

THE LIMITED UTILIZATION OF FREE TRADE AGREEMENTS: AN  
EMPIRICAL STUDY OF THE USE OF THE INDONESIA-JAPAN  
ECONOMIC PARTNERSHIP AGREEMENT BY FIRMS

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## SUMMARY

The number of Free Trade Agreements (FTAs) in the Asia-Pacific region has been growing remarkably in the past two decades. An increasing number of empirical studies, however, have found that those tariff rates lowered by FTAs are used only for a small number of traded goods and by a small number of trading firms. This dissertation presents an empirical study investigating the association of FTA use with firm and manager characteristics, so to gain a better understanding of the limited use of FTAs. Firm characteristics is defined as the size, age, years in operation, and FDI status of firms, as well as their trading behavior. Manager characteristics is defined as the age, years of schooling and professional experience, and FTA knowledge of managers. The Indonesia-Japan Economic Partnership Agreement (IJEPA) is used as a case study.

The empirical study finds that the limited FTA use is associated to two factors: the FTA structure and the ROO fixed cost selection effect. The FTA structure consist of the tariff margin or the saving benefit obtained from the difference between the MFN tariffs and FTA tariffs, and the Rules of Origins (ROO) or a fixed cost firms pay

to be eligible for FTA tariffs. Firms pay a higher fixed cost for a more restrictive ROO. The study finds that firms respond to the FTA structure by trading products with highly restrictive ROO and largest tariff margin. Since the tariff margin is a variable cost calculated based on the value of shipments, products are sent in large-scale shipments and on an irregular pattern. This behavior allows firm to accumulate large tariff savings and compensate for the costly ROO. Hence, the FTA's ROO and tariffs are endogenous factors in the FTA structure that determine firms' use of an FTA.

The highly restrictive and costly ROO creates a ROO fixed cost selection effect or a condition in which firms face a short-term capacity constraint. Firms that trade a large proportion of their production with the FTA-market, have been in operation for long years, and capitalize by FDI are more likely to manage the ROO selection effect and use FTA. The results suggest that firms use an FTA for the long-term prospect of engaging in an intensive trade activity, since continuous large-scale shipments would make the ROO fixed cost negligible in the long run. The results also indicate that firms do not use FTA tariffs in ad-hoc trading activity. Future research can use transaction-level data to test such an association.

The characteristics of managers in FTA-using firms also relates to the firms' large proportion of trade to an FTA-market. FTA use is associated with the managers' years of work experience or the process of learning-by-doing. Due to the firms' intensive trade activity to an FTA-market, managers tend to specialize their knowledge on a specific FTA. Attendance to government-organized awareness campaigns are useful know-how to managers, but do not trigger FTA use.

To both my pride and joy, may this work inspire you  
to persevere in your pursuit of knowledge and wisdom.

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# Chapter 1 Examining the Use of the Indonesia-Japan Economic Partnership Agreement: A two-prong approach

## 1.1 Introduction

The Asia-Pacific region is brimming with Free Trade Agreements (FTAs). As of 2017, the World Trade Organization (WTO) had received notification of 38 plurilateral and 97 bilateral FTAs involving one or several Asian countries. These numbers are in stark contrast to the notification of five plurilateral and nine bilateral FTAs<sup>1</sup> in the year 2002. The rapid multiplication of FTAs is among others driven by the development of the trade-in-task network in the region. In that network, the production of goods is fragmented across multiple countries before their final assembly in one country (Grossman and Rossi-Hansberg, 2008). Countries seek to supply to these networks by becoming FTA members. FTA-member countries pay lower FTA preferential tariffs than the general or Most Favored Nation (MFN)<sup>2</sup> tariffs charged to non-FTA member countries. Due to the lower FTA tariffs, products from FTA-members become more competitively priced than products from non-FTA members. Given the discriminatory nature of FTAs, countries do not want to be isolated from or left out of preferential schemes, risking their firms' competitiveness in the burgeoning trade-in-task networks.

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<sup>1</sup> Retrieved from the Website of the Asian Development Bank. Asia Regional Integration Center: Tracking Asian Integration, 26 November 2018 at <https://aric.adb.org/fta>

<sup>2</sup> The MFN tariffs are the tariffs imposed by a member country of the WTO on other WTO member countries.

Despite the proliferation of FTAs, the proportion of trade-using FTA tariffs has been observed to be somewhat limited. For example, in a firm-level survey on the use of ASEAN and ASEAN+1<sup>3</sup> FTAs, only 24% of the sampled firms in Malaysia were using FTAs in 2012, compared to the 31% in 2011 in Vietnam, and 47.3% in 2012 in Thailand (Tambunan and Chandra, 2013). Kawai and Wignaraja (2011) reported some 45% of surveyed firms in China had used FTAs to trade, compared to 29% in Japan, 20.8% in the Republic of Korea, and 20% in the Philippines. According to China Customs' (2014) record, only 34.95% of all eligible FTA imports to China used the ASEAN-China FTA (ACFTA) tariffs in 2013 - eight years after the FTA's enactment. In the various FTAs in which Thailand is involved, the proportion of trade that used FTA tariffs within the total value of trade in 2009 ranged from 43.9% to 60.9% for exports, and 21%-71% for imports (Menon, 2013). In the case of the Indonesia-Japan Economic Partnership Agreement (IJEPA), only 17% of exports to Japan used preferential tariffs in 2010 (Pangestu, 2010). This phenomenon highlights how the proliferation of FTAs "does not automatically increase the number of transactions that utilize FTA schemes" (Hayakawa et al., 2009). Those relatively low figures also prompt two questions: what factors could explain the limited use of FTAs by firms, and what policies could enhance FTA use?

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<sup>3</sup> ASEAN+1 or ASEAN-Plus-One FTAs are the five FTAs that involves the 10 countries member of the Association of South-East Asian Nation (ASEAN) with one partner country. Countries that have become ASEAN FTA partners are China, Japan, Republic of Korea, India, Australia and New Zealand. Except for AANZFTA or ASEAN-Australia-New Zealand FTA, other partner countries are involved individually with ASEAN, i.e., ACFTA or the ASEAN-China FTA.



In light of the above, this dissertation investigates the association of FTA use with factors related to firm and product characteristics. There are two reasons for choosing the two subjects for research. Firstly, firms are the primary beneficiaries of FTAs. The study of firms seeks to examine firm characteristics associated with FTA use and firms that have yet to benefit from an FTA. Firm characteristics is defined as the size, age, years in operation, and FDI status of firms – including the characteristics of managers that firms hire. Manager characteristics include the age, years of schooling and professional experience, and FTA knowledge of the managers. Secondly, products are what firms are trading using FTAs. The study of products seeks to identify factors that firms take into account in choosing to use an FTA, such as the ROO and tariffs. It also identifies firms' behavior given the characteristics of products that firms trade, such as the firms' shipping behavior and its trade proportion to FTA-markets. These examinations are expected to present possible explanations for the limited proportion of trade that uses an FTA and the limited use of FTA by firms.

The two subjects warrant the use of two different methodologies or the 'two-prong approach.' Each of the methodologies has its advantages and limitations. The first methodology is to use customs data. Customs data are used to examine products that are traded by firms over a long period and to identify the impact of tariff reduction or exclusion by traded products (Cheong et al., 2010). Unfortunately, customs data does not contain information on the characteristics of firms that use FTAs. In order to obtain primary data on firm characteristics, studies use firm-level

surveys. The disadvantage of firm-level surveys is in its inability to cover a large number of firms. Firm-level surveys hardly represent all of the firms, industries, and traded-goods that use FTAs. Hence, the results of the firm-level survey may also be biased. The generalization of the results should be made cautiously since attribution is contextual to the objective of the survey. Nevertheless, each methodology complements the other in providing a wholesome picture of FTA use by firms. Both methodologies are applied in the study of the Indonesia-Japan Economic Partnership Agreement or the IJEPA. To the author's knowledge, this dissertation is one of the first attempts to simultaneously examine the use of a bilateral FTA by the two-prong approach<sup>4</sup>.

With regards to the theoretical framework on the use of FTAs by firms, a large body of literature attributes the limited use of FTAs to the FTA's Rules of Origin (ROO) (Krueger, 1993; Krishna and Krueger 1995 and 2000; Krishna, 2005; Bureau et al., 2007; Cadot et al., 2006; Francois et al., 2006; Manchin, 2006; Kim and Cho, 2010; and Hayakawa et al., 2014). The WTO defines the ROO as "laws, regulations and administrative determinations... to determine the country of origin of goods."<sup>5</sup> In the context of an FTA<sup>6</sup>, the ROO is a set of criteria that a traded product needs to

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<sup>4</sup> To the best of knowledge, a similar approach has been exercised in one study of a bilateral FTA between Switzerland and Japan (Schaub, 2012).

<sup>5</sup> As defined in the WTO Agreement on Rules of Origin of the Uruguay Round Agreement.

<sup>6</sup> There are two types of ROO, one that is set for preferential treatment or FTA and another that is set for non-preferential treatment. Although both are used to determine the country of origin, the non-preferential ROO are mainly used for labelling and marketing requirement, calculating statistical record, and ensuring that quotas, countervailing duties and anti-dumping policies are not being violated. Unlike preferential ROO that extends preferential tariff to the trade goods, non-preferential ROO does not grant preferential tariff.

comply with to be eligible for an FTA preferential treatment. The criteria often prescribe firms to use input materials that originate from an FTA-country or to produce the goods using specific processing techniques in an FTA-country. As a result, firms have to procure a larger proportion of input materials from an FTA-country, change procurement patterns, or invest in new machinery. Hence to be eligible for FTA preferential treatments, firms' products have to meet the ROO criteria.

Theoretically, the ROO is expected to limit FTA use by firms. The main reason is due to the restrictiveness of the ROO criteria. The more restrictive the criteria, the more challenging it is to firms to fulfill it since the 'originating' criteria constraints the choices of production and creates higher production cost (Krishna, 2005). The ROO is a fixed cost that firms need to incur initially so to be eligible for FTA preferential treatment. In addition to the ROO fixed cost, firms also need to pay for the Certificate of Origins (COO). The COO is a certificate that informs the origin of the goods in each shipment. Hence, firms incur additional costs in producing or shipping their products under an FTA. In light of this, not all firms would be able to pay the ROO fixed cost, and not all firms would consider FTA use as profitable. Therefore, products with a restrictive ROO are expected to have a negative association with FTA use.

To compensate for the restrictive ROO, firms send products that have a high tariff margin or send high-value shipments. The tariff margin is the difference between the lower FTA tariffs and the higher MFN tariffs. A wide tariff margin represents a higher discount and a lower tariff payment to firms. Hence, FTA use is

expected to have a positive association in products that have a high tariff margin. Firms can also send high-value shipments to compensate for the ROO fixed cost. The reason is that tariffs represent a variable cost. Tariffs are charged as a proportion to the value of the shipments. By sending high-value shipments, firms incur a lower amount of tariff payment. The payment of tariffs compensates for the payment for the ROO fixed cost. Another way to save on the cost associated with the ROO is to send infrequent shipments. By shipping in infrequent or occasional bouts, firms can save on the cost of processing multiple COO. Hence, firms would have to weigh in the cost and benefit of using an FTA. Even though a restrictive ROO is expected to have a negative association with FTA use, a high tariff margin, high-value shipments, and infrequent shipments are expected to have a positive association with FTA use.

The ROO fixed cost is also expected to limit FTA use to firms with specific characteristics. The reason is that although the ROO fixed cost is equivalent in the long run, but it is not equivalent in the short run as firms face constraints in capacity (Krishna and Krueger, 2000). Firms that are large or highly-productive, capitalized by FDI, and in operation for many years, are expected to face fewer constraints than the lesser productive, local or new firms. Large or highly-productive firms have more financial capacity and resources, FDI firms have wide access to information on FTAs, and older firms have established experience and credibility that will ease them to tap into additional financial resources.

