

## ERIA Discussion Paper Series

## Trade Creation Effects of Regional Trade Agreements: Tariff Reduction versus Non-tariff Barrier Removal

Kazunobu HAYAKAWA<sup>§</sup>

*Bangkok Research Center, Institute of Developing Economies, Thailand*

Tadashi ITO

*Inter-disciplinary Studies Center, Institute of Developing Economies, Japan*

Fukunari KIMURA<sup>#</sup>

*Faculty of Economics, Keio University, Japan*

*Economic Research Institute for ASEAN and East Asia, Indonesia*

April 2015

---

**Abstract:** *This paper empirically decomposes trade creation effects of regional trade agreements (RTAs) into those due to the tariff reduction effects and due to non-tariff barrier (NTB) removal by using the most disaggregated tariff-line level trade data in a large number of countries in the world. Specifically, making the full use of the fineness of our dataset, we employ the standard gravity equation and identify those effects by estimating trade creation effects of RTAs for products ineligible and eligible to RTA preferential schemes separately. Our major findings are as follows. First, for the whole samples, there are significantly positive trade creation effects due to tariff reduction while weak effects are detected for NTB removal. Second, effects of tariff reduction and NTB removal are smaller for differentiated products than for non-differentiated products. Third, trade creation effects of tariff reduction and NTB removal are substantially large in cases of trade between low-income countries while weak in cases of trade including high-income countries. Fourth, although larger tariff margins on average lead to larger trade creation effects, the relationship between tariff margins and trade creation effects is highly non-linear.*

**Keywords:** Regionalism; RTAs; NTB; gravity equation; tariff line

**JEL Classification:** F15; F53

---

<sup>§</sup> This research was conducted as part of a project of the Economic Research Institute for ASEAN and East Asia “Comprehensive Analysis on Free Trade Agreements in East Asia.”

<sup>#</sup> Corresponding author: Fukunari Kimura; Address: Faculty of Economics, Keio University, 2-15-45, Mita, Minato-ku, Tokyo 108-8345, Japan; Tel: 81-3-5427-1290; E-mail: fkimura@econ.keio.ac.jp

## 1. Introduction

Regional trade agreements (RTAs) are expected to increase trade among their member countries by lowering not only tariff rates but also non-tariff barriers (NTBs). Although the elimination of tariffs should always be a core part of RTAs, the role of RTAs for removing various types of NTBs has also been emphasized in policy discussion. Recent RTAs tend to include provisions for various policy modes such as the mobility of natural persons, standard and conformance, government procurement, competition policy, intellectual property rights protection, E-commerce, dispute settlement, labor standards, environmental policy, technical cooperation, and so on. These provisions may play a significant role in increasing intra-RTA trade. For example, the government procurement provision grants foreign firms an access to the government procurement market, thereby possibly yielding an increase in trade among member countries. The intellectual property provision may contribute to strengthening the protection of intellectual property and thus to increasing trade in goods that incorporate high technology and creative contents among member countries. In addition, the conclusion of an RTA itself can strengthen business connection between countries, partially solve incomplete information problems, and enhance trade. In this paper, we regard such overall trade-enhancement effects of RTAs other than direct effects of tariff removal as trade creation effects due to the removal of NTBs.<sup>1</sup>

Although many empirical studies have been conducted on RTA effects on trade, it remains unknown whether such effects come mainly from tariff reduction or the removal of NTBs. The academic literature on RTAs often estimates gravity equations for bilateral trade. Examples of the recent studies include Baier and Bergstrand (2007), Caporale *et al.* (2009), Medvedev (2010), Roy (2010), and Vicard (2009). These studies introduce to a gravity equation a dummy variable that takes the value one if trading countries belong to the same RTA and zero otherwise. Cipollina and Salvatici (2010) conduct a meta-analysis for 85 of such papers and conclude a positive RTA impact on bilateral trade. However, most of the studies demonstrate the whole effects of RTAs on trade without differentiating effects of tariff reduction from those of NTB

---

<sup>1</sup> For example, Hayakawa and Kimura (2015) found that RTAs under GATT Article XXIV and the Enabling Clause are associated with the 2.1 and 2.4 percent lower NTBs, respectively.

removal.

Against this backdrop, the purpose of this paper is to separately estimate effects of tariff reduction and NTB removals through RTAs. Our identification strategy is to examine effects of RTAs on trade in “ineligible” and “eligible” products separately. In RTAs, countries do not necessarily eliminate tariffs for all products. For some products, tariffs on the most-favored-nations (MFN) basis are already zero so that further preferential tariffs cannot be placed. In addition, some “sensitive” products are excluded from the list of tariff reduction. These products are here called “ineligible products”. When exporting such ineligible products to RTA member countries, exporters cannot enjoy any tariff advantage (since their tariff rates do not change). Nevertheless, if RTAs contributed to eliminating some portions of NTBs in member countries, they could still enjoy some positive effects even for ineligible products. Thus, we estimate effects of NTB removal by examining effects of RTAs on trade in ineligible products. On the other hand, trade in eligible products among RTA members would be benefited by both tariff reduction and NTB elimination. Thus, we estimate the total effects of tariff elimination and NTB removal on trade by examining effects of RTAs on trade in eligible products.

A challenging issue in decomposing effects into those coming from tariff reduction and those from NTB removal is to separate trade data into eligible and ineligible products. In RTAs, eligibility is defined at each country’s most detailed tariff-line level. Namely, without exploiting the trade data at a tariff-line level, we cannot quantify trade separately for ineligible and eligible products. In most of the previous studies, major data sources in gravity analysis are Direction of Trade by the International Monetary Fund and the UN Comtrade by the United Nations, neither of which provides such detailed trade data. Instead, this paper derives trade data from the World Trade Atlas (WTA) by Global Trade Information Services, in which trade data for a large number of countries are available at each country’s detailed tariff-line level. Specifically, we employ tariff-line-level import data for 46 countries for our gravity estimation. The number of export countries is 174. The sample years are restricted from 2007 to 2011 to keep the version of harmonized system (HS) consistent, i.e., HS2007. As a result, our dataset potentially includes approximately 360 million of observations though we encounter a lot of “zero” trade in a large number of finely classified commodities. No

previous studies have estimated gravity equations with such a detailed and large dataset.

After estimating trade creation effects of RTAs for ineligible and eligible products with the whole samples, we further investigate those effects by introducing interacting terms. One variation is to separate differentiated products from non-differentiated products following the definition provided by Rauch (1999). It is an empirical question whether tariff reduction and NTB removal may affect differently compared with non-differentiated products. Another is to decompose trade by income levels of exporters and importers. Low-income countries tend to have higher MFN tariffs and trade barriers in general than high-income countries. Although RTAs formed by low-income countries are often criticized as those of low quality, incremental trade creation effects could be large. We will check this intuition with our dataset. Furthermore, we investigate how effects of RTAs on trade in eligible products change according to the magnitude of tariff margins, i.e., gaps between RTA preferential rates and MFN rates. When exporting even to RTA partners, exporters do not enjoy benefits from RTA preferential rates if they do not proactively utilize preferential arrangements. Since the usage of RTA preferential rates requires exporters to comply with so-called rules of origin, incurring additional cost for the exporters, exporters do not necessarily use them. Several studies show that preferential rates are more likely to be utilized when exporting products with larger tariff margins (Bureau *et al.*, 2007; Cadot *et al.*, 2006; Francois *et al.*, 2006; Manchin, 2006; Hayakawa *et al.*, 2014; Hakobyan, 2015). Therefore, the effects of RTAs on trade in eligible products should be larger in products with larger tariff margins.

The rest of this paper is organized as follows. The next section introduces our detailed trade data and the estimation specification. Section 3 presents the estimation results on the RTA effects of tariff reduction and NTB elimination. Section 4 concludes.

## 2. Data and Methodology

This section first introduces our key dataset, which includes the import data at each country's tariff-line level. Then, we specify our gravity equations.

### 2.1. Tariff-line Level Data

Only a limited number of countries provide detailed tariff-line level trade data online. We draw tariff-line level import data in 46 countries from the database of WTA. These importing countries are selected based on the data accessibility. Furthermore, as explained below, we integrate tariff data with these import data. Therefore, we also do not include import data for countries in which tariff data are not available. For example, Korea is dropped because we have its import data but do not get access to its tariff data.<sup>2</sup> Although the import database covers all the partner (exporting) countries, we drop export countries for which other variables used in our estimation work are not available. As a result, the number of exporting countries becomes 174. In order to keep the version of HS system consistent over the sample years for constructing a panel dataset, we restrict the sample years only to 2007-2011 (i.e., HS2007). Furthermore, even during that period, if a country switches the HS version in the middle, we drop inconsistent import country-year pairs.<sup>3</sup> The number of the sample years thus differs across importing countries (see Appendix).

We match tariff data with the above import data at tariff-line levels. The detailed tariff data are obtained from the database by the World Integrated Trade Solution (WITS). In the database, various kinds of tariff schemes including not only MFN schemes and RTA schemes but also the generalized system of preferences (GSP) is available. Since our main interest in this paper lies in the effects of RTAs, we use only RTA rates in addition to MFN rates. We integrate preferential rates in only RTAs that are included in the Regional Trade Agreements Information System (RTA-IS) in the website of the World Trade Organization. To combine the data on trade and tariffs, we

---

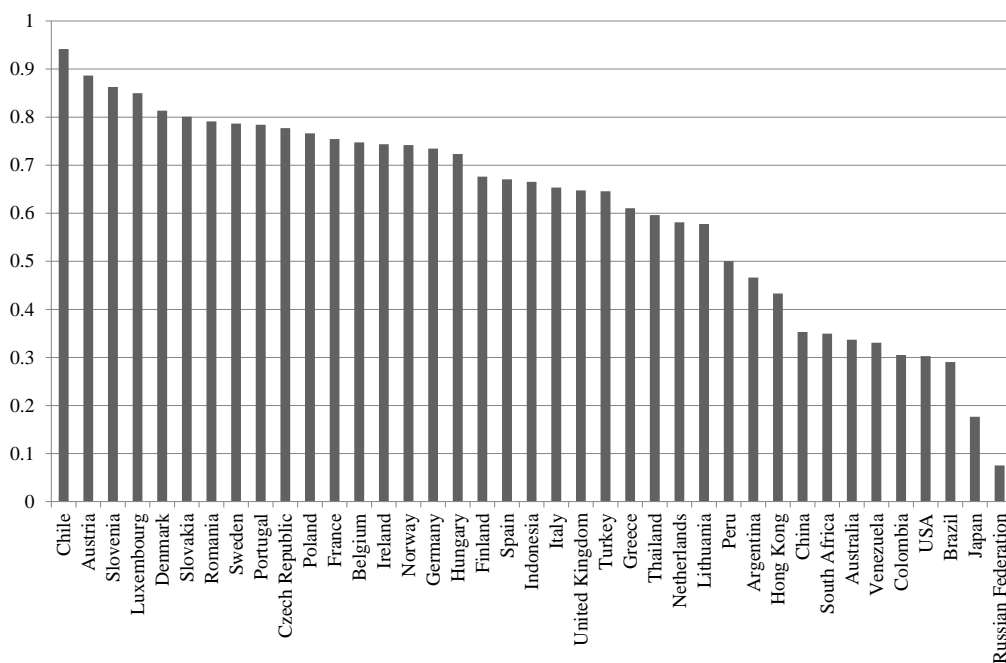
<sup>2</sup> Specifically, the tariff database explained below does not provide RTA preferential rates in Korea.

