

## Firms' use of FTA schemes in exporting and importing : is there a two-way relationship?

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journal or publication title	IDE Discussion Paper
volume	363
year	2012-08-01
URL	<a href="http://doi.org/10.20561/00037806">http://doi.org/10.20561/00037806</a>

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## IDE DISCUSSION PAPER No. 363

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August 2012

#### **Abstract**

In this paper, we examine the roles of firm size in the use of FTA schemes in exporting and importing. Also, it is investigated as to whether FTA users in importing (exporting) are more likely to use FTA schemes in exporting (importing). To do that, we employed a unique survey in which the detailed information on FTA use is available for Japanese affiliates in ASEAN. Our findings are summarized as follows. First, firm size matters in the use of FTA schemes only in exporting, not in importing. Second, the past experience of FTA use in exporting (importing) does not help firms use the FTA schemes in importing (exporting). Thus, it is necessary to assist firms to use FTA schemes in exporting even if they are already using FTA schemes in importing.

**Keywords:** FTA; micro data; firm size

**JEL classification:** F15; F53; O53

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<sup>§</sup> I am grateful to the Japan External Trade Organization for providing me with the micro data used in this study. The opinions expressed in this paper are those of the author and do not represent the views of any of the institutions with which I am affiliated.

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# Firms' Use of FTA Schemes in Exporting and Importing: Is There a Two-way Relationship?

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**Abstract:** In this paper, we examine the roles of firm size in the use of FTA schemes in exporting and importing. Also, it is investigated as to whether FTA users in importing (exporting) are more likely to use FTA schemes in exporting (importing). To do that, we employed a unique survey in which the detailed information on FTA use is available for Japanese affiliates in ASEAN. Our findings are summarized as follows. First, firm size matters in the use of FTA schemes only in exporting, not in importing. Second, the past experience of FTA use in exporting (importing) does not help firms use the FTA schemes in importing (exporting). Thus, it is necessary to assist firms to use FTA schemes in exporting even if they are already using FTA schemes in importing.

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## **Highlights**

- We examine the roles of firm size in FTA use in exporting and importing.
- We find that firm size matters in the FTA use only in exporting, not in importing.
- We also examine complementarity in FTA use between cases of exporting and importing.
- We do not find such complementarity in FTA use.

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## **1. Introduction**

Since the latter half of the 1990s, there have been a vast number of papers on self-selection mechanics in firms' trading. Melitz (2003) is the theoretical pioneering study on the selection mechanism in firms' exporting. It theoretically demonstrates that exporting firms have relatively high productivity because productive firms can still obtain non-negative gross profit even if they incur sunk costs for exports. The numerous empirical studies, including Bernard and Jensen (1999), Lopez (2005), Greenaway and Kneller (2007), and Wagner (2007), have supported this theoretical prediction on self-selection mechanics in exporting. In recent years, moreover, the empirical literature has been extended to investigate the self-selection mechanics of firms to engage in importing and both exporting and importing (Muuls and Pisu, 2009; Castellani et al., 2010; Vogel and Wagner, 2010; Aristei et al., 2011). Such studies found that importers are more productive than non-importers and that firms which engage in both importing and exporting exhibit higher performance than those that engage in either exporting or importing.

In trading, some firms use free trade agreement (FTA) schemes in order to reduce their payment of tariff rates. The FTA has been one of the hottest issues in the world economy. Its surge has continued unabated since the early 1990s. According to the World Trade Organization (WTO) website, as of January 2012, around 500 regional trade agreements have been notified to the WTO. Due to this increasing availability of FTA schemes, international trade under FTAs has experienced a significant increase. In Asia, for example, around 20% to 30% of Thai and Malaysian trade values (imports or exports) with ASEAN countries are those under the FTA schemes in 2010 (Thai Ministry of Commerce; Malaysian Ministry of Trade and Industry). Also, among exporters of Japanese overseas affiliates in ASEAN, around 20% of exporters are using FTA schemes in exporting to ASEAN countries or Japan (Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania (JETRO)).