Another characteristic that is also expected to have a positive association with FTA use is the firms' proportion of trade with an FTA-market. FTA-using firms are expected to have a larger proportion of trade to the FTA-market than to other markets. Firms that engage in intense trading activity to an FTA-market would see their ROO fixed cost become negligible in the long run. Firms would also concentrate its trade to an FTA-market since for each FTA-market firms have to pay a different or an additional ROO fixed cost (Bhagwati, 1995). Firms that have the characteristics of being highly-productive, capitalized by FDI, and operating for many years, as well as having a high trade proportion to an FTA-market, are expected to have a positive association with FTA use. Hence, the ROO fixed cost creates a 'selection effect' on the characteristics of firms or products that use FTAs.

Other factors related to FTA use that are rarely included in empirical studies are the firms' awareness of FTAs and characteristics of managers. Firms hire managers to handle trade activities. These managers learn how to use FTAs, handle procurement, maintain documentation of input materials, and calculate the cost and benefit of using an FTA. Although there is little to none theoretical framework and empirical study on the association of manager characteristics with FTA use, literature on the internationalization of firms have associated some manager characteristics to the acceleration of firms' internationalization (Leonidou et al., 1998; Cavusgil et al., 1994; and Zou and Stan, 1998).

Among the manager characteristics expected to associate with FTA use are those related to the process of learning-by-doing and the ability to learn about FTAs,

as signified by the age, years of working experience and education level of the manager. Meanwhile variables related to FTA knowledge are the managers' attendance to government-organized campaigns and knowledge of various FTAs. Several firm-level surveys have used descriptive statistics to describe the lack of awareness as one of the reasons for the lack of FTA use. Hence an exploratory empirical study on the significance of manager characteristics and FTA awareness could contribute to the growing literature on FTA use by firms.

The first Chapter of this dissertation is organized as such: the second section presents the purpose and motivation of this study, including the significance of trade, FTA and Public Policy; the reasons for choosing the IJEPAs as a case study; the identified knowledge gap based on the review of literature; and the research objective. The third section briefly presents the research methodologies or the two prong-approach. The fourth section discusses the main findings from the two empirical studies, as well as identifying the connections between them. The last section presents the organization of this dissertation.

## **1.2 Purpose and Motivation of the Study**

### **1.2.1 The Significance of FTA and Rules of Origins**

Governments engage in FTAs as part of their strategic trade policy or the policy to intervene in the market and to protect and create competitive industries after the opening of the market to trade. FTAs become the government's policy of choice as they are allowed by the WTO and can limit the risk of retaliation from other countries

or adversely-impacted stakeholders. Hence, governments tend to engage in FTAs that are welfare-improving.

With the stalled Doha Round and the growth of the global trade-in-task network in the Asia-Pacific, governments are increasingly turning to FTAs to improve their countries' competitiveness. FTAs are used to secure market access vis-à-vis competition from other countries. Governments negotiate FTAs to support domestic industries in the export of final products and import of input materials. Thus the proliferation of FTAs in the Asia-Pacific region does not happen in a vacuum. The ongoing domestic, regional, and global developments provide an essential backdrop to this phenomenon.

There are several reasons for policymakers to be concerned of the proliferation and limited use of FTAs. Firstly, in trade liberalization efforts, FTAs are known as the second-best choice after the WTO. However, FTAs are increasingly used as a geopolitical containment policy. The mega-FTAs that emerge in the Asia-Pacific region are extensions of the ongoing competition and increased political tension between the traditional and the rising powers in the region. Hence, these FTA trade blocks may put pressure on, if not held hostage of the negotiations under the multilateral trading system.

Secondly, the different ROO criteria set by each FTA have been criticized for the creation of the "noodle bowl effect" (Bhagwati, 1995). Firms that seek to expand their market destinations by taking advantage of FTAs' tariffs would have to incur an extra fixed cost for each FTA's ROO (Bhagwati, 1995; and Krishna and Krueger,

1995). Thus, the overlapping and entangling ROO criteria not only creates confusion but also additional costs to firms.

Thirdly, the proliferation of FTAs has, among others, caused the drain in the negotiation capacity of trade officers in developing countries (Bhagwati, 2008). Trade negotiations are herculean tasks associated with the channeling of resources, time, money, and political candor. Given the limited availability of resources in developing countries, there is an opportunity cost for allocating resources into FTA negotiations.

At the outset of the modest figures on the proportion of FTA trade, the improvement of FTA use is considered to be the “most important challenge associated with Asian FTAs” (Baldwin et al., 2014). The pressure that mega-FTAs put into the multilateral trading system, the overlapping and costly ROOs, and the resource-consuming negotiations represent opportunity cost for growth. The underutilization of FTAs could undermine the impact of FTAs and eventually decrease any future incentive to establish new agreements (Baldwin, 2005). The underutilization of FTAs could also mean a loss of opportunity for economic growth. The second Chapter of this dissertation elaborates on these unfolding of events and their consequences. Even though they are not the focus of this dissertation, they nevertheless lend important motivation and context.



### **1.2.2 Trade between Japan and Indonesia**

Indonesia and Japan negotiated the Indonesia-Japan Economic Partnership Agreement (IJEPA) in response to the large trade flow between the two countries. In the year 2007, Japan was the third-largest source of imports to Indonesia, accounting for 8.8% of Indonesia's total imports. It was also the primary destination for Indonesian exports accounting for 20.7% of its total exports (WTO, 2009). Meanwhile, Indonesia ranked as the seventh-largest source of imports to Japan, accounting for 4.3% of Japan's total imports, and 17<sup>th</sup> largest source of exports, accounting for 1.3% of Japan's total export (WTO, 2009). Indonesia mainly supplied raw materials such as minerals and base metals that fed into Japanese industries. Thus, in the period leading to the enactment of the IJEPA on 1 July of 2008, Indonesia was part of the extensive burgeoning trade-in-task network of Japan.

There are several reasons for choosing the Indonesia-Japan Economic Partnership Agreement (IJEPA) as a case study in this dissertation. Firstly, this study uses a unique data set provided by the Ministry of Trade of the Republic of Indonesia (MOTRI). The data set is obtained from a database of exporting firms that have administratively applied to use FTAs, including the IJEPA. The data set has enabled this study to shed light on the use of bilateral FTA by firms, a topic that is rarely investigated in previous literature. Access to the database presents two advantages to this study. One, it enables the sampling of firms that have market-access or clients in Japan. Two, since the database contains firms that have used FTAs, the sampled firms are expected to be aware of FTAs. Awareness and market access are essential

conditions for the objective of this study. Firms are often found to not use FTAs due to their lack of market access. By sampling firms that have market access, the study will be able to apply the theoretical framework proposed by Demidova and Krishna (2007) on firms' decision to use FTA tariffs over MFN tariffs. By controlling for awareness, the study observes the significance of awareness in FTA use. Thus the database enables this study to propose an alternative methodology to examine the association of FTA use to the characteristics of firms that have market access and FTA awareness.

Secondly, the IJEPA is the only preferential agreement that exists between Indonesia and Japan. This condition enabled this study to conduct an isolated examination on FTA use as no FTAs overlap with the IJEPA. Overlapping FTAs may create technical difficulties in calculating the total proportion of preferential trade. One example would be the FTAs agreed by Thailand and Japan: the bilateral FTA Japan Thailand Economic Partnership Agreement (JTEPA) and the regional FTA ASEAN Japan Comprehensive Economic Partnership (AJCEP). Assume that the JTEPA provides a lower tariff margin and a less restrictive ROO, the AJCEP provides a higher tariff margin with a more restrictive ROO, and that both FTAs create the same benefits to the firms. Firms may choose the AJCEP or the JTEPA tariff to import cars from Japan. Since the two FTAs overlap, the total preferential trade for imported cars is equal to the value of trade under the AJCEP plus the trade under the JTEPA. Any research on imported cars that use the JTEPA tariff cannot ignore the possibility that such proportion may be lower because of the presence of the

AJCEP. Therefore, in the absence of another FTA between Japan and Indonesia, this study can specify that the proportion of IJEPA trade is not affected by any overlapping FTA.

Lastly, past studies observed that only a limited proportion of trade used IJEPA preferential tariffs. According to Pangestu (2010), the former Minister of Trade of Indonesia, the proportion of Indonesian export that used the IJEPA tariff was recorded at 17% of the total trade between Indonesia and Japan in 2010. This figure is lower than the use of ACFTA at 42%, the ASEAN-Korea FTA (AKFTA) at 37% and the ASEAN FTA (AFTA) at 36% in the same year (Pangestu, 2010). She attributed the limited proportion of IJEPA trade to the low tariff margin and the high-tariffs and non-tariff measures (NTM) on Indonesia's main export. Sitepu et al. (2015) found that the utilization rate of the IJEPA from January 2011 to May 2012 was at a limited 32.56%, while the utilization rate of the ACFTA is at 35.98%, the AKFTA at 33.61%, and the AFTA at 30.43%.

It can be argued that the modest figures of IJEPA use came from the timing of the studies. Firms still lacked the awareness of the IJEPA in its early period of implementation. The enactment of the IJEPA also coincides with the 2008 global economic crisis. However, those two factors may also have no consequences to the level of IJEPA use. According to the Japan External Trade Organization's yearly survey, the proportion of IJEPA-using firms tends to be consistently low from 2008 to 2015. The lowest figure was in 2008, with 21.7% of the sampled firms reporting to have used the IJEPA. The highest figure was in 2010, at 43.3% (JETRO, 2009 -

2016). Hence an empirical study that uses more recent panel data could shed a better-understanding of the level of IJEPA use.

Another possible explanation for the low proportion of IJEPA use is in its tariff structure and ROO. Approximately 41.7% of Japan's tariff lines<sup>7</sup> were already subject to duty-free MFN before the enactment of the IJEPA. As a result, a large portion of trade uses MFN tariffs. Meanwhile, a large number of tariff lines that are liberalized by the IJEPA from 2008 to 2023 consists of tariff lines that were once subject to a 10% tariffs or less (WTO, 2009). Hence, the tariff margin may not be wide enough for all products for firms to use the FTA. The IJEPA ROO could also be very costly for firms. In comparing the restrictiveness of the East Asian FTAs, Maulana (2013) finds that the IJEPA ROO tends to be more restrictive than the ACFTA and AFKTA. An empirical study would be useful to observe firms' response to the tariff margin and the ROO.

In conclusion, the IJEPA is a trade agreement that involves Indonesia and Japan, two natural trading partners that operate within the trade-in-task network in Asia-Pacific. This dissertation uses the IJEPA as a study case for several reasons. The exclusive access to the MOTRI database presents an opportunity to present new findings and to conduct a different sampling methodology. As the primary and sole preferential trade scheme between the two countries, the IJEPA enables for an isolated analysis. The low level of IJEPA use in its early period of implementation

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<sup>7</sup> Each traded product has a tariff line, or a national code that the country use to classify and describe the product.

warrants further research. To the best of the author's knowledge, the proposed two-prong approach has never been used simultaneously to observe the use of the IJEPA by firms.

### **1.3 Knowledge Gap**

This dissertation seeks to contribute to the knowledge gap in three ways.

Firstly, studies on the use of bilateral FTAs between developing and developed economies have rarely been conducted. Empirical studies have observed factors associated with the use of unilateral preferential schemes<sup>8</sup> implemented by the US and EU towards developing or least developed economies (Cadot et al., 2006; Francois et al., 2006; Manchin, 2006; and Bureau et al., 2007), bilateral FTAs between developed economies (Keck and Lendle, 2012; and Schaub, 2012), and regional FTAs between Korea and ASEAN member countries (Kim and Cho, 2010; and Hayakawa et al., 2014). Hence this dissertation presents a different scope by examining the use of a bilateral FTA that involves a developed and developing economy like Japan and Indonesia.

