their origin and explains the intra-industry trade of similar products. The Data Base combines detailed bilateral trade, transport and protection data characterizing the economic linkages among regions, together with individual country input–output databases, which account for inter-sectoral linkages.

The GTAP Data Base 8.1, which was released in February 2013, has dual reference years (2004 and 2007) and this analysis used 2007 as the reference year. The data covers 134 regions and 57 commodities, and Mongolia was one of the newly added regions in the previous version of Data Base 8, which was released on 12 June 2012. The GTAP Input–Output Table (IOT) for Mongolia is based on the Mongolian IOT for 2005, which includes 55 sectors (Narayanan, B., et al, eds., 2012; Begg, Burmaa, M., et al, 2012). The standard GTAP Model has five primary



factors of production: land, skilled labor, unskilled labor, natural resources, and capital, with land and natural resources being sluggish, and labor and capital being mobile factors.

As Mongolia was the only country of interest in the analysis, the regions were aggregated from the 134 into two groupings, Mongolia and the rest of the world (ROW). The GTAP sectors were aggregated into 44 sectors from the 57 in the database. The skilled and unskilled labor factors of the original GTAP model were combined as labor in the new model. The commodity aggregations used in the models are illustrated in Appendix Table A1.

The composition of Mongolia's and the ROW's GDP (Gross Domestic Product), as reported in the GTAP Data Base 8.1 is shown in Table 1. As reported in the table, Mongolia's exports to the ROW amounted to 60.9% of GDP, while imports stood at 62.1%. At the same time, the figures for the ROW were 27.4%. This indicates that the role of foreign trade in the Mongolian economy is relatively high compared to the global average. From the source side, net factor income accounted for 62% of Mongolia's GDP, while net taxes and depreciation equaled 26.1% and 12% of the total, respectively (Table 1).

**Table 1: Composition of GDP in the Model** (%)

		Mongolia	Rest of the World
From the expenditure side: $GDPEXP=C+G+I+X-M$			
	Private Consumption (C)	50.5	59.8
	Government Consumption (G)	13.2	17.2
	Investment (I)	37.5	23.0
	Exports (X)	60.9	27.4
	Imports (M)	62.1	27.4
	Total	100.0	100.0
From the source side: $GDPSRC=NETFACTINC+NETAXES+VDEP$			
	Net Factor Income (NETFACTINC)	62.0	60.2
	Net Taxes (NETAXES)	26.1	29.1
	Depreciation (VDEP)	12.0	10.6
	Total	100.0	100.0

Source: GTAP 8.1 Data Base

## 2.2 Simulation

The effects of ongoing and expected import tariff reforms in Mongolia were evaluated by observing the changes in national welfare and other selected general equilibrium effects using the GTAP model. The tests were as follows.

- (i) Version A (A): Effects of the MFN applied rate changes introduced in 2015–2016 in Mongolia;
- (ii) Version B (B): Effects of the MFN tariff increases up to the WTO bound rates of Mongolia.

The applied import tariff changes to the ad valorem base rates of Mongolia's import tariffs in the GTAP model are illustrated in Table 2. As these changes represent the new or target rates in the model, the variable in the GTAP model "tms", which represents the source specific change in tax on imports of a tradable commodity, was shocked simultaneously for the sectors in question by the percentage target rates. The base tariff rates in the GTAP Data Base 8.1 were

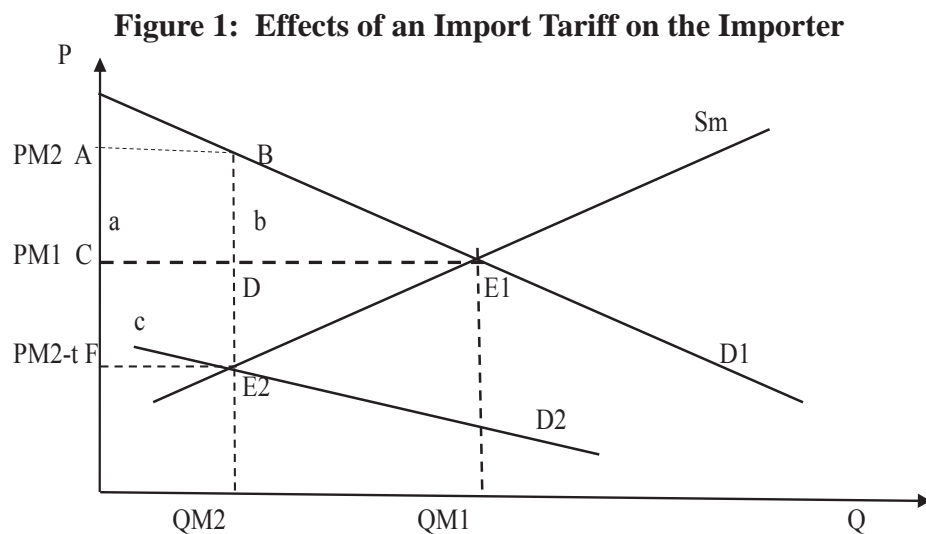


consistent with the existing MFN applied rates of Mongolia. Therefore, the shocks were applied to the base model with existing tax distortions and the GTAP's Alterm utility, which creates a distortion-free base model, was not used. Changes made to the base rates as target rates and the list of corresponding shocks applied in the simulations are illustrated in Tables 2 and 3 respectively. The updated import tax rates after the simulations were consistent with the target rates and they are provided in Table 4.

Ad valorem import tariffs are levied as a percentage of the CIF import value, which includes trade costs, such as transport and insurance. Tariffs increase the cost of imported goods and all the intermediate and final demands consuming imported commodities pay the tariff. Accordingly, a raising of import tariffs adds an additional cost to the import price and thus reduces the demand for imports (i.e. the import demand curve shifts from D1 to D2). The import tariff has three effects on the importing country as illustrated in Figure 1. These are:

a) Direct burden of the tariff (area "a + c = ABFE2"): The amount of tariff revenue paid by consumers to the government on imports. This tariff revenue is not a loss to the economy as it redistributes purchasing power from consumers to the government and can be spent for the nation's welfare;

b) Excess burden on the importer or allocative efficiency loss (area "b = BDE1"): The loss of consumer surplus that is not recouped elsewhere in the economy, as the consumers reduce their import consumption and pay higher prices. It represents consumption inefficiency because consumers who would have been willing to purchase QM1–QM2 imports at the free market price of PM1 can no longer do so;



Notes:  $S_m$  = the foreign supply of the imported good. Given the Armington assumption that goods are differentiated by country of origin, there is no domestic production of the imported variety;  
 $D_1$  = the compensated demand curve for imports by domestic consumers (the duty-free demand in general, at base rates in our case);  
 $D_2$  = the demand curve upon introducing the import tariff (an import tariff increase in our case);  
 $PM_1, QM_1$  = CIF import price and import quantity at initial equilibrium;  
 $PM_2, QM_2$  = the domestic price of imported goods and import quantity at the new equilibrium, whereas  
 $PM_2$  = CIF world import price plus the tariff;  
 $PM_2-t$  = import price, tariff-net.

Source: Adapted from Burfisher, M., 2011

**Table 2: The Mongolian Import Tax Target Rates Applied to the Simulations (rTMS)** (%)

No.	GTAP Code	GTAP Sector Description	Applied Target Rates	
			Version A	Version B
1	PDR	Paddy rice	–	15
2	WHT	Wheat	–	20
3	GRO	Cereal grains nec.	–	18
4	V F	Vegetables, fruit, nuts	6	19
5	OSD	Oil seeds	–	20
6	C B	Sugar cane, sugar beet	–	20
7	PFB	Plant-based fibers	–	20
8	OCR	Crops nec.	–	20
9	CTL	Cattle, sheep and goats, horses	3	12
10	OAP	Animal products nec.	–	18
11	WOL	Wool, silkworm cocoons	–	20
12	FRS	Forestry	–	20
13	FSH	Fisheries	–	20
14	COA	Coal	–	20
15	OIL	Oil	–	20
16	GAS	Gas	–	20
17	OMN	Minerals nec.	–	20
18	CMT	Bovine meat products	13	15
19	OMT	Meat products nec.	6	17
20	VOL	Vegetable oils and fats	–	19
21	MILRMK	Milk and dairy products	12	16
22	PCR	Processed rice	–	15
23	SGR	Sugar	–	20
24	OFD	Food products nec.	–	19
25	B T	Beverages and tobacco products	17	26
26	TEX	Textiles	–	20
27	WAP	Wearing apparel	–	25
28	LEA	Leather products	–	20
29	LUM	Wood products	6	19
30	PPP	Paper products, publishing	–	20
31	P C	Petroleum, coal products	–	20
32	CRP	Chemical, rubber, plastic products	–	7
33	NMM	Mineral products nec.	6	19
34	I S	Ferrous metals	–	20
35	NFM	Metals nec.	–	20
36	FMP	Metal products	–	20
37	MVH	Motor vehicles and parts	–	20
38	OTN	Transport equipment nec.	–	20
39	ELE	Electronic equipment	4	16
40	OME	Machinery and equipment nec.	–	20
41	OMF	Manufacturing nec.	–	19
42	ELY	Electricity	–	20
43	GDT	Gas manufacture, distribution	–	20
44	OTH	Other goods and services:	–	–

- Notes: 1. rTMS = GTAP code for % ad valorem import tax by source  
2. nec. = not elsewhere classified  
3. “–” = indicates that the base rates were not changed

**Table 3: List of Shocks Applied to the Model**

<p><u>Version A</u></p> <p>Shock tms("v_f", "RestofWorld", "Mongolia") = -0.9288;  Shock tms("ctl", "RestofWorld", "Mongolia") = 2.1393;  Shock tms("cmt", "RestofWorld", "Mongolia") = 8.0996;  Shock tms("omt", "RestofWorld", "Mongolia") = 1.5515;  Shock tms("milrmk", "RestofWorld", "Mongolia") = 6.9098;  Shock tms("b_t", "RestofWorld", "Mongolia") = 8.3222;  Shock tms("lum", "RestofWorld", "Mongolia") = 0.9723;  Shock tms("nmm", "RestofWorld", "Mongolia") = 0.9688;  Shock tms("ele", "RestofWorld", "Mongolia") = 0.7974;</p>
<p><u>Version B</u></p> <p>Shock tms("pdr", "RestofWorld", "Mongolia") = 11.8292;  Shock tms("wht", "RestofWorld", "Mongolia") = 14.3066;  Shock tms("gro", "RestofWorld", "Mongolia") = 13.1153;  Shock tms("v_f", "RestofWorld", "Mongolia") = 11.2214;  Shock tms("osd", "RestofWorld", "Mongolia") = 15.9416;  Shock tms("c_b", "RestofWorld", "Mongolia") = 20.0000;  Shock tms("pfb", "RestofWorld", "Mongolia") = 20.0000;  Shock tms("ocr", "RestofWorld", "Mongolia") = 14.3887;  Shock tms("ctl", "RestofWorld", "Mongolia") = 11.0641;  Shock tms("oap", "RestofWorld", "Mongolia") = 12.5008;  Shock tms("wol", "RestofWorld", "Mongolia") = 14.8892;  Shock tms("frs", "RestofWorld", "Mongolia") = 15.0018;  Shock tms("fsh", "RestofWorld", "Mongolia") = 18.5222;  Shock tms("coa", "RestofWorld", "Mongolia") = 16.6759;  Shock tms("oil", "RestofWorld", "Mongolia") = 19.4534;  Shock tms("gas", "RestofWorld", "Mongolia") = 20.0000;  Shock tms("omn", "RestofWorld", "Mongolia") = 14.3294;  Shock tms("cmt", "RestofWorld", "Mongolia") = 10.0129;  Shock tms("omt", "RestofWorld", "Mongolia") = 12.0899;  Shock tms("vol", "RestofWorld", "Mongolia") = 13.3433;  Shock tms("milrmk", "RestofWorld", "Mongolia") = 10.7280;  Shock tms("pcr", "RestofWorld", "Mongolia") = 9.6674;  Shock tms("sgr", "RestofWorld", "Mongolia") = 14.3360;  Shock tms("ofd", "RestofWorld", "Mongolia") = 12.0666;  Shock tms("b_t", "RestofWorld", "Mongolia") = 16.6547;  Shock tms("tex", "RestofWorld", "Mongolia") = 14.3092;  Shock tms("wap", "RestofWorld", "Mongolia") = 19.6295;  Shock tms("lea", "RestofWorld", "Mongolia") = 14.4438;  Shock tms("lum", "RestofWorld", "Mongolia") = 13.3557;  Shock tms("ppp", "RestofWorld", "Mongolia") = 14.3471;  Shock tms("p_c", "RestofWorld", "Mongolia") = 14.3220;  Shock tms("crp", "RestofWorld", "Mongolia") = 1.9134;  Shock tms("nmm", "RestofWorld", "Mongolia") = 13.3518;  Shock tms("i_s", "RestofWorld", "Mongolia") = 14.2868;  Shock tms("nfm", "RestofWorld", "Mongolia") = 14.3071;  Shock tms("fmp", "RestofWorld", "Mongolia") = 14.2903;  Shock tms("mvh", "RestofWorld", "Mongolia") = 14.2977;  Shock tms("otn", "RestofWorld", "Mongolia") = 14.2960;  Shock tms("ele", "RestofWorld", "Mongolia") = 12.4279;  Shock tms("ome", "RestofWorld", "Mongolia") = 14.4131;  Shock tms("omf", "RestofWorld", "Mongolia") = 13.6468;  Shock tms("ely", "RestofWorld", "Mongolia") = 17.5539;  Shock tms("gdt", "RestofWorld", "Mongolia") = 20.0000;</p>

Source: GTAP Model

**Table 4: Mongolia's Base and Updated Import Tariff Rates in the Simulations (rTMS)**

(%)

No.	GTAP Code	GTAP Sector Description	Base Tax Rates	Updated Tax Rates	
				Version A	Version B
1	PDR	Paddy rice	2.835	2.835	16.648
2	WHT	Wheat	4.981	4.981	24.955
3	GRO	Cereal grains nec.	4.318	4.318	18.538
4	V F	Vegetables, fruit, nuts	6.994	6.000	20.549
5	OSD	Oil seeds	3.500	3.500	20.92
6	C B	Sugar cane, sugar beet	0.000	0.000	21.279
7	PFB	Plant-based fibers	0.000	0.000	20.124
8	OCR	Crops nec.	4.905	4.905	20.383
9	CTL	Cattle, sheep and goats, horses	0.843	3.000	15.894
10	OAP	Animal products nec.	4.888	4.888	21.131
11	WOL	Wool, silkworm cocoons	4.449	4.449	25.999
12	FRS	Forestry	4.346	4.346	26.464
13	FSH	Fisheries	1.247	1.247	22.119
14	COA	Coal	2.849	2.849	29.175
15	OIL	Oil	0.458	0.458	208.056
16	GAS	Gas	0.000	0.000	23.413
17	OMN	Minerals nec.	4.960	4.960	22.292
18	CMT	Bovine meat products	4.533	13.000	22.173
19	OMT	Meat products nec.	4.381	6.000	29.437
20	VOL	Vegetable oils and fats	4.991	4.991	19.369
21	MILRMK	Milk and dairy products	4.761	12.000	20.533
22	PCR	Processed rice	4.862	4.862	15.081
23	SGR	Sugar	4.954	4.954	20.203
24	OFD	Food products nec.	6.187	6.187	19.493
25	B T	Beverages and tobacco products	8.011	17.000	27.069
26	TEX	Textiles	4.978	4.978	23.020
27	WAP	Wearing apparel	4.489	4.489	35.535
28	LEA	Leather products	4.855	4.855	21.957
29	LUM	Wood products	4.979	6.000	22.450
30	PPP	Paper products, publishing	4.944	4.944	22.705
31	P C	Petroleum, coal products	4.967	4.967	20.231
32	CRP	Chemical, rubber, plastic products	4.991	4.991	7.003
33	NMM	Mineral products nec.	4.983	6.000	22.565
34	I S	Ferrous metals	4.999	4.999	21.316
35	NFM	Metals nec.	4.980	4.980	35.881
36	FMP	Metal products	4.996	4.996	20.914
37	MVH	Motor vehicles and parts	4.989	4.989	21.027
38	OTN	Transport equipment nec.	4.991	4.991	21.879
39	ELE	Electronic equipment	3.177	4.000	18.058
40	OME	Machinery and equipment nec.	4.883	4.883	21.236
41	OMF	Manufacturing nec.	4.710	4.710	22.107
42	ELY	Electricity	2.081	2.081	36.807
43	GDT	Gas manufacture, distribution	0.000	0.000	38.058
44	OTH	Other goods and services:	0.000	0.000	0.000
		Total	173.245	203.583	1,164.05

Notes: 1. nec. = not elsewhere classified;

2. rTMS = GTAP variable of ad valorem import taxes by source

Source: GTAP 8.1 Data Base and simulation results

c) Terms-of-trade effect (area “c = CDFE2”): Like a direct burden, purchasing power is redistributed from foreign consumers to domestic consumers. The lower price accepted by foreigners compensates consumers for area “c” of their tariff payment to the government. Thus, the domestic price increases by less than the full amount of the tariff. Terms-of-trade gains to the importer is a loss of import purchasing power by the exporting country (Burfisher, M., 2011).