In the academic literature, in contrast to the case of just trading, there are few studies on the self-selection in the use of FTA schemes. As in the case of just exporting, however, it is known that firm size matters in using FTA schemes in exporting. While FTA users can export their products with cheaper tariff rates, the use of FTAs requires firms to incur some amount of additional cost. In order to meet the rules of origin (ROOs), the users may need to change their procurement sources from the optimal pattern of procurement. Also, fixed costs for the use of FTA schemes such as administrative costs might be not negligible. Due to these kinds of costs, all exporters do not necessarily use FTA schemes. FTA users are those who can earn enough tariff

payment savings. Namely, as well as in exporting, the productive firms or the large-sized firms can use FTA schemes in exporting because those firms have the larger exports, which lead to a larger amount of savings on the tariff payment. Such self-selection mechanics in the context of FTA use are theoretically demonstrated in Demidova and Krishna (2008). Takahashi and Urata (2010) is the empirical paper analyzing this. They examine FTA usage by Japanese firms at the firm level by employing a questionnaire survey (cross-section data), finding that larger firms are more likely to use FTA schemes. In short, as in the case of exporting, there are selection mechanics in firms' use of FTA schemes in their exporting.

In this paper, we apply the above-mentioned development of analysis on self-selection mechanics in firms' trading into the context of FTA use. Namely, we develop the analysis of firms' use of FTA schemes in two directions. One is to examine whether firm size matters in using FTA schemes in *importing* rather than exporting. This extension is important because of the following reasons. As in the use of FTA schemes in exporting or in just starting importing activities, if fixed costs for the use of FTA schemes in importing are not trivial, there might be sorting effects in FTA users in importing according to firm size. However, in contrast to the case of just importing, fixed costs for FTA use seem to be trivial for importers. All of the necessary documents for the use of FTA schemes are basically prepared in the exporter side. The importers need to just submit to customs the certificates of origin (COO) that are prepared and presented by exporters. Therefore, unlike the case of using FTA schemes in exporting or of just starting importing activities, firm size may not play a significant role in using FTA schemes in importing. If so, policy support for encouraging firms to use FTA schemes will be totally different between importing and exporting.

The other direction of our extension is to examine self-selection in the use of FTA schemes in both importing and exporting. Specifically, as in the case of simple trading, we examine the two-way link in the use of FTA schemes between importing and exporting: whether or not FTA users in importing (exporting) are more likely to use FTA schemes in exporting (importing). In the literature of simple trading, previous studies find complementarity in fixed costs for exporting and importing. For example, as mentioned in Aristei et al. (2011), common sunk costs arise when firms implement an organizational structure in charge of international operations or when firms acquire information on foreign markets, which may include both potential buyers (export) and suppliers of intermediate inputs (import). Therefore, the productivity threshold to be an importer (exporter) will be lower for exporters (importers). Also, productivity improvement through starting importing (exporting) may enable firms to bear the sunk

costs of exporting (importing). However, we will not expect such complementarity in the context of FTA use, particularly through the implementation of the organizational structure. Due to the trivial fixed costs for FTA use in importing, FTA users in *importing* do not learn anything about or establish any organizational divisions for the use of FTAs in *exporting*. Also, regardless of using FTA schemes in exporting, firms do not have difficulty in using those in importing. As such, policy makers need to support firms who try to use FTA schemes in exporting even if they are already using those in importing.

We employ a unique dataset collected by the Japan External Trade Organization (JETRO). JETRO has carried out an ongoing survey of Japanese affiliates operating in Asia for 22 years, since 1987. The survey was initially targeted at manufacturing companies, but in the wake of growth in the service sector, inclusion of non-manufacturing companies began in 2007 (the 21st survey). The survey, named the “Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania,” has included questions on the affiliates’ FTA use particularly in the last three years. For example, it asks whether the affiliate currently uses any existing bilateral/multilateral FTAs for import or export activities. Some basic firm characteristics, including employment, are also available in this survey. Moreover, we can exclude exporters using other kinds of free trade schemes such as duty-drawback systems, under which the custom duties on imported components are exempted if imported items are used for manufacturing exported items. In short, the JETRO survey is suitable for analyzing firms’ use of FTA schemes.