Secondly, amidst the limited numbers of empirical studies on FTA use, this dissertation employs a two-prong approach with the aim of conducting a comprehensive examination of one FTA. The two prong-approach develops upon

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<sup>8</sup> Unilateral preferential scheme are non-reciprocal preferential treatment provided to certain products from developing and least developed countries. FTAs on the other hand are reciprocal preferential treatment.

past studies for comparability of results. The firm-level survey, for example, takes into account variables that were used in past studies such as the firms' intensity to trade and source of capital (Ing et al., 2016), knowledge of FTA (Wignaraja, 2014), sectoral dummies (Takahashi and Urata, 2008; and Hayakawa et al., 2009), firms' number of years in operation (Wignaraja, 2014; and Hayakawa, 2014a), and firms' size by employment (Takahashi and Urata, 2008 and 2010; Hayakawa et al., 2009; Hiratsuka et al., 2009; Wignaraja, 2014; Hayakawa, 2014a; and Ing et al., 2016). The studies compiled in this dissertation also introduce new variables such as manager characteristics and firms' intensity and pattern of trade. The variable on the firms' pattern of trade is introduced to control the possibility of overestimation upon the use of proxy trade data. A dummy variable on Non-Tariff Measures is also introduced to be used as a control variable and to minimize the possibility of omitted-variable bias. The model also introduces an interaction variable of the ROO and the tariff margin to gain better understanding on the association between the two main variables in this research. By including these new variables, this dissertation seeks to conduct a comprehensive examination of the association of FTA use, present new evidence, and create comparability of results.

Thirdly, firm-level studies have mostly differentiated between firms that are FTA users and non-FTA users. Contrary to those firm-level studies, this dissertation seeks to differentiate between firms that use FTA tariffs and firms that use MFN tariffs to trade with an FTA-country – such as presented by the theoretical framework proposed by Demidova and Krishna (2007). In addition to it, this dissertation also

looks into the association of FTA use with FTA awareness. The reason is that in the descriptive statistics in various past studies, non-FTA users are often identified as firms that do not have market access, nor have an awareness of FTAs. Given the objective of this dissertation, the firm-level sampling is conducted to firms that trade with an FTA-market and have an awareness of FTAs. Hence, this study empirically examines the factors that are associated with FTA use by firms while controlling for the firms' market access and FTA awareness.

In closing, the dissertation not only seeks to create comparability of results and to introduce new variables, but it also seeks to conduct a comprehensive examination of FTA use by firms.

#### **1.4 Research Objectives and Contribution**

The objective of this dissertation is to examine factors associated with FTA use, so to identify the possible explanations for the limited use of FTAs by firms. The two studies contained in this dissertation seek to contribute to the existing empirical studies by proposing an alternative firm-level survey methodology and new variables on the characteristics of firms, managers, and product-related factors. This dissertation also attempts to provide trade negotiators, administrators, and policymakers with practical information, empirical evidence, and possible policy recommendation. This study presents three Chapters of the author's original work, as well as a compilation and discussion on theoretical literature and empirical studies related to FTA use by firms.

### **1.4.1 Research Methodologies**

This study begins with the main research question of what are the firm characteristics and product factors associated with FTA use. This study employs three steps to examine the research question. The first step is to examine the relevant theoretical framework and empirical studies to formulate the hypotheses and research methodology. The second and third step is to apply the two-prong approach.

The first step is presented in Chapter two. The general hypotheses postulate that FTA use is most likely associated with firms that are large, in operation for a number of years, capitalized by FDI, and trade intensively to an FTA-market. These firms engaged in the trade of products that are subject to a large tariff margin and less restrictive ROO. In response to the tariff margin and ROO, firms send high-value shipments infrequently. FTA use is also most likely associated with managers that have years of schooling and working experience in the trading business, as well as managers that have attended Government-organized training and have knowledge of various FTAs. The general hypotheses presented in Chapter two are later adjusted according to the availability of data and presented in Chapters three and four as testable hypotheses.

The second step is the product-level study presented in Chapter three. It starts with the development of panel data containing the utilization rate, average monthly import value, yearly pattern of imports, and tariff margin. The first three variables are calculated from the monthly import data as published by the Japan Customs website for April 2012 – March 2017. The website contains 20,085



observations of monthly import value at the tariff line or the 9-digit level HS. Hence all variables, including the tariff margin, are precise and highly disaggregated for each tariff line. The utilization rate is the dependent variable in the model. It is calculated as the value of trade that uses the IJEPA tariff over the total value of trade that is eligible for the IJEPA tariff. The average monthly import value is the average monthly imports for each Japanese fiscal year of April to March of the next year. The yearly pattern of imports is represented by the coefficient of variation of monthly import value. The ROO restrictiveness score is also constructed based on the IJEPA Annex 2 document and the Estevadeordal Index. The tariff margin and the ROO restrictiveness score are used to build the interaction variable. The dummy variable for the NTM is constructed based on the Trade Analysis and Information System (TRAINS) database of the United Nations Conference on Trade and Development (UNCTAD). The economic model in this study is similar to the model used by Hayakawa, (2014); Keck and Lendl, (2010); and Schaub, (2012) and estimations are done using the Tobit, Double-Hurdle, Linear regression, and Poisson techniques.

Tobit is used to manage the dependent variable, or termed as the FTA utilization rate in this study, which has a rightly-skewed distribution due to a large number of observations with the value of zero and one. This study also uses the Double-Hurdle model to deny the possibility that the association between the ROO and the FTA utilization is driven by possible mis-specification. Cragg (1971) introduces the Double-Hurdle model as an alternative to the Tobit model. Unlike the Tobit model that determines the probability of a positive value and the actual value

by using the same parameter, the Double-Hurdle model presents a more flexible alternative as the outcomes are determined through a Probit model in the first stage and a truncated normal model in the second stage (Burke, 2008). This study presents the results of two estimations, one that includes all observations and another that includes observations with a tariff margin that is larger than zero. Similar past studies use the Heckman sample selection model (Manchin (2006), Tobit and fractional logit (Hakobyan 2015; and Keck and Lendl, 2012), and Tobit (Kim and Cho, 2010; and Hayakawa et al., 2014).

The third step or the firm-level study starts with the design and testing of a questionnaire. It is followed by a firm-level survey of FTA users in the Greater Jakarta Area. The answers to the questionnaire are used to create cross-sectional data for the estimations and to capture qualitative data on managers' perception and experience of using the IJEPA. The MOTRI database is used to sample two types of firms: firms that use the IJEPA and firms that use the ACFTA. ACFTA-using firms that export to Japan are used as a proxy for firms that do not use the IJEPA in their trading activity in 2016. The survey obtained a sample of 73 Indonesian firms. The amount of FTA tariffs that firms use is obtained respectively from the MOTRI database and Japan's tariff schedule<sup>9</sup> as published on the Japan Customs website.

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<sup>9</sup> Tariff Schedule is a table that contains all the tariff (ad-valorem or specific tariff) rates, charges or prices, for each traded product. Each country has a different tariff schedule since each country charges different tariff to another country. Each country publishes its own tariff schedule.

The estimations only use observations with ad-valorem tariffs<sup>10</sup>. Since firms export different types of products, the tariff margin is averaged for all of the products that each firm trade at the 6-digit HS Code<sup>11</sup>. The ROO restrictiveness score is constructed based on the IJEPA Annex 2 document and the Estevadeordal Index, an ordinal index pioneered by Estevadeordal (1999) that assigns score according to the ROO's degree of restrictiveness. The score is also averaged for all of the products that each firm trade at the 6-digit HS Code. To tests the association of FTA use with firm and manager characteristics, ROO restrictiveness and tariff margin, the study develops its model from the Probit model of Takahashi and Urata (2008) and Wignaraja (2014). It also uses linear regression and logit to test the robustness of the results. Chapter three presents two results of the firm-level survey: the estimation on firm and manager characteristics that are associated with FTA use and a summary of the qualitative interview on managers' perception of and experience in IJEPA use. Chapter four presents the results of the estimation.

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<sup>10</sup> The 'ad-valorem tariff' is levied as a percentage of the total value of imported goods, such as 15% tariff for example, on the value of imported goods.

<sup>11</sup> Member countries of the World Customs Organization use the same 6-digit HS Code to identify a product. These 6-digit HS Code are said to be 'harmonized.' Behind the 6-digit HS Code, each country may add two, three, or 4-digit National or Domestic code to further classify the traded products. These 8 to 10-digit are called national 'tariff lines.' See figure 1.1 for further illustration.

## **1.5 Main Findings**

### **1.5.1 Qualitative Results of the Firm-level Survey**

This section summarizes the results of the qualitative survey on managers' perception and experience of using the IJEPA. The majority of the sample consists of large FDI firms engaged in the trading of textile and textile articles and chemicals. Awareness on the IJEPA is found to be moderate with almost all of the managers know of the IJEPA. As expected in firms from developing countries, the majority of firms are very dependent on government-sourced information and assistance – including government-organized awareness campaigns to learn on FTAs. The government still plays a vital role in dispersing information on FTAs.

The processing of the COO in the Greater Jakarta area is found to be challenging for first-timers, especially in filling the ROO forms. However, repeat transactions ease the process of filling COO forms. Firms process the COO either by using in-house resources as it is more cost-effective given their availability of human resources, or outsource services as it is more time-effective given their lack of human resources. The COO processing time is brief or between 1-3 days, and the cost ranges from free to Rp.750.000,-. Hayakawa et al., (2013) also noted the marginal fee of US\$0.5 for the issuance of COO in Indonesia. This fee is relatively cheaper than Japan that charges US\$25.1 or Cambodia that charges between US\$15-US\$50. Compared to other countries, the cost and timing to process COOs in Indonesia are relatively short and value-for-money.

With regards to the cost and benefit of using an FTA, exporting firms would only use FTAs to service clients and to send large or high-value shipments. Although half of the managers believe that FTAs provide them with better pricing, many exporting firms also see FTA use as an additional administration cost. Despite some common belief that only importers benefit from the tariff savings and exporters tend to be 'passive' FTA users, the survey finds that some exporting managers see the strategic and long-term non-monetary benefits of using an FTA. FTA use is said to increase the firms' profit, export quantity, and competitiveness, and maintain the firms' long-term clientele in the FTA-market. Hence, although the value of the shipment is an important factor in the firms' decision to use an FTA, some exporting also use FTAs to maintain their long-term market access to FTA-markets.

### **1.5.2 Estimation Results for the Product-level Study**

This section briefly presents the results of the estimation from the product-level study.

First, the average monthly import value reports a consistent positive association with FTA use across all specifications. The higher the shipping value, the more likely it is that firms use an FTA. This result is also in line with the hypothesis and a prior study by Hayakawa et al. (2013). By sending high-value shipments, firms amass more tariff savings to compensate for the ROO fixed cost. Firms that trade products with a restrictive ROO and high tariff margin reap more tariff savings benefit by sending high-value shipments.

Secondly, the NTM dummy and the interaction variable for ROO and tariff margin both report a consistent negative association with FTA use across all specifications. As expected, firms are less likely to use FTA for products that has an NTM as it increases the cost and requirements that firms need to fulfill in addition to the ROO fixed cost set under the FTA. The coefficient of the interaction variable also reports a negative association, which suggest that the more positive the effect of the tariff margin to FTA use, the more restrictive the ROO or vice-versa. These results confirms that the IJEPA structure offers a high tariff margin for products with a high ROO restrictiveness level. Cadot et al. (2006) and Gibbons (2010) present similar cases of “where incentives of preference utilization were highest, the highest barriers to their utilization were found”.

Thirdly, upon the inclusion of the interaction term, both the ROO restrictiveness score and the tariff margin show a positive association with FTA use. This positive association between the FTA use and the ROO restrictiveness score is unexpected, since firms are more likely to use FTA for products with less restrictive ROO and high tariff margin - in line with the hypothesis and prior studies by Hayakawa et al. (2013) and Keck and Lendl (2012).

Although this result is contrary to the hypothesis and the results of past studies, there are possible explanations to this result. Firstly, the positive coefficient of the ROO restrictiveness score tends to be very small compared to the magnitude of the negative coefficient of the interaction variable. Hence the overall association of the ROO restrictiveness score to the FTA utilization rate tend to be negative.