Because the direct burden of tax revenue simply redistributes national income, the change in national welfare includes only the excess burden of the tariff plus its terms-of-trade effect. Therefore, the importer’s net effect depends on whether its consumption efficiency loss or excess burden (area “b”) is greater than its terms-of-trade gain (area “c”).

The GTAP model allows the quantification of these and other general equilibrium effects.

## 2.3 Results

### 2.3.1 Welfare Effects

The simulation results demonstrated that the MFN tariff reforms for 9 sectors introduced in Mongolia in 2016–2016 (Version A) would result in a direct burden of US\$8.185 million of import tax revenue and an efficiency loss of US\$0.752 million, while tariff changes for 43 sectors (Version B) up to Mongolia’s WTO bound rates would result in a direct burden of US\$256.62 million of import tax revenue and an efficiency loss of US\$21.682 million (Table 5).

In terms of trade in goods and services, these tariff changes would result in a gain of US\$0.623 million in Version A and a loss of US\$14.251 million in Version B. In addition, in terms of trade in investment and savings, these changes would result in a gain in both cases equaling US\$0.033 million and US\$1.983 million, respectively (Table 5).

As the allocative efficiency (or the consumption efficiency) losses are greater than the terms-of-trade gains, the net effect of these tariff reforms would result in total welfare losses of US\$0.096 million and US\$33.95 million in Versions A and B, respectively. This means that for every dollar of additional import tax revenue, the Mongolian economy would incur 1.17 cents of welfare loss as a result of import tariff changes introduced in 2016–2016 and the welfare loss would increase further to 13.23 cents if the import tariffs were raised to Mongolia’s WTO bound rates. Therefore, in order to compensate for these losses, it is required that the government spend the additional tax revenues on projects that will give a return of not less than 1.17% and 13.23%, respectively, in Versions A and B (Table 5).

In terms of the allocative efficiency effect by commodity or industry, almost all sectors would have efficiency losses, except the sectors of wheat, vegetables, fruit, nuts, forestry, electronic equipment and electricity in Version A, and minerals nec., coal and oil in Version B. In particular, the minerals nec. sector, representing copper, gold, zinc and other minerals, which are Mongolia’s major industrial and export commodity, would have a US\$0.732 million allocative efficiency gain in Version B, followed by the coal sector resulting in a gain of US\$0.122 million (Table 6).

The results of the systematic sensitivity analysis (SSA) of the GTAP Model indicated that the negative sign of the welfare effect (EV) was robust with respect to the 100% variation of the source-specific import tax (tms) at a 75% confidence level (Appendix Table A2).

**Table 5: Welfare Effects for Mongolia: EV Decomposition Summary**

Components		Version A	Version B
Total welfare change (EV), 2007 US\$ Million		-0.096	-33.95
	Allocative Efficiency	-0.752	-21.682
	Endowment	0	0
	Technology	0	0
	Population	0	0
	Terms of Trade in Goods and Services	0.623	-14.251
	Terms of Trade in Investment and Savings	0.033	1.983
Change in Government Tax Revenue ( $\Delta T$ ), 2007 US\$ Million		8.185	256.62
Welfare Cost: Cents per US\$ of Revenue $\{100 \times (EV/\Delta T)\}$		-1.17	-13.23

Source: GTAP model, simulation results

### 2.3.2 Selected General Equilibrium Effects

The simulation results indicated that the import tax reforms would result in positive changes in Mongolia's GDP. The country's real GDP would see a 0.22% increase in the case of the MNF tariff raises introduced in 2015–2016 (Version A), while it would grow by 2.09% of import tariffs increased to the country's WTO bound rates (Version B) (Table 7).

From the expenditure side, private and government consumption increased by 0.27% and 0.19%, respectively, in Version A, while they went up by 2.02% and 1.52% in Version B, respectively. However, investment decreased in both versions and accounted for 0.04% and 8.36%, respectively, in Versions A and B. In addition, exports dropped in both cases, accounting for 0.10% and 0.06%, respectively, as the import tariff has a similar effect to a real exchange rate appreciation making Mongolian goods relatively expensive on foreign markets. At the same time, the aggregate imports of Mongolia decreased by 0.21% and 6.53% in Versions A and B respectively (Table 7).

On the source side, net taxes increased by 0.80% and 24.94% in Versions A and B, respectively. These increases represent the additional net increases of import tax revenues and indicate direct burdens of the import tariff reforms, as discussed earlier. Depreciation also increased in both cases as production has expanded. However, net factor income would be lower, dropping 7.99% in version B (Table 7).

Regarding foreign trade, Mongolia's terms of trade would increase by 0.026% in Version A, but decrease by 0.596% in Version B. Nevertheless, the country's trade balance had positive changes in both cases equaling US\$2.8 million and US\$157.5 million, respectively (Table 8).



**Table 6: Version A: Welfare Decomposition of Allocative Efficiency Effect by Commodity**  
(2007 US\$ million)

No.	GTAP Code	Produced Commodities	Contribution to EV of Allocative Effects	
			Version A	Version B
1	PDR	Paddy rice	0	0
2	WHT	Wheat	0.009	-0.775
3	GRO	Cereal grains nec	0	-0.006
4	V_F	Vegetables, fruit, nuts	0.027	-0.299
5	OSD	Oil seeds	0	0
6	C_B	Sugar cane, sugar beet	0	0
7	PFB	Plant-based fibers	0	0
8	OCR	Crops nec	0	-0.022
9	CTL	Cattle, sheep and goats, horses	-0.003	-0.234
10	OAP	Animal products nec	-0.001	-0.334
11	WOL	Wool, silkworm cocoons	-0.001	-0.043
12	FRS	Forestry	0.001	-0.034
13	FSH	Fisheries	0	-0.002
14	COA	Coal	0	0.122
15	OIL	Oil	0	0.01
16	GAS	Gas	0	0
17	OMN	Minerals nec	-0.002	0.732
18	CMT	Bovine meat products	-0.109	-0.028
19	OMT	Meat products nec	-0.017	-0.149
20	VOL	Vegetable oils and fats	-0.002	-0.167
21	MILRMK	Milk and dairy products	-0.261	-0.526
22	PCR	Processed rice	0	-0.009
23	SGR	Sugar	0	-0.042
24	OFD	Food products nec	-0.003	-1.104
25	B_T	Beverages and tobacco products	-0.187	-0.641
26	TEX	Textiles	-0.009	-0.371
27	WAP	Wearing apparel	-0.015	-2.148
28	LEA	Leather products	-0.006	-0.077
29	LUM	Wood products	-0.012	-0.213
30	PPP	Paper products, publishing	-0.001	-0.355
31	P_C	Petroleum, coal products	-0.006	-1.111
32	CRP	Chemical, rubber, plastic products	-0.001	-0.181
33	NMM	Mineral products nec	-0.042	-0.625
34	I_S	Ferrous metals	-0.001	-0.317
35	NFM	Metals nec	-0.013	-0.255
36	FMP	Metal products	-0.003	-0.351
37	MVH	Motor vehicles and parts	-0.012	-0.941
38	OTN	Transport equipment nec	-0.021	-1.389
39	ELE	Electronic equipment	0.015	-0.114
40	OME	Machinery and equipment nec	-0.026	-1.817
41	OMF	Manufacturing nec	-0.003	-0.165
42	ELY	Electricity	0.007	-4.907
43	GDT	Gas manufacture, distribution	0	-0.001
44	OTH	Other goods and services	-0.054	-2.789
		Total	-0.752	-21.682

Note: nec. = not elsewhere classified

Source: GTAP model, simulation results



**Table 7: Changes in Mongolia's GDP by Expenditure and Source**

Components	Values by Version, 2007 US\$ Million			Pre- and Post- Simulation Changes			
	Base	A	B	2007 US\$ Million		Percentage (%)	
<b>GDPEXP:</b>				<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>
Private Consumption (C)	1,983.9	1,989.3	2,024.0	5.39	40.1	0.27	2.02
Investment (I)	1,474.7	1,474.1	1,351.5	-0.63	-123.3	-0.04	-8.36
Government Consumption (G)	518.2	519.2	526.1	0.98	7.87	0.19	1.52
Exports (X)	2,391.9	2,389.5	2,390.4	-2.40	-1.41	-0.10	-0.06
Imports (M)	2,439.1	2,434.0	2,280.2	-5.16	-158.9	-0.21	-6.53
Total	3,929.6	3,938.1	4,011.8	8.52	82.26	0.22	2.09
<b>GDPSRC:</b>	<b>Base</b>	<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>
Net Factor Income (NETFACTINC)	2,430.7	2,430.7	2,236.6	0.01	-194.1	0.00	-7.99
Net Taxes (NETAXES)	1,028.9	1,037.1	1,285.5	8.18	256.62	0.80	24.94
Depreciation (VDEP)	470.0	470.3	489.7	0.33	19.73	0.06	4.19
Total	3,929.6	3,938.1	4,011.8	8.52	82.25	0.22	2.09

Source: GTAP model, simulation results

**Table 8: Effects on Mongolia's Foreign Trade**

Item	Version A	Version B
Changes in Terms of Trade (tot) <sup>6</sup> , percentage change (%)	0.026	-0.596
Changes in Trade balance (DTBAL) <sup>7</sup> , 2007 US\$ million	2.8	157.5

Source: GTAP model, simulation results

As illustrated in Figure 1, introduction of import tariffs (or any increase of the existing tariffs) results in decreased demand for import varieties of these goods and increased demand for domestic varieties; thus, there is an expansion of the domestic production of these commodities. Accordingly, Mongolia's self-sufficiency in the test for Version A increased for all sectors upon which import tariff rises were applied. The self-sufficiency represents share of the domestic supply in total use, and for most of the commodities in question Mongolia's self-sufficiency rate was lower and their use was dependent on imports. The data indicates that Mongolia was self-sufficient in only 14 out of the 44 sectors in question. For milk and dairy products, for example, despite the abundance of domestic raw materials, only 85% of total use was supplied by domestic production and it would increase slightly to 86.4%, when the import tax on milk and dairy products increased to 12% from its base rate of 5% as the result of the import tariff reforms carried out in 2015–2016. Even if the import tariff rose to 16%, the WTO bound level, domestic production of milk and dairy products would increase to 88.4% of total use, which is still an insufficient level (Table 10).

Therefore, import tariffs effect a country's industrial structure because the expanding industries compete with other industries and services for resources for production. This competition causes wages and rents in the importing country to rise relative to those in the rest of the world, which is a similar effect to a real exchange-rate appreciation. Therefore, it makes all the importer's goods relatively expensive on world markets. Both resource competition and real exchange rate appreciation contribute to a decline in the importer's production and exports and an increase in imports. These changes in trade flows contribute to an aggregate term-of-trade gain/loss of an importer (Burfisher, M., 2011).

In our test, for example in Version A, Mongolia's import tariff raising for milk and dairy products from 5% to 12% would result in an increase of the market price of milk and dairy products by 0.59% and an output expansion of domestic milk and dairy products of 2.979%, while the domestic market price of imports of milk and dairy products would be 6.91% higher. This was consistent with the expectation that the domestic price of imports increases by less than the full amount of the tariff increase. The excess burden, or deadweight efficiency loss related to milk and dairy products equaled US\$0.261 million as reported in Table 6 (Tables 6, 11, and 14).

As discussed earlier, due to expanding industries, the demands for endowments or the factors of production in Version A increased for all sectors in question, except for vegetables, fruit and nuts, while those in other goods and services decreased. For example, the demand for labor in milk and dairy products increased by 3.431%, while the demand for land and capital increased respectively by 1.832% and 3.459%. Accordingly, the market price for land and labor would rise by 0.537% and 0.016%, respectively, in version A (Tables 9 and 12).

**Table 9: Effects of Market Price of Endowments**

Endowment Commodities	(pm, % change)	
	Version A	Version B
Land	0.537	-3.804
Labor	0.016	-6.747
Capital	-0.026	-6.466
Natural Resources	-0.036	2.062

Source: GTAP model, simulation results

Similar effects were observed for all other sectors in question, except vegetables, fruit and nuts. The vegetables, fruit and nuts sector had a welfare gain of US\$0.027 million in version A, while its output decreased by 0.433%. This is in fact a consistent result, because the newly introduced import tariff rate of 6% for this sector was lower than its base rate of 6.994%, i.e. it actually had a tariff reduction effect (Tables 6 and 11).

Increased tariffs on imports led to a decrease in the quantities of imports of the affected products and also a decrease for all Mongolia's exports. As reported in Table 14, the quantity of aggregate imports decreased for all 8 sectors in Version A, which were subject to an import tax rise. For example, the aggregate import quantity of milk and dairy products decreased by 14.563% and the domestic market price of imports of milk and dairy products would become 6.91% higher (Table 14).

In addition, both the resource competition and real exchange-rate appreciation effects contributed to a decline in Mongolia's exports. In version A, the aggregate export quantity of milk and dairy products decreased by 4.307%, while its aggregate export price went up 0.59%. At the same time, both the resource competition and real exchange rate appreciation effects resulted in a decline of production and exports of other goods and services, which were not subject to import tariff reform, thus leading to a rise in their import. In Version A, for example, the output of food products nec. declined by 0.403% and the aggregate export quantity of food products nec. decreased 0.699%, as the country's export price for these products became 0.188% higher compared to the price before the import tariff reform (Tables 11, 14 and 15).

Similar results were observed in Version B of the import tariff reform, but obviously their scale was much greater than in Version A. For example, as a result of the import tariff being

raised to Mongolia's WTO bound rates, the market price of milk and dairy products would decrease by 2.571% and its output would be 11.531% higher than before the tariff hikes. Accordingly, the quantities demanded for labor and capital in the milk and dairy products industry increased by 13.445% and 13.253%, respectively. Also, the quantities demanded for land and natural resources increased by 6.816% and 0.011%, respectively (Tables 11 and 13).

As expected, the import quantity of milk and dairy products decreased by 28.741% in Version B. However, despite the real exchange-rate appreciation effect, the export quantity of milk and dairy products increased by 18.761%, in contrast to Version A. This was due to the aggregate export price index of milk and dairy products decreasing by 2.571%, making Mongolian milk and dairy products cheaper than in the rest of world (Tables 14 and 15).

