Chapter 1

How Do Exports and Imports Affect the Use of Free Trade Agreements? Firm-level Survey Evidence from Southeast Asia

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August 2015

This chapter should be cited as

Ing, L.Y., S. Urata and Y. Fukunaga (2015), 'How Do Exports and Imports Affect the Use of Free Trade Agreements? Firm-level Survey Evidence from Southeast Asia', in Ing, L.Y. and S. Urata (eds.), *The Use of FTAs in ASEAN: Survey-based Analysis*. ERIA Research Project Report 2013-5, Jakarta: ERIA, pp.1-24.

CHAPTER 1

How Do Exports and Imports Affect the Use of Free Trade Agreements? Firm-level Survey Evidence from Southeast Asia

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Based on profit estimations, findings from a firm-level survey of 630 manufacturing firms across Association of Southeast Asian Nations (ASEAN) countries conducted in 2013 showed that a 1 percent increase in the share of exports in total sales will increase the probability of use of free trade agreements (FTAs) by 0.2 percent, whereas a 1 percent increase in the share of imports in total inputs will reduce the probability of use of FTAs by 0.4 percent. Results from locally weighted scatterplot smoothing (LOESS) estimations predict that the use of FTAs is tilde-shaped and negative-shaped as a function of exports and imports, respectively.

Keywords: Free Trade Agreement, ASEAN, Regional integration, FTA Utilisation

JEL: F14, F15, F16, F23, F6

* The authors thank national teams for their work on leading surveys in Southeast Asia – MOFAT for Brunei Darussalam, CICP for Cambodia, LPEM–FEUI for Indonesia, NERI for Lao PDR, MIER Malaysia, YIE for Myanmar, PIDS for the Philippines, SIIA for Singapore, University of Chulalongkorn for Thailand, and CIEM for Viet Nam. The authors thank Ikumo Isono and Archanun Koophaiboon, and participants at the 14th East Asian Economic Association Conference for their comments on an earlier draft, and Robert Herdiyanto for his assistance in data cleaning at an early stage of the survey, and Rully Prassetya and Muhammad Rizqy for checking the use of GSP.

1. Introduction

The last two decades have witnessed a surge in free trade agreements (FTAs) in Southeast Asia – they have evolved and embraced the trading partners of the Association of Southeast Asian Nations (ASEAN), mainly in East Asia. The ASEAN Free Trade Area (AFTA) was launched in 1992 with six ASEAN member states and four other states joined in the second half of the 1990s. Currently, AFTA has ten member states. A more comprehensive trade agreement, the ASEAN Trade in Goods Agreement (ATIGA), was concluded in 2008.

ASEAN and its six trading partners (Australia, China, India, Japan, Korea, and New Zealand) have enacted no less than 156 FTAs with their trading partners around the world (ADB, Asia Regional Integration Center, 2013). ASEAN itself has engaged in AFTA and in five regional FTAs with its main trading partners, known as ASEAN+1 FTAs – the ASEAN–Australia–New Zealand FTA, the ASEAN–China FTA, the ASEAN–India FTA, the ASEAN–Japan Comprehensive Economic Partnership (AJCEP), and the ASEAN–Korea FTA. AFTA effectively started in 1992, and the other FTAs came into force in January 2010.

In November 2011, a Regional Comprehensive Economic Partnership (RCEP) was initiated. This is essentially aimed at levelling up the quality of ASEAN+1 FTAs. The members of RCEP are Australia, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Korea, Lao PDR, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Viet Nam.

The growing number of FTAs and Economic Partnership Agreements in this region raises a key question*: how do export and import intensities affect the use of FTAs?* Learning about the use of the existing FTAs in the region will help us to design new FTAs and optimise their use.

Section 2 reviews existing studies. Section 3 explains the estimation strategy and data. Section 4 presents our findings, and section 5 draws conclusions and provides our policy recommendations.

2. Literature Review

Principally, there are two main approaches to analysing the use of FTAs – records of official FTA certificates of origin and firm-surveys. Each has positive and negative aspects.

The first approach is based on official FTA certificates of origin (COO). This approach has two positive aspects. First, it provides information on the detailed use of FTA by products. Second, there is no sample bias problem. The main challenge is data availability. In the area of Southeast Asia that we cover in our analysis, only Thailand and Malaysia can provide detailed data of the issuance of COO. In the other countries there are no detailed data on the use of FTAs by product and by trading partner. Moreover, customs data do not provide information on firm characteristics. The first approach is used in a selected number of studies conducted by Ratananarumitsorn and Laksanapanyakul (2008), Athukorala and Kohpaiboon (2011), and Kohpaiboon (2012) for Thailand.[2]

The second approach to the study of FTA usage is the firm survey. The two main positive aspects of this approach are, first, that it provides firm characteristics, which allows us to analyse how firm characteristics will affect decisions of firms to use FTAs. Second, it allows us to observe motivations for use of FTAs as well as constraints on their use. The main challenge of the survey approach, however, is that it can be both costly and time-consuming to conduct the required surveys. In addition, there is a sample bias issue, and thus the quality of research mainly relies on the survey strategy. There are three major groups of studies that analyse FTA utilisation in East Asia using the survey approach – Asian Development Bank (ADB) studies (Cheong and Cho, 2009; Wignaraja et al., 2009; Wignaraja, 2010; Zhang, 2010; Chia, 2011; Hiratsuka et al., 2011; Kawai and Wignaraja, 2011; Wignaraja et al., 2011; and Wignaraja, 2013), Japan External Trade Organization (JETRO) studies (Hiratsuka et al., 2009; Hayakawa, 2012; 2013; and Hayakawa et al., 2013), and Research Institute of Economy, Trade and Industry (RIETI) studies (Takahashi and Urata, 2008; 2010).