In sum, our analysis presents the comprehensive pictures on the relationship between firm size and the use of FTAs in trading. The literature on firm-level studies has investigated the self-selection mechanics in several kinds of firms’ international activities, including exporting, importing, investing, outsourcing, and so on. However, in the context of firms’ FTA use, only Takahashi and Urata (2010) examine the relationship of firm size with the FTA use in exporting. No studies explore its relationship with the FTA use in importing. Also, there are no studies investigating the relationship in FTA use between importing and exporting. Therefore, this paper contributes greatly to adding some new facts on firms’ FTA use to the literature of the self-selection mechanics. In particular, our estimates are derived from the panel dataset good enough for analyzing firms’ FTA use.

The rest of this paper is organized as follows. The next section specifies our empirical framework. Data issues are discussed in Section 3. Section 4 presents our estimation results, and Section 5 concludes on this paper.

## 2. Empirical Framework

This section specifies our empirical framework for analyzing the use of FTA schemes in exporting and importing. To this end, following Aristei (2011), we estimate a bivariate probit model for the probability of FTA use in exporting (importing) as a function of previous FTA use status in importing (exporting), in addition to several firm characteristics, including firm size. Our bivariate probit model is given by:

$$FTA_{it}^{Exp} = \begin{cases} 1 & \text{if } FTA_{it}^{Exp*} > 0 \\ 0 & \text{if } FTA_{it}^{Exp*} \leq 0 \end{cases} \quad \text{and} \quad FTA_{it}^{Imp} = \begin{cases} 1 & \text{if } FTA_{it}^{Imp*} > 0 \\ 0 & \text{if } FTA_{it}^{Imp*} \leq 0 \end{cases}$$

where

$$\begin{cases} FTA_{it}^{Exp*} = \beta_1 FTA_{it-1}^{Imp} + \mathbf{x}_{it-1}\boldsymbol{\gamma}_1 + u_{1it} \\ FTA_{it}^{Imp*} = \beta_2 FTA_{it-1}^{Exp} + \mathbf{x}_{it-1}\boldsymbol{\gamma}_2 + u_{2it} \end{cases}$$

From the theoretical point of view (see, for example, Demidova and Krishna, 2008),  $FTA_{it}^{Exp*}$  is the difference in firm  $i$ 's total profit in year  $t$  between the cases of using an FTA tariff scheme and a general tariff scheme (e.g., most-favoured-nation scheme) in exporting. If firms can earn a larger total profit from FTA use, they choose the use of FTA rates in their exporting, and we observe  $FTA_{it}^{Exp} = 1$ . The same is true for  $FTA_{it}^{Imp*}$ . A vector of  $\mathbf{x}$  consists of several firm characteristics. The error terms are assumed to follow:

$$\begin{pmatrix} u_{1it} \\ u_{2it} \end{pmatrix} \sim N \left[ \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 & \rho \\ \rho & 1 \end{pmatrix} \right].$$

The parameters of  $\beta_1, \beta_2, \gamma_1, \gamma_2$ , and  $\rho$  are estimated via maximum likelihood.

We include several firm characteristics into a vector of  $\mathbf{x}$ . First of all, as in the usual studies on firm heterogeneity, we explore the role of firm size in using FTA schemes.<sup>1</sup> As demonstrated in Devidova and Krishna (2008), the productive firms are more likely to use FTA schemes in exporting. From the theoretical and empirical points of view, firm size in terms of employment or quantity of production has a positive relationship with productivity (see, for example, Fukao and Kwon, 2006). Therefore, the larger-sized firms are expected to be more likely to use FTA schemes in *exporting*. If fixed costs for FTA use in importing are relevant, the larger-sized firms are also more likely to use FTA schemes in *importing*. In sum, the significance of firm size in the FTA use in exporting (importing) reflects the relevance of fixed costs for the FTA use in exporting (importing). As mentioned in the introductory section, in contrast to the case

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<sup>1</sup> Unfortunately, our dataset does not allow us to calculate any productivity measures such as value-added per worker or total factory productivity.

of FTA use in exporting, the use of FTA schemes in importing does not require importers to incur a significant burden. Therefore, without productivity improvement through starting the use of FTA schemes in exporting, firm size would not have a significant effect on the FTA use in importing.