**Table 10: Mongolia's Self-Sufficiency or Domestic Share in Total Use**

No.	GTAP Code	GTAP Sector Description	Base	Updated	
				Version A	Version B
1	OIL	Oil	25,552.76	25,579.625	28,951.16
2	OMN	Minerals nec.	25.823	25.823	25.941
3	OSD	Oil seeds	16.855	16.387	15.304
4	NFM	Metals nec.	6.638	6.635	6.564
5	WAP	Wearing apparel	2.307	2.303	1.828
6	WOL	Wool, silkworm cocoons	1.869	1.865	2.030
7	COA	Coal	1.692	1.692	1.665
8	LEA	Leather products	1.357	1.333	1.497
9	TEX	Textiles	1.247	1.246	1.331
10	CMT	Bovine meat products	1.195	1.198	1.247
11	GDT	Gas manufacture, distribution	1.090	1.090	1.090
12	OAP	Animal products nec.	1.060	1.060	1.080
13	OTH	Other services	1.056	1.055	1.061
14	CTL	Cattle, sheep and goats, horses	1.011	1.011	1.015
15	ELY	Electricity	0.989	0.989	0.993
16	OMT	Meat products nec.	0.909	0.915	0.981
17	FRS	Forestry	0.904	0.904	0.923
18	MILRMK	Milk and dairy products	0.850	0.864	0.884
19	V_F	Vegetables, fruit, nuts	0.832	0.831	0.839
20	WHT	Wheat	0.716	0.715	0.774
21	GRO	Cereal grains nec.	0.627	0.628	0.609
22	FSH	Fisheries	0.623	0.623	0.614
23	NMM	Mineral products nec.	0.552	0.556	0.604
24	C_B	Sugar cane, sugar beet	0.531	0.532	0.523
25	LUM	Wood products	0.516	0.52	0.576
26	PDR	Paddy rice	0.505	0.503	0.547
27	GAS	Gas	0.461	0.461	0.502
28	OMF	Manufacturing nec.	0.443	0.442	0.47
29	PPP	Paper products, publishing	0.314	0.314	0.366
30	OCR	Crops nec.	0.294	0.284	0.275
31	I_S	Ferrous metals	0.279	0.279	0.306
32	B_T	Beverages and tobacco products	0.214	0.215	0.215
33	OFD	Food products nec.	0.179	0.178	0.191
34	PFB	Plant-based fibers	0.127	0.126	0.131
35	CRP	Chemical, rubber, plastic products	0.122	0.122	0.119
36	P_C	Petroleum, coal products	0.084	0.084	0.089
37	FMP	Metal products	0.083	0.083	0.099
38	ELE	Electronic equipment	0.058	0.059	0.079
39	OTN	Transport equipment nec.	0.029	0.029	0.035
40	MVH	Motor vehicles and parts	0.023	0.023	0.027
41	OME	Machinery and equipment nec.	0.023	0.023	0.025
42	VOL	Vegetable oils and fats	0.004	0.004	0.002
43	PCR	Processed rice	0.002	0.002	0.003
44	SGR	Sugar	0.002	0.002	0.002

Note: nec. = not elsewhere classified  
Source: GTAP model, simulation results

**Table 11: Effects on Market Price and Industry Output**

Produced Commodities (i)	Market Price Changes (pm, % change)		Industry Output Changes (qo, % change)	
	Version A	Version B	Version A	Version B
Paddy rice	0.730	-0.806	-1.072	18.626
Wheat	0.126	3.738	-0.141	18.482
Cereal grains nec.	0.400	-0.901	-0.061	2.336
Vegetables, fruit, nuts	0.086	0.388	-0.433	4.882
Oil seeds	0.725	-0.831	-3.279	4.045
Sugar cane, sugar beet	0.732	-0.844	-0.359	11.447
Plant-based fibers	0.731	-0.813	-0.894	24.865
Crops nec.	0.723	-0.829	-4.099	5.850
Cattle, sheep and goats, horses	0.135	-6.282	0.009	-4.131
Animal products nec.	0.070	-3.927	-0.053	-1.769
Wool, silkworm cocoons	0.047	-1.389	-0.343	7.871
Forestry	0.181	0.514	0.199	6.885
Fisheries	-0.028	4.133	-0.024	3.915
Coal	0.004	0.223	-0.005	1.191
Oil	0.000	-0.128	0.001	1.284
Gas	-0.019	15.993	-0.008	8.460
Minerals nec.	0.003	-1.261	-0.002	1.223
Bovine meat products	0.132	-2.610	0.657	5.628
Meat products nec.	0.119	-2.301	0.921	13.726
Vegetable oils and fats	2.011	6.268	-12.217	-35.944
Milk and dairy products	0.590	-2.571	2.979	11.531
Processed rice	1.895	6.574	-3.899	8.725
Sugar	1.986	6.439	-5.549	19.543
Food products nec.	0.188	2.517	-0.403	15.740
Beverages and tobacco products	0.915	5.034	5.080	6.952
Textiles	0.032	-1.157	-0.231	12.339
Wearing apparel	0.036	4.382	-0.206	-16.912
Leather products	0.282	-2.550	-2.098	23.472
Wood products	0.107	0.953	1.332	18.112
Paper products, publishing	0.027	0.290	-0.075	24.899
Petroleum, coal products	0.215	5.284	-0.450	15.513
Chemical, rubber, plastic products	0.026	1.509	-0.103	-2.538
Mineral products nec.	0.057	1.519	1.168	13.844
Ferrous metals	0.024	4.510	-0.089	17.228
Metals nec.	0.028	0.282	-0.229	-1.303
Metal products	0.024	3.143	-0.132	28.306
Motor vehicles and parts	0.025	2.115	-0.118	23.829
Transport equipment nec.	0.028	-0.497	-0.222	28.250
Electronic equipment	0.028	0.042	2.721	36.959
Machinery and equipment nec.	0.026	2.529	-0.184	15.427
Manufacturing nec.	0.026	2.500	-0.160	8.429
Electricity	0.028	-0.823	0.003	2.482
Gas manufacture, distribution	0.037	0.892	-0.025	1.291
Other services	0.059	-0.025	-0.062	-2.450
Capital goods	0.069	4.197	-0.112	-12.554

Notes: 1. nec. = not elsewhere classified;

2. pm = GTAP variable for market price of commodity i in region r: "Mongolia" column;

3. qo = GTAP variable for industry output of commodity i in region r: "Mongolia" column

Source: GTAP model, simulation results

**Table 12: Effects on Production Factors in Version A, % change (qfe[\*\*Mongolia])**

Produced Commodities (i)	Land	Labor	Capital	Natural Resources
Paddy rice	-0.988	-1.107	-1.097	-0.004
Wheat	-0.201	-0.119	-0.108	0
Cereal grains nec.	-0.133	-0.034	-0.023	0
Vegetables, fruit, nuts	-0.447	-0.428	-0.418	-0.002
Oil seeds	-2.857	-3.453	-3.443	-0.013
Sugar cane, sugar beet	-0.385	-0.35	-0.339	-0.001
Plant-based fibers	-0.837	-0.918	-0.908	-0.004
Crops nec.	-3.551	-4.324	-4.314	-0.017
Cattle, sheep and goats, horses	-0.074	0.041	0.051	0
Animal products nec.	-0.126	-0.025	-0.015	0
Wool, silkworm cocoons	-0.371	-0.333	-0.323	-0.001
Forestry	0.101	0.225	0.233	0.001
Fisheries	-0.122	-0.042	-0.034	0
Coal	-0.100	-0.016	-0.007	0
Oil	-0.093	-0.007	0.001	0
Gas	-0.105	-0.022	-0.014	0
Minerals nec.	-0.095	-0.010	-0.002	0
Bovine meat products	0.014	0.614	0.660	0.001
Meat products nec.	0.143	0.887	0.934	0.001
Vegetable oils and fats	-6.058	-12.259	-12.212	-0.011
Milk and dairy products	1.832	3.431	3.459	0.005
Processed rice	-2.134	-3.941	-3.894	-0.003
Sugar	-2.912	-5.59	-5.543	-0.005
Food products nec.	-0.482	-0.438	-0.391	0
Beverages and tobacco products	2.106	5.049	5.095	0.005
Textiles	-0.414	-0.279	-0.227	0
Wearing apparel	-0.390	-0.224	-0.172	0
Leather products	-1.222	-2.105	-2.053	-0.002
Wood products	0.281	1.292	1.344	0.001
Paper products, publishing	-0.324	-0.076	-0.024	0
Petroleum, coal products	-0.505	-0.485	-0.433	0
Chemical, rubber, plastic products	-0.336	-0.103	-0.051	0
Mineral products nec.	0.207	1.125	1.177	0.001
Ferrous metals	-0.330	-0.089	-0.037	0
Metals nec.	-0.411	-0.273	-0.221	0
Metal products	-0.349	-0.132	-0.079	0
Motor vehicles and parts	-0.361	-0.160	-0.108	0
Transport equipment nec.	-0.392	-0.230	-0.178	0
Electronic equipment	0.913	2.721	2.773	0.002
Machinery and equipment nec.	-0.372	-0.184	-0.132	0
Manufacturing nec.	-0.361	-0.160	-0.108	0
Electricity	-0.300	-0.021	0.032	0
Gas manufacture, distribution	-0.310	-0.045	0.007	0
Other services	-0.342	-0.097	-0.040	0
Capital goods	-0.325	-0.128	-0.087	0

Notes: 1. nec. = not elsewhere classified;

2. qfe[\*\*Mongolia] = GTAP variable of demand for endowment i for use in industry j in region r: "Mongolia"

Source: GTAP model, simulation results



**Table 13: Effects on Production Factors in Version B, % change (qfe[\*\*Mongolia])**

Produced Commodities (i)	Land	Labor	Capital	Natural Resources
Paddy rice	15.318	19.982	19.910	0.069
Wheat	15.201	19.835	19.763	0.069
Cereal grains nec.	1.533	2.676	2.604	0.002
Vegetables, fruit, nuts	3.688	5.382	5.310	0.012
Oil seeds	2.980	4.492	4.420	0.009
Sugar cane, sugar beet	9.237	12.348	12.276	0.039
Plant based fibers	20.592	26.601	26.530	0.095
Crops nec.	4.507	6.410	6.338	0.016
Cattle, sheep and goats, horses	-3.941	-4.196	-4.268	-0.025
Animal products nec.	-1.942	-1.686	-1.758	-0.015
Wool, silkworm cocoons	6.219	8.558	8.486	0.025
Forestry	6.229	8.063	8.007	0.031
Fisheries	4.467	5.950	5.893	0.021
Coal	1.241	2.077	2.021	0.002
Oil	1.277	2.121	2.064	0.002
Gas	11.231	14.066	14.009	0.061
Minerals nec.	0.696	1.423	1.367	-0.002
Bovine meat products	1.237	5.920	5.604	-0.004
Meat products nec.	5.027	13.953	13.638	0.004
Vegetable oils and fats	-18.376	-35.660	-35.976	-0.041
Milk and dairy products	6.816	13.445	13.253	0.011
Processed rice	2.692	9.003	8.688	-0.001
Sugar	7.794	19.819	19.504	0.009
Food products nec.	5.979	15.973	15.657	0.005
Beverages and tobacco products	1.825	7.166	6.850	-0.002
Textiles	3.961	12.661	12.306	0.001
Wearing apparel	-9.069	-16.787	-17.142	-0.022
Leather products	8.769	23.526	23.171	0.010
Wood products	6.494	18.385	18.030	0.006
Paper products, publishing	9.379	24.905	24.550	0.011
Petroleum, coal products	5.329	15.752	15.397	0.004
Chemical, rubber, plastic products	-2.764	-2.538	-2.893	-0.011
Mineral products nec.	4.615	14.138	13.783	0.002
Ferrous metals	5.982	17.228	16.873	0.005
Metals nec.	-2.084	-1.001	-1.356	-0.010
Metal products	10.884	28.306	27.951	0.014
Motor vehicles and parts	9.029	24.113	23.758	0.010
Transport equipment nec.	10.883	28.303	27.948	0.014
Electronic equipment	14.712	36.959	36.604	0.021
Machinery and equipment nec.	5.185	15.427	15.072	0.003
Manufacturing nec.	2.089	8.429	8.074	-0.002
Electricity	-0.473	2.639	2.284	-0.007
Gas manufacture, distribution	-1.009	1.428	1.073	-0.008
Other services	-2.636	-2.216	-2.600	-0.010
Capital Goods	-7.796	-12.649	-12.930	-0.021

Notes: 1. nec. = not elsewhere classified;

2. qfe[\*\*Mongolia] = GTAP variable of demand for endowment i for use in industry j in region r: "Mongolia"

Source: GTAP model, simulation results



**Table 14: Effects on Mongolia's Imports** (% change)

Traded Commodities (i)	Version A		Version B	
	Domestic Market Price of Import (pim)	Aggregate Import Quantity (qim)	Domestic Market Price of Imports (pim)	Aggregate Import Quantity (qim)
Paddy rice	0	0.816	11.829	-11.926
Wheat	0	0.397	14.306	-24.806
Cereal grains nec	0	0.029	13.115	-3.785
Vegetables, fruit, nuts	-0.929	1.080	11.221	-11.428
Oil seeds	0	0.390	15.941	-5.282
Sugar cane, sugar beet	0	0.096	19.998	-6.001
Plantbased fibers	0	0.008	20.000	-0.616
Crops nec	0	0.006	14.389	-2.477
Cattle, sheep and goats, horses	2.139	-3.493	11.064	-25.870
Animal products nec	0	-0.036	12.501	-19.276
Wool, silkworm cocoons	0	-0.094	14.886	-27.834
Forestry	0	0.655	15.002	-29.226
Fisheries	0	-0.085	18.522	-10.151
Coal	0	-0.434	16.639	-34.613
Oil	0	-0.071	19.196	-87.901
Gas	0	-0.092	19.991	-14.287
Minerals nec	0	-0.101	14.329	-13.223
Bovine meat products	8.100	-26.144	10.013	-40.664
Meat products nec	1.551	-5.024	12.090	-49.636
Vegetable oils and fats	0	-0.025	13.344	-2.568
Milk and dairy products	6.910	-14.563	10.728	-28.741
Processed rice	0	0.469	9.667	-0.793
Sugar	0	-0.045	14.336	-1.333
Food products nec	0	0.017	12.067	-3.706
Beverages and tobacco products	8.322	-3.139	16.655	-5.611
Textiles	0	-0.114	14.309	-16.738
Wearing apparel	0	0.059	19.630	-33.935
Leather products	0	0.062	14.444	-11.446
Wood products	0.972	-1.252	13.356	-19.750
Paper products, publishing	0	0.011	14.348	-15.229
Petroleum, coal products	0	0.022	14.322	-1.514
Chemical, rubber, plastic products	0	0.018	1.914	-0.168
Mineral products nec	0.969	-1.444	13.352	-20.276
Ferrous metals	0	-0.013	14.287	-8.066
Metals nec	0	-0.096	14.307	-51.393
Metal products	0	-0.021	14.291	-5.742
Motor vehicles and parts	0	-0.063	14.298	-6.406
Transport equipment nec	0	-0.091	14.296	-11.127
Electronic equipment	0.797	-0.323	12.428	-13.832
Machinery and equipment nec	0	-0.072	14.413	-7.562
Manufacturing nec	0	-0.058	13.647	-17.862
Electricity	0	0.089	17.554	-48.399
Gas manufacture, distribution	0	0.063	19.996	-47.422
Other goods and services	0	0.063	0	-3.120

Notes: 1. nec. = not elsewhere classified; 2. qim = GTAP variable for aggregate import quantity of traded commodities i in region s (Mongolia), market price weighting; 3. pim = GTAP variable for domestic market price of composite import price of traded commodities i in region r (Mongolia)

Source: GTAP model, simulation results

**Table 15: Effects on Mongolia's Exports** (% change)

Traded Commodities (i)	Version A		Version B	
	Aggregate Export Price Index (pxw)	Aggregate Export Quantity (qxw)	Aggregate Export Price Index (pxw)	Aggregate Export Quantity (qxw)
Paddy rice	0.730	-6.999	-0.806	57.320
Wheat	0.126	-1.125	3.738	-33.271
Cereal grains nec	0.400	-0.955	-0.901	2.153
Vegetables, fruit, nuts	0.086	-0.312	0.388	-1.404
Oil seeds	0.725	-3.301	-0.831	3.784
Sugar cane, sugar beet	0.732	-3.936	-0.844	23.972
Plantbased fibers	0.731	-3.654	-0.813	34.714
Crops nec	0.723	-4.323	-0.829	4.956
Cattle, sheep and goats, horses	0.135	-0.541	-6.282	25.121
Animal products nec	0.070	-0.171	-3.927	9.551
Wool, silkworm cocoons	0.047	-0.586	-1.389	17.359
Forestry	0.181	-0.900	0.514	-2.553
Fisheries	-0.028	0.056	4.133	-8.119
Coal	0.004	-0.024	0.223	-1.233
Oil	0.000	0.001	-0.128	1.284
Gas	-0.019	0.557	15.993	41.082
Minerals nec	0.003	-0.003	-1.261	1.244
Bovine meat products	0.132	-0.960	-2.610	18.990
Meat products nec	0.119	-1.015	-2.301	19.615
Vegetable oils and fats	2.011	-12.545	6.268	-39.100
Milk and dairy products	0.590	-4.307	-2.571	18.761
Processed rice	1.895	-9.848	6.574	-33.602
Sugar	1.986	-10.724	6.439	-34.588
Food products nec	0.188	-0.699	2.517	-9.368
Beverages and tobacco products	0.915	-2.079	5.034	-11.439
Textiles	0.032	-0.231	-1.157	8.243
Wearing apparel	0.036	-0.252	4.382	-30.800
Leather products	0.282	-2.204	-2.550	19.963
Wood products	0.107	-0.649	0.953	-5.762
Paper products, publishing	0.027	-0.149	0.290	-1.589
Petroleum, coal products	0.215	-0.899	5.284	-22.140
Chemical, rubber, plastic products	0.026	-0.155	1.509	-9.135
Mineral products nec	0.057	-0.251	1.519	-6.713
Ferrous metals	0.024	-0.132	4.510	-24.647
Metals nec	0.028	-0.235	0.282	-2.368
Metal products	0.024	-0.168	3.143	-21.662
Motor vehicles and parts	0.025	-0.132	2.115	-11.330
Transport equipment nec	0.028	-0.238	-0.497	4.202
Electronic equipment	0.028	-0.237	0.042	-0.358
Machinery and equipment nec	0.026	-0.200	2.529	-19.793
Manufacturing nec	0.026	-0.188	2.500	-18.421
Electricity	0.028	-0.160	-0.823	4.613
Gas manufacture, distribution	0.037	-0.207	0.892	-4.987
Other goods and services	0.059	-0.191	-0.025	0.083

Notes: 1. nec. = not elsewhere classified; 2. qxw = GTAP variable for aggregate export quantity of traded commodities i from region r (Mongolia), FOB weights; 3. pxw = GTAP variable for aggregate export price index of traded commodities i from region r (Mongolia)

Source: GTAP model, simulation results

### 3. Conclusion

Foreign trade plays an essential role in Mongolia's economy and it is important to properly analyze and understand the economic impacts of the country's trade policy. Since the beginning of the country's transition toward a market economy, Mongolia has been pursuing a relatively liberal foreign trade policy.