<sup>3</sup> The Philippines and Venezuela report both import and tariff data in the version of HS2002 during 2007-2011. Since we can still construct the panel data in such cases, we keep the Philippines and Venezuela in our samples.

aggregate the number of digits in tariff data when the number of digits of the most detailed level is finer in the tariff data than the trade data; we pick up the lowest tariff rates within the category in this aggregation. We also include in our database an indicator variable showing whether two countries are the members of the same RTA, which is used in Figure 1 and is called “RTA” dummy variable in the next section. The information on RTA memberships is also obtained from the RTA-IS.

Using these detailed data, we take a brief look at the share of intra-block trade, i.e., the share of trade among RTA members. Figure 1 depicts the share of imports from RTA partner countries in total imports in 2011. It shows that European countries in addition to Chile have high shares, which are more than 70 percent. Indeed, Chile is known as one of the most active countries in terms of forming RTA networks. The results for European countries reflect active trade among European countries, namely, among members in European Union (EU) and European Free Trade Area (EFTA). On the other hand, some Latin American countries in addition to countries such as China, the U.S., and Japan have low shares, which are less than 40 percent. Indeed, these countries have not yet formed RTAs with their major trading partners.

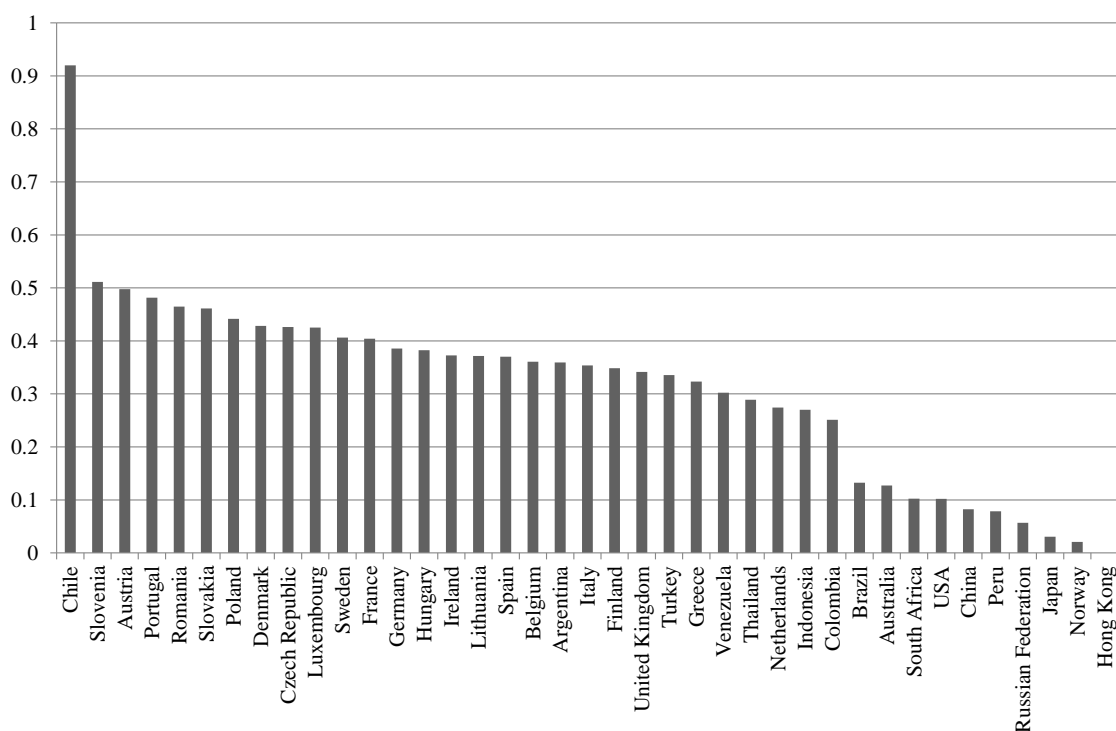
**Figure 1: Share of Imports from RTA Partners**



Source: Authors’ computation

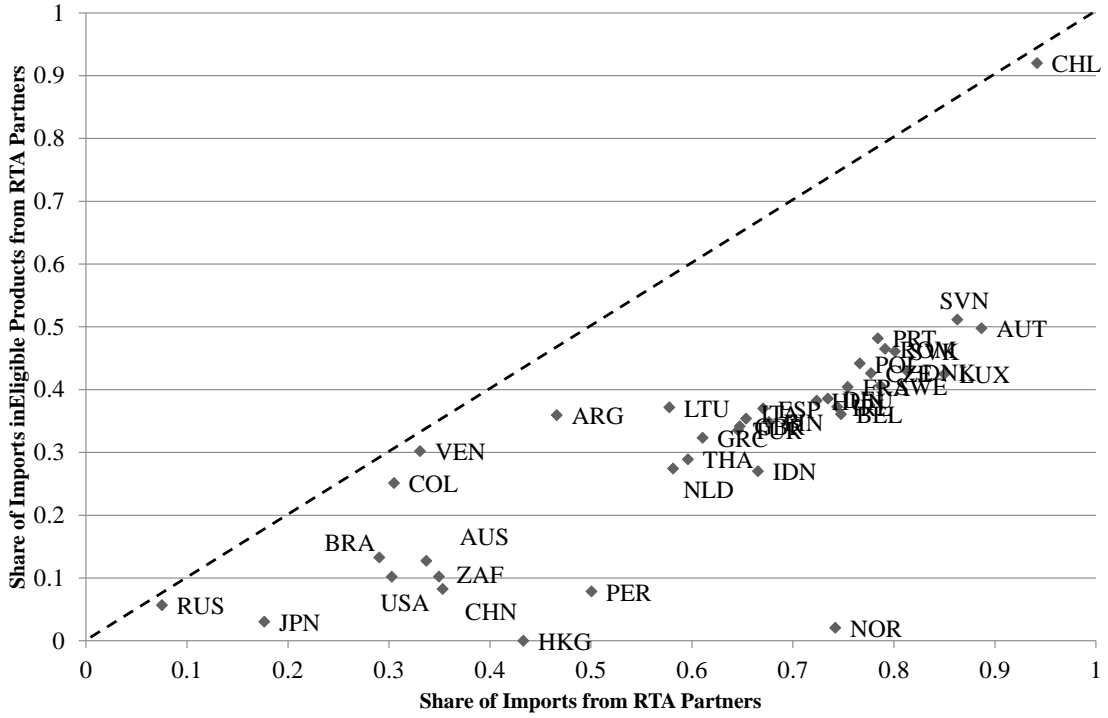
Figure 2 depicts the share of imports in products eligible to RTA schemes in the total import values in 2011. To identify RTA eligibility, we need to use the tariff-line level information. We make use of the fineness of our dataset when drawing this figure. Naturally, all countries have substantially lower shares than in Figure 1. A difference between the two shares can be clearly shown in Figure 3. If the liberalization level of RTAs, i.e., the coverage of liberalized products, is low, the share in Figure 2 should also be low. Or, if a country already achieves zero MFN rates for a large number of products, the share in Figure 2 also becomes low because we define RTA eligibility as having lower RTA rates than MFN rates. Remarkable reductions in European countries including Norway are consistent with their high shares of products with zero MFN rates. On the other hand, Chile keeps a high share, i.e., more than 90 percent, in Figure 2, which implies that Chile keeps positive MFN rates for the majority of products and gives RTA partners “preferential” rates.

**Figure 2: Share of Imports in Eligible Products from RTA Partners**



Source: Authors' computation.

**Figure 3: Comparison of Two Shares**



Source: Authors' computation.

## 2.2. Specification for Tariff-line Level Trade Data

Using the tariff-line level trade data, we estimate gravity equations. Our baseline gravity equation at the tariff-line level is given by

$$\begin{aligned}
 Imports_{ijpt} = & \exp(\beta_1 RTA_{ijt} + \beta_2 \ln(1 + MFN_{ipt}) + \beta_3 \ln ExGDP_{jt} \\
 & + \beta_4 \ln ImGDP_{it} + \beta_5 \ln Exchange_{ijt} + u_{ijp} + u_t) \\
 & \cdot \epsilon_{ijpt}.
 \end{aligned} \tag{1}$$

$Imports_{ijpt}$  represents bilateral imports of country  $i$  from country  $j$  in tariff-line product  $p$  at year  $t$ .  $RTA$  is a binary variable taking the value one if two countries are members of the same RTA and zero otherwise. In order to control for the effects of general tariffs,



we include MFN rates.  $ExGDP$  and  $ImGDP$  are exporter  $j$ 's (real) GDP and importer  $i$ 's (real) GDP, respectively.  $Exchange_{ijt}$  is (real) exchange rates of exporter  $j$ 's currency against importer  $i$ 's currency in year  $t$ .  $u_{ijp}$  and  $u_t$  are country pair-product fixed effects and year fixed effects, respectively.  $\varepsilon$  is the disturbance term.