In addition to employment, we introduce a share of local inputs in total inputs and firm age (the number of years from firm establishment) as control variables. The share of local inputs may be associated with the effect of ROOs restrictiveness in the case of exporting because firms that originally have a high share can comply with ROOs easily. As a result, firms with the higher local input share may be more likely to use FTA schemes in exporting. In the import side, on the other hand, the higher share of local inputs implies a smaller magnitude of imports, resulting in a smaller amount of tariff savings and thus less incentive to use FTA schemes for firms. The older firms will have more knowledge on international activities, including FTA schemes, and thus will be more likely to use FTA schemes in exporting or importing. These firm characteristics variables are one-year lagged.

### **3. Data Issues**

Our main data source is JETRO's "Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania." This survey has been conducted since 1987 and provides data on Japanese affiliates in those regions. For our analysis, we employ the survey data for the 2009-2011 period. In each year of this period, questionnaires were sent to around 5,000 Japanese affiliates operating in those regions. The survey received more than 2,000 valid responses, which seems to be a sufficiently high response rate of more than 40% despite the fact that the survey is not mandatory. In 2009, for example, 1,109 were from Japanese affiliates in the manufacturing industry. Of these, 915 were from ASEAN7 countries (Thailand, Malaysia, Singapore, Indonesia, the Philippines, Vietnam, and Myanmar), 128 from South Asia (India, Bangladesh, Pakistan, and Sri Lanka), and 66 from Oceania (Australia and New Zealand).

Our use of foreign plants' data (i.e. Japanese overseas affiliates' data) has the following advantage, particularly in the analysis of firms' decisions on FTA use. The major reason for not using FTA schemes would be that firms do not know at all what FTAs are, rather than their considering the use of general tariff rates such as MFN rates to be more beneficial than FTA rates. In this case, firms' use of general tariff rates is not based on a rational decision. Such firms would not be a suitable sample for our analysis of firms' decisions on FTA use. On the other hand, foreign plants will have enough

knowledge on FTAs because such firms are familiar with international activities and are also sensitive to the available tools in those activities, compared at least to purely domestic firms. Therefore, our analysis on foreign plants will yield more precise estimates on the selection effects of FTA use.

We focus on Japanese manufacturing affiliates in ASEAN7 countries.<sup>2</sup> With this kind of sample, we can control for the differences in ROOs across sample FTAs to some extent because ASEAN countries try to harmonize the ROOs in their FTAs. Those countries conclude on FTAs with several countries. First, those countries have multilateral and/or bilateral FTAs with Australia, China, India, Japan, Korea, and New Zealand in addition to ASEAN itself. Second, Malaysia has a bilateral FTA with Pakistan. Third, Singapore not only has bilateral FTAs with Jordan, Panama, Peru, and the United States but also is a member of the Trans-Pacific Strategic Economic Partnership (Brunei, Chile, New Zealand, and Singapore) and the Singapore-European Free Trade Association FTA (Switzerland, Iceland, Liechtenstein, Norway, and Singapore). In sum, various kinds of FTA schemes are available in our sample countries.

Our sample drawn from the JETRO survey seems to capture well the information of Japanese affiliates in ASEAN countries. According to the “Basic Survey of Japanese Business Structure and Activities” by the Ministry of Economy, Trade and Industry (METI), there were around 2,000 Japanese manufacturing affiliates in ASEAN7 countries in 2009. Namely, the JETRO survey includes more than half of Japanese affiliates in the case of ASEAN7 covered by the METI data. Compared with the METI data, the JETRO survey includes detailed information on affiliates’ status of FTA use according to partner countries. More importantly, affiliates in the JETRO survey are not so qualitatively different from those in the METI data. For example, affiliates in ASEAN4 countries (Thailand, Malaysia, Indonesia, and the Philippines) in 2009 had almost the same mean values of employment (669 for the JETRO and 601 for the METI) and the share of exports in total sales (45% for the JETRO and 48% for the METI). Thus, the sample affiliates in our dataset can be taken as the representative. From this survey, we obtain all necessary data on firm characteristics in addition to the information on firms’ FTA use in importing and exporting. The basic statistics are provided in Table 1.