The existing literature on the use of FTAs mostly provides insights into the use of FTAs by products using the first approach, or how firm characteristics (size, ownership, location,

[2] The official COO approach is also used in a study by Pomfret et al. (2010) for Australia, where official FTA COO data are available.

exporting, importing, and others) affect their use using the second approach. But they do not explain the overall picture of how the levels of export and import activities – the share of exports in total sales and the share of imports in total inputs – actually affect firm behaviour in terms of their decisions to use FTAs.

The main value added of our paper is twofold. First, it provides a survey-based study on the use of FTAs in Southeast Asian countries. Second, it explains the use of FTAs in relation to export and import intensity. Moreover, considering the fact that all ASEAN+1 FTAs were in effect in January 2010, our survey conducted in 2013 will provide significant insights into the use of FTAs in this region, thereby complementing the latest existing studies conducted mostly using survey data gathered before 2010/2011.

3. Estimation Strategy and Data

3.1. Estimation Strategy

First, we aim to analyse how export and import activities will affect the use of FTAs, by controlling firm characteristics.

$$\hat{y}_k = \begin{cases} 1 & \text{if the firm uses at least one FTA} \\ 0 & \text{otherwise} \end{cases} \quad (1)$$

$$\hat{y}_k = \beta_1 X_k^{FTA_{ij}} + \beta_2 M_k^{FTA_{ij}} + \beta_3 GSP^{ij} + \gamma \boldsymbol{F}_k + \varepsilon_k \quad (2)$$

where $\hat{y}$ is the revealed use of an FTA. k indexes firms. In our empirical exercise, we limit the observation by defining firm as the firm that is located and operating in Southeast Asia. $\hat{y}_k$ will be 1 if a firm uses at least one FTA for either exports or imports; 0 otherwise.

FTA_{ij} is an FTA of which countries i and j are members. In our empirical exercise, i stands for ASEAN countries and j stands for ASEAN's partners (here meaning ASEAN's six main trading partners).

To see how exports and imports affect the use of the FTA, let X and M be the share of the value of exports in total sales and the share of the value of imports in total inputs,

respectively. We also test it in dummy forms where DX and DM represent dummies for exporting firms and exporting firms, respectively. We also include a dummy variable for the use of the Generalized System of Preferences (GSP) to see if experience of using GSP may affect the use of FTAs.

$\boldsymbol{F}$ stands for a number of firm characteristics which include size of firm, ownership, and location. The size of firm will be represented by the number of total workers. Ownership is represented by a dummy variable which is 1 for a firm that is wholly domestically owned; 0 otherwise. Location will be represented by a dummy variable which is 1 for a firm that is located in an industrial zone such as an export processing zone, a free trade zone, or a special economic zone; 0 otherwise. We also control for age and the initial capital of firms in standard log forms.

3.2. Data

The Economic Research Institute for ASEAN and East Asia (ERIA) in collaboration with the ASEAN Business Advisory Council (ASEAN BAC) and national think tanks in the Southeast Asian region conducted surveys on the usage of FTAs by the private sector. The surveys cover 630 exporting and/or importing manufacturing firms across nine ASEAN countries – Cambodia, Lao PDR, Indonesia, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Viet Nam. The surveys were complemented with interviews and focus group discussions with firms, business associations, chambers of commerce, and government officials. Considering the relatively small number of manufacturing and services firms in Brunei, focus group discussions were organised there instead of surveys. The surveys were carried out between April and August 2013. They were led by Cambodian Institute for Cooperation and Peace (CICP) in Cambodia, Lembaga Penyelidikan Ekonomi dan Masyarakat (LPEM–FEUI) in Indonesia, National Economic Research Institute (NERI) in Lao PDR, Yangon Institute of Economics in Myanmar, Malaysian Institute of Economic Research (MIER) in Malaysia, Phillipine Institute for Development Studies (PIDS) in the Philippines, Singapore Institute of International Affairs (SIIA)in Singapore, Chulalongkorn University in Thailand, and Central Institute for Economic Management (CIEM) in Viet Nam.

The selection of the sample of exporting and/or importing manufacturing firms is based on a 2010 industry survey that covered all industries in the manufacturing sector, and excluded trading firms. To reduce sample bias, the samples were selected with the consideration of size, ownership, location, and the proportion of the use of FTAs (see Appendix A.1 and A.2 for detailed firm characteristics).[3]

4. Survey and Estimation Results

4.1. Survey Results on the Use of FTAs

Tables 1 and 2 show the survey findings on the use of FTAs by agreement. Generally, the pattern of FTA usage is determined by the intensity of exports and imports between countries. Table 1 shows that, without controlling for trading partners, the average use of AFTA and ASEAN+1 FTAs for exporting and importing firms were 15 percent and 12 percent, respectively. The usage of FTAs in ASEAN appeared to follow this pattern.