There are two issues to be noted on equation (1). One is that, since the commodity code at a tariff-line level is different across import countries, it is technically impossible to include tariff-line product fixed effects, i.e.,  $u_p$ . In order to control for product fixed effects, it is thus necessary at least to introduce tariff-line product-importer fixed effects, i.e.,  $u_{ip}$ . Instead of them, we will introduce finer fixed effects, i.e., country pair-product fixed effects, which will also contribute to addressing the endogeneity issue in RTA variable, as suggested in Baier and Bergstrand (2007).<sup>4</sup> The inclusion of country pair-product fixed effects means that we would detect trade creation effects of RTAs concluded in the middle of our sample period; for country pairs connected with or without RTAs all the way in the sample period, RTA effects are wholly controlled by the fixed effects.<sup>5</sup>

The other is that this equation does not control for multilateral resistance terms in the way of Anderson and van Wincoop (2003) or Feenstra (2002). For example, the ideal version of Feenstra's way in our case is to include exporter-product-year (i.e.,  $u_{jpt}$ ) and importer-product-year (i.e.,  $u_{ipt}$ ) fixed effects. Roughly, each country has

---

<sup>4</sup> Baier and Bergstrand (2007) closely examined this issue and tried a wide array of economic and political instrument variables, but concluded that the instrument variable method is not reliable due to the lack of suitable instruments. As a result, Baier and Bergstrand suggested the use of panel data with country pair fixed effects. This estimation enables us to isolate the impact of a RTA on bilateral trade from any time-invariant country pair specific effects, some of which are related with both bilateral trade and the probability of RTA formation. In our context, the introduction of country pair-product fixed effects will be more appropriate.

<sup>5</sup> In our dataset, 37 new RTAs are concluded in the middle of our sample period. Since some of the RTAs are concluded between a country and EU, EFTA, ASEAN, or other customs unions/free trade areas, the number of country pairs switching their status from no RTAs to having an RTA is way above 300.

around 8,000 tariff lines. Furthermore, our sample includes multiple import countries, multiple export countries, and multiple years. Therefore, with controlling for country pair-product fixed effects, the inclusion of these fixed effects requires a massive matrix inversion that is beyond the capability of commonly used statistical software. Thus, following Vandebussche and Zanardi (2010), we introduce the bilateral real exchange rates, together with country pair-product fixed effects, to partially control for multilateral resistance terms.

Next, we decompose the trade creation effects of RTAs into two: effects due to tariff reduction and NTB removal. To do that, we replace the previous RTA dummy variable by Ineligible and Eligible variables, to separate out the effects of tariff reduction and NTB removal. The former variable takes the value one if two countries are the members of the same RTA but the preferential rates lower than MFN rates are not available, and zero otherwise. Eligible variable takes the value one if two countries are the members of the same RTA and the preferential rates lower than MFN rates are available, and zero otherwise. Equation (1) is modified as follows:

$$\begin{aligned}
 & Imports_{ijpt} \\
 = & \exp(\beta_1 Ineligible_{ijpt} + \beta_2 Eligible_{ijpt} + \beta_3 \ln(1 + MFN_{ipt}) + \beta_4 \ln ExGDP_{jt} \\
 & + \beta_5 \ln ImGDP_{it} + \beta_6 \ln Exchange_{ijt} + u_{ijp} + u_t) \\
 & \cdot \epsilon_{ijpt}.
 \end{aligned} \tag{2}$$

The coefficient for Ineligible is expected to capture only the effects of NTB removal while the coefficient for Eligible represents the sum of the effects of NTB removal and tariff reduction.

The data sources are as follows. As mentioned in the previous subsection, those on imports are the database of WTA while we obtain the information on RTA,

Ineligible, and Eligible dummy variables from the databases of WITS and RTA-IS. The data on MFN rates are also from the database of WITS. We draw the data on GDP, GDP deflator, and bilateral exchange rates from the World Development Indicator. GDP deflator is used for deflating GDP and exchange rates.

### **3. Estimation Results**

This section reports estimation results of our gravity equation exercise. We first show the whole effect of RTAs by estimating equation (1) and then the effects of tariff reduction and NTB elimination through RTAs by estimating equation (2). Some additional estimation is also conducted. The basic statistics for these analyses are provided in Table 1. In our 36,591,139 samples of country pair-product imports in 2007 -2011, the mean of RTA Dummy is 0.5157, i.e., 52 percent out of the whole samples are trade between RTA members, which is the sum of the mean of Ineligible Dummy (0.2004) and that of Eligible Dummy (0.3152). The mean of  $\ln(1+MFN)$  is 0.0570, which indicates that the simple average of MFN tariffs is as low as 5.87 percent ( $\exp(0.0570) - 1$ ), though the standard deviation is large (0.0801). The mean of Margin, gaps between RTA tariffs and MFN tariffs, is 2.79 percent, and its standard deviation is as large as 0.0944. Because our samples include a large number of importers in EU, RTA and MFN average tariff rates seem to be low compared with the world average.

**Table 1: Basic Statistics**

	Obs	Mean	Std. Dev.	Min	Max
Values	36,591,139	1,481,695	5.53E+07	0	4.69E+10
RTA Dummy	36,591,139	0.5157	0.4998	0	1
* Differentiated	22,708,744	0.3332	0.4713	0	1
* Margin	22,708,744	0.0279	0.0944	0	98.8
* Square of Margin	22,708,744	0.0097	4.6168	0	9,758.8
* Cube of Margin	22,708,744	0.2366	452.5166	0	964,043.7
Ineligible Dummy	36,591,139	0.2004	0.4003	0	1
* Differentiated	22,708,744	0.1108	0.3138	0	1
* High Exporter-High Importer	22,708,744	0.1237	0.3292	0	1
* High Exporter-Low Importer	22,708,744	0.0288	0.1673	0	1
* Low Exporter- High Importer	22,708,744	0.0274	0.1631	0	1
Eligible Dummy	36,591,139	0.3152	0.4646	0	1
* Differentiated	22,708,744	0.2224	0.4159	0	1
* High Exporter-High Importer	22,708,744	0.2242	0.4170	0	1
* High Exporter-Low Importer	22,708,744	0.0548	0.2276	0	1
* Low Exporter- High Importer	22,708,744	0.0334	0.1797	0	1
ln (1+MFN)	36,591,139	0.0570	0.0801	0	4.6030
* High Exporter-High Importer	22,708,744	0.0221	0.0575	0	4.6030
* High Exporter-Low Importer	22,708,744	0.0160	0.0464	0	2.6370
* Low Exporter- High Importer	22,708,744	0.0085	0.0339	0	4.6030
ln ExGDP	36,591,139	30.3132	1.7406	22.1011	33.8467
ln ImGDP	36,591,139	30.5520	1.3827	27.2501	33.8467
ln Exchange	36,591,139	0.3490	3.0982	-10.3793	23.2556

*Source:* Authors' computation

### 3.1. The Whole Effect of RTAs

We estimate equation (1) to examine the whole effect of RTAs. Before doing that at a tariff-line level, we estimate a conventional gravity equation with the total trade values among the same set of countries for the sake of comparison. The estimation results for the total values by the ordinary least squares (OLS) are provided in column "Total" in "OLS" in Table 2. We regress the log of trade values by simply dropping observations with zero trade values. In this estimation, we control for country pair fixed effects, not country pair-product fixed effects. We include the simple average of MFN rates for each country and each year. The coefficient for RTA dummy is negatively significant, indicating possible negative effects of RTAs on trade among member countries. Obviously, this result is not consistent with the usual expectation. The results for the other variables are as follows. As is consistent with our prior, the

coefficient for MFN rates is estimated to be significantly negative. As in the usual gravity results, the coefficients for exporter GDP and importer GDP are positively significant. The real exchange rates have an insignificant sign in its coefficient.

**Table 2: Baseline Results**

	OLS		PPML	
	Total	Tariff-line	Total	Tariff-line
RTA Dummy	-0.264*** [0.081]	0.078*** [0.005]	-0.007 [0.046]	0.036 [0.026]
ln (1+MFN)	-2.085** [0.879]	-0.525*** [0.024]	-3.439*** [1.239]	-0.284** [0.111]
ln ExGDP	0.221*** [0.077]	0.182*** [0.005]	0.149** [0.070]	0.267*** [0.033]
ln ImGDP	0.819*** [0.084]	0.771*** [0.005]	0.776*** [0.060]	0.764*** [0.037]
ln Exchange	0.001 [0.010]	-0.006*** [0.001]	-0.040*** [0.014]	-0.024*** [0.007]
Number of obs.	33,135	22,708,744	34,825	36,591,139
Adj. R-sq	0.9313	0.8195		
Log likelihood			-8.07.E+11	-7.17.E+12

*Notes:* \*\*\*, \*\*, and \* indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include year dummy variables. Also, we include country pair fixed effects in column “Total” and country pair-tariff line fixed effects in column “Tariff-line”.

The estimation result at a tariff-line level is shown in column “Tariff-line” in Table 2. The signs of the coefficients for MFN rates as well as the exporter and importer GDPs are unchanged, though the magnitude of the coefficient for MFN rates is notably decreased. The coefficient for RTA turns out to be significantly positive. Specifically, the conclusion of RTAs increases trade values among member countries by around 8 percent. This contrasting result implies that the aggregation level matters in the estimation of gravity equations. As seen in the case of RTA dummy, even the sign of coefficients may be changed according to the aggregation level. The coefficient for the real exchange rates becomes significantly negative; the depreciation of exporter’s currency against importer’s currency unexpectedly decreases trade values in US dollars.

Next, we check the sensitivity of our results in terms of excluding observations

with zero-valued trade. This exercise is important because the number of observations dropped due to zero values becomes much larger in detailed disaggregated levels. For this exercise, we employ the pseudo-poisson maximum likelihood (PPML) technique (Silva and Tenreyro, 2006).<sup>6</sup> It is noted that our PPML estimation drops country pair-product observations that have zero-valued trade in all sample years; still 38 percent of 36,591,149 samples are zeros. The results are provided in columns “PPML”. Except for RTA dummy variable, the results in all other variables are similar to OLS results. The coefficients for RTA dummy variable become insignificant both in “Total” and “Tariff-line”.

### **3.2. Tariff Reduction versus NTB Elimination**

In this subsection, we estimate the effects of tariff reduction and NTB elimination on trade by estimating equation (2) at a tariff-line level. The OLS results for only observations with positive trade values are provided in column “OLS” in Table 3. Both coefficients for Ineligible and Eligible dummy variables are positively significant. The significantly positive coefficient for Ineligible implies that the elimination of NTBs through RTAs contributes to increasing trade among members. Specifically, on average, RTAs increase imports of ineligible products and eligible products by 4 percent and 15 percent, considering the logarithm in the regression equation, respectively. The difference in these increases, i.e., 11 percent, indicates the average effect of tariff reduction through RTAs. The results for the other variables are qualitatively same as those in “Tariff-line” in Table 2.