Secondly, another explanation for this unexpected positive association between the ROO restrictiveness and the FTA utilization rate relates to the way the IJEPA is structured. Since the IJEPA is found to offer a very high tariff margin for products with very restrictive ROO, firms tend to use the IJEPA for these sorts of products. Coincidentally, these products are mostly consumer goods in which Indonesia has a comparative advantage over Japan. Lastly, a similar positive association between the ROO and utilization rate is also found in the study of FTAs between a developing and developed country of Thailand and Japan (Hayakawa, 2014b). Despite the contrary results, the tariff margin association becomes negative upon the addition of industrial dummy, suggesting that among products within the same industry the FTA tends to be used for products with a less restrictive ROO. Nevertheless, in the general trade between Indonesia and Japan, firms tend to use the IJEPA for products that have a restrictive ROO and high tariff margin.

Lastly, the coefficient of variation presents mixed association depending on the model. A small value of the coefficient of variation indicates that there is a lower dispersion in the pattern or the value of the yearly average monthly shipment. In other words, firms tend to use the FTA to send products at a regular value and consistent pattern of shipments. On the other hand, a large value of the coefficient of variation indicates that there is a high volatility in terms of the pattern or the value of the shipments. The mixed results warrants further research by using firm-level transaction data.

To sum up, the results of the product-level study suggest that firms tend to send products with high tariff margins and restrictive ROO. They also seek to accumulate higher savings in terms of tariff payments by sending high-value shipments. By reaping a higher tariff savings firms compensate for the costly ROO fixed cost. The regular pattern of shipments at a similar value is supported by the low cost of processing multiple COO.

### **1.5.3 Estimation Results for the Firm-level Study**

This section briefly presents the estimation results of the product-level study and the conclusions of both the firm and product studies.

First, the estimation shows a negative association between FTA use and the ROO. This finding is in line with theories on the negative impact of the ROO on the use of FTAs (Krishna and Krueger, 1995; and Krishna, 2005). To comply with the ROO, firms incur a fixed cost. Highly restrictive ROO criteria require a higher fixed cost and create capacity constraints in the firms' production curve.

Second, the findings on firm characteristics indicate that FTA use has a positive association with the firms' trade proportion to an FTA-market, years of establishment, and FDI status. FTA use is also found to have a negative association with firms' size and firms' asset. Although the positive associations between FTA use and the trade proportion, years in operation and FTA capitalization are somehow expected, the negative association between FTA use and the firms' size and firms' asset seem to be contrary to the results of past studies. A plausible explanation could



be that the results of the firm-level study tend to be specific to the sampling methodology. In other words, since this study sample firms that are all users of FTA – whether the IJEPA or the ACFTA, some specific characteristics identified in the firm-level study presents the relative or comparative conditions of firms that use the IJEPA to firms that use the ACFTA. Hence, smaller firms with a high proportion of trade to Japan, long years in operation, and capitalization by FDI, tend to use the IJEPA instead of the ACFTA.

The main finding of the firm-level study is in the coefficient of the firms' trade proportion to the Japanese market. Across all specifications, the variable shows a highly significant positive association with IJEPA use. The higher the proportion of trade to the Japanese market in the overall trade that firms do, the more likely the firm uses the IJEPA. Several possibilities could explain the positive association. First, since a firm has to incur an additional ROO fixed cost for each FTA-market (Bhagwati, 1995), a firm would tend to concentrate its trade activity with a specific FTA-market. Second, in firms that have long conducted intensive trade activity with an FTA-market, it is more beneficial to use the FTA. Third, in firms that receive regular orders from FTA-market clients, it is more beneficial to invest in the ROO early on due to the prospect of spreading the ROO fixed cost into multiple shipments. In all cases, as firms concentrate their trading activities with an FTA-market, their ROO fixed cost becomes negligible in the long run.

The firm-level study also found a positive association between IJEPA use and firms' years in operation. The longer a firm operates, the more likely it is to use the

IJEPA. While this result is consistent with the findings by Wignaraja (2014) that older manufacturing firms in Indonesia with more experience tend to use FTAs, there are three possible explanations for this positive association. Firstly, the IJEPA has been enacted since 1 July 2008 while the ACFTA entered into force since 1 January 2010. Hence older firms may have the first-mover advantage to use the IJEPA, since the ACFTA was enacted more recently. Secondly, as proposed by Krishna and Krueger (1995), although the ROO fixed cost can be negligible in the long run, it creates capacity constraints in the short run. Older firms, with their accumulated profit, years of experience, and long built-up credibility have a better chance of tapping into external financial sources when they face capacity constraints. Hence, older firms have a better opportunity for the initial use of an FTA than new firms. Secondly, the longer these firms operate and trade using an FTA, the lower the FTA ROO fixed cost is per shipments since the initial ROO fixed cost is spread over multiple shipments. New firms or potential FTA users, on the other hand, incur an initial ROO fixed cost that makes their initial production price less competitive compared to older firms. Hence without the possibility of long-term clientele and continuous shipments, new firms prefer to opt-out of FTA use. Hence, the two characteristics that have positive associations with FTA use are all related to the nature of the ROO.

The study finds that IJEPA-using firms tend to be smaller by the number of employees and asset value than firms that use ACFTA. The study also finds that firms that are capitalized by FDI tend to use FTAs. Since FDI firms are often part of

an extensive trade-in-task network, they have ready access to information on supplying to the network and on the ROO criteria.

Thirdly, with regards to manager characteristics, the results of the estimation show that IJEPA use is associated with younger managers with long working experience in the export and import business to an FTA-market. Unexpectedly, these managers do not have much knowledge of other FTAs except for the IJEPA. Manager's attendance in IJEPA awareness campaign or training shows no association with IJEPA use.

The results of the manager characteristics variables can be interpreted in two ways. First, knowledge of the IJEPA does not automatically create IJEPA use. The results indicate that firms' lack of use of an FTA is not associated with its managers' lack of FTA-knowledge. This finding also indicates that government-organized awareness campaigns are useful to spread FTA "know-how" to firms or trade managers. It is, however, not a sufficient trigger for IJEPA use – even by firms that have market access or clients in Japan. Second, the more the manager knows about the IJEPA, the less likely the manager knows about other FTA. This finding indicates that managers tend to specialize and develop their FTA-knowledge according to the length of their work experience and their firms' main destination market. In the case of the IJEPA, young managers in IJEPA-using firms tend to specialize in export and import from early in their careers, and their knowledge of the IJEPA accumulates by way of work experience in the firms. Since the estimation of manager characteristics

is part of an exploratory empirical study, the results of the estimation ought to be interpreted with caution as they may be limited to the IJEPA context.

To conclude, the results of the firm-level study and product-level study indicate that (i) the structure of the FTA's tariff and ROO fixed cost shapes the behavior or the response of firms, and (ii) ROO fixed cost creates a selection effect of which only firms with specific characteristics tend to use an FTA. The results of the estimation present that FTA-users tend to be firms that have been in operation for many years, concentrating their trade to the FTA-market, and capitalized by FDI. In their initial use of an FTA, firms that operate for many years have the first-mover advantage and the advantage of tapping into a large option of financial sources – whether accumulated profit or external financing. FDI firms also have an advantage over local firms, due to their access to an extensive network of information. Meanwhile, firms respond to the structure of the FTA's tariff and ROO fixed cost by sending products in high-value shipments at a regular pattern and similar value so to amass larger savings in terms of tariff payment or get better pricing for their products. As these firms trade intensively to an FTA-market, the proportion of the firms' trade to the FTA-market grow large and the ROO fixed cost becomes negligible.

Hence, the structure of the FTA's tariff and ROO fixed cost, and the ROO fixed cost 'selection effect' has limited the use of an FTA. New or potential FTA users would need to pay an initial ROO fixed cost that is higher than long-time FTA users. To reach a point where the ROO fixed cost becomes negligible, these new firms

need to trade intensively to the FTA-market. Since ad-hoc shipments and small-valued transactions do not immediately compensate for the initial ROO fixed cost, these firms opt-out from using an FTA.

#### **1.5.4 Policy Implication**

This dissertation looks into the two aspects of FTA use: the firm and at the product-level. Given the results of the studies, there are two policies that the government may consider to improve the level of IJEPA use by firms.

Firstly, the government may look into tariff lines that are eligible for preferential treatment but have recorded a utilization rate of zero or less than one. The two governments may consider identifying these 'missed opportunity', by comparing IJEPA use to other FTA use, and reviewing the tariff margin and relaxing the ROO restrictiveness criteria.

Secondly, since managers see the importance of government-organized awareness campaigns and services, FTA awareness campaigns remain an important agenda in the government's program. Further improvements of the awareness campaigns can be made with regards to the government's role, the activities and objective, and the targeting of stakeholders. The government could shift its role by becoming a facilitator that assists firms in finding markets or resourcing competitively priced input materials from abroad. It could enhance its role beyond its current role as an administrator of tariff revenue.

Improvements can be made to the activities and objective of the awareness campaigns. Awareness campaigns can be organized not only to improve firms' understanding of meeting the ROO and processing the COO but also to promote the use of FTAs as a strategic tool. The presentations on ways to comply with the ROO and to process the COO can be enhanced by including a table that compares the IJEPA tariffs to various FTAs. This table can be used to point out commodities or products in which Indonesia has a comparative advantage, higher tariff margin, and lesser non-tariff measures. By knowing the tariffs offered by various FTAs, firms can actively seek market access and use FTAs as part of their operational strategy. Firms can also be encouraged to maintain good rapport with clients so to get repeat transactions. COO can be offered as a service to importers since the cost of applying for a COO is relatively low in Indonesia compared to the cost in other countries.

Lastly, the campaigns and facilitation activity could be targeted to new and local firms that produce products with a sizeable tariff margin. The firm-level survey finds the use of FTA by small firms that are trading on commodities or raw material, i.e., exporting goods such as fern, spices, home decoration, chemical residue, and corals for aquariums. These types of small and micro firms could benefit from the sizeable tariff margin since the ROO criteria tend to be less restrictive. The government could provide export-promotion assistance, export credit, capacity building to comply with ROO to firms that produce goods with a sizeable tariff margin.

## **1.6 Organization of the Dissertation**

This dissertation is organized into five Chapters. The first Chapter or the introduction, briefly presents the purpose and motivation of the study, the research questions, the main hypotheses, the methodologies used, and the findings.

The second Chapter reviews relevant theories, research methodology, and empirical studies that are used to formulate the general hypotheses and to conduct the study. It also presents a brief discussion on the significance of FTAs in the government's policy and information on the IJEPA.

The third Chapter presents the testable hypothesis and the research methodology, as well as the empirical strategy and the results of the estimation on the association of FTA use and the characteristics of firms and managers.

The fourth Chapter presents the empirical strategy and the results of the estimation of the association of FTA use and product-related factors. It starts with a brief presentation on the testable hypothesis and the research methodology.

The last Chapter, concludes by summarizing the academic contributions of Chapters three and four, as well as by reiterating the policy recommendation that may be valuable to policymakers. This Chapter also presents the limitation of the study and an indication of possible future research.

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## **Chapter 2 Literature Review: Factors Associated with the Use of Free Trade Agreements**

### **2.1 Introduction**

The purpose of this Chapter is to provide historical context and theoretical foundations to the research question presented in this dissertation. Studies on factors associated with FTA use by firms cannot be separated from the broader context of the increasing number of FTAs and the limited proportion of trade that uses FTAs. This Chapter starts by presenting governments' objective and interest in their engagement in FTAs, and the global and regional conditions that contribute to the proliferation of FTAs. It then reviews related theories to formulate the general hypotheses and discusses research methodologies employed in past studies. This Chapter closes with a review of literature on the case study, the Indonesia-Japan Economic Partnership Agreement or the IJEPA, and on the general use of FTAs in Indonesia.