Mongolia's import tariff policy since the economic transition can be classified into four phases, namely: the period of transition toward introducing and setting tariff policies on foreign trade; the period of integration into multilateral trade policies and rules; the period of enhancing the regulatory functions of customs tariffs; and the start of supporting domestic industries by tariff policies.

Currently, Mongolia is imposing much lower tariff rates on imports than the country's commitments to the WTO. Aiming at supporting domestic industries, the government of Mongolia has increased import taxes on some domestically produced products and is planning to increase them further up to the WTO bound rates.

An analysis of the economic impacts on the ongoing and planned tariff reforms using the CGE model and employing the GTAP Data Base 8.1 revealed that although Mongolia's GDP would have positive changes in both cases, such tariff reforms would result in a loss for the country's total welfare. The allocative efficiency loss (US\$0.518 million) was greater than the terms-of-trade gain (US\$0.018 million) in the former case, while Mongolia would experience both allocative efficiency and terms-of-trade losses if the country raised import taxes up to its WTO bound rates. In order to compensate for these losses, it is required that the government spend the additional tax revenues on projects that will give a return of 1.17% and 13.23% respectively in the ongoing and expected tax reforms, respectively. For example, the government of Mongolia is implementing a mortgage loan program to support low-income families to purchase houses. The housing loan rate to these families is much lower than the market rate and currently amounts to 8% per annum. If the government funded this program with the additional tax revenues from import tax reform, the lending rate would need to be increased to at least 13.23%, otherwise the overall welfare of the economy would incur losses.

The other general equilibrium effects indicated that import tariff reforms would affect Mongolia's industrial structure and foreign trade. The increased import tariffs had a similar effect to a real exchange rate appreciation that made Mongolia's products relatively expensive at world markets. Therefore, most of the sectors that had import tariff increases would have reductions in their exports, despite their output expansions, especially as a result of the tariff reforms in 2015–2016.

However, in case Mongolia would rise import tariffs up to for its WTO bound rates, the country's industrial output would expand along with increase of exports of Mongolia's major manufacturing industries, such as leather products, meat products, dairy products, and wool and cashmere products.

\* Senior Research Fellow, Research Division, ERINA

\*\*Head, Department of Commerce, Business School, National University of Mongolia

## References

- Ballard, C.H., Shoven, J. and Whalley, J. (1982): The Welfare Cost of Distortions in the United States Tax System: A General Equilibrium Approach, Working Paper No. 1043, National Bureau of Economic Research, December 1982. Available online: <http://www.nber.org/papers/w1043.pdf> (1 June 2015)
- Ballard, C.H., Shoven, J. and Whalley, J. (1985): General Equilibrium Computations of the Marginal Welfare Costs of Taxes in the United States, *American Economic Review*, Vol. 75, No. 1, (March 1985), pp. 128–138
- Begg, M., Ch. Burmaa, et al (2012): “GTAP 8 Data Base Documentation Chapter 7.C: Mongolia” by Begg, Michael, Burmaa Chadraaval, Ragchaasuren Galindev, Esmedekh Lkhanaajav and Erdenesan EldevOchir. Retrieved from: <https://www.gtap.agecon.purdue.edu>
- Brockmeier, M. (1996): A Graphical Exposition of the GTAP Model, GTAP Technical Paper No. 08. Retrieved from: <https://www.gtap.agecon.purdue.edu>
- Browning, E. (1976): The Marginal Cost of Public Funds, *The Journal of Political Economy*, 84 (2), pp. 283–298
- Burfisher, M. (2011): *Introduction to Computable General Equilibrium Models*, New York: Cambridge University Press
- Enkhbayar, Sh., Nakajima, T. (2013): Impacts of Mongolian FTAs with the Countries in Northeast Asia: CGE Analysis with the GTAP 8 Data Base, *The Northeast Asian Economic Review*, Vol. 1, No. 2, November 2013, pp. 43–67
- Hanslow, Kevin J. (2000): A General Welfare Decomposition for CGE Models, GTAP Technical Paper No. 19, January 2000. Available online: <https://www.gtap.agecon.purdue.edu/resources/download/185.pdf> (4 September 2015)
- Hertel, T. (ed.) (1997): *Global Trade Analysis: Modeling and Applications*, Cambridge University Press
- Huff, Karen M. and Thomas W. Hertel (2000): Decomposing Welfare Changes in the GTAP Model, GTAP Technical Paper No. 5, January 2000. Available online: <https://www.jgea.org/resources/download/2365.pdf>
- Malcolm, G. (1998): Adjusting Tax Rates in the GTAP Data Base, GTAP Technical Paper No. 12, September 1998. Available online: <https://www.gtap.agecon.purdue.edu/resources/download/580.pdf> (4 September 2015)
- Narayanan, G. Badri, Angel AGUIAR, and Robert McDUGALL (eds.) (2012). *Global Trade, Assistance, and Production: The GTAP 8 Data Base*, Center for Global Trade Analysis, Purdue University.
- Otgonsaikhan, N. (2013): Budget Replenishment of Mongolia on The Basis of Customs Tariff Regulation of Foreign Trade, Doctoral Dissertation, Baikal State University of Economics and Law, Russia
- Walmsley, Terrie L., Angel Aguiar and G. Badri Narayanan, (2012): Introduction to the Global Trade Analysis Project and the GTAP Data Base, GTAP Working Paper No. 67, 2012. Available online: <https://www.gtap.agecon.purdue.edu/resources/download/6122.pdf> (4 September 2015)
- WTO (2005a). Trade Policy Review Mongolia: Report by the Secretariat. Retrieved from <http://www.wto.org>
- WTO (2005b). Trade Policy Review Mongolia: Report by Mongolia. Retrieved from <http://www.wto.org>

**Appendix Table A1: Commodity Aggregation Used in the Model**

The Model (44 Sectors)	GTAP Data Base 8.1 (57 Sectors)
Paddy rice	Paddy rice
Wheat	Wheat
Cereal grains nec.	Cereal grains nec.
Vegetables, fruit, nuts	Vegetables, fruit, nuts
Oil seeds	Oil seeds
Sugar cane, sugar beet	Sugar cane, sugar beet
Plantbased fibers	Plantbased fibers
Crops nec.	Crops nec.
Cattle, sheep and goats, horses	Cattle, sheep and goats, horses
Animal products nec.	Animal products nec.
Wool, silkworm cocoons	Wool, silkworm cocoons
Forestry	Forestry
Fisheries	Fisheries
Coal	Coal
Oil	Oil
Gas	Gas
Minerals nec.	Minerals nec.
Bovine meat products	Bovine meat products
Meat products nec.	Meat products nec.
Vegetable oils and fats	Vegetable oils and fats
Milk and dairy products	Raw milk, Dairy products
Processed rice	Processed rice
Sugar	Sugar
Food products nec.	Food products nec.
Beverages and tobacco products	Beverages and tobacco products
Textiles	Textiles
Wearing apparel	Wearing apparel
Leather products	Leather products
Wood products	Wood products
Paper products, publishing	Paper products, publishing
Petroleum, coal products	Petroleum, coal products
Chemical, rubber, plastic products	Chemical, rubber, plastic products
Mineral products nec.	Mineral products nec.
Ferrous metals	Ferrous metals
Metals nec.	Metals nec.
Metal products	Metal products
Motor vehicles and parts	Motor vehicles and parts
Transport equipment nec.	Transport equipment nec.
Electronic equipment	Electronic equipment
Machinery and equipment nec.	Machinery and equipment nec.
Manufacturing nec.	Manufacturing nec.
Electricity	Electricity
Gas manufacture, distribution	Gas manufacture, distribution
Other services	Water; Construction; Trade; Transport nec.; Sea transport; Air transport; Communication; Financial services nec.; Insurance; Business services nec.; Recreation and other services; Public administration; defense, health, education; Dwellings

Notes: 1. The original sectors in the GTAP Data Base 8.1 start with capital letters;  
2. nec. = not elsewhere classified

**Appendix Table A2: Systematic Sensitivity Analysis (SSA) of the EV Results to Changes with 100% Variation in the Shocks**

(tms = % ad valorem import tax by source)

Indicators	Version A		Version B	
	75%	95%	75%	95%
Confidence Intervals*				
Mean (X)	-0.096	-0.096	-33.949	-33.949
Standard Deviation (sd)	0.039	0.039	13.86	13.86
Standard Deviation Multiplier (k)	2	4.47	2	4.47
Upper limit (X+sdK)	-0.018	0.078	-6.229	28.005
Lower Limit (X-sdK)	-0.174	-0.27	-61.669	-95.903

Note: \*Estimations made according to Chebyshev's Theorem

Source: GTAP model, SSA simulation results

<sup>1</sup> Otgonsaikhan, N., p. 83<sup>2</sup> Resolution 24 of 18 April 1997, "Customs Duty on Imported Goods"<sup>3</sup> The Law on Supporting Manufacturing, 2015<sup>4</sup> Customs Tariffs and Customs Duty Law, Clause 4.2. The Customs tariffs on imported goods consist of general tariffs, most-favoured-nation (MFN) tariffs and preferential tariffs. The general tariff rates are twice the MFN tariffs. Preferential tariffs are set by international treaty. The law was amended on 3 December 2015.<sup>5</sup> For more details on the GTAP model and database, see Hertel, T. (ed.) 1997.<sup>6</sup> tot (REG) [% change]: terms of trade for region  $r$ :  $\text{tot}(r) = \text{psw}(r) - \text{pdw}(r)$ ;  
psw( $r$ ) # index of prices received for tradables produced in  $r$  #;  
pdw( $r$ ) # index of prices paid for tradables used in region  $r$  #<sup>7</sup> DTBAL(REG) [change]: change in trade balance X-M, US\$ million



# Korea's Countermeasures and their Implications for International Environmental Regulations\*

Jum Soon Lee \*\*

Hye Young Joo \*\*\*

## Abstract

*Recently, environmental regulations around the world have been strengthened focusing on advanced countries. In this respect, there is a growing proportion of the role of government to respond properly in the environmental regulations. This study aims at analyzing countermeasures of environmental regulations of Korea government and presenting the implications. This research results show that the environmental support system of Korean government has the following problems: 1) Inadequacy in the law system related to environmental regulation, 2) Absence of validity evaluation systems of support policy for international environmental regulations, 3) Expansion of the gap in the ability to cope with environmental regulation by company size. For the countermeasures for these issues, we presented the following solutions: 1) Step-by-step, gradual reinforcement in environmental standards to fit the international regulations, 2) Arrangement of monitoring system regarding environmental regulation, 3) Support in acquiring ISO certification, 4) Establishment of joint reaction system regarding environmental regulations.*

Keywords: International Environmental Regulation, TBT, Korea-REACH, COMPASS

JEL classification codes: F1, L5

## 1. Introduction

Recently, as FTAs have been spread throughout the world, some of trade barrier, tariff and quantitative trade restriction (quota), are cutback or abolished. Meanwhile, non-tariff barrier, such as standard, certification, technology regulation related to environment, have a tendency of being strengthened. Especially, increasing concerns over climate change and environment protection, technology regulation to improve energy efficiency and environment protection are strengthened. With EU's introduction of REACH, REACH act has been spread throughout the Asian countries like Taiwan, Japan, Korea, and the number of nations introducing GHS related to the classification and labeling of chemical substances are increasing.

Environment regulations recently tend to move on to TBT (Technical Barriers to Trade) so that individual countries can protect their own domestic industries by strengthening their environment regulation, instead of Multilateral Environmental Agreements, which makes it difficult for a mutual agreement. The number of TBT notified to WTO was 1,564 in 2014, and among these, the number of technology regulation (product standard, certification) that is aimed for the energy reduction or environment protection was 88 in 2004 and is doubled to 248 in 2014<sup>1</sup>.

Also, the majority of product related international environment regulation has been centered in electric/electronic, vehicle, chemical industry (which are all Korea's main export industry), and countries with international environment regulation are Korea's main export countries. In other words, Korea's main export industries, electric/electronic, vehicle, chemical industry



which counts 56% of Korea's overall export, are exposed to the risk of international environment regulation. Therefore, when considering the economic structure of Korea, where export plays tremendous role, we ought to keep an eye on the reinforcing movement of the international environment regulation and to react to it appropriately.

Meanwhile, companies are continuing their self-supporting efforts to cope with international environment regulation. One example of them is the case of large company. They have specialized departments in charge of international environment regulation, so that they can actively cope with environment regulations such as RoHS or REACH. However, in the case of small and medium-sized companies, they lack professional manpower or feel the burden of expenses limitations, and poor understanding of international environment regulation, which makes it difficult for them to cope with international environment regulation. According to the results of 'Research on the actual condition of reaction to the international environment regulation' conducted by Korea Federation of Small and Medium Business in March 2014, approximately 23.5% of the small and medium-sized businesses are reported to have difficulty in coping with international environment regulation. Especially, in small and medium-sized businesses, the reasons of their difficulty are reported to be lack of information and professional manpower related to international environmental regulation (49.9%), burden of expenses of environment regulation, such as trial and certification (31%). Therefore, government's institutional support is required urgently. Consequently, since the international environment regulation is being reinforced these days, in this paper, Korea's reaction support situation for the international environment regulation are reviewed and effective improvement plans are examined.

The composition of this paper are as follows: firstly, in chapter 2, preceding research related to international environment regulation will be reviewed. In the third chapter, the concept of international environment regulation will be briefly summarized, and recent trends regarding the international environment regulation will be looked at. In chapter 4, we will look at Korea's current support situation and their tasks regarding the issue of international environment regulation. Lastly, in the fifth chapter, a brief summarization of this paper is presented.

## 2. Overview of Preceding Research

Some of the representative domestic studies regarding international environment regulation are as follows: Bong Jin Jung and Kwi Ho Lee (2010), Hyeok Ki Min (2010), Kwon Woo Doh and Hwan Il Park (2010), Jong Sub Lim and Jun Hyeong Lim (2011), Kwang Woon Yun and Seong Ho Kim (2013), Sang Goo Kang and Yong Keun Lee (2013).

First of all, Bong Jin Jung and Kwi Ho Lee (2010) sought ways to enhance companies' competitiveness and to expand of new markets through an analysis of companies' reaction to international environment regulation. According to the research results, the latest information about international environment regulation and technology development should be synthetically provided and this information should be standardized for a better establishment of international environmental standards.

Hyeok Ki Min (2010) stated that international environment regulation increases individual companies' production costs. In cases of violating this regulation, they may be excluded from the market, on the other hand, their coping methods for the regulation can be motives for growth to

individual companies' or countries.

Since the global financial crisis in September 2008, the global economy has been under a period of rapid economic stagnation. In the meantime, since the regulation on environmental industry which is becoming a momentum for growth, is being reinforced. Kwon Woo Doh and Hwan Il Park (2010) is concerned that international environment regulation may become an invisible trade barrier. Especially, in case conflicts occur because of the environmentalism, since resolving the problem through WTO takes a long time, we need to focus on developing new environment technology and also try to establish our technology into a global standard and foster the domestic environmental industry.

Jong Sub Lim and Jun Hyeong Lim (2011) analyzed the effects of regulation aimed to protect the environment on their companies and proposed some countermeasures. To be more specific, companies can develop eco-friendly products, obey environmental legislation, and practice eco-friendly management.

Kwang Woon Yun and Seong Ho Kim (2013) analyzed the effect of international environment regulation on export companies' GSCM (Green Supply Chain Management) results. According to the results, in cases where companies are greatly affected by RoHS (Restriction of Hazardous Substances), they tend to choose the GSCM method in order to cope with RoHS guidelines. And the higher they choose the GSCM method, the more positive performances they obtain.

Sang Goo Kang and Yong Keun Lee (2013) emphasized that many countries are making their own environment regulations that reflect their own characteristics, because international environmental treaty negotiation cannot appropriately take place because of an acute interest between advanced countries and developing countries. Especially, in case of Korea, which highly relying on export, the reinforcement of international environment regulation may lead to a decrease in export. They suggested countermeasures such as establishment of coping foundation for international environment regulation, securement of professional manpower, installation of exclusive institution for environment.