Table 1–column (a) shows that in exports, about 32.5 percent of the total exporting manufacturing firms claimed they used AFTA–ATIGA for their exports. The use of ACFTA and AKFTA for exports was also higher compared with the other FTAs, with a usage of 20.6 and 14.8 percent, respectively. Only about 5 percent of the total exporting manufacturing firms claimed that they used either AJCEP or the ASEAN–India Free Trade Area (AIFTA).

Table 1–column (b) illustrates that 32.7 percent of total importing manufacturing firms claimed they used ACFTA for their imports and that 19.1 percent of importing manufacturing firms claimed they used AFTA–ATIGA for their imports to ASEAN. The use of AKFTA for imports in ASEAN was about 7.8 percent, and that of the other FTAs was less than 5 percent.

[3] To obtain representative respondents, the surveys were designed to have respondents who is only either exporting or importing, or both exporting and importing. The definition of the size of firms is based on the number of employees: Small (<50 employees), Medium (51–300 employees) and Large (>300 employees), as defined by the International Financial Corporation, 2012.

Table 1: The Survey Results of the Use of FTAs in Manufacturing

FTAs	Firms using FTAs for Exports (% of exporting manufacturing firms) (a)	Firms using FTAs for Imports (% of importing manufacturing firms) (b)
FORM D (AFTA–ATIGA)	32.5	19.1
FORM E (ACFTA)	20.6	32.7
FORM AK (AKFTA)	14.8	7.8
FORM AANZ (AANZFTA)	9.3	2.9
FORM AJ (AJCEP)	5.4	2.3
FORM AI (AIFTA)	5.1	4.0
FORM A (GSP)	43.7	18.5
FORM B (MFN)	21.5	6.6

Source: Authors' calculations based on ERIA's firm surveys.
Note:

1. The total number of observations is 630 firms. The number of exporting manufacturing firms is 514, and the number of importing manufacturing firms is 346 (firms located in export processing zones, free trade zones, and special economic zones are excluded from the total importing manufacturing firms as they are eligible for tariff-free imports, so that there is no necessity for them to obtain FTA COO).
2. The interpretation of percentage 32.5 in the table: on average, 32.5 percent of the total exporting manufacturing firms in ASEAN claimed they used AFTA–ATIGA.
3. The summation of the use of FTA COO does not necessarily equal to 100 percent as not all firms used FTAs and one firm may have had more than one FTA COO (e.g. most-favoured nation [MFN] and GSP).
   a. GSP is a program designed to provide preferential duty-free entry
   b. MFN is a program designed to apply the same tariff rates for all countries.
4. Please note that the magnitudes of the usage of FTAs could be higher if we control for the number of firms by export destinations and import origins (see Table 2).

When we control for preferred main trading partners, the use of FTAs shows higher results (Table 2). Since the use of FTAs largely concentrated on AFTA–ATIGA and ASEAN+1 FTAs, we controlled for respondents claiming that the main export destination of their products and/or the import origin of their inputs was at least one of the 16 countries that are members of at least one of the FTAs in the region. The denominator now is the firms that only exported to or imported from at least one of the 16 countries (i.e. Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Korea, Lao PDR, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Thailand, and Viet Nam). It shows that, on average, the use of AFTA or ASEAN+1 FTAs were 21 percent and 18 percent, respectively, with the following pattern.

Table 2–column (a) illustrates that 51.5 percent of exporting firms had export destinations of at least one of the 16 countries that claimed used AFTA–ATIGA in 2013. The relatively high usage of AFTA–ATIGA compared with the other FTAs was mainly driven by the fact that ASEAN is the main export destination for ASEAN countries. ASEAN contributed 26 percent to the total value of exports of ASEAN countries to the world in 2011. In addition, businesses were relatively more aware of and familiar with the procedure of AFTA COO, as AFTA started in 1992, whereas other FTAs came into effect only in 2010.

The table also shows that 25.6 and 20.0 percent of firms claimed they used ACFTA and AKFTA for their exports, whilst the use of the other FTAs was below 14 percent, which resulted in an average use of FTAs in ASEAN of 21.4 percent[4]. The low usage of AJCEP of only 6.6 percent is probably due to the fact that Japan has formed bilateral FTAs with most ASEAN countries, whereas the relatively low usage of AIFTA is probably due to the fact that the flow of exports of ASEAN countries to India was lower than that of exports of ASEAN to its other main trading partners – China, Korea, and Japan. The share of exports of ASEAN countries to India was only about 3 percent of total ASEAN exports to the world in 2011. In Cambodia, Lao PDR, and Myanmar (CLM), on average, the usage of FTAs for exports was about 60 percent of the average of that of other ASEAN countries in AFTA–ATIGA, ACFTA, and AKFTA. The usage of the ASEAN–Australia–New Zealand Free Trade Agreement (AANZFTA) and AIFTA and AJCEP in CLM countries was only about 3 percent or less.