---

<sup>6</sup> Helpman, *et al.* (2008) estimate the extended technique of Heckman two-step estimation in order to deal with zero-valued trade.

**Table 3: Tariff Reduction versus NTB Elimination**

	OLS	PPML
Ineligible Dummy	0.036*** [0.005]	-0.028 [0.029]
Eligible Dummy	0.140*** [0.006]	0.299*** [0.034]
ln (1+MFN)	-0.628*** [0.025]	-0.823*** [0.144]
ln ExGDP	0.181*** [0.005]	0.258*** [0.033]
ln ImGDP	0.770*** [0.005]	0.760*** [0.037]
ln Exchange	-0.006*** [0.001]	-0.026*** [0.007]
Number of obs.	22,708,744	36,591,139
Adj. R-sq	0.8196	
Log likelihood		-7.15.E+12

*Notes:* \*\*\*, \*\*, and \* indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

We also estimate the same model by the PPML to include observations with zero-valued trade. The estimation results are reported in column “PPML”. Except for RTA-related variables, the estimation results are qualitatively unchanged with those in the case of OLS. However, the coefficient for Ineligible dummy turns out to be insignificant while that for Eligible dummy is still significantly positive. Specifically, the imports of eligible products increase by 35 percent with considering the logarithm. Thus, so far we may say that RTAs contribute to increasing imports of eligible products perhaps due to the tariff reduction while the effects of NTB elimination through RTAs do not seem to be robust.

### 3.3. Extension

We next examine differences in the effects of RTAs between differentiated and non-differentiated products. There are two possible opposite forces in cases of differentiated products. One is that due to the lower demand elasticity with respect to prices, tariff effects are expected to be smaller for differentiated products than for non-

differentiated products. The other is that the effects of NTB elimination may be larger for differentiated products because, for example, those products are more likely to include creative contents and thus their trade is expected to be more sensitive to intellectual property rights protection in import countries. To detect possible differences between differentiated and non-differentiated products, we introduce interaction terms of RTA related-variables with “Differentiated”, which takes the value one for differentiated products in the “liberal” classification of products by Rauch (1999). As demonstrated in Ai and Norton (2003), in the case of non-linear models such as PPML, the marginal effect of a change in both interacted variables is not equal to that of changing just the interaction term. Therefore, in order to make our interpretation simple, we estimate this model with interaction terms by the OLS (for observations with only positive imports) rather than the PPML.

The estimation results are provided in Table 4. Coefficients for variables other than RTA-related variables are basically unchanged from those in the previous tables. In column (I), the coefficient for RTA dummy *per se* is again estimated to be significantly positive. Also, its interaction with an indicator on differentiated products has a negatively significant coefficient. This result seems to reflect low demand elasticities in the case of differentiated products. In column (II), the coefficients for Ineligible and Eligible dummies are positively significant. Their interaction terms with Differentiated have negatively significant coefficients again. The negative coefficients for the interaction terms for both Ineligible and Eligible indicate that not only tariff reduction but also NTB elimination enhances trade to a lesser extent in cases of differentiated products than those of non-differentiated products.



**Table 4. OLS Results: RTA Effects in Differentiated Products**

	(I)	(II)
RTA Dummy	0.111*** [0.009]	
* Differentiated	-0.050*** [0.010]	
Ineligible Dummy		0.072*** [0.009]
* Differentiated		-0.052*** [0.011]
Eligible Dummy		0.179*** [0.010]
* Differentiated		-0.057*** [0.012]
ln (1+MFN)	-0.525*** [0.024]	-0.629*** [0.025]
ln ExGDP	0.181*** [0.005]	0.181*** [0.005]
ln ImGDP	0.771*** [0.005]	0.770*** [0.005]
ln Exchange	-0.006*** [0.001]	-0.006*** [0.001]
Number of obs.	22,708,744	22,708,744
Adj. R-sq	0.8195	0.8196

*Notes:* The dependent variable is a log of imports. \*\*\*, \*\*, and \* indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

Next, we investigate how RTA effects differ according to income levels of exporting and importing countries. To do that, we introduce interaction terms of Ineligible and Eligible dummies with three indicator variables being classified by income levels of exporters and importers, i.e., high-income exporters and high-income importers, high-income exporters and low-income importers, and low-income exporters and high-income importers. Then the base of the regression without these indicators represents trade from low-income exporters to low-income importers.<sup>7</sup> The

<sup>7</sup> Following World Bank classifications of income as of 2010, we divide our sample countries into high and low-income countries. The following countries are classified as high income countries: ABW, ADO, ANT, ARE, AUS, AUT, BEL, BHR, BHS, BMU, BRB, BRN, CAN, CHE, CHI, CYM, CYP, CZE, DEU, DNK, ESP, EST, FIN, FRA, FRO, GBR, GIB, GNQ, GRC, GRL, GUM, HKG, HRV, HUN, IMY, IRL, ISL, ISR, ITA, JPN, KOR, KWT, LIE, LUX, LVA, MAC, MCO, MLT, MNP, NCL, NLD, NOR, NZL, OMN, POL, PRI, PRT, PYF, QAT, SAU, SGP, SMR, SVK,

estimation results by OLS are reported in Table 5. While column (I) includes such interaction terms with Ineligible dummy, those with Eligible dummy are introduced in column (II). Column (III) includes those with both Ineligible and Eligible dummies. Column (IV) further introduces those with MFN rates.

**Table 5: OLS Results by Income Levels of Exporters and Importers**

	(I)	(II)	(III)	(IV)
Ineligible Dummy	0.082*** [0.009]	0.052*** [0.005]	0.330*** [0.012]	0.329*** [0.012]
* High Exporter-High Importer	-0.077*** [0.011]		-0.418*** [0.015]	-0.406*** [0.015]
* High Exporter-Low Importer	-0.046*** [0.011]		-0.322*** [0.017]	-0.328*** [0.017]
* Low Exporter- High Importer	-0.066*** [0.012]		-0.330*** [0.015]	-0.325*** [0.015]
Eligible Dummy	0.140*** [0.006]	0.288*** [0.011]	0.545*** [0.015]	0.574*** [0.015]
* High Exporter-High Importer		-0.187*** [0.012]	-0.536*** [0.018]	-0.571*** [0.018]
* High Exporter-Low Importer		-0.150*** [0.013]	-0.441*** [0.020]	-0.457*** [0.020]
* Low Exporter- High Importer		-0.188*** [0.014]	-0.462*** [0.018]	-0.489*** [0.018]
ln (1+MFN)	-0.639*** [0.025]	-0.611*** [0.025]	-0.639*** [0.025]	-2.293*** [0.087]
* High Exporter-High Importer				2.012*** [0.092]
* High Exporter-Low Importer				1.115*** [0.108]
* Low Exporter- High Importer				1.866*** [0.105]
ln ExGDP	0.181*** [0.005]	0.178*** [0.005]	0.175*** [0.005]	0.171*** [0.005]
ln ImGDP	0.771*** [0.005]	0.767*** [0.005]	0.765*** [0.005]	0.760*** [0.005]
ln Exchange	-0.006*** [0.001]	-0.006*** [0.001]	-0.006*** [0.001]	-0.006*** [0.001]
Number of obs.	22,708,744	22,708,744	22,708,744	22,708,744
Adj. R-sq	0.8196	0.8196	0.8196	0.8196

*Notes:* The dependent variable is a log of imports. \*\*\*, \*\*, and \* indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

SVN, SWE, TCA, TTO, USA, VIR.

According to the estimated coefficients in column (IV), we can interpret the results as follows. First, RTA effects are strongly positive for low-income exporters/importers trade. The conclusion of an RTA enhances trade by 39 percent due to the removal of NTBs and by 39 percent (78 percent - 39 percent) due to the reduction in tariffs, again with considering the logarithm in the regression equation. The height of MFN tariffs does also matter; the higher the MFN tariffs, the smaller the imports. Second, in contrast, RTA effects are substantially weak for high-income exporters/high-income importers trade. Considering the magnitude of the coefficients for the interacting terms, we can see that the coefficient for Eligible becomes almost zero while that for Ineligible goes to negative. The coefficient for MFN tariffs also becomes almost zero. Third, transactions between high-income exporters and low-income importers and between low-income exporters and high-income importers are placed in the middle. It shows weakly positive coefficients for Eligible while almost zero for Ineligible. In sum, trade-enhancing effects of RTAs are substantial in cases of RTAs between low-income countries while weak in cases of RTAs with high-income countries.

Last, we follow another identification strategy on separately estimating the effects of tariff reduction and NTB elimination. Specifically, we include the interaction term of tariff margin with RTA dummy. The estimation equation is modified as follows:

$$\ln Imports_{ijpt} = \beta_1 RTA_{ijt} + \beta_2 RTA_{ijt} \cdot Margin_{ijpt} + \beta_3 \ln(1 + MFN_{ipt}) + \beta_4 \ln ExGDP_{jt} + \beta_5 \ln ImGDP_{it} + \beta_6 \ln Exchange_{ijt} + u_{ijp} + u_t + \epsilon_{ijpt}. \quad (3)$$

Margin represents a difference between MFN and RTA rates. In this specification,  $\beta_1$  shows the effects of NTB elimination through RTAs while  $\beta_2$  indicates the additional effects of RTAs based on tariff reduction. We estimate this model with interaction terms by the OLS.

The results are reported in column (I) in Table 6. The results for the previous variables are unchanged. The coefficient for RTA dummy is significantly positive, indicating the positive effects of NTB elimination through RTAs. Its interaction term with Margin also has a significantly positive coefficient, which implies, as is consistent with our expectation, larger tariff margin leads to larger trade creation effects of RTAs. However, its magnitude looks too small, compared with that of RTA dummy. The

magnitude of tariff margin multiplied by its coefficient corresponds to the effects of tariff reduction through RTAs. Thus, for example, only when tariff margin would be larger than 115 percent ( $= 100 * 0.076 / 0.066$ ), the effects of tariff reduction would become larger than those of NTB elimination. However, such magnitude of tariff margin is rare. For example, Table 1 shows that its sample average is 2.79 percent (the maximum is 980 percent though). In short, this result does not seem to be consistent with the findings in Table 3 where the coefficient for Eligible dummy is larger than that for Ineligible dummy.