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<sup>2</sup> The industry classification in this dataset is rather rough; food industry, textile industry, wearing apparel, wooden products, furniture, paper industry, chemical industry, plastic products, medicine, rubber products, pottery, iron and steel, non-metallic mineral products, metal products, general machinery industry, electric machinery industry, transport equipment, precision machinery industry, and other manufacturing sectors.

==== Table 1 ====

Before reporting our estimation results, we take a brief look at sample affiliates' FTA use. Table 2 reports the number of affiliates in each type. Four types are reported: affiliates who do not use FTA schemes at all (Non-users), affiliates who use FTA schemes only in exporting (Users in Exporting), affiliates who use FTA schemes only in importing (Users in Importing), and affiliates who use FTA schemes in both exporting and importing (Two-way Users). From this table, we can see that the majority of affiliates are classified as Non-users. Although this table is not based on completely balanced panel data, the share of Non-users decreases from 77% to 68% during our sample period, indicating that Japanese affiliates in ASEAN start to use FTA schemes gradually. As a result, FTA users are increasing. In particular, Two-way Users have experienced the greatest increase. Their share increases from 8% to 14% during our sample period. This trend is followed by Users in Exporting. The number of Users in Importing not only is smallest but also has experienced the slowest increase among FTA users.

==== Table 2 ====

Table 3 reports the transition of types in FTA use between the previous year and the concurrent year. The largest number can be observed in affiliates who do not use FTA schemes in both of the two years. But, interestingly, relatively large numbers can be seen in not only the change from Non-users to Users in Exporting but also the change from Non-users to Two-way Users. That is, a significant number of affiliates start to use FTA schemes in both exporting and importing at the same time. This observation is also interesting in the sense that the number of such affiliates is larger than that of affiliates changing from Non-users to Users in Importing. Namely, it is a relatively rare case that affiliates start to use FTA schemes only in importing. Another noteworthy point is that a relevant number of the past FTA-users change to Non-users. In short, there are active type changes in Japanese affiliates.

==== Table 3 ====

#### **4. Empirical Results**

This section reports our estimation results. Our baseline results are reported in

Table 4. Columns (I) and (II) present the estimation results for equations without the past FTA status variables and the firm characteristics variables, respectively. In column (III), we include all variables simultaneously. In all estimations, the coefficients for  $\rho$  are estimated to be significant, indicating that FTA use is highly correlated between the cases of export and import. In other words, there remain factors that are not included in our model but which affect both the use of FTA schemes in exporting and their use in importing.

==== Table 4 ====

The results in column (I) are as follows. First, we can see that firm size in terms of employment matters in using FTA schemes only in exporting, not in importing. The significant result in the case of export is consistent with the previous studies' finding (Takahashi and Urata, 2010). On the other hand, the result in the case of importing is the first evidence in the literature, indicating that fixed costs for the use of FTA schemes in importing are negligible. This is consistent with the fact that importers just need to submit the COO to customs. Second, due to the more experience/knowledge on international activities/institutions particularly in their host countries, the older affiliates are more likely to use FTA schemes only in importing, though the insignificant role of firm age in exporting is puzzling. Third, the local input share has influence on the use of FTA schemes only in importing. Its coefficient is estimated to be significantly negative, indicating that the smaller magnitude of imports may lead to the smaller amount of tariff savings and thus to less incentive to use FTA schemes for firms. Its insignificant result in the case of exporting may be due to the fact that ASEAN adopts a very flexible criterion, an optional criterion, as ROOs: The country of origin of goods is determined by whether to meet either a value-added content criterion or a change in tariff classification criterion.<sup>3</sup>

In column (II), we examine the complementarity in the use of FTAs between the cases of exporting and importing. We can see that, in both cases, coefficients for the past FTA status variables are estimated to be insignificant. This is consistent with the above results that fixed costs for FTA use are negligible in the case of importing. Thus, regardless of using FTA schemes in exporting, firms do not have difficulty in using those in importing. Also, FTA users in importing do not learn anything about or establish any organizational divisions for the use of FTAs in *exporting*. As a result,

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<sup>3</sup> Indeed, Cadot and de Melo (2007) point out that ROOs in ASEAN FTAs are much less restrictive than those in other FTAs existing in the world.

there is no complementarity in the use of FTAs between the cases of exporting and importing. These results are qualitatively unchanged in column (III), where equations include all variables simultaneously.