Table 2–column (b) shows AFTA–ATIGA had the highest usage in 2013 with 39.4 percent. Grouping all ASEAN countries together, ASEAN was the largest source of imports for ASEAN, accounting for 23 percent of the total value of ASEAN's imports in 2011. ACFTA had the second highest usage for imports in ASEAN, with 38.7 percent. China was the second largest import origin, after ASEAN, contributing 13 percent of the total value of imports of ASEAN from the world in 2011. ASEAN countries are viewing the rise of trade with China as

[4] The calculation of the use of FTAs is based on Ing and Urata's method, which is largely influenced by Pomfret et al. (2010). They used tariff lines, here we use surveyed firms. Previous studies asserted that across six ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam), the total utilisation rates of FTA COO for exports and imports were about 20 percent between 2006 and 2008 (Hiratsuka et al., 2009) and increased to about 25 percent in 2011 (Hayakawa, 2013, based on the JETRO Survey on Japanese affiliated firms). A detailed discussion on the existing methods of measurement of the utilisation rates of FTAs can be found in Hamanaka (2013).

both a threat and a hope. The threat is that China may seize shares of the ASEAN domestic market with its relatively competitively priced products, and the hope is that ASEAN could benefit from cheaper materials. Thus, an increase in the use of ACFTA for imports may not necessarily be a negative sign for trade (See Ing, 2012, on the case of Indonesia using ACFTA). The use of AKFTA and AIFTA for imports in ASEAN was 12.3 and 9.6 percent, respectively, whereas that of the other FTAs was about 5 percent or less.

The use of FTAs was rather concentrated in certain products. For example, the use of FTAs was concentrated in apparel and electronics, which contributed about 18 and 10 percent, respectively, to the total use of FTA COO in Indonesia. It also revealed that the use of FTA COO was concentrated in machinery and pharmaceuticals, which contributed 13 and 12 percent, respectively, to the total use of FTA COO in Thailand.[5]

Table 2: Survey Results of the Use of FTAs in Manufacturing,

Controlling for Preferred Main Trading Partners

FTAs	Firms using FTAs for Exports (% of exporting manufacturing firms) (a)	Firms using FTAs for Imports (% of importing manufacturing firms) (b)
FORM D (AFTA–ATIGA)	51.5	39.4
FORM E (ACFTA)	25.6	38.7
FORM AK (AKFTA)	20.0	12.3
FORM AANZ (AANZFTA)	13.8	5.4
FORM AJ (AJCEP)	6.6	3.3
FORM AI (AIFTA)	10.8	9.6
FORM A (GSP)	42.0	16.5
FORM B (MFN)	21.4	6.4

[5] The official data on the use of FTAs confirm the survey findings. However, the data on the use of FTAs by products are very limited. These data are only available for Indonesia and Brunei. The number of FTA COO in Indonesia's exports were concentrated in textiles, machinery and electronics, wood and wooden products, plastics and rubber, and chemicals, which constituted about 58 percent of the total number of COO for exports (Ministry of Trade of Indonesia, 2013). Likewise, exports using FTA COO in Brunei were largely concentrated in mineral fuels, and mineral oils and products of their distillations, which contributed about 98 percent to the total value of exports using COO, whereas manufactured goods only contributed about 2 percent to the total value of exports using COO (Ministry of Foreign Affairs and Trade of Brunei, 2013).

Source: Authors' calculations based on ERIA's firm surveys.
Note:

1. The total number of observations is 630 firms. By controlling the preferred trading partners of the 16 countries, the number of exporting manufacturing firms is 317, and the number of importing manufacturing firms is 252 (the firms which are located in export processing zones, free trade zones, and special economic zones are excluded in the total importing manufacturing firms as they are eligible for tariff-free imports, so that there is no necessity for them to obtain FTA COO).
2. The interpretation of the percentage 51.5 in the table: on average, 51.5 percent of the total exporting manufacturing firms in ASEAN claimed they used AFTA–ATIGA.
3. The summation of the use of FTA COO does not necessarily equal to 100 percent as not all firms used FTAs and one firm may have used more than one FTA and non-FTA COO (e.g. most-favoured nation [MFN] and Generalized System of Preferences [GSP]).
    a. GSP is a program designed to provide preferential duty-free entry.
    b. MFN is a program designed to provide tariff rates applied the same for all countries.

4.2. Estimation Results on the Use of FTAs

4.2.1. The Use of FTAs as a function of exports and imports

Table 3 shows the probit estimation results of the use of FTAs in ASEAN. Table 3–column (a) shows that export share affected the use of FTAs. An increase of 1 percent in export share increased the likelihood of FTA use by 0.1 percent. However, low chi-square and pseudo R-squared shows the estimation may have suffered from omitted variables.

Interestingly, exports and imports affected the use of FTAs in different ways. Table 3–column (b) shows that a 1 percent increase in the share of exports in total sales led to a 0.2 percent increase in the probability that firms would use FTAs, whilst a 1 percent increase in the share of imports in total inputs reduced by 0.4 percent the probability that firms would use FTAs.