**Table 6. OLS Results: Trade Creation according to Tariff Margin**

	(I)	(II)	(III)
RTA Dummy	0.076*** [0.005]	0.071*** [0.005]	0.067*** [0.005]
* Margin	0.066*** [0.018]	0.276*** [0.026]	0.472*** [0.029]
* Square of Margin		-0.003*** [0.000]	-0.019*** [0.002]
* Cube of Margin			0.0002*** [0.000]
ln (1+MFN)	-0.597*** [0.029]	-0.757*** [0.033]	-0.868*** [0.034]
ln ExGDP	0.181*** [0.005]	0.180*** [0.005]	0.180*** [0.005]
ln ImGDP	0.770*** [0.005]	0.768*** [0.005]	0.766*** [0.005]
ln Exchange	-0.006*** [0.001]	-0.006*** [0.001]	-0.006*** [0.001]
Number of obs.	22,708,744	22,708,744	22,708,744
Adj. R-sq	0.8195	0.8195	0.8195

*Notes:* The dependent variable is a log of imports. \*\*\*, \*\*, and \* indicate 1%, 5%, and 10% significance, respectively. In the parenthesis is the robust standard error. In all specifications, we include country pair-tariff line and year dummy variables.

One possible reason for such a small effect of tariff reduction is its non-linear relationship with trade creation effects. To see this, we introduce interaction terms of RTA dummy with not only tariff margin but also its square and cube terms into our model, of which estimation results are reported in columns (II) and (III). All margin-related variables have significant coefficients. In column (II), the tariff margin corresponding to the maximal trade-enhancing effect along the inverse quadratic shape is approximately 55 percent while the tariff margins for the local maximum and the

local minimum of the cubic curve in column (III) are 15 percent and 70 percent. Namely, although a larger tariff margin on average leads to larger trade creation effects, the relationship between tariff margin and trade creation effects is highly non-linear.

#### **4. Concluding Remarks**

This paper decomposed the RTAs' effects into the tariff reduction effects and NTB elimination effects on trade by the use of the trade data at a tariff-line level. Specifically, making the full use of the fineness of our dataset, we identified the effects of tariff reduction and NTB elimination through RTAs by estimating the effects of RTAs in products ineligible and eligible to RTA schemes separately. Our major findings are as follows. First, for the whole samples, there are significantly positive trade-enhancing effects due to tariff reduction while weak effects are detected for NTB removal. The OLS regression without zero-valued trade indicates trade creation effects of tariff reduction and NTB removal by RTAs at the magnitude of 11 percent and 4 percent. However, the PPML regression including plenty of samples with zero-valued trade presents inconclusive results for the effect of NTB removal while the positive effect of tariff removal seems to be robust. Second, effects of tariff reduction and NTB removal are smaller for differentiated products than for non-differentiated products, probably due to the low price elasticity of demand for differentiated products. RTAs seem to have stronger trade creation effects in cases of non-differentiated products. Third, trade creation effects of tariff reduction and NTB removal are substantially large in cases of trade between low-income countries while weak in cases of trade including high-income countries. The estimates indicate that trade between low-income countries is enhanced by 39 percent due to either tariff reduction or NTB removal while effects are much smaller in cases of trade between high and high, between high and low, or between low and high. Fourth, although larger tariff margins between MFN tariffs and RTA preferential tariffs on average lead to larger trade creation effects, the relationship between tariff margins and trade creation effects is highly non-linear.

The results certainly have to be interpreted carefully. With country pair-product

fixed effects, we just pick up effects of new RTAs concluded in the middle of the sample period of 2007-2011. Although our sample set includes a substantial number of bilateral trade combinations with status switching from no RTA to having an RTA, we cannot a priori say that these RTAs are typical in assessing RTA effects in general. In addition, just a few years after the conclusion would be too short to capture the whole trade creation effects of RTAs. Nevertheless, it is important to quantitatively assess the trade creation effects of RTAs with the separation of effects coming from tariff reduction and NTB removal and find strong trade creation effects in cases of non-differentiated products as well as trade between low-income countries. These can be done only by working with highly disaggregated trade and tariff data.

## References

- Ai, C.R. and E.C. Norton (2003), 'Interaction Terms in Logit and Probit Models', *Economics Letters*, 80(1), pp.123-129.
- Anderson, J.E. and E. van Wincoop (2003), 'Gravity with Gravitas: A Solution to the Border Puzzle', *American Economic Review*, 93(1), pp.170-192.
- Baier, S.L. and J.H. Bergstrand (2007), 'Do Free Trade Agreements Actually Increase Members' International Trade?', *Journal of International Economics*, 71(1), pp.72-95.
- Bureau, J., R. Chakir and J. Gallezot (2007), 'The Utilisation of Trade Preferences for Developing Countries in the Agri-food Sector', *Journal of Agricultural Economics*, 58(2), pp.175-198.
- Cadot, O., C. Carrere, J. De Melo and B. Tumurchudur (2006), 'Product-specific Rules of Origin in EU and US Preferential Trading Arrangements: An Assessment', *World Trade Review*, 5(2), pp.199-224.
- Caporale, G., C. Rault, R. Sova and A. Sova (2009), 'On the Bilateral Trade Effects of Free Trade Agreements between the EU-15 and the CEEC-4 countries', *Review of World Economics*, 145(2), pp.189-206.
- Cipollina, M. and L. Salvatici (2010), 'Reciprocal Trade Agreements in Gravity Models: A Meta-Analysis', *Review of International Economics*, 18(1), pp.63-80.
- Feenstra, R. (2002), 'Border Effects and the Gravity Equation: Consistent Methods for Estimation', *Scottish Journal of Political Economy*, 49(5), pp.491-506.
- Francois, J., B. Hoekman and M. Manchin (2006), 'Preference Erosion and

- Multilateral Trade Liberalization', *World Bank Economic Review*, 20(2), pp.197–216.
- Hakobyan, S. (2015), 'Accounting for Underutilization of Trade Preference Programs: U.S. Generalized System of Preferences', *Canadian Journal of Economics*, 48(2).
- Hayakawa, K., H. Kim and H. Lee (2014), 'Determinants on Utilization of the Korea-ASEAN Free Trade Agreement: Margin Effect, Scale Effect, and ROO Effect', *World Trade Review*, 13(3), pp.499-515.
- Hayakawa, K. and F. Kimura (2015), 'How Much Do Free Trade Agreements Reduce Impediments to Trade?', Forthcoming in *Open Economies Review*.
- Helpman, E., M. Melitz and Y. Rubinstein (2008), 'Estimating Trade Flows: Trading Partners and Trading Volumes', *Quarterly Journal of Economics*, 123(2), pp.441-487.
- Manchin, M. (2006), 'Preference Utilisation and Tariff Reduction in EU Imports from ACP Countries', *The World Economy*, 29(9), pp.1243-1266.
- Medvedev, D. (2010), 'Preferential Trade Agreements and their Role in World Trade', *Review of World Economics*, 146(2), pp.199-222.
- Rauch, J.E. (1999), 'Networks Versus Markets in International Trade', *Journal of International Economics*, 48(1), pp.7-35.
- Roy, J. (2010), 'Do Customs Union Members Engage in More Bilateral Trade than Free-trade Agreement Members?', *Review of International Economics*, 18(4), pp.663-681.
- Silva, S. and S. Tenreyro (2006), 'The Log of Gravity', *Review of Economics and Statistics*, 88(4), pp.641-658.
- Vandenbussche, H. and M. Zanardi (2010), 'The Chilling Trade Effects of Antidumping Proliferation', *European Economic Review*, 54(6), pp.760-777.
- Vicard, V. (2009), 'On Trade Creation and Regional Trade Agreements: Does Depth Matter?', *Review of World Economics*, 145(2), pp.167-187.

## Appendix. Sample Countries

### A1. Importers

	Tariff-line Digit	Sample Years	Tariff-line Number
Argentina	8	2007 - 2011	Approximately 11,000
Australia	8	2007 - 2011	Approximately 6,000
Austria	8	2007 - 2011	Approximately 10,000
Belgium	8	2007 - 2011	Approximately 10,000
Brazil	8	2007 - 2011	Approximately 10,000
Canada	8	2007 - 2010	Approximately 8,000
Chile	8	2007 - 2011	Approximately 9,000
China	8	2007 - 2011	Approximately 8,000
Colombia	10	2007 - 2011	Approximately 8,000
Costa Rica	10	2008 - 2010	Approximately 10,000
Czech Republic	8	2007 - 2011	Approximately 10,000
Denmark	8	2007 - 2011	Approximately 10,000
Finland	8	2007 - 2011	Approximately 10,000
France	8	2007 - 2011	Approximately 10,000
Germany	8	2007 - 2011	Approximately 10,000
Greece	8	2007 - 2011	Approximately 10,000
Hong Kong	8	2007 - 2011	Approximately 7,000
Hungary	8	2007 - 2011	Approximately 10,000
Indonesia	8	2007 - 2011	Approximately 8,000
Ireland	8	2007 - 2011	Approximately 10,000
Italy	8	2007 - 2011	Approximately 10,000
Japan	9	2007 - 2011	Approximately 9,000
Lithuania	8	2007 - 2011	Approximately 10,000
Luxembourg	8	2007 - 2011	Approximately 10,000
Mexico	8	2008 - 2010	Approximately 12,000
Netherlands	8	2007 - 2011	Approximately 10,000
New Zealand	8	2007 - 2010	Approximately 7,000
Norway	8	2007 - 2011	Approximately 7,000
Panama	8	2007 - 2008	Approximately 9,000
Peru	10	2007 - 2011	Approximately 8,000
Philippines	8	2007 - 2010	Approximately 12,000
Poland	8	2007 - 2011	Approximately 10,000
Portugal	8	2007 - 2011	Approximately 10,000
Romania	8	2007 - 2011	Approximately 10,000
Russian Federation	8	2007 - 2011	Approximately 10,000
Singapore	8	2007 - 2010	Approximately 12,000
Slovakia	8	2007 - 2011	Approximately 10,000
Slovenia	8	2007 - 2011	Approximately 10,000
South Africa	8	2007 - 2011	Approximately 7,000
Spain	8	2007 - 2011	Approximately 10,000
Sweden	8	2007 - 2011	Approximately 10,000
Thailand	8	2007 - 2011	Approximately 8,000
Turkey	8	2007 - 2011	Approximately 10,000
United Kingdom	8	2007 - 2011	Approximately 10,000
USA	8	2007 - 2011	Approximately 10,000
Venezuela	10	2007 - 2011	Approximately 7,000