Above preceding researches focus on explaining companies' countermeasures for the reinforcement of international environment regulation or the effect that regulation has on countries' domestic export. However, as conservative environment regulation is reinforced which protects domestic countries' profit, it is becoming more difficult for a company to independently cope with it. This paper was written based on this point. This paper aims to look at Korea's current support situation for the international environment regulation and to provide effective improvements.

### **3. Current Trends of International Environment Regulation**

#### **3.1 Concept and Type of International Environment Regulation**

Many researchers define the concept of environmental regulation in various ways according to their research points. For example, Jun Keum Jung (1999) defines environment regulation as one of social/economic regulations, which contribute to realizing the government's aim to create a more desirable society by creating an appropriate atmosphere. However, Jun Hyun Hong (2001) looked at environment regulation from various perspectives, and defines it from

two perspectives. He defines it as government's or local government's public beneficial activities from an independent perspective, and also as public beneficial activities to prevent undesirable social results, such as a failure of market, social inequalities, environment destruction, which he looked at this concept from a purposive perspective.





Generally, environment regulation can be divided into two categories: Firstly, those which affect the trade with 240 Multilateral Environmental Agreements, such as the Climatic Change Convention, the Convention on Biological Diversity and etc.; Secondly, those which are performed in EU, US, Japan and etc. Individual country's trade regulations regarding the environment. Recently, environment regulation is divided into the following 3 categories regarding diversities and characteristics of environment related regulation: The first category is controls on greenhouse emissions, and ETS, regulation on vehicle fuel efficiency and emissions, and etc. all belong to this category; The second one is energy efficiency regulations, and regulations that emphasize energy efficiency, such as EuP, Indication of energy consumption efficiency grade compose the majority; The third one is harmful material regulation such as EU's REACH, US' RoHS, and ELV.

### 3.2 The Necessity of Taking Action against International Environment Regulation

Environment regulations recently tend to move on to TBT (Technical Barriers to Trade) so that individual countries can protect their own domestic industry by strengthening their environment regulation, instead of Multilateral Environmental Agreements, which makes it difficult for a mutual agreement.

As global concerns over environment protection is growing, various environment regulations are not only acting as an accelerator for a development of environmental industries, but also as an invisible trade barrier for market access. For example, EU, US and Japan are reinforcing their environmental standards in order to protect their domestic industries, and in cases of certain products failed to meet their standards, they are unilaterally taking actions to limit the trade. Consequently, not only small and medium-sized companies which are subject to environment regulation of major export countries such as EU and US, but also global corporations are exposed. (Refer to Table 1).

**Table 1: Product environmental regulations in the US and EU sanctions case**

			
<ul style="list-style-type: none"> <li>• Samsung Electronics' computer keyboard</li> <li>• The US Federal Government's violation of the insecticide act</li> </ul>	<ul style="list-style-type: none"> <li>• Mercedes-Benz</li> <li>• US' violation of CAFÉ (<i>corporate average fuel economy</i>)</li> <li>• Fine imposition of \$29.4 million</li> </ul>	<ul style="list-style-type: none"> <li>• US Plizer</li> <li>• US' violation of food·medicine·cosmetic policy</li> <li>• Fine imposition of \$ 1.2 billion</li> </ul>	<ul style="list-style-type: none"> <li>• US Palmer</li> <li>• EU's violation of cosmetic policy (containment of harmful substances)</li> <li>• Voluntarily recall</li> </ul>

Source: Korea Institute of S&T Evaluation and Planning (2010), "Global environmental regulations based on industry trends and suggestions for building," p.5

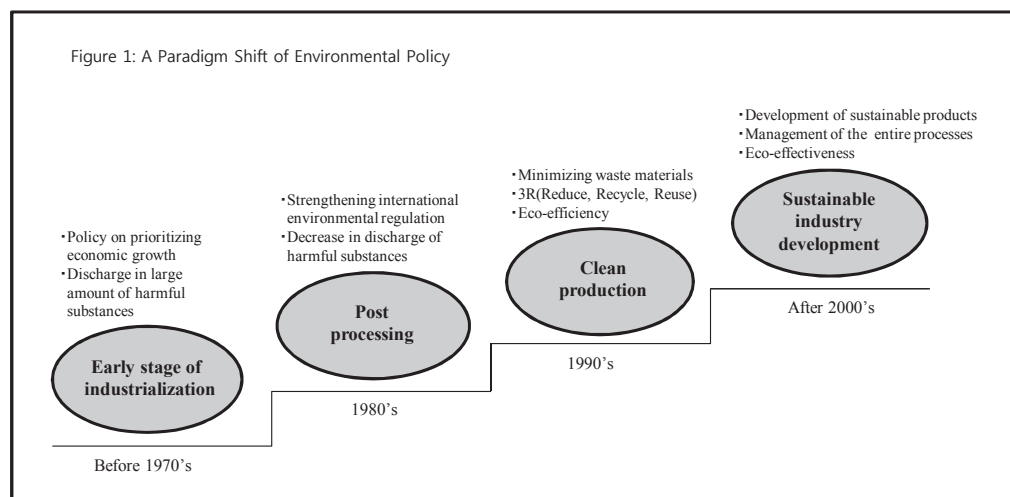
Also, most of the product-related international environment regulations are focused on Korea's major export industries, such as electric/electronic, vehicles, chemical industries. Therefore, countries that implement international environment regulation are Korea's major export countries. Korea's major export industries, such as electric/electronic, vehicles, chemical industries, which make up 56% of Korea's entire export, are exposed to the risks of international environment regulation. Hence, in consideration of Korea's economic structure in which export takes up a large portion, it is time to actively react to the trend of reinforcement in international environment regulation. In addition, when looking at these international environment regulations macroscopically, government's support for coping with international environment regulation should be reinforced, in that it protects the domestic industries and establishes eco-friendly industrial structure, not just for supporting individual companies because its ripple effect is so big that it is threatening export country's industrial structure.

### 3.3 Recent Trends of International Environment Regulation

Recently, in advanced countries, they are getting rid of previous post management, and started to utilize integrated risk management, which takes environmental influences in the entire processes of a product, from product manufacture to disposal and retrieval. To be specific, a rapid switch to environmental paradigm that considers environment in the entire product processes, and post management regulation such as the disposal of air pollutants or wastes, preventions of environment pollution, establishment of eco-friendly production processes, installation of environmental performance assessment, development of green product design, and EU's integrated product policy<sup>2</sup>, has been taken place. Especially, in EU's IPP (Integrated Product Policy), Japan's Basic Law for Establishing the Recycling-based Society and US' CLM (Chemical Life-cycle Management), various measures have been taken to decrease the environment load that is generated in the entire product processes.

Figure 1 displayed this paradigm switch in environment policy in a diagram form. To be more specific, it can be inferred from this figure that there has been compound of various policies, such as a reinforcement of the environment policies based on the existing regulation-centered regulation, and an expansion of various inducements, not a totally new concept of environment regulation revision.

**Figure 1: A Paradigm Shift of Environmental Policy**

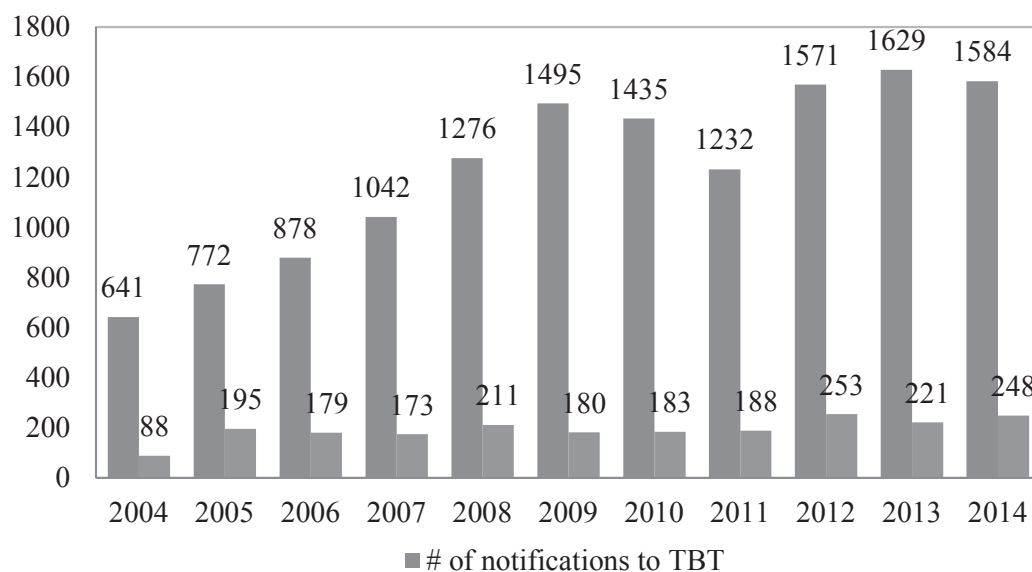


Source: Korea Institute of S&T Evaluation and Planning (2010). "Environmentally friendly industrial restructuring and development plan," p.42

Also, the main agent that takes the responsibility of environment pollution is changing from government to private companies who produce and export products. Especially, through the reinforcement of PL (Product Liability) and Polluter-Pays Principle the responsibility of environmental effect of a certain product is on manufacturer and importer. In the case of EU, with the enactment of REACH, the main agent that takes the responsibility of the organization of risk assessment foundation or the judgement of safety status of chemical substances has changed from government to individual companies, which all emphasizes the recognition of the importance of managing harmful chemical substances. Following this trend, the number of enactment of international environment regulation related legislation is increasing by 10-15% each year and it is being spread out throughout the world such as EU.

Let's look at the trend of major countries' international environment regulation. Figure 2 shows the progress of the number of notifications to TBT and notifications to TBT that are aimed to protect environment. According to this, the number of notifications from 2004 to 2014 is 13,535, and especially the number of notifications in 2013 was 1,629, which is the highest number after 2004. Among them, the number of notifications related to product standards aimed for environment protection and the number of notification related to technology regulation such as trial and certification was 88 in 2004. This number has shown to be more than doubled in the year of 2014, with 248 notifications.

**Figure 2: Total TBT Notification Number and the Number of Environmental Protection Purposes**



Source: Korea International Trade Association (2014), Korea Ministry of Trade, Industry and Energy (2015)

The TBT notifications reported to WTO can be categorized into two types, advanced countries and developing countries. As shown in Table 2, in 2014, with advanced countries' 17%, and developing countries' 83% (including poorest countries' 3%), the number of notifications of TBT in developing countries is rising when compared to those in advanced countries. Since 2007, while the number of notifications of TBT in advanced countries has decreased, there is a tendency that the TBT notifications in developing countries are increasing<sup>3</sup>. Especially, between the years of 2013 and 2014, the ratio of TBT notifications in developing countries is more than



70%, and this shows that there is a great progress of environment regulation in developing countries.

**Table 2: Developed / developing country-specific trends TBT Notification Number (2008-2014)**

Type of country \ Year	2008	2009	2010	2011	2012	2013	2014
Advanced country	411	278	280	259	309	325	257
Developing country	829	1,180	977	950	1,141	1,142	1,223
Poorest country	23	37	163	14	105	135	55

Source: Korea Ministry of Trade, Industry and Energy (2015)

Dividing TBT notifications by purpose, 'Protection of human health and safety' accounted more than half, with 91 notifications. This purpose is followed by 'Prevention of deceptive acts and consumer protection' (308 cases), 'Environment protection' (248 cases), and 'Quality control practices' (177 cases). These results show the trend of many countries introducing international environment regulation for protecting own nationals' safety or environment protection. Also, in cases of safety emergency situations occur, among TBT notifications, those that do not exceed 60 days, some processes, like gathering opinions (which is a matter of recommendation) can be omitted. (Article 2.10 of the TBT Agreement). This shows that there is an active enactment of new regulations. In addition, comparing the purposes of TBT notifications between advanced and developing countries, there are some discrete differences. While main purposes of notifications in advanced countries are protecting human health and safety, consumer protection, environment protection, those in developing countries are quality control practices, provision of consumer information<sup>4</sup>.

#### **4. Korea's Present Support Situations of Reaction to International Environment Regulation and Countermeasures**

##### **4.1 Present Support Situations of Reaction to International Environment Regulation**

Converted into Multiple Law systems, Korea's environment-related policies are operated by various regulation/support plans separately. Consequently, problems have recently emerged such as incongruity in systems, consumers' confusion in environmental awareness, and increase in the companies' costs of environmental responses. For example, encouraging the use of recycled products may lead to saving resource and decreasing the amount of waste. However, it may also cause negative consequences such as excessive use of chemical materials in product manufacturing, excessive emission of water and atmosphere pollutants and reduce in product's lifetime as its quality and efficiency declines.

While some policies are tried to switch to the risk-based system, there are implemental limitations such as absence of related evaluation techniques and database. Meanwhile, recently, some policies are arranging a risk-based system such as an introducing evaluation system that deals with the risks related to soil pollution or utilizing evaluation results that deal with the risks concerning the use of baby goods.

Furthermore, Korea has recently established new environmental regulations which are very



similar to EU's RoHS (WEEE) guidelines. However, these standards are somewhat inadequate, compared to those of major advanced countries such as EU, US, and Japan. Moreover, in Korea 'Act on the Resource Circulation of Electrical and Electronic Equipment and Vehicles (ECO-Assurance System)<sup>5</sup>' was enacted to apply the maximum limits of 6 types of chemical materials which was suggested and limited by RoHS.

However, at this point, these regulations are not strictly applied, unlike Europe's REACH regulations, therefore, the revision of Toxic Chemicals Control Act, a Korean version of REACH model is being pushed. The following is a brief arrangement of reinforcement in international environment regulations of several major advanced countries around the world.

**Table 3: Environmental regulation policies of major countries**

Country	Regulations and controls	Year of effectuation	Major contents
EU	ELV Directive	2000	Restrictions to the reusage of disused cars and the usage of certain metals
	WEEE (Waste Electrical and Electronic Equipment)	2005	Obligations to recovery and recycle of waste electrical and electronic equipments
	RoHS (Restriction of Hazardous Substances)	2006	Prohibition to containing 6 harmful substances in electrical and electronic equipments
	REACH	2007	Registration and permission to chemical substances
	EuP (Eco-design Requirements for Energy using Products)	2005	Setting an environmental evaluation standard in the entire processes of a product
US	CAFÉ (corporate average fuel economy)	1979	Regulations to vehicle average fuel economy
	California Waste Electrical and Electronic Equipment	2007	Charging on recycling waste electrical and electronic equipments
Japan	PC Recycle regulation	2003	Obligations to recovery and separate processing of harmful substances in PC
	home appliances recycle regulation	2006	Recovery and recycle of waste home appliances
	J-MOSS	2006	Obligations to the labeling of certain harmful substances in electrical and electronic equipments
China	RoHS	2007	Restrictions to the usage of lead, mercury, cadmium, hexavalent chrome, PBB, PBDE, etc.
	China WEEE	2011	Obligations to eco-design and recovery and processing of product information of electronic equipments
Korea	ECOAS	2008	Systematic organization of harmful substances information and its management
	Toxic Chemicals Control Act	1991	Registration and permission to chemical substances

Source: Government date from Ministry of Trade, Industry and Energy, Small and Medium Business Administration and Ministry of Environment, 2015

Meanwhile, in order to support companies for reacting effectively to environment regulations, the Ministry of Trade, Industry and Energy, the Ministry of Environment, and Small and Medium Business Administration are seeking for various support measures. To be more specific, since 2009, the Ministry of Trade, Industry and Energy is operating and managing 'Center

for supporting businesses with international environment regulation reaction', which performs a role of the key position in supporting small and medium-sized companies. Moreover, since the May of 2008, Cooperation with the Ministry of Environment, the Ministry of Trade, Industry and Energy constituted 'Joint bureau for REACH reaction' and is trying to apprehend the real condition of companies coping with environment regulations or hosting periodic events such as REACH EXPO.

The Ministry of Environment conducts integrated management of chemical materials based on REACH guidelines, and the Small and Medium Business Administration gives International Standards Certifications support work as one of their priorities. The following Table 4 organizes the above related ministries' specific supporting plans.