As of 2018, the World Trade Organization (WTO) Secretariat took note of 292 trade agreements<sup>12</sup> that were in force – much higher than the 79 Free Trade Agreements (FTA) that were in force in the year 2000. According to the WTO principle of Most Favored Nations (MFN), a WTO-member country is to grant the same tariff favor to all WTO members. However, WTO members are also exempted

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<sup>12</sup> WTO interactive Graph on “RTAs Currently in Force (By Year of Entry into Force) 1948-2019). Retrieved on 24 January 2019 from <http://rtais.wto.org/UI/PublicAllRTAList.aspx>



under article XXIV of the General Agreement on Tariff and Trade (GATT) to engage in the creation of FTAs under various specific conditionality - including that the FTA tariffs are set lower than the MFN tariffs<sup>13</sup>.

By using an FTA, firms from FTA-member countries benefit from the lower FTA tariffs. Firms benefit by either charging higher prices for the products that they export or paying lower tariff payments for the products that they import. The benefit that firms amass from using an FTA range within the magnitude of the tariff margin, or the differences between the FTA and MFN tariffs. The lower FTA tariff makes firms from an FTA-country more competitive than firms from non-FTA countries that still pay higher MFN tariffs. Hence by using FTAs, firms from FTA-member countries have a competitive advantage over firms from non-FTA countries.

Despite the benefits that FTA tariffs offer, scholars warned on the negative impact of the FTAs' Rules of Origins (ROO). The ROO is believed to cancel the trade-liberalizing objective of the lower FTA tariffs. In order to be eligible for FTA tariffs, firms have to meet the ROO 'originating' criteria. The ROO criteria often require that the traded product is produced in or use materials from an FTA-country. These requirements put constraints on the firms' production curve. Firms cannot produce at their optimal production curve anymore. In turn, firms would have to incur

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<sup>13</sup> GATT article XXIV 5(b) presents that "the duties and other regulations of commerce... shall not be higher or more restrictive than the corresponding duties... prior to the formation of the free-trade area..."

an additional fixed cost to meet the ROO criteria. This ROO fixed cost offsets the benefits that firms accumulate from the FTAs' tariff margin.

Hence, the FTA tariffs and ROO are the two main factors to observe in the study of FTA use by firms. Theoretical work on the ROO is pioneered by Krueger (1993), Krishna and Krueger (1995 and 2000), and Krishna (2005) following the enactment of the North American Free Trade Agreement. Given the recent interest in FTAs, theories on other related factors associated with FTA use have been somewhat limited. In light of this, this dissertation derives hypotheses from theories proposed by Melitz (2003) and Demidova and Krishna (2007) on firm heterogeneity and behavior under conditional policies, and Harveston et al., (2000) on the internationalization of firms. Despite the limited theoretical literature, a large body of empirical studies presents useful methodologies to examine FTA use by firms. Those studies observe the association of the characteristics of firms (Takahashi and Urata, 2008; Hiratsuka et al., 2009; Hayakawa et al., 2009; Wignaraja, 2013; Hayakawa, 2014a; and Ing et al., 2016) and the product-related factors (Bureau et al., 2007; Kim and Cho, 2010; Keck and Lendl, 2012; Hayakawa et al., 2014) to FTA use. These theoretical frameworks and methodologies provide a backdrop to the 'two-prong approach' employed in this dissertation.

The rest of this Chapter is organized into four additional sections. The second section elaborates on the reasons and objectives of governments to engage in FTAs. The third section presents the hypotheses derived from relevant theories. The fourth section discusses past empirical studies and proposes the research methodology to

test the hypotheses. The fifth section briefly introduces past research related to the IJEPA and the use of FTAs in Indonesia. The last section concludes.

## **2.2 The Formation and Proliferation of FTAs and Public Policy Aspects**

This section discusses factors that have, among others, contributed to the formation and proliferation of FTAs in the Asia-Pacific region.

By engaging in FTAs, countries commit to extending favorable trade conditions reciprocally by way of written arrangements. Favorable treatments include the reduction or elimination of tariffs, quotas, and non-tariff measures among FTA-members. The formation of FTAs can be attributed to internal factors within the country, such as the government's interest and objective to engage in FTAs and the dynamic interaction between the government and domestic stakeholders. Meanwhile, FTA proliferation is, among others, driven by external factors such as the unfolding of events at the global and regional levels.

Governments use FTAs as part of their 'strategic trade policy' - a term coined by Krugman (1987). Under the assumption of imperfect competition and increasing returns to scale, Krugman (1987) theoretically presents how trade could be driven by specialized firms that have reached economies of scale. Firms that have reached economies of scale produce at a lower cost and have a competitive edge. While the theory by itself does not go against the principles of free trade, it is often used by governments to justify their support for firms, including by shielding them from foreign competitions and supporting them to reach economies of scale. Hence,

governments use FTAs as part of their strategic trade policy to intervene in the market and to create competitive firms in international trade.

The main two features of FTAs are the tariff and the ROO. The governments' objective and interest are often reflected in the FTA negotiations and the final FTA tariff and ROO structure.

Tariffs are traditionally applied to raise revenue. However, with governments' better ability to raise industrial, income, or consumption tax, the role of tariff slightly shifts to restricting imports and to protecting or supporting domestic or nascent industries against foreign competition. By developing these industries, governments seek to amass additional tax revenue in the future.

Governments negotiate lower export tariff to their FTA-counterpart so that the country's export become competitively priced vis-à-vis non-FTA countries. Given the lower tariffs, firms' products become more competitively priced abroad. With the increase in demand and market size, firms expand their production scale. Governments could also seek compensation for the lowering of their countries import tariffs in return for a lower export tariffs for products that have a competitive advantage. Governments could also offer lower tariffs for imported inputs materials. Firms save on the cost of production as they can procure foreign inputs at a lower import tariff. Governments can also extend protection to domestic firms, or industries by scheduling a gradual tariff reduction, calibrating the level of market access through a quota system, and applying restrictive ROO criteria. Hence, as governments engage in FTAs to protect the country's industries from foreign

competition and to support firms to reach economies of scale and to be competitive against foreign firms, the FTA tariff structure thus reflects these interests.

Another feature of the FTA that is also used by governments to protect and support industries is the ROO. The ROO is an “inherent feature of FTAs” (Estevadeordal and Suominen, 2004) since FTA-members apply different external tariffs towards members and non-members. The ROO criteria require that traded products ‘originate’ from an FTA country in order to be eligible for FTA tariffs.

The ‘eligibility’ criteria set by the FTA’s ROO serves multiple purposes. In the short run, the implementation of ROO avoids superficial transformation of goods<sup>14</sup> (Estevadeordal and Suominen, 2004), avoids trans-shipment or trade deflection<sup>15</sup>, and restricts trade between the signatory parties and third-party countries (Estevadeordal, 1999, Augier, 2005). By applying an FTA with a ROO, an FTA-country can also attract investment opportunity that is better off in the long run (Ju and Krishna, 1998). Firms from non-FTA countries engage in foreign direct investment to be able to procure materials from and produce traded goods in FTA-countries and to trade by taking advantage of the FTA preferential scheme.

However, theorists also often identify the ROO as a “hidden protection” that insulates or protects domestic industries from foreign competition (Krueger, 1993; Krishna and Krueger 1995 and 2000; Estevadeordal, 2000; Krishna, 2005; and

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<sup>14</sup> Restrictive ROO in Final goods may result in trade diversion in intermediate goods.

<sup>15</sup> Trans-shipment is a case in which non-FTA countries would try to by-pass the higher tariff barrier, by exporting to an FTA-member country so to benefit from the FTA’s preferential tariff and re-exporting it to another FTA-member country.

Carrere et al., 2011). The ROO acts as “hidden protection” by canceling out the benefit from the lower FTA tariff. Products in protected industries, such as agriculture, for example, tend to have restrictive ROO criteria and low tariff margins (Estevadeordal and Suominen, 2004). Gibbons (2001) highlights the “growing consensus amongst trade economist” on the association of ROO restrictiveness and under-utilization of FTA, of which it is often the case that the “tariff lines with the highest preference margins are normally subject to the most restrictive ROO”. Restrictive ROO implies a higher cost to firms. Hence, either the limited benefit obtained from the low tariff margin is canceled by the high cost of meeting the ROO, or the high tariff margin is canceled by the high cost of meeting the ROO.

There are several reasons for governments to use FTAs as their strategic trade policy. Firstly, governments have limited rooms to implement strategic trade policies other than through FTAs. Aside from FTAs, export subsidies and import restrictions are alternative strategic trade policies that governments can use to support and protect industries. Export subsidies are to assist domestic firms to expand their market shares abroad (Spencer and Brander, 1983), while import restrictions are meant to limit competition in the domestic market. Unfortunately, export subsidies and import restrictions are heavily regulated by the WTO.

Secondly, FTAs are also used to initiate economic reform and to improve industrial competitiveness, especially in sectors that often oppose reform. FTAs are used as external pressure schemes to introduce legal conditions that attract and increase FDI, to eliminate regulations that hamper business activity, or to discipline

industries. Examples include the removal of subsidies in industries that have not performed well or the decrease of tariffs in industries that have lost competitiveness. Hence, FTAs are used as a justification to engage in domestic reforms and to create long term welfare.

Thirdly, FTAs limit possible unilateral retaliation from other countries. Any governments' attempt to protect and develop their domestic industries are prone to make other countries worse-off. As countries retaliate against each other, trade wars become inevitable. Using the game theory of prisoners' dilemma, Johnson (1955) demonstrates how international agreements make participating countries better off. As countries chose to cooperate, unilateral action or retaliation are minimized or avoided. Any failure to collaborate diminishes the welfare of the countries involved, while collaboration increases welfare. In a continuously repeated game, McMillan (1986) and Dixit (1987) suggest that trade agreement should be designed as such that cheating would result in a smaller gain to the countries involved. Countries would continuously fulfill their commitments and refrain from imposing unilateral policies to avoid loss of welfare. Thus, FTAs can be used by governments to reduce the risk of retaliation from other countries and to create a condition in which all participating countries' welfare are better off.

Amidst the various purpose that FTAs serve, their formation cannot be separated from the dynamic interaction between governments and their domestic constituents. By simulating the interaction between the government, voters, and special-interest groups, Grossman and Helpman (1995) theoretically demonstrate

two possible scenarios in the creation of an FTA: either substantial welfare is generated for the average voters and the adversely-impacted interest-groups or sectors experience coordination failure or the welfare gained by the exporters is larger than the loss of import-competing sectors plus the harm it inflicts to the average voters. Duttagupta and Panagariya (2003) present that FTAs that protect import-competing industries and industries that export intermediate-goods have a better chance to be endorsed domestically. Thus politically, FTAs are the result of the interaction between the government and its constituents. Governments would engage in FTAs under the condition that substantial welfare is generated.

While those domestic factors have, among others, contributed to the formation of an FTA, the proliferation of FTAs can be attributed to external factors, namely the dynamic condition of the region. Many countries in the Asia-Pacific engage in FTAs in order to maintain their competitiveness given the stalling Doha Round, the growing trade-in-task network or the fragmented offshore production and trade of intermediate goods, and the competition among major powers in the region. The WTO rounds of negotiation once presented an opportunity to further negotiate the lowering of tariffs under the MFN principle. As the multilateral negotiations came to a halt, countries started to turn to FTAs to further liberalize trade and to remain competitive in the trade-in-task network.

With the lower FTA tariffs, firms in FTA-members have a better advantage in the trade-in-task network than firms from non-FTA members. Firms that are at the center of the trade-in-task network procure inputs materials at a lower tariff and save



on the amount of tariff payments. Firms that are at the periphery of the network supply inputs materials at more competitive pricing. Countries that are left out from FTAs would see their product prices become less competitive, their trade diverted away, and their economy worse off. Hence, FTAs are used by member countries to secure market access vis-à-vis non-FTA countries.