We conduct some kinds of robustness checks. Specifically, the same models are estimated for “cleaner” samples. We firstly drop affiliates who do not export to and import from FTA partner countries. Since such affiliates automatically do not use FTA schemes, we drop those in order to focus on affiliates who make a rational decision on the use of FTA schemes. The estimated results for this kind of sample are reported in Table 5. We secondly drop the affiliates that do not have incentives to use FTA schemes due to having different kinds of tariff exemption schemes. The JETRO survey asks affiliates about their reasons for not utilizing FTAs. One of the major reasons is that “importers are exempted from tariffs” in the case of exporting. Actually, in many ASEAN countries, there are various kinds of tariff exemption schemes for promoting inbound investment. Thus, if the partners enjoy such schemes, firms do not need to make use of FTAs. Table 6 reports the estimation results for the sample dropping such affiliates in addition to those who do not trade. The results in both Tables 5 and 6 are basically unchanged from those in Table 4. In particular, those on the variables with our main interest are not changed. Namely, the coefficients for employment are estimated to be significantly positive in the use of FTA schemes only in exporting. In the case of importing, firm size does not matter for the use of FTA schemes. Also, there is no complementarity in the use of FTAs between the cases of exporting and importing.

==== Tables 5 & 6 ====

## **5. Concluding Remarks**

In this paper, by employing a unique dataset collected by JETRO, we examined the roles of firm size in the use of FTA schemes in exporting and importing. Also, it was investigated whether or not FTA users in importing (exporting) are more likely to use FTA schemes in exporting (importing). Our first finding is that firm size matters in the use of FTA schemes only in exporting, not in importing. This result would be because fixed costs for the use of FTA schemes are significant only in the case of exporting. In using FTA schemes in importing, firms just need to submit to customs the COO prepared by exporting firms. Therefore, it is much more important for policy makers to assist firms to use FTA schemes in exporting than in importing. Our second finding is that the past experience of FTA use in exporting (importing) does not help firms use the

FTA schemes in importing (exporting). This lack of complementarity in FTA use between cases of exporting and importing should be based on the trivial fixed costs in the use of FTAs in importing. For policy makers, it is necessary to assist firms to use FTA schemes in exporting even if they are already using FTA schemes in importing.

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Table 1. Basic Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FTA in Export ( $t$ )	2,109	0.23	0.42	0	1
FTA in Import ( $t$ )	2,109	0.19	0.40	0	1
FTA in Export ( $t - 1$ )	2,109	0.25	0.43	0	1
FTA in Import ( $t - 1$ )	2,109	0.19	0.39	0	1
ln Employment ( $t - 1$ )	2,109	5.44	1.46	0.69	10.38
Age ( $t - 1$ )	2,109	15.68	10.02	0	54
Local Input Share ( $t - 1$ )	2,109	0.45	0.34	0	1

Table 2. Number of Affiliates in Each Type

	Non-users	Users in Exporting	Users in Importing	Two-way Users	Total
2009	426 (77)	47 (8)	35 (6)	45 (8)	553
2010	451 (66)	82 (12)	54 (8)	98 (14)	685
2011	592 (68)	100 (11)	57 (7)	122 (14)	871
Total	1,469 (70)	229 (11)	146 (7)	265 (13)	2,109

*Source:* Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania (JETRO)

*Note:* The upper number reports the number of observations, and the parentheses are its share in all affiliates in each year.