**Table 4: Support Systems for International Environmental Regulations**

Department of management	Name of business	Major support contents	Budget (hundred million won)	
			2014	2015
Ministry of Trade, Industry and Energy	Establishment of foundation to cope with international environmental regulations	Analyzing information related to international environmental regulations and consulting	6.2	7.5
	Development of global professional technology	Developing technology to cope with environmental regulations	196.2	205.7
	Informatization of industrial technology	Converting environmental regulations, certification information to DB	9.0	9.0
	Establishing foundation to manage chemical substances in small and medium-sized businesses	Establishing foundations to manage chemical substances	15.0	14.3
	Strengthening the skills of professional manpower	Training professional manpower in industry field	20.0	20.0
	Development of transportation system (Green car)	Development of core environmental technology	926.7	765.8
Small and Medium Business Administration	Establishing foundations to cope with overseas standard	Supporting certification (overseas standard, etc.)	136.1	168.1
	Strengthening the export competence of small and medium-sized businesses	Managing small and medium-sized businesses export support center	423.9	806.1
	Establishing foundations for overseas expansion in small and medium-sized businesses	Supporting small and medium-sized businesses' export	30.0	60.0
Ministry of Environment	Establishing export foundation of environmental industry	Establishing integrated information system related to international environmental regulation	140.7	143.6
		Providing information related to environmental industry environmental regulation		
		Providing consulting service		
	Coping with international environmental regulation	Training professional manpower to cope with international environmental regulation	4.8	4.8

Source: Government data from Ministry of Trade, Industry and Energy, Small and Medium Business Administration and Ministry of Environment, 2015

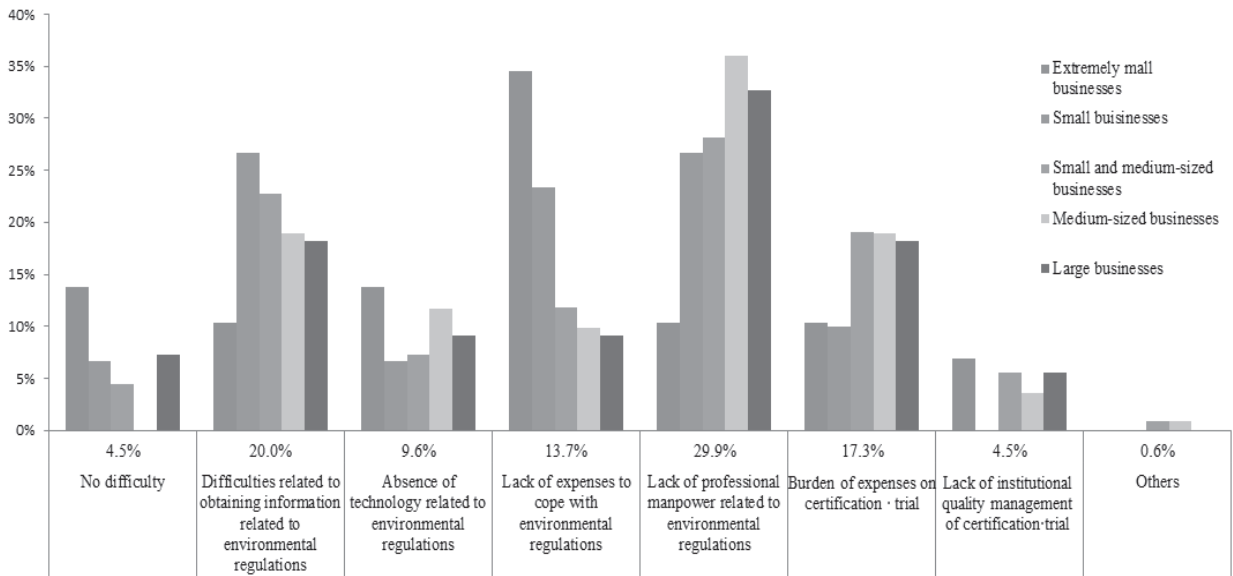
Besides, Korean Trade Intelligence Agency as a specific department of the KTA (Korean Trade Association)-affiliated organization is responsible for businesses that are related to global international environment regulation. Since the March of 2006, through a program called 'Global Window Program', this agency is providing various information to numerous domestic companies, such as information over foreign companies' reaction to international environment regulation, the trends of international environment regulation in different foreign countries, and professionals' various opinions about the international environment regulation. Also, Business Institute for Sustainable Development, which is an organization affiliated with Korea Chamber of Commerce and Industry are supporting proceeding numerous businesses by establishing international environment regulation coping system through utilizing the internet, implementation of environmental education, publication of international environment regulation coping guidebook. In order to manage EU's End-of-Life Vehicle Directive (ELV) jointly, Korea Automobile Manufacturers Association (KAMA) is implementing/operating Automobile Recycling Working Group or supporting the establishment of International Material Data System<sup>6</sup>.

#### 4.2 Domestic Companies' Actions to International Environment Regulation

Most companies have made self-supporting efforts to cope with international environment regulation. In case of large companies, there exist specialized departments charged of the international environment regulation. Therefore, they can actively cope with international environment regulation such as RoHS guidelines or REACH regulation<sup>7</sup>.

On the other hand, because of the burden of expense, small and medium-sized businesses have difficulties in obtaining information related to environment regulation, and low level of awareness, they face hardship in coping autonomously with international environment regulation. One example of them is the following: On the March of 2014, according to the findings of Korea Federation of Small Businesses, approximately 23.5% of small and medium-sized businesses are facing difficulties in coping with international environment regulation, and especially those difficulties include the following: insufficiency in environment related information and lack of professional manpower (49.9%), burden of expenses, such as expenses in acquiring certification of overseas standard (31%)<sup>8</sup>.

**Figure 3: Barriers to International Environmental Regulations by Company Size**

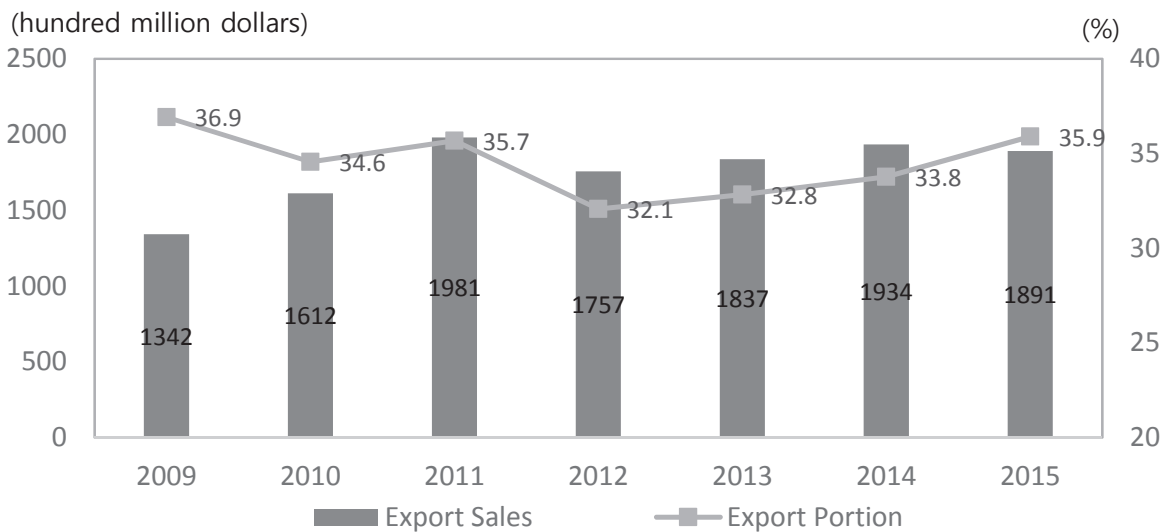


Source: Korea Federation of SMEs (2014)

### 4.3 Countermeasures against International Environment Regulations of Korea Manufacturing Firms

According to the report, the change of world trade structure and Korea trade, issued by Korea International Trade Association in 2016, Korea's trade structure has been moving similar to the way of the world trade trend change like rising portion of consumer goods export, spreading of e-commerce export, increasing export rate of SMEs. Especially, export rate of SMEs which account for 87.9% (13,422 thousand people) of the entire employed population, are on the rise, going from 32.1% in 2012 to 33.8% in 2014, and 35.9% in 2015(see, Figure 4). This figure also shows that export portion of Korea's SMEs has continued to increase since 2012.

**Figure 4: Export Sales and Portion of Korea SMEs**



Source: Korea Small and Medium Business Administration (<http://stat2.smba.go.kr/>)

In addition, diversification of export items in the world market have been leading a downtrend 13 items of our mainstay export items, from 80.2% in 2011 to 78.6% in 2015. 10 items except semiconductor item, general machinery item and computer item also have been declining in the global market share. What's more serious is that about 90% of the major 13 export items have been including in the international environmental regulations. Furthermore, Korea's SMEs are hardly respond in their own capacity due to the lack of their response capabilities such as environment regulation related information, shortage of funds.

#### 4.4 Tasks and Countermeasures for Coping with International Environment Regulation

As stated above, considering Korea's current supporting situation of coping with international environment regulation, the current system's tasks can be drawn like the following:

Firstly, when compared to several advanced countries, in Korea, the law system to strengthen the international environment regulation is not properly organized. As explained above, a domestic company with a low level of international environment regulation cannot meet foreign country's high one. Therefore, it is strongly necessary to organize the law system that appropriately reflects the current tendency in international environment regulation.

Secondly, considering that products are becoming eco-friendly, we need to reconsider validity of government's supporting policies, such as reinforcement in companies' research and development abilities, management of products' life cycle in markets and urgency in coping with international environment regulation.

Thirdly, when it comes to coping with international environment regulation, there exists a gap between large companies and small and medium-sized companies. Generally, the reinforcement in international environment regulation is directly connected to the competitiveness of company's products. Therefore, many companies devote themselves to developing eco-friendly products or enhancing environment efficiency. On the other hand, small and medium-sized export companies which are material/component companies under the Supply Chain, not only have low awareness of international environment regulation, but also they cannot afford to make technical development because of their low technical skills and funding power.

Meanwhile, the countermeasure for the above tasks are as follows:

Firstly, in consideration of domestic industries' capacity regarding the environment regulation, the level of domestic environment regulation should be enhanced gradually, stage by stage. Especially, when considering that domestic small and medium-sized businesses have low level of coping skills with environment, indiscriminate reinforcement in environment regulation may bring about recession in the certain industry. Therefore, instead of unilateral introduction of regulation, international environment regulation should be done with consideration of green competence of a certain industry or a domestic company. In other words, a desirable introduction of regulation ought to be done with a thorough understanding of that regulation and through a gradual stage by stage process. This will help the regulation to be successfully and smoothly applied into production system.

Secondly, at government level, through providing a service that enables to obtain and analyze information related to environment regulation, we should enhance domestic companies' reaction capabilities. Especially, in cases of small and medium-sized businesses, their level of awareness regarding international environment regulation is very low. Therefore, government should aid companies with enhancing their reaction skills to environment regulation. For

example, government may help companies with the following tasks: examining the contents of various environment regulation that major advanced countries are implementing; or analyzing factors that may affect company's environment management. Also, through a continuous monitoring of information that is related to environment regulation, necessary countermeasures should be prepared and also, risks that may be caused by international environment regulation should be minimized.

Thirdly, since there exists a discrepancy between large companies and small and medium-sized companies in the interest level of reaction to environment regulation or reaction direction, government's countermeasures should be organized in consideration of the size of a company. Above all, when considering that most of material/component industries that are under products' Supply Chain are small and medium-sized export enterprise, the existing environmental management promotion plans that is centered upon large companies should be expanded so that establishment of environmental management system for small and medium-sized businesses can be supported. For the coexistence of large companies and small and medium-sized companies, joint development support for environment technology or tax credit for investments of reaction to environment regulation can be good examples.

Fourthly, as the recent movement of international standardization in the environmental field is being visualized, countermeasures for the standardization in certification of Korea's KS should be arranged. Especially, for domestic small and medium-sized businesses whose foundation of environmental management is weak, international standard in the environment field may act as a new technical barrier to trade. According to a recent survey done by Korean Trade Association, the number of small and medium-sized export companies in 2015 was approximately 90,000, and among these, the number of small and medium-sized companies with ISO 14001 certification was only 28,260<sup>9</sup>. As the competition between companies are becoming more and more fierce world widely, in order for small and medium-sized export enterprise to lead the technology development related to environment and to create new markets, it is important to improve their reaction skills to international standardization. Hence, taking advantage of the following support plans: existing programs to train experts of international standardization or support systems for acquisition costs ISO certification (Subsidization of 30-50 % of certification acquisition costs); may be a good method.

## 5. Conclusion

We analyzed Korea's support situations for coping with environment regulations, among the strong trend of reinforcement in global environment regulation. Also, based on these results, we tried to draw some effective improvement plans. While environment regulations are reinforced globally, the results of analysis of Korea's support situations for coping with environment regulations are as follows.

Firstly, our legal system to strengthen the international environment regulation is yet insufficient when compared to those of several advanced countries. As stated earlier, countries who have a low level of international environment regulation face difficulties when they try to meet the other countries' high-level environment regulation. This emphasizes the importance of appropriate organization of legal system to appropriately react to the trend of reinforcement in international environment regulation.



Secondly, in terms of international environment regulation, there exist some amount of gaps between large companies and small and medium sized companies. Especially, in case of small and medium-sized export companies, their level of recognition of international environment regulation is very low and also because of their low technical skills and funding power, they cannot afford for technical development. Therefore, with connection to large companies' existing environmental management promotion plans, we need to support the establishment of environmental management system for small and medium-sized companies. Plans such as joint environmental technology development support or tax credit for the investment of environmental regulation are some of the great examples for the coexistence of large companies and small and medium-sized companies

Thirdly, since there is a strong movement of standardization in environmental regulation, we need to strengthen the countermeasures for the standardization of Korea's KS accreditation standard. According to the recent investigation by KTA (Korean Trade Association), the number of small and medium-sized export companies in 2015 was approximately 90,000, and among them, the number of companies that possessed ISO 14001 certification was only 28,260. Therefore, we need to actively utilize supporting plans such as training programs for the professionals of international standardization or aiding some amount of ISO certification acquisition costs.

Lastly, we ought to come up with a joint response system so that we can support the countermeasures to international environment regulation of foreign companies. One example of this might be Japan's JBCE. JBCE collects and provides information related to international environment regulation in EU, and publishes analysis reports of international environment regulation. Moreover, it represents Japanese companies' interests through lobbying activities in EU-related organizations. Meanwhile, in Korea, there exist no communal organizations of domestic companies like in Japan. However, through EICTA, we merely state our companies' opinions to EU government in an indirect way. Therefore, benchmarking one operation cases of Japan's JBCE should be thoroughly reviewed as one of the many relevant choices.

\* This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2015S1A5B8046893)

\*\* Researcher, Korea E-Trade Research Institute, Chung-Ang University, First Author

\*\*\* Assistant Professor, Dept. of International Trade & Logistics, Chung-Ang University, Corresponding Author

<sup>1</sup> Korea Ministry of Trade, Industry and Energy (Korea), "2014 Report on Technical Barriers to Trade (TBT Report)", April 2015, p.7.

<sup>2</sup> The EU integrated product policy (IPP) is, in view of all of the steps of the product life cycle policy for the purpose of minimizing the environmental impact resulting from the product. Here, one advantage of the voluntary measures and regulatory and economic methods or environmental labeling and product design guidelines, such as various policy approach for each stage of the product life cycle, raw materials extraction, production, distribution / sale, use and disposal / recycling the plan has been presented.

<sup>3</sup> It is TBT notification portion for the purpose of environmental protection in developed countries decline appears to be because, not because it is environment-related technical regulations are weakened and

relatively also enhances other technical regulations (Korea International Trade Association, "The Impacts of Environmental Regulations on Competitiveness", Trade Focus 13(1), January 2014, p.5).

- <sup>4</sup> Korea Ministry of Trade, Industry and Energy (Korea), "2014 Report on Technical Barriers to Trade (TBT Report)", April 2015, p.11.
- <sup>5</sup> What it was done from January 2008 Environmental security system, which applies the 'electrical and electronic products and the Act on Recycling of cars' on TV, refrigerator, washing machine, etc. Electrical and Electronic Products 10 species and more than 3.5t freight cars along the EU car including the WEEE Directive, RoHS Directive, prescribes almost the same content and the ELV Directive.
- <sup>6</sup> Jung, Bongjin and Kwiho Lee (2010), "Current Status of Countermeasure for Overcoming the International Regulations in Korea", Clean Technology 16(3), September 2010, p.159.
- <sup>7</sup> Representing Korea, Samsung Electronics, LG Electronics and other international Environmental regulations (RoHS, REACH, etc.) Establishing a management information system has been built within an efficient management system of product information material. Only as the operating system for green purchasing and supplier management, technical support and harmful. It has been to build a win-win management systems such as materials management techniques taught.
- <sup>8</sup> Korea Federation of SMEs, "2014 Export SME Survey of International Environmental Regulations", March 2014, p.20.
- <sup>9</sup> Korea International Trade Association, "Small and medium export enterprises in the international environmental management standard and Utilization Strategy", Trade Focus 14(30), August 2015, p.4.