Table 3-column (b) also shows that domestic firms were 15 percent more likely to use FTAs. This finding is consistent with a study by Khopaiboon (2012) on the use of FTAs in Thailand, employing data on official FTA COO. One of the explanations for this could be that domestic firms largely operate in relatively small profit margin businesses, which leads them to pursue even small gains driven by margins of preference, which may affect the prices of their final products in export markets. The experience of the use of GSP indicates it would increase the probability of using FTAs, but it is not statistically significant. The number of workers, which is widely used as a measure reflecting the size of firms, also showed a positive effect on the probability of using FTAs, whilst firm location did not affect the use of FTAs.

Level of development of a country also showed a positive effect on the use of FTAs. A firm that is located in a 10 percent higher income per capita country was 6.2 percent more likely to use FTAs. The reasons could be related to the fact that, firstly, a higher income per capita country may have a more efficient system for firms to obtain an FTA COO, and second, that country has more capacity to spread information on the use of FTAs and thus can provide more help to their firms in terms of using FTAs.

Table 3–column (c) shows that an exporting firm was 39 percent more likely to use FTAs than the average importing firm, whereas being an importing firm did not significantly affect the probability of using FTAs.

Table 3: Probit Estimation Results of the Use of FTAs in ASEAN

Estimator	Probit	Probit	Probit
Sample	All	All	All
Dependent variable:	(a)	(b)	(c)
The use of FTAs (1=use FTA; 0=otherwise)			
Export share	0.001*	0.002***	
	(1.74)	(2.33)	
DX=1 if export share>0			0.392***
			(7.81)
Import share		–0.004***	
		(–3.75)	
DM=1 if import share>0			0.047**
			(2.01)
DGSP=1 if has ever used GSP	0.236	0.256	0.256
	(1.17)	(1.22)	(1.15)
Worker (ln_number of worker)	0.024	0.032**	0.047***
	(1.58)	(2.03)	(2.86)
DDOM=1 if domestic share>0		0.150***	0.202***
		(3.20)	(4.13)
DLOC=1 if in industrial area	–0.049	–0.006	–0.064
	(–1.12)	(–0.13)	(–1.38)
Level of development (ln_gdpcap)	0.004	0.006**	0.011***
	(0.30)	(1.98)	2.32
Constant	–1.287***	–1.176***	–1.155***
	(–3.50)	(–3.07)	(–3.09)
Firm characteristics (note for me: age of firm, ln capital in 2012)	Yes	Yes	Yes
Observations	630	630	630
Chi-square test	24.17	50.26	94.99
Prob>Chi-square	0.001	0.000	0.000
Pseudo R2	0.312	0.686	0.633

t-test in parentheses.

***significant at 1%, **significant at 5%, *significant at 10%

Figure 1 shows findings from locally weighted scatterplot smoothing (LOESS) estimations, predicting the use of FTAs as tilde-shaped and negative-shaped functions of intensity of exports and imports, respectively. A share of exports up to 50 percent will increase the use of FTAs, but then it starts to decrease until it reaches 80 to 90 percent. The reason

could be that imports are largely used for exports, and the higher the import content, the lower the likelihood that a firm would use FTAs due to certain domestic (and regional) value content requirements, which usually require them to at least use 35 to 40 percent regional value content to satisfy rules of origin (ROO). [6]

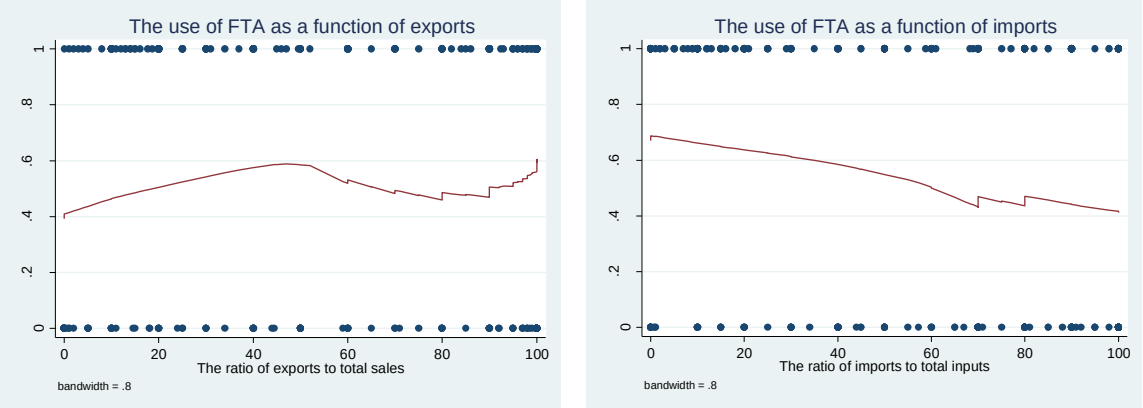
The use of FTAs as a function of intensity exports and imports will be further explored using LOESS estimations.

Figure 1: The Use of FTAs as a Function of Exports and Imports

(a) The Use of FTAs as a Function of Exports

(b) The Use of FTAs as a Function of Imports

LOESS Estimation[7]



Source: Authors' estimations
Note: We used locally weighted scatter plot smoothing estimation.

However, in drawing policy recommendations the findings should be interpreted with caution as the results are survey-based, even though sample-bias has been controlled for and a local polynomial has been introduced.