### A2. Exporters (174)



Afghanistan; Albania; Algeria; Angola; Antigua and Barbuda; Argentina; Armenia; Aruba; Australia; Austria; Azerbaijan; Bahamas; Bahrain; Bangladesh; Barbados; Belarus; Belgium; Belize; Benin; Bermuda; Bhutan; Bolivia; Bosnia and Herzegovina; Botswana; Brazil; Brunei Darussalam; Bulgaria; Burkina Faso; Burundi; Cambodia; Cameroon; Canada; Central African Republic; Chad; Chile; China; Colombia; Comoros; Congo; Congo (Democratic Republic of the); Costa Rica; Croatia; Cuba; Cyprus; Czech Republic; Cote d'Ivoire; Denmark; Djibouti; Dominica; Dominican Republic; East Timor; Ecuador; Egypt; El Salvador; Eritrea; Estonia; Ethiopia; Fiji; Finland; France; Gabon; Gambia; Georgia; Germany; Ghana; Greece; Greenland; Guatemala; Guinea; Guinea-Bissau; Guyana; Haiti; Honduras; Hong Kong; Hungary; Iceland; India; Indonesia; Iran; Iraq; Ireland; Israel; Italy; Jamaica; Japan; Jordan; Kazakhstan; Kenya; Kiribati; Korea; Kuwait; Kyrgyzstan; Lao People's Democratic Republic; Latvia; Lebanon; Lesotho; Liberia; Libyan Arab Jamahiriya; Lithuania; Luxembourg; Macau; Macedonia (the former Yugoslav Rep. of); Madagascar; Malawi; Malaysia; Maldives; Mali; Malta; Mauritania; Mauritius; Mexico; Moldova, Rep. of; Mongolia; Morocco; Mozambique; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Poland; Portugal; Qatar; Romania; Russian Federation; Rwanda; Sao Tome and Principe; Saudi Arabia; Senegal; Singapore; Slovakia; Slovenia; South Africa; Spain; Sri Lanka; Sudan; Suriname; Swaziland; Sweden; Switzerland; Syrian Arab Republic; Taiwan; Tajikistan; Tanzania, United Rep. of; Thailand; Togo; Tonga; Trinidad and Tobago; Tunisia; Turkey; Turkmenistan; Tuvalu; Uganda; Ukraine; United Arab Emirates; United Kingdom; USA; Uruguay; Vanuatu; Venezuela; Viet Nam; Yemen; Zambia; Zimbabwe.

## ERIA Discussion Paper Series

No.	Author(s)	Title	Year
2015-35	Kazunobu HAYAKAWA, Tadashi ITO, and Fukunari KIMURA	Trade Creation Effects of Regional Trade Agreements: Tariff Reduction versus Non-tariff Barrier Removal	Apr 2015
2015-34	Kazunobu HAYAKAWA, Tadashi ITO	Tariff Pass-through of the World-wide Trade: Empirical Evidence at Tariff-line Level	Apr 2015
2015-33	Kazunobu HAYAKAWA, Nuttawut LAKSANAPNYAK UL, and Shujiro URATA	Firm-level Impact of Free Trade Agreements on Import Prices	Apr 2015
2015-32	Ponciano INTAL, Jr.	AEC Blueprint Implementation Performance and Challenges: Investment Liberalization	Apr 2015
2015-31	Emily Christi A. CABEGIN	The Challenge of China and the Role of Deepening ASEAN Integration for the Philippine Semiconductor Industry	Apr 2015
2015-30	Venkatachalam ANBUMOZHI, Alex BOWEN and Puthusserikunnel Devasia JOSE	Market-Based Mechanisms to Promote Renewable Energy in Asia	Apr 2015
2015-29	Venkatachalam ANBUMOZHI	Low Carbon Green Growth in Asia: What is the Scope for Regional Cooperation?	Apr 2015
2015-28	Tan LI and Larry D. QIU	Beyond Trade Creation: Free Trade Agreements and Trade Disputes	Mar 2015
2015-27	Mai Anh NGO	Exporting and Firm-Level Credit Constraints – Evidence from Ghana	Mar 2015
2015-26	Sunghoon CHUNG, Joonhyung LEE, Thomas OSANG	Did China Tire Safeguard Save U.S. Workers?	Mar 2015

No.	Author(s)	Title	Year
2015-25	Esther Ann BØLER, Beata JAVORCIK, Karen Helene ULLTVEI-MOE	Globalization: A Woman's Best Friend? Exporters and the Gender Wage Gap	Mar 2015
2015-24	Tristan Leo Dallo AGUSTIN and Martin SCHRÖDER	The Indian Automotive Industry and the ASEAN Supply Chain Relations	Mar 2015
2015-23	Hideo KOBAYASHI and Yingshan JIN	The CLMV Automobile and Auto Parts Industry	Mar 2015
2015-22	Hideo KOBAYASHI	Current State and Issues of the Automobile and Auto Parts Industries in ASEAN	Mar 2015
2015-21	Yoshifumi FUKUNAGA	Assessing the Progress of ASEAN MRAs on Professional Services	Mar 2015
2015-20	Yoshifumi FUKUNAGA and Hikari ISHIDO	Values and Limitations of the ASEAN Agreement on the Movement of Natural Persons	Mar 2015
2015-19	Nanda NURRIDZKI	Learning from the ASEAN + 1 Model and the ACIA	Mar 2015
2015-18	Patarapong INTARAKUMNER D and Pun-Arj CHAIRATANA and Preeda CHAYANAJIT	Global Production Networks and Host-Site Industrial Upgrading: The Case of the Semiconductor Industry in Thailand	Feb 2015
2015-17	Rajah RASIAH and Yap Xiao SHAN	Institutional Support, Regional Trade Linkages and Technological Capabilities in the Semiconductor Industry in Singapore	Feb 2015
2015-16	Rajah RASIAH and Yap Xiao SHAN	Institutional Support, Regional Trade Linkages and Technological Capabilities in the Semiconductor Industry in Malaysia	Feb 2015
2015-15	Xin Xin KONG, Miao ZHANG and Santha Chenayah RAMU	China's Semiconductor Industry in Global Value Chains	Feb 2015

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2015-14	Tin Htoo NAING and Yap Su FEI	Multinationals, Technology and Regional Linkages in Myanmar's Clothing Industry	Feb 2015
2015-13	Vanthana NOLINTHA and Idris JAJRI	The Garment Industry in Laos: Technological Capabilities, Global Production Chains and Competitiveness	Feb 2015
2015-12	Miao ZHANG, Xin Xin KONG, Santha Chenayah RAMU	The Transformation of the Clothing Industry in China	Feb 2015
2015-11	NGUYEN Dinh Chuc, NGUYEN Dinh Anh, NGUYEN Ha Trang and NGUYEN Ngoc Minh	Host-site institutions, Regional Production Linkages and Technological Upgrading: A study of Automotive Firms in Vietnam	Feb 2015
2015-10	Pararapong INTERAKUMNER D and Kriengkrai TECHAKANONT	Intra-industry Trade, Product Fragmentation and Technological Capability Development in Thai Automotive Industry	Feb 2015
2015-09	Rene E. OFRENEO	Auto and Car Parts Production: Can the Philippines Catch Up with Asia	Feb 2015
2015-08	Rajah RASIAH, Rafat Beigpoor SHAHRIVAR, Abdusy Syakur AMIN	Host-site Support, Foreign Ownership, Regional Linkages and Technological Capabilites: Evidence from Automotive Firms in Indonesia	Feb 2015
2015-07	Yansheng LI, Xin Xin KONG, and Miao ZHANG	Industrial Upgrading in Global Production Networks: Te Case of the Chinese Automotive Industry	Feb 2015
2015-06	Mukul G. ASHER and Fauziah ZEN	Social Protection in ASEAN: Challenges and Initiatives for Post-2015 Vision	Feb 2015
2015-05	Lili Yan ING, Stephen MAGIERA, and Anika WIDIANA	Business Licensing: A Key to Investment Climate Reform	Feb 2015
2015-04	Gemma ESTRADA,	Fiscal Policy and Equity in Advanced	Jan

No.	Author(s)	Title	Year
	James ANGRESANO, Jo Thori LIND, Niku MÄÄTÄNEN, William MCBRIDE, Donghyun PARK, Motohiro SATO, and Karin SVANBORG- SJÖVALL	Economies: Lessons for Asia	2015
2015-03	Erlinda M. MEDALLA	Towards an Enabling Set of Rules of Origin for the Regional Comprehensive Economic Partnership	Jan 2015
2015-02	Archanun KOHPAIBOON and Juthathip JONGWANICH	Use of FTAs from Thai Experience	Jan 2015
2015-01	Misa OKABE	Impact of Free Trade Agreements on Trade in East Asia	Jan 2015
2014-26	Hikari ISHIDO	Coverage of Trade in Services under ASEAN+1 FTAs	Dec 2014
2014-25	Junianto James LOSARI	Searching for an Ideal International Investment Protection Regime for ASEAN + Dialogue Partners (RCEP): Where Do We Begin?	Dec 2014
2014-24	Dayong ZHANG and David C. Broadstock	Impact of International Oil Price Shocks on Consumption Expenditures in ASEAN and East Asia	Nov 2014
2014-23	Dandan ZHANG, Xunpeng SHI, and Yu SHENG	Enhanced Measurement of Energy Market Integration in East Asia: An Application of Dynamic Principal Component Analysis	Nov 2014
2014-22	Yanrui WU	Deregulation, Competition, and Market Integration in China's Electricity Sector	Nov 2014
2014-21	Yanfei LI and Youngho CHANG	Infrastructure Investments for Power Trade and Transmission in ASEAN+2: Costs, Benefits, Long-Term Contracts, and Prioritised	Nov 2014