## References

- Amagai, Hisashi (2007): "Environmental Regulation and Competitive Strategy: Review of the Porter Hypothesis", *Soka Business Review*, 31, No.1-2, pp.23-33.
- Aoki, Masamitsu (2005): "Environmental Regulation Trends and the Corresponding State of the World", *Journal of Electronics Mounting*, 8, No.5, pp.24-32.
- Compliance in Advance and Supporting System (<http://www.compass.or.kr>).
- Doh, Kwonwoo and Hwanil Park (2010): "The Emergence of Green Protectionism and Countermeasures", SERI Issue Paper, pp.1-38.
- Hamamoto, Mitsutsugu (1998): "Industrial Productivity and Environmental Regulations", *Economic Journal*, 162, No.3, pp.51-62.
- Jung, Bongjin and Kwiho Lee (2010): "Current Status of Countermeasure for Overcoming the International Regulations in Korea", *Clean Technology*, 16, No.3, pp.151-161.
- Kang, Sanggoo and Yongkeun Lee (2013): "Korean Counterplans regarding Environmental Regulations in Major Trading Countries-Focused on the Electrical and Electronics Industries", *E-Trade Review*, 11, No.3, pp.121-142.
- Korea Federation of SMEs (2014): "2014 Export SME Survey of International Environmental Regulations".
- Korea Small and Medium Business Administration (<http://stat2.smba.go.kr>).
- Korea Institute of S&T Evaluation and Planning (2010): "Global Environmental Regulations Based on Industry Trends and Suggestions for Building".

- Korea International Trade Association (2014): "The Impacts of Environmental Regulations on Competitiveness", *Trade Focus*, 13, No.1, pp.1-33.
- \_\_\_\_ (2015): "Small and Medium Export Enterprises in the International Environmental Management Standard and Utilization Strategy", *Trade Focus*, 14, No.30, pp.1-22.
- Korea Ministry of Trade, Industry and Energy (2015): "2014 Report on Technical Barriers to Trade (TBT Report)".
- \_\_\_\_ (2013): "2013-2014 Korea's Major Industries, Regional Trade Environmental Regulations Guidelines".
- Lim, Jongsub and Junhyeong Lim (2011): "A Study on Korean Enterprise's Counter Strategy for Corresponding to Environmental Regulations for International Trade", *Review of business & economics*, 24, No.2, pp.823-844.
- Min, Hyeok ki (2010): "Current Status of Countermeasure for Overcoming the International Regulations in Korea", *KIET Industrial Economic Review*, pp.40-49.
- Ministry of Economy Trade and Industry (Japan) (2014): "Unfair Trade Report 2014".
- Ministry of Economy Trade and Industry (Japan) (2014): "Job Creation and Growth Strategies in Accordance with the International Standard of Play, Energy Saving".
- Nam, Jeongwoo (2015): "A Study on Environmental Management Strategy due to the Global Environmental Regulation: A Focusing on Comparative Study of Korea and Japan", *SERI Issue Paper*, 67, pp.85-109.
- Tomoni, Toyozumi (2006): "Eco Business Expansion Strategy", *Human Environmental Studies*, 5, No.1, pp.115-134.
- Ueda, Kazuhiro and Minoru Shimamoto (2007): "Green Innovation. Chuokeizai-sha".
- WTO (2015): "TBT Annual Review (2004-2014)".
- Yun, Kwangwoon and Seongho Kim (2013): "The Relationship of International Environmental Regulation, GSCM (Green Supply Chain Management) Practices and Performance of Korean Exporting Firms: A Focus on RoHS (Restrictions of the use of Hazardous Substances)", *Review of Business & Economics*, 26, No.2, pp.1009-1032.

# The TPP and East Asian Economic Community 2020: Integration or Disintegration? \*

Min He\*\*

## Abstract

*This paper discusses the impact of the TPP, which was finally agreed upon on October 5, 2015, to the East Asian Economic Community 2020 building process. The results are that, as a higher standard trade agreement, the TPP will contribute to the economic growth and domestic reform agenda of East Asian countries through freer trade and investment. However, it will disunite ASEAN countries, reduce China's influence and prevent exclusive regional cooperation in East Asia, and result in a "stumbling block" currently for the EAEC 2020 building process. Therefore, in order to re-rebalance both the economic and political powers in and across the East Asia, the CJKFTA and RCEP negotiation should be concluded as soon as possible, and the ASEAN centrality should be further substantiated. Furthermore, an EAEC 2020 blueprint is needed to strengthen the consensus of building an East Asia Community. It will be helpful to promote all-round functional cooperation to share more common interests and benefits in the region.*

Keywords: EAEC 2020, TPP, EAC, CJKFTA, RCEP

JEL classification codes: F10, F15

## 1. Introduction

There are two free trade agreement (FTA) tracks in and around East Asia. One is the intra-Asia FTA track, such as China-Japan-Korea (CJK) FTA, ASEAN+1(10+1), ASEAN+3(10+3), and the Regional Comprehensive Economic Partnership (RCEP, 10+3+3), among others. These FTAs, in which ASEAN is the core and regional hub, are based on moderate trade liberalization. The other track is the across-Asia FTA track such as the Trans-Pacific Partnership (TPP) and FTAAP, which are based on comprehensive and high-level liberalization, see Table 1.

"Realizing an East Asia Economic Community by 2020" is expected to serve as the catalyst in the "East Asia Community" building process, which is a higher goal for the intra-Asia FTA track. The East Asia Community laid a solid groundwork for the future direction of East Asian regional cooperation, and specified the institutional cooperation not only in economic-financial but also in political-security, environment-energy, socio-cultural-educational realms.

In the across-Asia track, the TPP was finally agreed upon on October 5, 2015 and signed on February 4, 2016. The TPP is a mega-sized free trade agreement including East Asian countries such as Japan, Singapore, Malaysia, Vietnam and Brunei and other 7 countries outside of Asia<sup>1</sup>. Other East Asia countries such as South Korea, Indonesia, Thailand, Philippines, and Cambodia have been considering participating in the TPP.

The TPP, which stretches across the Pacific connecting nations in East Asia with those in the Western Hemisphere, is one of the most significant emerging agreements among 300 or so trade agreements in the Asia-Pacific region. It is also considered as the centerpiece of the U.S. "rebalance" to the Asia-Pacific, which have made the "U.S. factor" a major external variable in East Asia cooperation. Though it is conceivable that it will not be ratified by the United States

according to the recent speech by the new US President-elect Trump, as the currently largest regional free agreement proposed, with a higher standard trade rules, the TPP will surely have great impact on the East Asia regional cooperation building process.

**Table 1: Cooperation Mechanisms Status Quo In and Around East-Asia Region**

	Asian Track	Asian-Pacific/Trans-Pacific Track
Scope	<b>Asia, ASEAN as a core</b> <ul style="list-style-type: none"> <li>• CJK FTA</li> <li>• ASEAN+1</li> <li>• ASEAN+3(EAFTA)</li> <li>• ASEAN+6 (RCEP, CEPEA)</li> </ul>	<b>Asia-Pacific</b> <ul style="list-style-type: none"> <li>• EAS (Summit)</li> <li>• APEC (Forum)</li> <li>• TPP (12)</li> <li>• FTAAP</li> </ul>
FTA Approach	<ul style="list-style-type: none"> <li>• Moderate Trade Liberalization</li> <li>• Early Harvest/Step by Step to include Singapore issues</li> <li>• Low Legalization (emphasizing flexibilities, pragmatic, trust-building)</li> </ul>	<ul style="list-style-type: none"> <li>• Comprehensive and rigorous/21st Quality</li> <li>• WTO-Plus trade rules</li> <li>• Aggressive Investment Liberalization</li> <li>• High Legalization on Trade Rules</li> </ul>
Sources of Attraction	<ul style="list-style-type: none"> <li>• Regional trade hub</li> <li>• Growing economy/rising power</li> <li>• State-led capitalism</li> <li>• Cultural proximity (to some Asian countries, “Confucian states”)</li> <li>• Regionalization</li> </ul>	<ul style="list-style-type: none"> <li>• Regional security stabilizer</li> <li>• “Rebalancing”</li> <li>• Washington consensus</li> <li>• Value provider (democracy, human rights)</li> <li>• Globalization</li> </ul>
Nature	Regional Multilateralism	Region-wide Bilateralism

Source: By author

This paper assesses these two FTA tracks, and discuss the impact of TPP to East Asian Integration and EAEC 2020 building process. Section 2 reviews the origins of the EAEC 2020 and characteristics of East Asian Integration. Section 3 analyses possible effects, positive and negative, of TPP to East-Asia countries and EAEC 2020 building process. Section 4 concludes and provides policy implications.

## 2. East Asian Integration and the EAEC 2020

### 2.1 From EAC to EAEC 2020: From an Institutional Approach to Functional Cooperation

The earliest proposal of East Asian regionalism was brought out by the Malaysian Prime Minister Mahathir Mohamad on December 1990 in order to confront and respond to the integration of Europe and North America, as well as the slow GATT negotiations at that time. This East Asian Economic Group (EAEG) proposal suggests East Asian countries including Japan, China, South Korea and the ASEAN countries should unite and cooperate, and remove American and Australian influence from regional cooperation framework. The U.S. and Australia were quick to declare themselves against this EAEG, because they were excluded. Japan and Korea were hesitant to support Mahathir’s proposal because of their longtime promotion of an Asia-Pacific region. The ASEAN countries discussed this proposal, but with no further substantive progress. Therefore, the idea of an EAEG never came to be realized in the early 1990s even though Mahathir later changed this proposal from EAEG to “East Asian Economic Caucus” (EAEC).

The idea for cooperation among East Asian Countries has been strongly spurred again since the outbreak of Asian Financial Crisis in the late 1990s. Leaders from ASEAN, China, Japan and South Korea held their 1st meeting in Kuala Lumpur to launch the cooperative mechanism “ASEAN+3” at the end of 1997. In 2001, a report titled “Towards an East Asia Community: Region of Peace, Prosperity and Progress” was submitted to the 5th ASEAN+3 meeting. This report, with 22 key recommendations including 57 specific measures, laid a solid groundwork for the future direction of East Asian regional cooperation, and specified the institutional cooperation not only in economic-financial but also in political-security, environment-energy, socio-cultural-educational realms in order to achieve the goal of building an East Asia Community.

In 2003, as the EAC mechanism was being developed, ASEAN Leaders declared the formation of an “ASEAN Economic Community”(AEC) by 2020.<sup>2</sup> This was the agreed upon goal of regional economic integration at the 9th ASEAN Summit, which aimed to transform ASEAN into a stable, prosperous and highly-competitive region with equitable economic development, reduced poverty, and socio-economic disparities. The AEC was to progress in tandem with the establishment of the ASEAN Political Security Community and the ASEAN Socio-Cultural Community.

In 2004 at the 8th ASEAN+3 meeting, the East Asian Community was officially announced as the long term goal of East Asian cooperation and the proposal of East Asia Summit (EAS) was agreed to be carried out in 2005. The meeting also reaffirmed that “ASEAN+3 process will continue to be the main vehicle.” Besides inspiring East Asian people and governments to work towards building an “East Asian Community”, the report stated that “the economic field, including trade, investment and finance, is expected to serve as the catalyst in this community-building process”.

At the ASEAN+3 Commemorative Summit in 2012 in Cambodia, another report titled “Realizing an East Asia Economic Community by 2020” took stock of all of the ASEAN+3 cooperation activities, evaluated their contributions, and recommended the realization of an East Asia Economic Community by 2020 as the main pillar of the new vision for East Asia regional cooperation and community building.

Looking back to East Asian integration, it seems as a shifting from a FTA-led integration building process to a regional functional cooperation building process, aimed at a region of shared interests featured by equitable, inclusive, balanced and sustainable development with freer movement of goods, services, investment and people. In terms of membership, the core will always fall within the ASEAN+3 countries.

## 2.2 Changes from the Global Financial Crisis: the TPP and the RCEP

Amidst the structural changes following the global financial crisis from 2008, East Asia recovered more quickly than other regions. East Asia has been rising as a region of global significance linked not only by increasing economic interdependence, which is reflected by the rising intra-regional trade and investment, but also by multi-layered cooperation frameworks supported and involved by the governments as well. On one hand, East Asia has enhanced their competitiveness by promoting regional integration and sharpening regional production networks in manufacture goods. On the other hand, East Asia has gradually constituted a building block for a more open global economy by complying with current rules set by the multilateral trading system. This is the so-called “*Open Regionalism*” in East Asia.

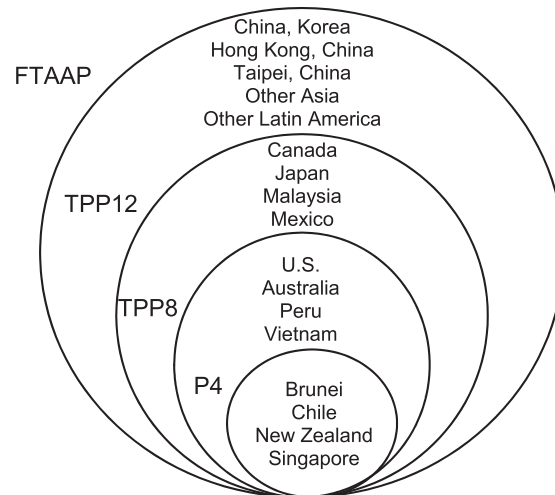


As being the most important production base and market for intermediate goods, as well as a major market for final consumer goods in the current global economy, East Asia has become the main target for those who switched from domestic demand-led growth to export-led growth after the global financial crisis.

Accordingly, in 2010, the U.S President Obama set forth a plan to double exports and declared US participation in TPP, see Figure 1. In 2011 APEC meeting, Japan announced it would join the TPP negotiations. In the same month, ASEAN proposed a new East Asia FTA, the RCEP, whose first round discussion was held in May, 2013, 2 months after the first discussion of a China-Japan-Korea FTA.

However, no agreement was reached of the TPP, the RCEP and the CJK FTA in 2013 and 2014, until on October 5, 2015 the TPP agreement was finally concluded.

**Figure 1: TPP Framework**



### 3. The Impact of TPP to EAEC 2020 Building

The TPP is a mega-sized free trade agreement including 12 countries in the Asia Pacific region, which represents approximately 40% of the world's GDP. The key distinguishing features of the TPP are its higher level of trade liberalization and its new trade rules with higher standard covering broader issues. The TPP requires the elimination of tariffs, and covers not only tradition commodity goods, but also issues such as service trade, E-commerce, state-owned enterprises, intellectual property, and labor and environment.

As a representative of "US factor", the U.S.-led TPP, enlisting seven of the RCEP members (four ASEAN members—Brunei Darussalam, Malaysia, Singapore and Vietnam, and three non-ASEAN countries—Japan, Australia and New Zealand), has become a major external variable in East Asian cooperation and integration. Due to US active promotion, more of East Asian countries like the Republic of Korea, the Philippines, Thailand, Indonesia, and Cambodia were showing more interest in joining the TPP.

As a higher standard trade agreement, economically, the TPP will contribute to the economic growth of East Asia countries through trade and investment liberalization. The TPP will constitute an external justification for the East Asian countries to carry out its domestic

reform agenda.

Politically, however, the TPP “as another aircraft carrier” to “help U.S. promote a global order that reflects both our interests and our values” has become a device for the U.S to seek leadership in Asia-Pacific region. It will prevent exclusive regional cooperation and maintain the predominance of the U.S. in East Asian affairs, and result in a “stumbling block” instead of “building block” to both EAC and EAEC 2020 building.