Unfortunately, the discriminatory nature of FTAs has been increasingly used by large economic powers to gain political influence in the region. With the increasing competition between the US and China and the extension of their interest in the Asia-Pacific, each major power creates their mega trade-blocks, i.e., Trans-Pacific Partnership, the Regional Comprehensive Economic Partnership and the long-term idealistic Free Trade Area in the Asia-Pacific. By joining these mega-FTAs, developing countries seek to increase their chances of supplying to the center of the trade-in-task networks that are often located in developed countries. Developed countries, on the other hand, use FTAs to increase their political clout and to tap into the large market of the growing population in the developing countries. There are growing concerns that these mega-FTAs and trade-blocks put more pressure on the halted multilateral trading system. Nevertheless, as countries are wary of losing competitiveness, countries continue to form and join these mega-FTAs. Hence, FTAs continue to proliferate.

Another concern related to the impact of the proliferation of FTAs is in the creation of the 'noodle bowl effect' that is caused by the different ROO criteria set by each FTA (Bhagwati, 1995). The noodle bowl effect implies higher production cost

to firms as they have to adjust to different FTAs' ROO to be able to take advantage of various FTAs (Bhagwati, 1995; and Krishna and Krueger, 1995). As an illustration, assume a firm in country C that produces and exports product x. Country C has a different FTA with country A and country B. The firm would like to use both FTAs in its exports so that it can pay a lower preferential tariff and increase the scale of its production. The ROO of FTA A requires product x to contain 40% material from the country A and should not contain material from the country B. While the ROO of FTA B requires 25% material from the country B. This entangling ROO for the same product x limits the possibility of the firm to reach economies of scale by exporting to A and B altogether. Instead, the firm has to incur a different fixed cost for each FTA's ROO. Thus the proliferation of FTAs does not necessarily create a lower cost to trade, economies of scale, or new market opportunity to firms.

In conclusion, governments form FTAs to improve the countries' welfare and under the condition that the FTA is welfare-improving. By applying FTAs as "strategic trade policy," governments enhance the competitiveness of strategic industries, introduce domestic reform, and limit the risk of unilateral retaliation from other countries or backlash from domestic stakeholders. At the same time, governments also impose a "hidden protection" upon engaging in an FTA, by applying restrictive ROO that cancels out the tariff discount benefit. Beyond those welfare-improving objectives, governments also seek to reduce the opportunity cost from being left out of FTAs. Given the discriminatory nature of FTA tariffs, countries that are left out of FTAs risk of becoming less competitive - especially at the outset of the halted WTO

Doha negotiations round, the growing trade-in-task network, and the interest of major powers in the Asia-Pacific region. These reasons have, among others, contributed to the formation and proliferation of FTAs. Beyond the interest that governments have towards FTA, further examination is needed to observe whether firms, as FTAs' intended beneficiary, are using FTAs.

### **2.3 General Hypothesis on FTA use by Firms**

This section discusses the theories and technical arrangements related to factors associated with FTA use by firms – including tariffs and ROO, in order to formulate the general hypotheses to be tested in this dissertation.

The first identified factor is the ROO. The ROO criteria require that the input materials or production process 'originate' from an FTA country. Technically, the ROO criteria apply to three types of goods: goods that contain inputs material that is wholly obtained such as agricultural products; goods that are produced using all input materials from and processed in an FTA-country; or goods that contain input materials originating from non-FTA countries.

For a traded good that contains inputs materials from non-FTA countries, the ROO criteria become technically complex. First, the traded good needs to satisfy the ROO 'substantial transformation' criteria, meaning that the traded good is distinctive by name, characteristic and use compared to its original input materials. Once it satisfies the substantial transformation criteria, one of the three Product Specific Rules (PSR) criterion applies. The three PSR criteria are namely the Change in Tariff

Classification (CTC) criterion, the Value-added criterion or often defined as Regional Value criterion (RVC) or Qualifying Value criterion (QVC), and (iii) the specific manufacturing or processing operation (TECH) criterion.

According to the CTC criterion, a traded good has to go through a ‘tariff shift’ from the tariff line of the input materials to the tariff line of the final traded good. The CTC can be in the form of a Change of Chapter (CC) at the 2-digit code, a Change of Heading (CH) at the 4-digit code, or a Change of Subheading (CS) at the 6-digit code. For example, a Toasted bread is classified under the HS Chapter 19. Its input materials are flour and butter from the HS Chapter 11 and the HS Chapter 4, respectively. Assume that both input materials originate from non-FTA countries. In order to be eligible for FTA tariffs, the final traded good or the toasted bread has to ‘Change Chapter’ (CC) from the initial HS Chapter 11 of Flour and the HS Chapter 4 of Butter into the HS Chapter 19 of Toasted Bread. This CTC criterion, in this case, tends to be straightforward. However, some FTAs also apply the exception criterion (EXC) to the CTC. Exceptions are ROO criteria that do not allow the sourcing of certain input materials from non-FTA countries. For example, an FTA only grants preferential tariff to Toasted Bread of the HS Chapter 19 under the condition that the flour of the HS Chapter 11 originates from the FTA-country. In this case, the CTC criterion puts an EXC to the HS Chapter 11 – meaning that the toasted bread cannot be granted preferential tariff if it contains flour from non-FTA countries.

According to the QVC criterion, a traded good is required to contain a specific percentage of originating input. For example, for a Cellphone to be eligible for a

preferential tariff, 40% of its content should originate from an FTA-country. The percentage represents the cost of materials plus overhead and labor. The QVC criterion applies to manufactured products that contain many input materials.

According to the TECH criterion, the traded goods need to undergo a specific manufacturing process that is unique to the industry. For example, a t-shirt that contains input from non-FTA countries can only be eligible for FTA preferential treatment if such a t-shirt is weaved, dyed, or printed in an FTA-member country.

All of these ROO criteria represent a fixed cost to firms. Firms incur an additional cost to produce products that comply with the FTA's ROO. Firms have to change its procurement sources to satisfy the percentage set by the QVC criterion and to avoid EXC in the CTC criterion. The changing of procurement patterns means an additional cost to the firms. Firms could also run into the possibility of paying a higher price to a supplier of input materials from an FTA-member country instead of buying at a lower price from non-FTA countries. Firms also need to maintain bookkeeping and documentation of its various procurement origin to be able to meet the CTC criterion or to count the percentage of their goods' origin according to the RVC criterion. The TECH requires firms to invest in certain technologies or new machinery.

Hence, the more restrictive the ROO, signified by a more substantial transformation of the input materials or a higher proportion of input material from an FTA-country, the more costly and difficult it is for firms to comply. In Krishna's (2004)

theoretical paper<sup>16</sup>, the ROO represents a constraint to the firms' production curve. As the choice of inputs for the production of an FTA traded-good is much more limited than non-FTA traded-goods that are produced under no constraint, a firm would have to pay a higher fixed cost for products with restrictive ROO. The more restrictive the ROO, the larger the distortion of input and thus, the higher the fixed cost. Since a restrictive ROO presents an increase in fixed cost to firms, this dissertation proposes the:

- *General Hypothesis 1: FTA use is negatively associated with the Rules of Origin.*

A tariff is a duty that the government levy from imported goods. The government levy two types of tariffs: the 'specific tariff' and the 'ad-valorem tariff'. The specific tariff is levied in a fixed amount for each unit of imported goods, i.e., USD\$25 for each ton of flour. The ad-valorem tariff is levied in percentage amount of the total value of the imported good, i.e., 25% of the value of toasted bread of one million Japanese Yen.

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<sup>16</sup> Krishna (2004), using constant return to scale and imperfect substitution, theoretically demonstrate how more restrictive ROO puts additional constraint to the firm's production curve and increasing the firms' cost. The theory presents that under no constraint, firms choose to produce goods at the lowest isocost line, using a mix amount of input capital K and input labor L with a ratio of  $K/L = \alpha_0$ . Under the constraint of ROO, the firm has to produce with more input K. This changes the ratio of  $K/L = \alpha$ , in which  $\alpha > \alpha_0$ . Therefore due to ROO, the firm has to shift from the initial isocost line, to a higher isocost line so to produce the same amount of goods. As a result, firm produce at a higher cost. The more restrictive the ROO, the more it limits and distorts the choice of inputs, and the firm's production cost thus increases. Consequently, firms will be less likely to use FTA due to the restrictiveness of ROO.

Technically, tariffs are organized under the Harmonized System (HS) that is developed and maintained by the World Customs Organization (WCO). The HS organizes tariffs in a logical structure by grouping traded goods into 96 Chapters. These 96 Chapters are again grouped into 18 Sections. Under the HS, each good is identified by a 6-digit code in which the first 2-digit signifies the Chapter, the second 2-digit signifies the Heading, and the third 2-digit signifies the Subheading. Member countries of the WCO use the same 'harmonized' 6-digit HS Code. Behind the 6-digit HS Code, each country may add two, three, or four digits National or Domestic code to further classify traded products. These 8 to 10-digit codes are called tariff lines and represent specific traded products. For example, the 6-digit HS Code 090411 denotes 'Pepper that is Neither Crushed or Ground' in all countries. The 9-digit tariff line of 090411.100 in Japan's tariff schedule denotes 'Pepper that is neither crushed or ground and put up in containers for retail sale', while in Indonesia's tariff schedule, the same tariff line of 090411.100 denotes 'Pepper that is neither crushed nor ground and white'. Thus each tariff line represents a specific product and each country maintains a different tariff line. [Figure 2-1](#) illustrates the composition of tariff line.

By using an FTA, firms save some amount of tariff payments or gain benefits from higher pricing. This amount is called the tariff margin. It is calculated by subtracting the FTA tariff from the MFN tariff. Importing firms use FTA tariffs since the tariff margin is cost-saving to them as they pay a lower tariff. Exporting firms use FTA tariffs since the tariff margin allows firms to charge higher pricing that is still

competitive vis-a-vis competing firms from non-FTA countries. Since a wider tariff margin represents higher savings of tariff payments or better pricing to firms, this dissertation proposes the:

- *General Hypothesis 2: FTA use is positively associated with the Tariff Margin.*

Theories related to the characteristics of firms that use FTAs tend to be scarce. Nevertheless, the argument of firms needing to pay a ROO fixed cost to be able to profit from FTA use is reminiscent of the theoretical proposition by Melitz's (2003). His seminal work presents that upon the introduction of trade, firms need to pay a fixed cost to begin exporting. The fixed cost is a payment that cannot be recovered once it is incurred and does not vary with the quantity of traded goods that the firm produces. Highly productive firms pay such a fixed cost and gain profit from exporting, while low productivity firms tend to supply to the domestic market. In the long run, the least-productive firms exit the export market. The process of intra-industry reallocation of resources from low to high-productivity firms creates heterogeneous or different sizes of firms in which the highest-productivity firms engage in exporting. In line with this theory, Demidova and Krishna (2008) present that the most highly-productive firms use the FTA tariffs to trade after paying a ROO fixed cost, while the less productive firms use the MFN tariffs. Thus, the initial fixed cost to engage in export or the ROO fixed cost to use FTAs create a selection process. Firms that pass



the selection process are expected to have the characteristics of being highly-productive and in operation for a long period.

Although those theories do not explicitly define the characteristics of highly-productive firms, some empirical studies present the positive association between productivity and size (Biesebroeck, 2005; and Fukao and Kwon, 2006; and Dhawan, 2011). Biesebroeck (2005) identifies highly-productive firms as firms with a large number of employees, producing a large number of products and supplying to a broad market. Demidova and Krishna (2007) have also theoretically demonstrated that as the ROO becomes increasingly restrictive, firms that continue to comply with the ROO would demand more labor. Dhawan (2001) identifies highly-productive firms as those that have invested in high-tech machinery or research and development, although they do not have many employees. Highly-productive firms also tend to have larger operating profits (Hayakawa, 2014a) which enable them to pay for the ROO fixed cost, i.e., buying new machinery or technology, changing procurement patterns, establishing a bookkeeping system and maintaining the documentation on the input materials, processing the COO, or hiring a knowledgeable trade manager. Hence, highly productive firms can be signified by their large size, whether by the number of employees, the value of their assets, or accumulated profit.