Table 3. Type Change in FTA Use during 2009-2011

	Non-users ( <i>t</i> )	Users in Exporting ( <i>t</i> )	Users in Importing ( <i>t</i> )	Two-way Users ( <i>t</i> )
Non-users ( <i>t</i> -1)	507	50	25	44
Users in Exporting ( <i>t</i> -1)	64	42	3	15
Users in Importing ( <i>t</i> -1)	40	2	33	11
Two-way Users ( <i>t</i> -1)	67	12	7	53

Source: Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania (JETRO)

Table 4. Bivariate Probit Estimation

	(I)		(II)		(III)	
	Export	Import	Export	Import	Export	Import
FTA in Import ( $t - 1$ )			-0.041 [0.081]		-0.062 [0.080]	
FTA in Export ( $t - 1$ )				0.044 [0.079]		0.022 [0.078]
ln Employment ( $t - 1$ )	0.078*** [0.026]	0.027 [0.028]			0.079*** [0.026]	0.026 [0.029]
Age ( $t - 1$ )	0.005 [0.004]	0.012*** [0.004]			0.005 [0.004]	0.012*** [0.004]
Local Input Share ( $t - 1$ )	-0.11 [0.100]	-0.411*** [0.106]			-0.116 [0.101]	-0.411*** [0.106]
Rho	0.753*** [0.024]		0.753*** [0.029]		0.758*** [0.029]	
Country dummy	YES		YES		YES	
Industry dummy	YES		YES		YES	
Year dummy	YES		YES		YES	
Observations	2,109		2,109		2,109	
Log likelihood	-1819		-1838		-1819	

Notes: \*\*\* and \*\* indicate 1% and 5% significance, respectively. In the parenthesis is the robust standard error.

Table 5. Robustness Check: No Trade Affiliates

	(I)		(II)		(III)	
	Export	Import	Export	Import	Export	Import
FTA in Import ( $t - 1$ )			-0.043 [0.081]		-0.057 [0.080]	
FTA in Export ( $t - 1$ )				0.059 [0.079]		0.048 [0.078]
ln Employment ( $t - 1$ )	0.063** [0.027]	0.021 [0.030]			0.063** [0.027]	0.019 [0.030]
Age ( $t - 1$ )	0.005 [0.004]	0.010** [0.004]			0.005 [0.004]	0.010** [0.004]
Local Input Share ( $t - 1$ )	-0.048 [0.109]	-0.211* [0.115]			-0.053 [0.110]	-0.210* [0.115]
Rho	0.795*** [0.022]		0.794*** [0.027]		0.796*** [0.026]	
Country dummy	YES		YES		YES	
Industry dummy	YES		YES		YES	
Year dummy	YES		YES		YES	
Observations	1,884		1,884		1,884	
Log likelihood	-1640		-1649		-1640	

Notes: \*\*\* and \*\* indicate 1% and 5% significance, respectively. In the parenthesis is the robust standard error.

Table 6. Robustness Check: Other Tariff Exemption Schemes

	(I)		(II)		(III)	
	Export	Import	Export	Import	Export	Import
FTA in Import ( $t - 1$ )			-0.048 [0.082]		-0.064 [0.081]	
FTA in Export ( $t - 1$ )				0.043 [0.080]		0.032 [0.079]
In Employment ( $t - 1$ )	0.081*** [0.028]	0.035 [0.031]			0.081*** [0.028]	0.034 [0.031]
Age ( $t - 1$ )	0.005 [0.004]	0.010** [0.004]			0.005 [0.004]	0.010** [0.004]
Local Input Share ( $t - 1$ )	-0.091 [0.113]	-0.214* [0.119]			-0.096 [0.113]	-0.214* [0.119]
Rho	0.794*** [0.023]		0.796*** [0.028]		0.797*** [0.027]	
Country dummy	YES		YES		YES	
Industry dummy	YES		YES		YES	
Year dummy	YES		YES		YES	
Observations	1,674		1,674		1,674	
Log likelihood	-1510		-1520		-1509	

Notes: \*\*\* and \*\* indicate 1% and 5% significance, respectively. In the parenthesis is the robust standard error. The sample in this table excludes affiliates any of whose partners enjoy some kind of tariff exemption schemes, in addition to non-trading affiliates.