[6] Imports affect the use of FTAs in two ways. First, the higher firms' need of import content, the higher the likelihood of them using FTAs. This will positively affect the use of FTAs. However, if firms use import content for their exports, then the higher the import content, the less likely those firms will use FTAs due to certain domestic (and regional) value content requirements. This will negatively affect the use of FTAs.
[7] Local polynomial Gaussian and Epanechnikov estimations are also introduced (see Appendix).

4.3. Reasons for a Relatively Low Usage of FTAs

The main reasons for a relatively moderate use of FTAs in the manufacturing sector across ASEAN countries could be twofold. First, there was only a small 'benefit margin' (see below for the definition) arising from the use of an FTA. Second, it was claimed that the information about FTAs was limited.

The first reason for the relatively low uptake of FTAs was the small benefit margins arising from their use. The benefit margins of FTAs are defined as the difference between the benefits arising from, and costs of, using FTAs. The benefits can be obtained from tariff margins known as the 'margin of preference', which is the difference between most-favoured nation (MFN) applied tariff rates and FTA preferential rates; and the costs are costs of obtaining COO.

Margins of preference are relatively low already, largely because the MFN applied tariff rates are already low in comparison with FTA tariff reduction schedules. The average MFN rate of the original ASEAN members was relatively low, ranging from 7 percent in 2005 to 6 percent in 2010 as a result of unilateral tariff reductions driven by international commitments made in the mid-1990s [8]. On average, they offered preferential tariff rates of 2 percent for ASEAN members over the same period, so that the tariff margin was about 4–5 percent. The tariff margins are even lower for ASEAN trading partners. Tariff rates in Australia and Japan were already low, so the tariff margins resulting from a preferential treatment seem to be very limited. For example, the average applied tariff rate for Australia was 3 percent in 2006; the corresponding figure for Japan was also 3 percent. Hence, it is unlikely that the tariff margins will be more than 5 percent for ASEAN members (ERIA's staff calculations, based on ASEAN Secretariat, 2013, and UNCTAD, 2013).[9]

Moreover, as tariffs become lower, the number of non-tariff measures is perceived to increase, as indicated in the interviews and focus group discussions. Also, it is often the case

[8] However, for a number of products, particularly safety-use products, protected-sector products, or high-end products, applied tariffs are still in two digits. For example, Indonesia still applies tariff rates of 20 percent, 15 percent, and 12 percent on edible preparations, vehicles, and articles of apparel, respectively, in AANZFTA and AIFTA. And the Philippines also still have relatively high tariff rates of 22 and 12 percent on processed meat and vehicles, respectively, in AJCEP and ACFTA.

[9] Empirical studies of preferential trade agreements (PTAs) generally claim that a threshold for margins of preference is about 4 percent (Francois et al., 2005) to 5 percent (Amiti and Romalis, 2006). If margins or preference are below the threshold it is not worth for firms to claim. This suggests that when MFN rates are below 5 percent, a preferential rate will be ineffective.

that shipments brought through customs under FTAs receive greater attention from customs officials, resulting in delays. To avoid administrative difficulties and delays, many firms opt to pay full duties when exporting. This indicates that the tariff margins under the existing FTAs are still perceived as not offering firms sufficient benefits compared with their costs.

Looking at the costs of COO, the ad-valorem equivalent of ASEAN's Rules of Origin is 3.40 percent across all instruments and sectors. It is 2.09 percent as a trade-weighted average (Cadot and Ing, 2014)[10]. The costs incurred and procedures that have to be complied with to obtain COO were perceived as being relatively high for small and medium enterprises. Whereas the official costs of obtaining COO were perceived to be reasonable across ASEAN countries (i.e. the survey shows the average official costs of obtaining preferential COO was only about USD 10–20 in Southeast Asia), concerns regarding the costs of applying for COO appeared to be prevalent amongst small and medium enterprises who would most likely not have the necessary in-house expertise. Thus, such small and medium enterprises have to engage a third party to assist them in obtaining preferential COO, which incurs third party fees.

Furthermore, many exporting firms in ASEAN countries are already in either free trade zones or operating under special arrangements with tax incentives. Most ASEAN countries had already been operating other schemes prior to the signing of FTAs, such as Information and Technology Agreement (ITA), Export Processing Zone (EPZ), and GSP, which allow firms to enjoy zero-tariffs (and tax incentives), and thus firms preferred to use those schemes rather than FTAs.

The second reason for the relatively low uptake of FTAs was that firms have limited information about FTAs. To date, ASEAN has engaged in at least six regional FTAs and a significant number of bilateral FTAs. However, on average, more than 60 percent of respondents across countries in the manufacturing sector claimed that the information about FTAs and how to use them was still limited or very limited. Government websites were cited as the top sources for obtaining information about FTAs, including their procedures and costs. Freight forwarding companies were the second source for information about FTAs. In certain

[10] This is in line with those in Central Europe of 5 percent (Herin, 1986) and 4.5 percent for the North American Free Trade Agreement (NAFTA) (Portugal–Perez, 2009).

countries, such as Cambodia, 70 percent of firms using FTAs claimed they are urged to do so by their government, whilst the other 30 percent are asked to do so by their trading partners. In Myanmar, interviews indicated that FTAs are even still perceived as another manifestation of trade restrictions.