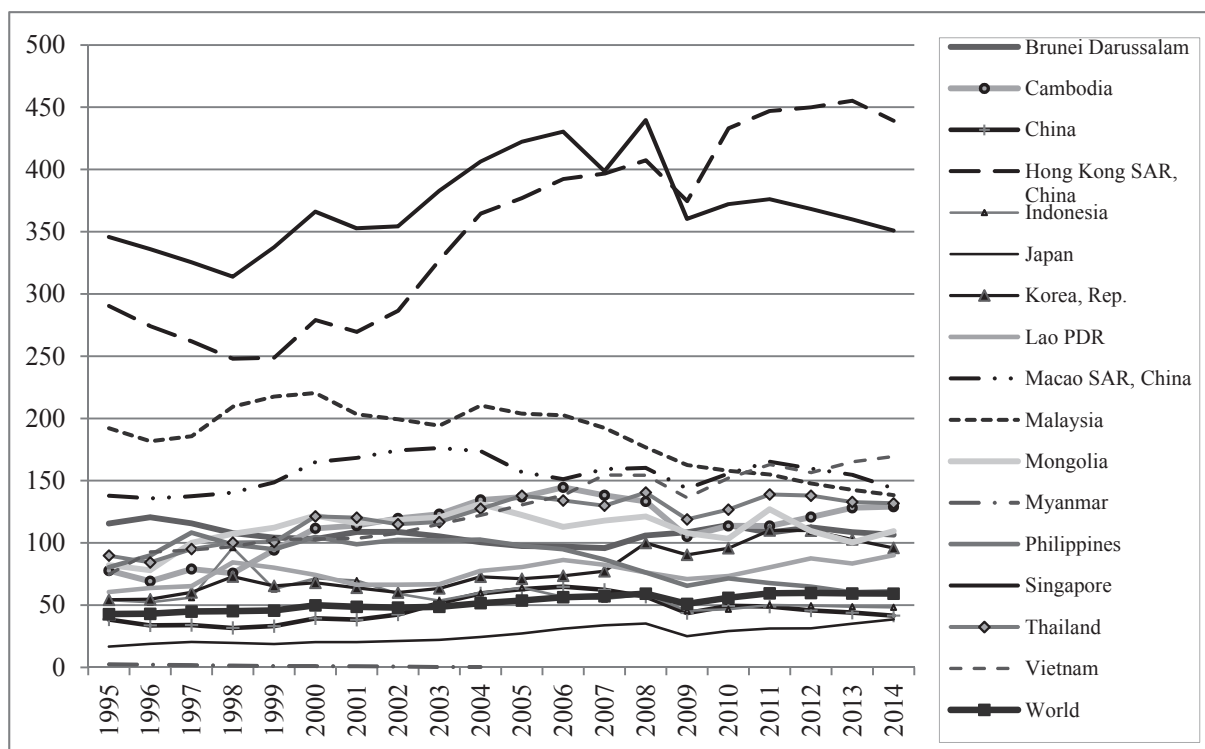
### 3.1 The TPP has a great impact on the economic growth of East Asian economies, thus back for EAEC building

Through the liberalization of trade and investments and the new rules, the TPP will have a great impact on the economy of East Asian countries. First of all, being a high level Free Trade Agreement, TPP will drive the trade between the U.S. and the East Asia Countries and contribute to economic growth of East Asia countries, most of which are export-led growth countries, as is shown in Table 2 and Figure 2. It is expected that the TPP will promote the further economic growth for participating countries, see Table 3. Furthermore, the high standard of the TPP, which requires a greater level of the market liberalization, coincides somewhat with the East Asian countries’ efforts to introduce market reforms into their economies, especially for the ones with high level of state intervention. From these aspects, the TPP therefore is good for the EAEC’s goals of building a single market and production base, and engagement with the world economy.

**Table 2: The Ratio of Export to the U.S. in the total Export of Selected East Asian Economies, 2014 (Goods Export in Billion Dollars)**

Export	Singapore	Malaysia	Indonesia	Philippines	China, HK	China, Taiwan	ASEAN	Korea	Japan	China
Total Export	409.8	234.1	176.0	61.8	524.1	311.9	1294.8	573.1	683.8	2342.3
to the U.S.	24.2	19.7	16.6	8.7	44.2	32.5	124.6	70.6	130.0	397.1
The Ratio%	6%	8%	9%	14%	8%	10%	10%	12%	19%	17%

Source: UNCTAD Statistics

**Figure 2: Trade to GDP Ratio of East Asian Economies, 1995-2014 (% of GDP)**

Source: WDI

**Table 3: Impact of regional trade liberalization on real GDP (%)**

	Worldwide	FTAAP	ASEAN+6	ASEAN+3	CJK FTA	TPP
Indonesia	4.71	3.64	3.69	3.00	-0.32	-0.36
Malaysia	12.34	9.43	8.27	7.53	-0.52	4.57
Philippines	6.00	6.07	4.60	4.42	-0.75	-0.39
Singapore	3.53	2.42	3.15	2.71	-0.42	0.97
Thailand	26.35	20.24	17.03	16.31	-1.19	-0.89
Vietnam	37.50	34.75	23.42	23.13	-0.50	12.81
China	7.35	5.83	3.43	3.16	2.27	-0.30
Japan	1.25	1.36	1.10	1.04	0.74	0.54
Korea	8.68	7.10	6.34	5.94	4.53	-0.33
Australia	2.46	2.08	2.44	-0.04	-0.11	1.16
India	8.39	-0.91	2.99	-0.29	-0.16	-0.22
New Zealand	4.86	3.80	2.29	-0.19	-0.24	2.15
U.S.	0.35	0.26	-0.07	-0.03	-0.05	0.09

Source: Kawasaki Kenichi, Determining Priority Among EPAs: Which trading partner has the greatest economic impact? Research Institute of Economy, Trade and Industry, 2011

3.2 The TPP provides a complementary mechanism for EAC building, therefore increasing the chance of EAEC achievement to some extent

Another contribution of TPP to EAC and EAEC building is the establishment of various rules covering not only traditional trade rules such as trade in goods, trade in services, invest-

ment, and intellectual property, but also E-commerce, government procurement, state-owned enterprises, labor and environment, and non-traditional issues that are not included in existing FTAs or RTAs. These TPP regulations provide complementary support and high-level direction for East Asia Integration, hence contribute to the EAC and EAEC building.

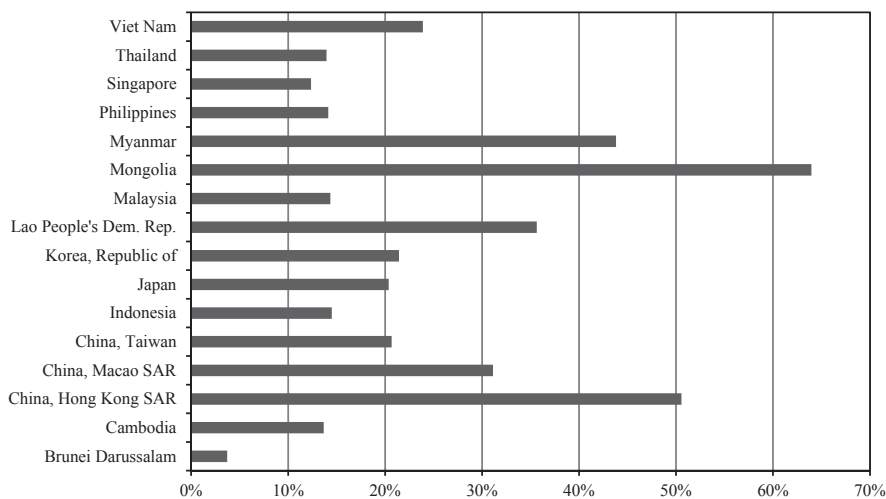
### 3.3 The TPP distracted the attention and resources of East Asia countries especially Japan and ASEAN countries from EAEC building

The TPP may lead to disunity within ASEAN because not all of them are included in the TPP and this will surely undermine ASEAN's centrality role in leading a regional integration process. The participation of the overlapping cooperation mechanisms of Japan and ASEAN countries both in intra-Asia cooperation mechanisms such as ASEAN+3, ASEAN+1, AEC, RCEP, EAC, EAEC etc., and across region (Asia-Pacific region) mechanism (like TPP) will distract the attention and resources of those countries. There is also a concern that now the TPP has come to a deal ahead of the RCEP, some of the dual members may have less desire to continue their efforts on the RCEP, which encompasses all the APT (ASEAN Plus Three) countries, and thus hindering the EAC and EAEC.

### 3.4 That the TPP excluded the most dynamic market in the region will reduce China's influence in East Asia, thus slow down EAEC building

China has experienced remarkable economic growth, and become the largest country in terms of value of world trade and second largest country in total output. China plays an important role driving the trade and economic growth in East Asia and the world. See Figure 3. Almost all the economic organizations in East Asia have leveraged China's growth to consolidate economic integration. However, the TPP excluded the most dynamic market in this region, and aimed to re-orient the trade focus to the U.S. This TPP agreement will compete with China's economic interests therefore reduce China's influence in East Asia, and likely slow down EAEC construction.

**Figure 3: East Asian Economies' trade with China as % of total trade, 2014, Merchandise Trade**



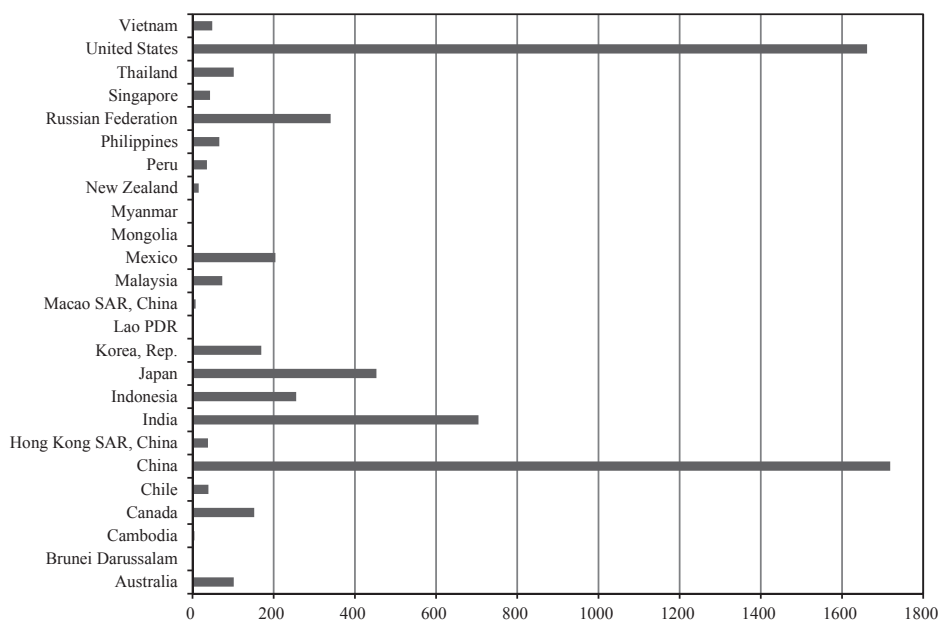
Source: UNCTAD Statistics

### 3.5 The US-led TPP with higher standard is supportive of U.S. economic goals but unrealistic currently in East Asia

The TPP has set its sight “behind the borders” of signatories to regulate investment, capital flows, intellectual property, and state-owned enterprises, which no prior multilateral proposal has attempted. Its wide-ranging implications for labor standards, social services, and freedom of on-line data portend a comprehensive blueprint for future agreements. And yet, the TPP’s assertive vision of Asia-Pacific integration may harbor the seeds of regional disintegration.

The TPP’s assertive vision is to seek to expand the role of markets in the delivery of health-care, housing, foreign investment, and services in a region where government programs have long underpinned social welfare, national development, and international cooperation. Vietnam, for instance, stands out among TPP members for its high level of state intervention. If the TPP were put into practice, these countries, most of which are developing countries, will call off government support. Faced with free market, these countries may experience strong shocks with no protection from the overseas countries especially from the developed countries. This is likely to increase economic instability, which may cause another round of economic crisis.

**Table 4: GDP of East Asia and TPP economies, 2014**  
(constant 2011 international billion dollars)



Source: WDI. GDP, PPP

## 4. Conclusion and Policy Implication

We find the TPP is representative of the Asia-Pacific FTA track, and EAEC 2020 is representative of the intra-Asia track. These two tracks are viable and partly complementary pathways in and around this region. These tracks will compete with each other as well. It seems like East Asia integration is being Asia-Pacific Oriented because of the earlier conclusion of the TPP agreement. In order to Re-rebalance both the economic and political power in and across the East

Asia region, the policy implications are as follows:

#### 4.1 To Conclude the CJKFTA and RCEP Negotiation ASAP

Compared with high level US-led TPP, the CJKFTA, involving the 3 largest economies in East Asia, is of greater importance to the East Asia integration process. While the RCEP, which places more importance on providing developing members with economic and technical cooperation to narrow the development gap, is more suitable in its current development stage for East-Asia countries. The conclusion of CJKFTA and the RCEP will provide an optimal platform for a regional integration scheme and additional flexibility to the least developed ASEAN Member States.

#### 4.2 To Exert ASEAN Centrality

EAEC/EAC building takes time. East Asian countries should be patient and united, and strengthen coordination and cooperation through these overlapping cooperation mechanisms, both intra-Asia and across Asia-Pacific. As the driver and the regional hub, ASEAN will continue to play its dominant role in carrying out all the cooperation mechanisms, thus the centrality role of ASEAN should be further substantiated.

#### 4.3 To Develop an EAEC/EAC Blueprint

EAEC/EAC is an idealist movement. Some scholars believe that EAEC/EAC will never come true. The reality is that EAEC/EAC has been weakened by realist politics, strategies and interests. However, this is just the reason why a blueprint is seriously needed for East Asia region countries. Only through the blueprint can the consensus of establishing an East Asia Community be built and strengthened. Just like European scholars and think-tanks preparing the idea and blueprint of European integration for political leaders to make decision, an ideal blueprint for East Asian integration is also in need as a spiritual and action guide to rally the cooperative collaboration to turn the vision to reality.

#### 4.4 To Promote All-round Functional Cooperation

In order to achieve the goals of EAC/EAEC 2020, East Asia countries need to take actions and seize each opportunity to enhance efforts of cooperation. No matter EAEC could be established in 2020 or not, all East Asian countries should actively join in the functional cooperation in economic and social cultural areas to share more common interests and benefits. The Belt and Road Initiative (BRI), proposed by Chinese President Xi Jinping in 2013, and Asian Infrastructure Investment Bank (AIIB), for instance, mainly focuses on connectivity and cooperation among countries, could be one of the opportunities. Another example is to strengthen cooperation on reducing inequality between and within East Asia countries, such as deepen the agricultural poverty reduction cooperation.



\* Part of this research is supported by the National Social Science Fund Youth Project *the Impact of TPP Agreement to the World Agricultural Trade Pattern and China* (#16CGJ002).

\*\* Assistant Professor, School of International Economics, China Foreign Affairs University

<sup>1</sup> They are the U.S., Australia, Peru, Canada, Chile, Mexico, and New Zealand.

<sup>2</sup> In January 2007, at the 12th ASEAN Summit, ASEAN Leaders collectively agreed to accelerate the establishment of the ASEAN Community from 2020 to 2015, as formally articulated in the *Cebu Declaration on the Acceleration of the Establishment of ASEAN Community by 2015*.

## References

Carter, Ashton (2015): "Remarks on the Next Phase of the U.S. Rebalance to the Asia-Pacific". U.S. Department of Defense, 6 April, 2015. [www.defense.gov/Speeches/Speech.aspx?SpeechID=1929.2016-05-06](http://www.defense.gov/Speeches/Speech.aspx?SpeechID=1929.2016-05-06).

Hearn Adrian H., Magaret Myers (2015): "China and the TPP: Asia-Pacific Integration or Disintegration?" on *The Dialogue.org*.

Kawasaki, Kenichi (2011): "Determining Priority Among EPAs: Which trading partner has the greatest economic impact?" in Research Institute of Economy, Trade and Industry.

Kazushi, Shimizu (2016): "The TPP and the East Asian Economic Integration-Including the Roles of Japan and the U.S." from US-Japan Research Institute, USJI Voice Vol.15, May31, 2016.

Petri, Peter A. Michael G. Plummer, and Fan Zhai (2011): "The Trans-Pacific Partnership and Asia-Pacific Integration: A Quantitative Assessment" in East-West Center Working Paper, No. 119, October 24, 2011.

Song, Junying, Shao Hua (2014): "Rethinking East Asian Community Building" in *China International Studies*, Vol2, p71-84.

Yoshida, Tadahiro (2004): "East Asian Regionalism and Japan" in *APEC Study Center*, Institute of Developing Economies, JETRO, Working paper series 03/04-No.9.

## GUIDELINES FOR CONTRIBUTIONS (abstract)

Please send peer-reviewed articles as email attachments or on a CD, in Microsoft Word or other text-file form. Papers should be double-spaced and not more than 5,000 words in length.

All peer-reviewed articles must have a summary of not more than 150 words, with keywords (three to six terms), and JEL classification codes (up to three).

The title page should contain the title of the paper, the full names and addresses of the authors, their contact information (telephone number, facsimile number and email address) and their professional affiliation. As the name of the author is to be withheld from the referees *the title of the paper only* should be repeated on the first page of the main text.

Please refer to the “Guidelines for Authors” on ERINA website (<http://www.erina.or.jp/index.html.en>) regarding the other matters for the authors of articles we would like to be observed.

Once manuscripts have been anonymously peer-reviewed, their acceptance or rejection rests with the Editorial Board.

The anonymity of both authors and referees will be maintained throughout the reviewing process.

The copyright of accepted peer-reviewed articles will belong to the author. Please refer to the “Guidelines on Copyright” regarding the copyright for accepted peer-reviewed articles.