No.	Author(s)	Title	Year
		Development	
2014-20	Yu SHENG, Yanrui WU, Xunpeng SHI, Dandan ZHANG	Market Integration and Energy Trade Efficiency: An Application of Malmqvist Index to Analyse Multi-Product Trade	Nov 2014
2014-19	Andindya BHATTACHARYA and Tania BHATTACHARYA	ASEAN-India Gas Cooperation: Redefining India's "Look East" Policy with Myanmar	Nov 2014
2014-18	Olivier CADOT, Lili Yan ING	How Restrictive Are ASEAN's RoO?	Sep 2014
2014-17	Sadayuki TAKII	Import Penetration, Export Orientation, and Plant Size in Indonesian Manufacturing	July 2014
2014-16	Tomoko INUI, Keiko ITO, and Daisuke MIYAKAWA	Japanese Small and Medium-Sized Enterprises' Export Decisions: The Role of Overseas Market Information	July 2014
2014-15	Han PHOUMIN and Fukunari KIMURA	Trade-off Relationship between Energy Intensity-thus energy demand- and Income Level: Empirical Evidence and Policy Implications for ASEAN and East Asia Countries	June 2014
2014-14	Cassey LEE	The Exporting and Productivity Nexus: Does Firm Size Matter?	May 2014
2014-13	Yifan ZHANG	Productivity Evolution of Chinese large and Small Firms in the Era of Globalisation	May 2014
2014-12	Valéria SMEETS, Sharon TRAIBERMAN, Frederic WARZYNSKI	Offshoring and the Shortening of the Quality Ladder: Evidence from Danish Apparel	May 2014
2014-11	Inkyo CHEONG	Korea's Policy Package for Enhancing its FTA Utilization and Implications for Korea's Policy	May 2014
2014-10	Sothea OUM, Dionisius NARJOKO, and Charles HARVIE	Constraints, Determinants of SME Innovation, and the Role of Government Support	May 2014

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2014-09	Christopher PARSONS and Pierre-Louis Vézina	Migrant Networks and Trade: The Vietnamese Boat People as a Natural Experiment	May 2014
2014-08	Kazunobu HAYAKAWA and Toshiyuki MATSUURA	Dynamic Tow-way Relationship between Exporting and Importing: Evidence from Japan	May 2014
2014-07	DOAN Thi Thanh Ha and Kozo KIYOTA	Firm-level Evidence on Productivity Differentials and Turnover in Vietnamese Manufacturing	Apr 2014
2014-06	Larry QIU and Miaojie YU	Multiproduct Firms, Export Product Scope, and Trade Liberalization: The Role of Managerial Efficiency	Apr 2014
2014-05	Han PHOUMIN and Shigeru KIMURA	Analysis on Price Elasticity of Energy Demand in East Asia: Empirical Evidence and Policy Implications for ASEAN and East Asia	Apr 2014
2014-04	Youngho CHANG and Yanfei LI	Non-renewable Resources in Asian Economies: Perspectives of Availability, Applicability, Acceptability, and Affordability	Feb 2014
2014-03	Yasuyuki SAWADA and Fauziah ZEN	Disaster Management in ASEAN	Jan 2014
2014-02	Cassey LEE	Competition Law Enforcement in Malaysia	Jan 2014
2014-01	Rizal SUKMA	ASEAN Beyond 2015: The Imperatives for Further Institutional Changes	Jan 2014
2013-38	Toshihiro OKUBO, Fukunari KIMURA, Nozomu TESHIMA	Asian Fragmentation in the Global Financial Crisis	Dec 2013
2013-37	Xunpeng SHI and Cecilya MALIK	Assessment of ASEAN Energy Cooperation within the ASEAN Economic Community	Dec 2013
2013-36	Tereso S. TULLAO, Jr. And Christopher James CABUAY	Education and Human Capital Development to Strengthen R&D Capacity in the ASEAN	Dec 2013
2013-35	Paul A. RASCHKY	Estimating the Effects of West Sumatra Public Asset Insurance Program on Short-Term Recovery after the September 2009 Earthquake	Dec 2013
2013-34	Nipon POAPONSAKORN and Pitsom MEETHOM	Impact of the 2011 Floods, and Food Management in Thailand	Nov 2013

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2013-33	Mitsuyo ANDO	Development and Resructuring of Regional Production/Distribution Networks in East Asia	Nov 2013
2013-32	Mitsuyo ANDO and Fukunari KIMURA	Evolution of Machinery Production Networks: Linkage of North America with East Asia?	Nov 2013
2013-31	Mitsuyo ANDO and Fukunari KIMURA	What are the Opportunities and Challenges for ASEAN?	Nov 2013
2013-30	Simon PEETMAN	Standards Harmonisation in ASEAN: Progress, Challenges and Moving Beyond 2015	Nov 2013
2013-29	Jonathan KOH and Andrea Feldman MOWERMAN	Towards a Truly Seamless Single Windows and Trade Facilitation Regime in ASEAN Beyond 2015	Nov 2013
2013-28	Rajah RASIAH	Stimulating Innovation in ASEAN Institutional Support, R&D Activity and Intelletual Property Rights	Nov 2013
2013-27	Maria Monica WIHARDJA	Financial Integration Challenges in ASEAN beyond 2015	Nov 2013
2013-26	Tomohiro MACHIK ITA and Yasushi U EKI	Who Disseminates Technology to Whom, How, and Why: Evidence from Buyer-Seller Business Networks	Nov 2013
2013-25	Fukunari KIMURA	Reconstructing the Concept of “Single Market a Production Base” for ASEAN beyond 2015	Oct 2013
2013-24	Olivier CADOT Ernawati MUNADI Lili Yan ING	Streamlining NTMs in ASEAN: The Way Forward	Oct 2013
2013-23	Charles HARVIE, Dionisius NARJOK O, Sothea OUM	Small and Medium Enterprises’ Access to Finance: Evidence from Selected Asian Economies	Oct 2013
2013-22	Alan Khee-Jin TAN	Toward a Single Aviation Market in ASEAN: Regulatory Reform and Industry Challenges	Oct 2013
2013-21	Hisanobu SHISHID O, Shintaro SUGIYAM A,Fauziah ZEN	Moving MPAC Forward: Strengthening Public-Private Partnership, Improving Project Portfolio and in Search of Practical Financing Schemes	Oct 2013



<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2013-20	Barry DESKER, Mely CABALLERO- ANTHONY, Paul TENG	Thought/Issues Paper on ASEAN Food Security: Towards a more Comprehensive Framework	Oct 2013
2013-19	Toshihiro KUDO, Satoru KUMAGAI, So UMEZAKI	Making Myanmar the Star Growth Performer in ASEAN in the Next Decade: A Proposal of Five Growth Strategies	Sep 2013
2013-18	Ruperto MAJUCA	Managing Economic Shocks and Macroeconomic Coordination in an Integrated Region: ASEAN Beyond 2015	Sep 2013
2013-17	Cassy LEE and Yoshifumi FUKUNAGA	Competition Policy Challenges of Single Market and Production Base	Sep 2013
2013-16	Simon TAY	Growing an ASEAN Voice? : A Common Platform in Global and Regional Governance	Sep 2013
2013-15	Danilo C. ISRAEL and Roehlano M. BRIONES	Impacts of Natural Disasters on Agriculture, Food Security, and Natural Resources and Environment in the Philippines	Aug 2013
2013-14	Allen Yu-Hung LAI and Seck L. TAN	Impact of Disasters and Disaster Risk Management in Singapore: A Case Study of Singapore's Experience in Fighting the SARS Epidemic	Aug 2013
2013-13	Brent LAYTON	Impact of Natural Disasters on Production Networks and Urbanization in New Zealand	Aug 2013
2013-12	Mitsuyo ANDO	Impact of Recent Crises and Disasters on Regional Production/Distribution Networks and Trade in Japan	Aug 2013
2013-11	Le Dang TRUNG	Economic and Welfare Impacts of Disasters in East Asia and Policy Responses: The Case of Vietnam	Aug 2013
2013-10	Sann VATHANA, Sothea OUM, Ponhrith KAN, Colas CHERVIER	Impact of Disasters and Role of Social Protection in Natural Disaster Risk Management in Cambodia	Aug 2013

No.	Author(s)	Title	Year
2013-09	Sommarat CHANTARAT, Krirk PANNANGPETCH, Nattapong PUTTANAPONG, Preesan RAKWATIN, and Thanasin TANOMPONGPHAN DH	Index-Based Risk Financing and Development of Natural Disaster Insurance Programs in Developing Asian Countries	Aug 2013
2013-08	Ikumo ISONO and Satoru KUMAGAI	Long-run Economic Impacts of Thai Flooding: Geographical Simulation Analysis	July 2013
2013-07	Yoshifumi FUKUNAGA and Hikaru ISHIDO	Assessing the Progress of Services Liberalization in the ASEAN-China Free Trade Area (ACFTA)	May 2013
2013-06	Ken ITAKURA, Yoshifumi FUKUNAGA, and Ikumo ISONO	A CGE Study of Economic Impact of Accession of Hong Kong to ASEAN-China Free Trade Agreement	May 2013
2013-05	Misa OKABE and Shujiro URATA	The Impact of AFTA on Intra-AFTA Trade	May 2013
2013-04	Kohei SHIINO	How Far Will Hong Kong's Accession to ACFTA will Impact on Trade in Goods?	May 2013
2013-03	Cassey LEE and Yoshifumi FUKUNAGA	ASEAN Regional Cooperation on Competition Policy	Apr 2013
2013-02	Yoshifumi FUKUNAGA and Ikumo ISONO	Taking ASEAN+1 FTAs towards the RCEP: A Mapping Study	Jan 2013
2013-01	Ken ITAKURA	Impact of Liberalization and Improved Connectivity and Facilitation in ASEAN for the ASEAN Economic Community	Jan 2013
2012-17	Sun XUEGONG, Guo LIYAN, Zeng ZHENG	Market Entry Barriers for FDI and Private Investors: Lessons from China's Electricity Market	Aug 2012
2012-16	Yanrui WU	Electricity Market Integration: Global Trends and Implications for the EAS Region	Aug 2012