Firms that have been in operation for a long period are also expected to use FTAs. According to Melitz (2003), the least-productive firms exit the export market over time. Thus there is a selection process through time. Firms that have been in

operation for many years have passed the 'survival of the fittest' test after engaging in their new initiatives. As firms continuously engage in trading activity and expand their market, they also become more efficient and competitive, gain economies of scale, and provide exporting goods at more competitive pricing (Wagner, 2002).

Another reason why older firms are expected to use an FTA is due to their experiences, track record, and credibility. The reason is that although the fixed cost associated with the ROO is equivalent in the long run, "they are not equivalent in the short run where capacity constraints can exist" (Krishna and Krueger, 2000). Upon facing financial constraints to export or to use an FTA, firms have to borrow additional capital from financial institutions. Newly established firms may not have the credibility, track record, and experience of older firms, nor a sizeable capacity or enough resources to pay for the ROO fixed cost. Thus it can be expected that firms that stay in the export market and use an FTA tend to be in operation for a long period.

One characteristic not derived from Melitz's (2003) theoretical framework but essential under the trade-in-task network in the Asia-Pacific, is the firms' source of capital. FDI firms are more likely to use an FTA as these firms tend to take part in the larger trade-in-task-network or tend to be suppliers to a parent company abroad. By being part of a vast network of firms, FDI firms are more at ease in acquiring information on the ROO requirement than locally financed firms.

To conclude, the fixed cost of complying with the ROO has created a selection effect on the characteristics of firms that use FTAs: highly productive firms, whether

by employment number, asset value or profit, FDI firms, and firms that have been in operation for a long period.

- *General Hypothesis 3: FTA use is positively associated with firms' size and years in operation, as well as firms' that are capitalized by way of FDI.*

The ROO fixed cost is also expected to influence the way firms' trade their products. Firms that would like to maximize their profit are expected to trade intensively with an FTA-country by engaging in high-value or bouts pattern of shipments. Bouts shipment is defined as infrequent or seasonal shipment of high-value.

Firms' intensity of trade with an FTA-market is represented by firms' proportion of trade with an FTA-market over the total trade of the firm. FTA-using firms are expected to have a larger proportion of trade to an FTA-market than to other markets. Such a proportion is also expected to be larger than firms that do not use the FTA.

There are two reasons why FTA-using firms tend to have a high proportion of trade with an FTA-market. First, each FTA has its own set of ROO criteria. In reference to the "noodle bowl effect of ROO" (Bhagwati, 1995), firms need to pay an additional fixed cost to comply with each FTA's ROO. In other words, firms need to pay a fixed cost to comply with the ROO of an FTA with country A, and another fixed cost for the ROO of an FTA with country B. The magnitude of the ROO fixed cost is different across industries, but the same across firms within an industry. However,

by complying with these different ROO criteria, firms do not necessarily create economies of scale since the input materials or manufacturing process may not be the same for each FTA. Hence, firms tend to trade intensively with an FTA-market.

Second, by trading intensively using an FTA, the ROO fixed cost becomes negligible in the long run. Since the ROO fixed cost is spread over multiple shipments, over time, the ROO fixed cost becomes part of the production cost. Hence, by engaging in intensive trade activities to an FTA-market, firms can maximize their profit by producing at the point where the marginal cost equals the marginal revenue.

Firms' intensity of trade or the high proportion of trade to the FTA-country can be the result of sending high-value shipments. Firms that send high-value shipments are expected to amass higher tariff savings. Tariff is a variable cost since tariff payment is calculated according to the value of the shipments. The magnitude of the tariff payment varies according to the value of the shipment. The higher the value of the shipment, the larger the saving in terms of tariff payment. On the other hand, the ROO represents a fixed cost to use an FTA that does not vary according to the value of the shipment. The higher the accumulated tariff savings, the more it compensates for the ROO fixed cost.

As an illustration, assume that the ROO fixed cost is 5% in a tariff equivalent, the FTA tariff is 1%, and the MFN tariff is 2% for each 100gr of cotton. Should firms decide to trade 500gr of cotton, then the FTA tariff payment plus the ROO fixed cost is at 10%, and the MFN tariff payment is at 10%. Firms would be indifferent to use the FTA or MFN tariffs as there is no margin of benefit of using an FTA. However, to

firms that trade 1000gr of cotton, the FTA tariff payment plus the ROO fixed cost is equal to 15% and the MFN tariff payment is 20%. Firms would consider the use of the FTA since there is a margin of benefit of 5%. Thus by trading at a higher value, firms can amass more margin of benefit – whether in the form of tariff savings or higher pricing of their goods.

This illustration also presents three consequences. Firstly, a ROO fixed cost that is higher than the savings from the tariff margin would make firms opt-out from the FTA tariffs and use the MFN tariffs instead. Secondly, there is a threshold shipment value at which the amount of the tariff saving is reasonable enough to compensate for the ROO fixed cost. Lastly, firms that produce goods with a restrictive ROO and low tariff margin need to send high-value shipments to compensate for the ROO fixed cost.

Some empirical studies find that by sending large or high-value shipments, firms can weigh in the ROO fixed cost. By using export volume as a proxy for the firms' shipment value, Hakobyan (2015) finds that products with high added-value would be better off in covering the costly ROO requirements. Hayakawa et al. (2014) identify the size of export transactions as the most significant factor in the utilization of the Korean-ASEAN FTA compared to the effect of other variables such as tariff margin and a measure of ROO restrictiveness. Bureau et al., (2007) find that small shipments tend to use the MFN tariffs even though they are eligible for the FTA tariffs, and products with low MFN tariffs are unlikely to use the FTA tariffs. These empirical

studies indicate that firms tend to send high-value shipments to save on a large magnitude of tariff payments and to compensate for the ROO fixed cost.

Another factor that could result in firms' intensity of trade is in the pattern of shipments. It is expected that by sending infrequent or seasonal high-value shipments, or also defined as bouts shipments, firms save on the cost of processing the Certificate of Origin (COO). The reason is that firms need to apply for a COO to certify that their traded goods meet the ROO criteria. The COO is a document or a form that accompanies the traded goods and describes the value, origin of input materials, percentage of originating content, and manufacturing process. The processing of the COO documentation per-shipment results in an additional cost to firms and requires additional time and resources. The more frequent or regular the shipments, the larger the accumulated cost that firms have to pay to process the COO and the higher the uncertainty due to the time needed to process it. By sending large one-off or less frequent shipments within a year, firms save on the cost, reduces the time, and minimizes the risk of applying for multiple COO. As far as this dissertation notes, no prior study has included shipment patterns as a variable.

Lastly, in addition to observing the individual association of tariff margin and ROO restrictiveness to FTA use, the study can also examine the association of the application of Non-tariff Measures (NTM) and to examine the interaction between the tariff margin and the ROO restrictiveness to FTA use.

NTMs are "any policy measures other than tariffs that can impact trade flows" which include among others quotas, prohibitions, licensing, customs procedures,

administration fees and domestic legislations that covers issues such as health, product, labor and environmental standard (Staiger, 2011). Studies related to NTMs have focused on the trade and economic impact of the removal of NTM (Andrianmananjara et al., 2004; and Walkenhorst and Yasui, 2005) since the “presence of NTMs may lead to higher domestic prices that would have been observed in their absence” (Ferrantino, 2006). As a result of this high domestic price due to NTM, trade is reduced. One of the reasons for this higher domestic price, is the additional cost that NTMs create in the production and shipment of the traded goods. Hence, NTMs are expected to have a negative association with FTA use.

Cadot et al. (2006) found a correlation between a highly restrictive ROO and high tariff margin. By testing the association between the coefficient of the interaction variable and FTA use, the study would be able to identify the FTA structure, or the way the tariff margin and ROO is constructed or negotiated in the FTA. A negative association between FTA use and the interaction variable suggests that the more positive effect of the tariff margin to FTA use, the more restrictive is the ROO, and vice-versa. The negative association would confirm that the FTA structure offers a high tariff margin for products with a high ROO restrictiveness level. As far as this dissertation notes, the interaction variable has rarely been included in past models of product-level study.

Hence, the firms’ intensive trade activity and firms’ engagement in high-value shipments in bouts are expected to have a positive association with FTA use. By engaging in intensive trading activity to an FTA-market the ROO fixed cost becomes

negligible in the long run and firms can maximize their profit by producing at a point where marginal revenue equals marginal cost. The intensive trade activity is done by sending (i) high-value shipments to accumulate considerable tariff savings that compensate for the ROO fixed cost, and (ii) shipments in an infrequent yearly pattern to save the cost of applying for multiple COO.

- *General Hypothesis 4: FTA use is positively associated with the firms' intensive trading activity to the FTA-market; a high-value shipment and an infrequent or seasonal shipment pattern. FTA use is negatively associated with the interaction variable of the ROO and Tariff margin and the Non-tariff Measures.*

Since no theoretical framework has discussed the association of manager characteristics with FTA use, managerial characteristics is derived from works related to the internationalization of firms (Leonidou et al., 1998; Cavusgil et al., 1994; and Zou and Stan, 1998).

There are at least three reasons for the inclusion of manager characteristics in the study of FTA use. Firstly, since the FTA ROO tend to be complex and restrictive, firms need to hire competent managers that have the ability to learn on or know FTAs. These managers weigh in the cost and benefit of FTA use, manage procurement origins, maintain the documentation of the input materials' origin, and act as decision-makers in the investments of new machinery and technology.



Secondly, although some theorists suggest that there is a lack of an integrated theoretical framework on the influence of manager characteristics on firms' exporting behavior (Leonidou et al., 1998; Cavusgil et al., 1994; and Zou and Stan, 1998), results of empirical studies frequently stress such an influence. In the extensive literature on the internationalization of firms, studies associate manager characteristics to the acceleration of the internationalization of firms – mostly in small firms or local firms that seek to globalize. In Leonidou et al. (1998) “objective-general” managerial factors have been associated with the propensity to initiate export. In a study by Harveston et al. (2000), managers in ‘born global firms’ tend to have higher international experience than managers in ‘gradual globalizing firms.’ In Simpson and Kujawa (1974), education is found to be a significant variable and may create differentiated responses between exporters and non-exporters in receiving orders from foreign customers. In the study, college and university education are found to be relevant, along with managers' age. The younger managers are also found to have a more global mindset than the old ones (Kujawa, 1974). Since the process of learning-by-doing may be an essential aspect in FTA use, an exploratory examination may be useful to test the significance of the manager's age, years of education and professional experience to FTA use.

Thirdly, descriptive statistics often cite firms' lack of information on FTAs as among the reasons for firms' lack of FTA use (Kawai et al., 2009; Takahasi et al., 2010; Zhang, 2010; Hiratsuka et al., 2009; and Wignaraja, 2014). Since it is the manager that has the knowledge of FTAs, empirical studies can be used to test the

significance of FTA knowledge with FTA use. In so far, only one empirical study (Wignaraja, 2014) has included a dummy variable for firms that “have acquired relevant in-house FTA expertise,” or in other words, managers with FTA knowledge. Unlike FDI firms that have the advantage of tapping into an extensive network of information, local or novice exporting firms are more dependent on the FTA knowledge of their managers.

Factors that are expected to have a positive association with FTA use are managers’ attendance to government-offered awareness campaigns or paid training, and manager’s knowledge of various FTAs. The reason for choosing those two factors are because government-organized awareness campaigns are often the primary sources of FTA knowledge to firms in developing countries (Kawai and Wignaraja, 2011; and Wigjoseptina, 2015), and the manager’s knowledge of one FTAs could be significant in easing the firms’ initial and subsequent use of other FTAs. Hence, as an exploratory exercise, variables related to manager characteristics, i.e., managers’ education, work experience, age, and awareness, will be included in an empirical study to test their significance to FTA use.

- *General Hypothesis 5: FTA use is positively associated with the managers’ years of education and working experience in the trading business, as well as with managers that have attended government-organized awareness campaign and have the knowledge of various FTAs.*

In closing, this section has presented five general hypotheses related to factors that are associated with FTA use by firms.

Firstly, FTA use is expected to be positively associated with a large tariff margin due to the higher tariff payment saving it represents to the firms.