5. Conclusions and Policy Recommendations

In conclusion, the intensity of export activities relative to total sales and that of imported inputs relative to total inputs play significant roles in the use of FTAs. To further improve the use of FTAs in the region, we recommend:

First, to increase the benefit margins of FTAs, and thus provide additional gains from the existing ASEAN+1 FTAs, ASEAN should set a motivating yet feasible level of tariff elimination in their preferential agreements. Simultaneously, for ASEAN to address the issue of the number of non-tariff measures, which are perceived to be increasing as tariff rates decline, the governments should set up country-level regulatory-oversight agencies to carry out non-tariff measure reviews (Cadot, Munadi, and Ing, 2013).

Second, to increase the use of FTAs, ASEAN should improve efforts to simplify ROO. Prima facie, ASEAN's ROO have a relatively simple and transparent structure, with 28 percent of them subject to a 40 percent regional value content (RVC–40) or change of tariff classification (CTH). One way to further ease the complexity of ROO is by generalising the alternate rule of ROO (Medalla, 2011) and streamlining ROO in light industries such as apparel, footwear, and prepared foods, which currently make up a low share of Asia Pacific trade, but may provide good opportunities for export-led growth and thus poverty reduction in some of the region's poorest countries (Cadot and Ing, 2014).

Last, to improve the information on FTAs and how to use them, one priority should be to improve the service quality of government websites and the help desks of authorities issuing COO. The websites and help desks should act as a front line in dealing with FTA regulations and policies for traders. Improvements should cover both hard and soft infrastructures of the websites and help desks, including the skills and capacities of officials. The improvement process could start with providing detailed information on COO

requirements online, or on other publicly available media, along with the costs of obtaining COO and the departments that are responsible for issuing them, as well as the individuals in charge and their contact details. The information about FTAs could also be disseminated through other accessible means such as mobile phones or other communication devices. The help desks and/or other units related to issuing COO and/or providing information on COO should be adequately trained to respond to basic questions relating to FTAs, trade agreement policy and regulations, benefits, and how to obtain a COO, including FTA procedures and costs. National chambers of commerce and business associations also play important roles in disseminating information about FTAs and providing input for governments when they are designing trade agreements. The majority of firms surveyed asserted that they would like to see more seminars, briefings, and consultations conducted to promote the use of existing FTAs and any new FTAs. Governments should also consider adopting an evaluation mechanism to review the use FTAs, which would allow the private sector to provide input that could be used as a basis when forming other FTAs, or any other type of cooperation or economic preferential agreement. In doing so, suitable methods to measure the effectiveness of FTAs or other preferential trade agreements should be implemented, and surveys or discussions with firms and business associations could complement the resulting findings on the effectiveness of the use of FTAs.

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Appendix

A.1. Firm Characteristics in the Manufacturing Sector

The surveys cover 630 exporting/importing manufacturing firms across ASEAN countries, excluding Brunei.

a. By Size

Country	Small	Medium	Large	Unknown	Total
Cambodia	5	8	36	11	60
Indonesia	4	41	55	4	104
Lao PDR	26	27	7	0	60
Malaysia	18	23	8	2	51
Myanmar	12	12	22	6	52
Philippines	20	45	39	4	108
Singapore	3	3	1	0	7
Thailand	16	37	24	8	85
Viet Nam	34	36	29	4	103
Total	138	232	221	39	630

Notes: Small (≤50 employees); Medium (51–300 employees); Large (>300 employees) based on IFC (2012).

b. By Ownership

Country	Fully Domestic	Fully Foreign	Joint Venture	Unknown	Total
1- Cambodia	0	54	4	2	60
2 - Indonesia	27	41	18	18	104
3 - Lao PDR	19	25	16	0	60
4 - Malaysia	45	0	5	1	51
5 - Myanmar	51	0	1	0	52
6 - Philippines	26	40	35	7	108
7 - Singapore	6	0	1	0	7
8 - Thailand	56	2	18	9	85
9 - Viet Nam	78	19	5	1	103
Total	308	181	103	38	630

c. By Export and Import Activities

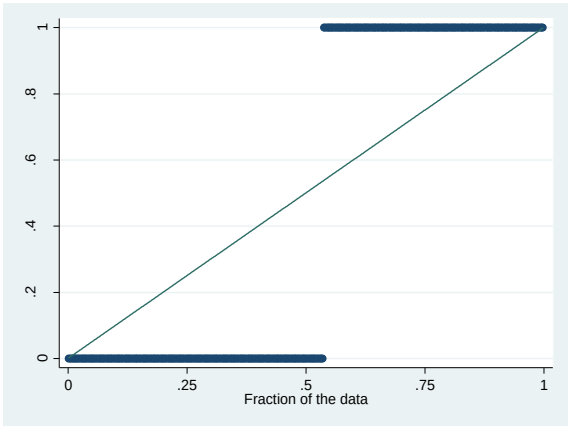
Country	Export Only	Import Only	Export & Import	Unknown	Total
1- Cambodia	2	4	49	5	60
2 - Indonesia	22	13	63	6	104
3 - Lao PDR	16	15	26	3	60
4 - Malaysia	17	2	29	3	51
5 - Myanmar	44	1	6	1	52
6 - Philippines	15	10	76	7	108
7 - Singapore	1	1	4	1	7
8 - Thailand	25	5	53	2	85
9 - Viet Nam	18	12	48	25	103
Total	160	63	354	53	630