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2012-15	Youngho CHANG, Yanfei LI	Power Generation and Cross-border Grid Planning for the Integrated ASEAN Electricity Market: A Dynamic Linear Programming Model	Aug 2012
2012-14	Yanrui WU, Xunpeng SHI	Economic Development, Energy Market Integration and Energy Demand: Implications for East Asia	Aug 2012
2012-13	Joshua AIZENMAN, Minsoo LEE, and Donghyun PARK	The Relationship between Structural Change and Inequality: A Conceptual Overview with Special Reference to Developing Asia	July 2012
2012-12	Hyun-Hoon LEE, Minsoo LEE, and Donghyun PARK	Growth Policy and Inequality in Developing Asia: Lessons from Korea	July 2012
2012-11	Cassey LEE	Knowledge Flows, Organization and Innovation: Firm-Level Evidence from Malaysia	June 2012
2012-10	Jacques MAIRESSE, Pierre MOHNEN, Yayun ZHAO, and Feng ZHEN	Globalization, Innovation and Productivity in Manufacturing Firms: A Study of Four Sectors of China	June 2012
2012-09	Ari KUNCORO	Globalization and Innovation in Indonesia: Evidence from Micro-Data on Medium and Large Manufacturing Establishments	June 2012
2012-08	Alfons PALANGKARAYA	The Link between Innovation and Export: Evidence from Australia's Small and Medium Enterprises	June 2012
2012-07	Chin Hee HAHN and Chang-Gyun PARK	Direction of Causality in Innovation-Exporting Linkage: Evidence on Korean Manufacturing	June 2012
2012-06	Keiko ITO	Source of Learning-by-Exporting Effects: Does Exporting Promote Innovation?	June 2012
2012-05	Rafaelita M. ALDABA	Trade Reforms, Competition, and Innovation in the Philippines	June 2012
2012-04	Toshiyuki MATSUURA and Kazunobu HAYAKAWA	The Role of Trade Costs in FDI Strategy of Heterogeneous Firms: Evidence from Japanese Firm-level Data	June 2012
2012-03	Kazunobu HAYAKAWA, Fukunari KIMURA, and Hyun-	How Does Country Risk Matter for Foreign Direct Investment?	Feb 2012

No.	Author(s)	Title	Year
	Hoon LEE		
2012-02	Ikumo ISONO, Satoru KUMAGAI, Fukunari KIMURA	Agglomeration and Dispersion in China and ASEAN: A Geographical Simulation Analysis	Jan 2012
2012-01	Mitsuyo ANDO and Fukunari KIMURA	How Did the Japanese Exports Respond to Two Crises in the International Production Network?: The Global Financial Crisis and the East Japan Earthquake	Jan 2012
2011-10	Tomohiro MACHIKITA and Yasushi UEKI	Interactive Learning-driven Innovation in Upstream- Downstream Relations: Evidence from Mutual Exchanges of Engineers in Developing Economies	Dec 2011
2011-09	Joseph D. ALBA, Wai- Mun CHIA, and Donghyun PARK	Foreign Output Shocks and Monetary Policy Regimes in Small Open Economies: A DSGE Evaluation of East Asia	Dec 2011
2011-08	Tomohiro MACHIKITA and Yasushi UEKI	Impacts of Incoming Knowledge on Product Innovation: Econometric Case Studies of Technology Transfer of Auto-related Industries in Developing Economies	Nov 2011
2011-07	Yanrui WU	Gas Market Integration: Global Trends and Implications for the EAS Region	Nov 2011
2011-06	Philip Andrews- SPEED	Energy Market Integration in East Asia: A Regional Public Goods Approach	Nov 2011
2011-05	Yu SHENG, Xunpeng SHI	Energy Market Integration and Economic Convergence: Implications for East Asia	Oct 2011
2011-04	Sang-Hyop LEE, Andrew MASON, and Donghyun PARK	Why Does Population Aging Matter So Much for Asia? Population Aging, Economic Security and Economic Growth in Asia	Aug 2011
2011-03	Xunpeng SHI, Shinichi GOTO	Harmonizing Biodiesel Fuel Standards in East Asia: Current Status, Challenges and the Way Forward	May 2011
2011-02	Hikari ISHIDO	Liberalization of Trade in Services under ASEAN+n : A Mapping Exercise	May 2011
2011-01	Kuo-I CHANG, Kazunobu HAYAKAWA	Location Choice of Multinational Enterprises in China: Comparison between Japan and Taiwan	Mar 2011

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
	Toshiyuki MATSUURA		
2010-11	Charles HARVIE, Dionisius NARJOKO, Sothea OUM	Firm Characteristic Determinants of SME Participation in Production Networks	Oct 2010
2010-10	Mitsuyo ANDO	Machinery Trade in East Asia, and the Global Financial Crisis	Oct 2010
2010-09	Fukunari KIMURA Ayako OBASHI	International Production Networks in Machinery Industries: Structure and Its Evolution	Sep 2010
2010-08	Tomohiro MACHIKITA, Shoichi MIYAHARA, Masatsugu TSUJI, and Yasushi UEKI	Detecting Effective Knowledge Sources in Product Innovation: Evidence from Local Firms and MNCs/JVs in Southeast Asia	Aug 2010
2010-07	Tomohiro MACHIKITA, Masatsugu TSUJI, and Yasushi UEKI	How ICTs Raise Manufacturing Performance: Firm- level Evidence in Southeast Asia	Aug 2010
2010-06	Xunpeng SHI	Carbon Footprint Labeling Activities in the East Asia Summit Region: Spillover Effects to Less Developed Countries	July 2010
2010-05	Kazunobu HAYAKAWA, Fukunari KIMURA, and Tomohiro MACHIKITA	Firm-level Analysis of Globalization: A Survey of the Eight Literatures	Mar 2010
2010-04	Tomohiro MACHIKITA and Yasushi UEKI	The Impacts of Face-to-face and Frequent Interactions on Innovation: Upstream-Downstream Relations	Feb 2010
2010-03	Tomohiro MACHIKITA and Yasushi UEKI	Innovation in Linked and Non-linked Firms: Effects of Variety of Linkages in East Asia	Feb 2010
2010-02	Tomohiro MACHIKITA	Search-theoretic Approach to Securing New Suppliers: Impacts of Geographic Proximity for	Feb 2010

No.	Author(s)	Title	Year
	and Yasushi UEKI	Importer and Non-importer	
2010-01	Tomohiro MACHIKITA and Yasushi UEKI	Spatial Architecture of the Production Networks in Southeast Asia: Empirical Evidence from Firm-level Data	Feb 2010
2009-23	Dionisius NARJOKO	Foreign Presence Spillovers and Firms' Export Response: Evidence from the Indonesian Manufacturing	Nov 2009
2009-22	Kazunobu HAYAKAWA, Daisuke HIRATSUKA, Kohei SHIINO, and Seiya SUKEGAWA	Who Uses Free Trade Agreements?	Nov 2009
2009-21	Ayako OBASHI	Resiliency of Production Networks in Asia: Evidence from the Asian Crisis	Oct 2009
2009-20	Mitsuyo ANDO and Fukunari KIMURA	Fragmentation in East Asia: Further Evidence	Oct 2009
2009-19	Xunpeng SHI	The Prospects for Coal: Global Experience and Implications for Energy Policy	Sept 2009
2009-18	Sothea OUM	Income Distribution and Poverty in a CGE Framework: A Proposed Methodology	Jun 2009
2009-17	Erlinda M. MEDALLA and Jenny BALBOA	ASEAN Rules of Origin: Lessons and Recommendations for the Best Practice	Jun 2009
2009-16	Masami ISHIDA	Special Economic Zones and Economic Corridors	Jun 2009
2009-15	Toshihiro KUDO	Border Area Development in the GMS: Turning the Periphery into the Center of Growth	May 2009
2009-14	Claire HOLLWEG and Marn-Heong WONG	Measuring Regulatory Restrictions in Logistics Services	Apr 2009
2009-13	Loreli C. De DIOS	Business View on Trade Facilitation	Apr 2009
2009-12	Patricia SOURDIN and Richard POMFRET	Monitoring Trade Costs in Southeast Asia	Apr 2009

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2009-11	Philippa DEE and Huong DINH	Barriers to Trade in Health and Financial Services in ASEAN	Apr 2009
2009-10	Sayuri SHIRAI	The Impact of the US Subprime Mortgage Crisis on the World and East Asia: Through Analyses of Cross-border Capital Movements	Apr 2009
2009-09	Mitsuyo ANDO and Akie IRIYAMA	International Production Networks and Export/Import Responsiveness to Exchange Rates: The Case of Japanese Manufacturing Firms	Mar 2009
2009-08	Archanun KOHPAIBOON	Vertical and Horizontal FDI Technology Spillovers: Evidence from Thai Manufacturing	Mar 2009
2009-07	Kazunobu HAYAKAWA, Fukunari KIMURA, and Toshiyuki MATSUURA	Gains from Fragmentation at the Firm Level: Evidence from Japanese Multinationals in East Asia	Mar 2009
2009-06	Dionisius A. NARJOKO	Plant Entry in a More Liberalised Industrialisation Process: An Experience of Indonesian Manufacturing during the 1990s	Mar 2009
2009-05	Kazunobu HAYAKAWA, Fukunari KIMURA, and Tomohiro MACHIKITA	Firm-level Analysis of Globalization: A Survey	Mar 2009
2009-04	Chin Hee HAHN and Chang-Gyun PARK	Learning-by-exporting in Korean Manufacturing: A Plant-level Analysis	Mar 2009
2009-03	Ayako OBASHI	Stability of Production Networks in East Asia: Duration and Survival of Trade	Mar 2009
2009-02	Fukunari KIMURA	The Spatial Structure of Production/Distribution Networks and Its Implication for Technology Transfers and Spillovers	Mar 2009
2009-01	Fukunari KIMURA and Ayako OBASHI	International Production Networks: Comparison between China and ASEAN	Jan 2009

<b>No.</b>	<b>Author(s)</b>	<b>Title</b>	<b>Year</b>
2008-03	Kazunobu HAYAKAWA and Fukunari KIMURA	The Effect of Exchange Rate Volatility on International Trade in East Asia	Dec 2008
2008-02	Satoru KUMAGAI, Toshitaka GOKAN, Ikumo ISONO, and Souknilanh KEOLA	Predicting Long-Term Effects of Infrastructure Development Projects in Continental South East Asia: IDE Geographical Simulation Model	Dec 2008
2008-01	Kazunobu HAYAKAWA, Fukunari KIMURA, and Tomohiro MACHIKITA	Firm-level Analysis of Globalization: A Survey	Dec 2008