Summary of variables

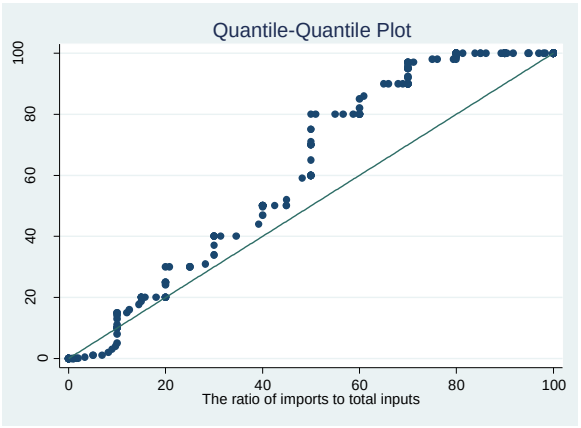
Variable	Obs	Mean	Std. Dev.	Min	Max
FTA	630	.4634921	.4990616	0	1
dx	630	.6244131	.4846534	0	1
exp_share	630	70.23235	29.7463	0	100
dm	630	.4913928	.5003175	0	1
imp_share	630	60.5813	25.46342	0	100
d_dom	630	.4888889	.5002737	0	1
Dom_share	630	41.72106	36.65538	0	100
Dummy_GSP	630	.970266	.1699855	0	1
ln_worker	630	5.170694	1.687104	1.098612	10.59663
ln_gdpcap	630	7.921816	.7412697	6.931019	10.87056

A.2. Data and Estimations

The Quantile Plot of the Use of FTAs (1=the use of FTAs; 0=otherwise)



The Quantile-Quantile Plot of Exports and Imports

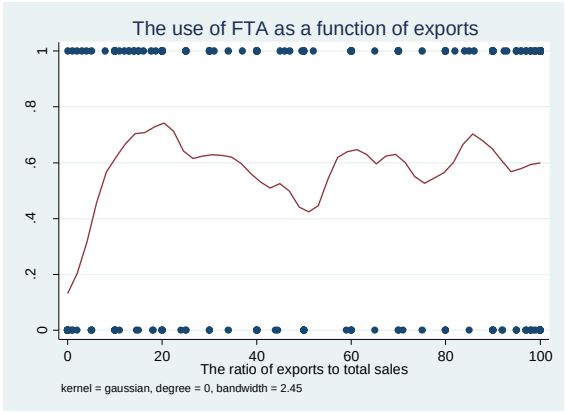


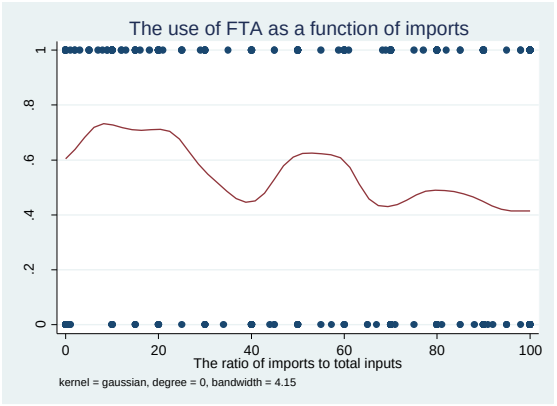
Source: Author's estimations.

The Use of FTAs as a Function of Exports

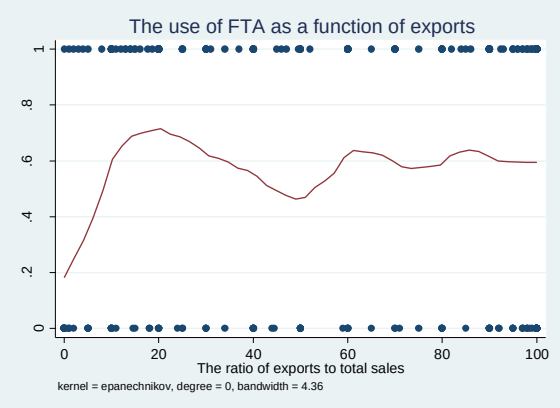
The Use of FTAs as a Function of Imports

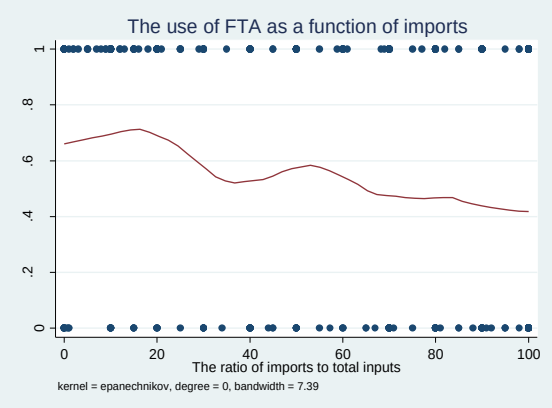
Kernel (Gaussian) Probability Density Estimation





Kernel (Epanechnikov) Probability Density Estimation





Source: Authors' calculations.