Secondly, FTA use is expected to have a negative association with the ROO. To be able to take advantage of the FTA tariffs, firms incur a fixed cost to comply with the FTA's ROO. The ROO represents a constraint to the production curve of firms. As a result, firms' production cost increases due to the ROO.

Thirdly, FTA use is expected to be positively associated with firms' proportion of trade to the FTA-market that comes as a result of an irregular pattern of high-value shipments. By trading intensively with an FTA-market, the ROO fixed cost becomes negligible in the long and firms produce at the most competitive price in which marginal cost equals marginal return. Meanwhile, by trading in an irregular pattern of high-value shipments, firms amass larger tariff savings and save on the cost of processing multiple ROO. FTA use is expected to have a negative association with the interaction variable of the ROO and Tariff margin, and the NTM.

Fourthly, firms' size, FDI status, and years in operation are expected to have a positive association with FTA use. Firms' productivity lowers the fixed cost in exporting (Melitz, 2003) and in complying with the ROO (Demidova and Krishna, 2007; and Hayakawa 2015). Highly-productive firms are signified by the size of their employees, asset or sales (Wagner, 2002; Biesebroeck, 2005; Demidova and Krishna, 2007), or profit (Hayakawa, 2014a). Firms that are in operation for a long

period have accumulated more experience, good track record, and credibility compared to younger firms. FDI firms have the advantage of being part of a network of trading firms. This network eases FDI firms' access to information on FTA use.

Lastly, since awareness and knowledge of an FTA involves a process of learning-by-doing, FTA use is expected to have a positive association in older managers with long working experience in export and import, and higher schooling years. Since government-organized awareness campaigns are often the managers' first introduction to an FTA, FTA use is expected to have a positive association with managers that have attended government-offered awareness campaigns and have knowledge of various FTAs.

#### **2.4 Research Methodology: the Two-prong Approach**

This section discusses the methodologies employed in past studies, their advantages and limitations, and the reasons for employing them in this dissertation. This section also presents the dependent and independent variables used in the empirical studies.

This study of FTA use often employs two methodologies. The first methodology uses firm-level data obtained from firm-level surveys. The second methodology uses product-level trade data obtained from published government sources. The two methodologies are defined as the two-prong approach in the first Chapter of this dissertation.

Firm-level surveys<sup>17</sup> are generally conducted by contacting and collecting data from a group of firms belonging to an Industrial association or a government database. The main advantage of firm-level surveys is in their ability to collect first-hand cross-sectional data on the characteristics, perceptions, and experience of firms in their use of FTAs (Ing et al., 2016). Hence, the collected data can be in terms of quantitative data or qualitative information.

The firm-level survey is the most common methodology to identify the characteristics of firms that use FTAs. Empirical studies use the quantitative data gathered from firm-level surveys to find the association of firm characteristics and FTA use (Takahashi and Urata 2008; Hayakawa et al., 2009; Hiratsuka et al., 2009; Wignaraja, 2014; and Ing et al., 2016). Other studies present descriptive statistics of firms that use FTAs (Kumar, 1992; Kawai and Wignaraja, 2009; Takahashi and Urata, 2009; Hiratsuka et al., 2009; Cheong et al., 2010; Zhang, 2010; and Wignaraja, 2014). Quantitative data from firm-level surveys are used both in empirical or descriptive studies.

Firm-level surveys are also used by governments and organizations to seek firms' views on ways to improve the governments' or organizations' support in the use of FTAs. Among the qualitative information gathered from firm-level surveys are

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<sup>17</sup> Most of the firm-level studies on the use of FTAs have concentrated in the Asian region since the government customs dataset on the use of preferential regime in Asia is not easily and publicly available (Wignaraja, 2014, Ing et al. 2016). Firm-level surveys have mostly been led by the Asian Development Bank (ADB), Asian Development Bank Institute (ADBI), Research Institute of Economy, Trade and Industry (RIETI), Economic Research Institute for ASEAN and East Asia (ERIA) and Japan External Trade Organization (JETRO), all research organization with insights and access to the government data.

firms' awareness and intention to use FTAs; decision-making and administration process to use FTAs; knowledge of cost, ROO technicalities and FTA tariffs; knowledge of FTA supporting services (JETRO 2009-2016; Salam et al., 2012; and Damuri et al., 2014; and Ing et al., 2015). Hence, firm-level surveys present many advantages in gathering firm perceptions and experience in FTA use.

The firm-level surveys also have their share of challenge and limitation. Firm-level surveys are usually costly and time-consuming. Since firm-level surveys can only sample a limited number of firms, they cannot cover all industries or firms that use FTAs. Firm-level surveys also cannot measure the impact of tariff rates on products, nor identify products that have gained most or have not benefited from the elimination of tariffs in the FTA (Cheong et al., 2010). Firms do not always give consent and avail information to surveyors and may tend to provide socially-acceptable responses. These reasons often make firm-level data marred with bias issues. Even though firm-level surveys have the advantage of capturing firm characteristics, and firm perception and experience in FTA use, generalization on the results should be cautiously made since the result may be specific to the research.

In order to observe factors associated with FTA use in the firms' products, studies use product-level data obtained from customs records. Since customs data contain detailed information on the traded products, including their volume and value, it can be used to calculate the proportion of traded product that uses FTA tariffs. Customs data also provides the advantage of eliminating sample bias since it is

presented as panel data that spans over several months or years (Ing et al., 2016). In empirical studies of factors associated with FTA use, the importing countries' customs data are best to be used to account for the possibility that some exports are not granted preferential tariff by the receiving or importing country (Hayakawa et al., 2014). Unfortunately, customs data does not contain information on firms' characteristics.

Hence, the two-prong approach represents two different methodologies to observe various factors associated with FTA use by firms. Each of the methodologies has its advantage as well as its limitation. By implementing the two-prong approach, this dissertation seeks to present a wholesome observation on FTA use by firms.

#### **2.4.1 The Dependent Variable: The Use of an FTA**

Although both approaches observe the use of an FTA as the dependent variable, FTA use is defined differently for each methodology. In firm-level studies that examine firm characteristics, the dependent variable is the firms' choice to use FTA tariffs instead of MFN tariffs. The dependent variable takes on two values: zero or one. Should the firm decide to use the FTA tariff, then the value of the dependent variable is denoted by one. The value of the dependent variable is denoted by zero if the firm chooses to use the MFN tariff.

This methodology is different from the methodology employed in past empirical studies on firm characteristics. Past studies differentiate between firms that

use and do not use an FTA in all sampled firms. Firms that do not use an FTA, whether due to market access or lack of awareness, are all included as observations. It is suspected that as a result of this methodology, Melitz (2003) self-selection of productive and non-productive firms becomes more apparent as the sample also includes firms that do not have market access or do not engage in trade activities with an FTA-market.

To improve on this methodology, the firm-level study in this dissertation only uses samples of firms that have market access or are exporting to the FTA-market, and firms that are aware of FTAs. The proposed methodology follows the theory proposed by Demidova and Krishna (2008) on the differentiation between productive firms that use the FTA tariffs and the less productive firms that use the MFN tariffs. By employing this methodology, this study presents a new context to the available literature. It tests the significance of various factors, including awareness, by controlling that the sampled firms have market access to the FTA-market.

In the product-level study, the dependent variable is the utilization rate<sup>18</sup>. The definition and the calculation of the utilization rate depend on the context of the study.

In studies that have access to data of the value of trade that uses FTA tariff, the utilization rate is calculated as the share of trade value that uses an FTA tariff of the product  $i$  in the period  $t$  over the value of total trade of the product  $i$  that is eligible

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<sup>18</sup> The term utilization rate is also used in firm-level studies and surveys by JETRO 2009-2016, Takahashi and Urata, 2008, Tambunan and Chandra 2014. In the firm-level context, utilization rate is defined as the number of firms that use an FTA out of the total number of sampled firms. Utilization rate is presented as a statistical figure.



for FTA tariff in the period  $t$  (Keck and Lendl, 2012; Schaub, 2012; and Hayakawa et al., 2014). The product  $i$  refers to the observation for each tariff line, while the period  $t$  refers to the period of observation. The utilization rate can take up the value between zero to one for each tariff line. The utilization rate takes on the value of zero for all imports that enter without using an FTA tariff, or it takes on the value of one or at 'perfect utilization' for all imports that enter using an FTA tariff (Kim and Cho, 2010).

In studies that do not have access to data on the value of preferential trade, the utilization rate is constructed using the gravity model (Estevadeordal, 1999, 2000; Anson et al., 2005; Augier et al., 2005; Manchin et al., 2007; Ando, 2009; Menon, 2013) or the preference indicator methodology (Sitepu et al., 2015). In the gravity model, the utilization rate is estimated by using the aggregate trade between FTA-members, the size of each country, and the distance between countries. The preference indicator methodology obtains the utilization rate by dividing the utility rate to the coverage rate. The utility rate is calculated by dividing the total export that uses preferential tariff over the total export. The coverage rate is calculated by dividing the number of tariff lines that has a preferential tariff over the total of tariff lines that has a tariff set beyond 0%. In both studies, the higher the percentage of preferential trade, the higher the utilization rate.

The utility rate is also used as a dependent variable in a study that does not employ import data from the importing or receiving country. By using the data of the exporting or sending country, Kim and Cho (2010) calculate the utility rate as the

proportion of export that uses FTA tariff over the total export. Although the utility rate is a useful indicator of the level of FTA use, there is a risk of a discrepancy between the data recorded by the exporting country and the importing country (Hayakawa et al., 2013). The discrepancy arises due to the differences in the tariff lines of countries, the value of Free/Freight On Board<sup>19</sup> (FOB) and Cost Insurance and Freight (CIF)<sup>20</sup>, and the discretionary customs' policy of the receiving country. Hence, studies that do not use customs data from the importing country, the dependent variable is calculated by using the gravity model, the preference indicator methodology, or the utility rate. With the increasing availability of data from governments' sources, recent studies calculate the utilization rate by using customs data from the importing or receiving country.

#### **2.4.2 The Independent Variables: ROO, Tariff Margin, Firm and Manager**

##### **Characteristics**

##### **Firm Characteristics**

Empirical studies on factors associated with FTA use by firms have introduced various dependent variables depending on the purpose and scope of the study.

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<sup>19</sup> Free/Freight on Board (FOB) is the value of the goods plus the cost born by the seller in delivering the goods to the ship at the port of departure. From that point on, the buyer would have to bear all costs & risks of the goods.

<sup>20</sup> Cost, Insurance Freight (CIF) is the value of goods, insurance plus the cost born by the seller to deliver the goods to the ship until the port of destination. Seller must pay the cost & freight necessary to bring goods to named port of destination.

In terms of scope, firm-level studies mostly focus on FTAs that involve one or more Asian countries. Wignaraja (2014) and Ing et al. (2016) analyze the determinants of the use of ASEAN and ASEAN+1 FTAs by firms in ASEAN member countries. Wignaraja (2014) identifies the characteristics of FTA-using firms in Indonesia, Malaysia, and the Philippines, while Ing et al. (2016) look at how the intensity of export and import affect the use of FTAs by firms in ASEAN countries except for Brunei. Other studies focus on FTA use by Japanese firms. Takahashi and Urata (2008, 2010) use the Japan External Trade Organization (JETRO) “Survey of Japanese Firms’ International Operations” of 2006 to examine FTA use by firms in various cities in Japan, mainly for bilateral FTAs that Japan has with Malaysia, Mexico, and Singapore. Hiratsuka et al. (2009) and Hayakawa et al. (2009) use JETRO’s “Survey of Japanese-Affiliated Firms in ASEAN, India, and Oceania” for 2006 to 2008 which respondents are Japanese-affiliated firms located in ASEAN6<sup>21</sup> and exporting Japanese-firms located in ASEAN6 and India. Another study by Hayakawa (2014a) uses the JETRO survey of 2009 to 2011 to examine the association of firm size to the use of FTAs by exporting firms in ASEAN countries, Australia, China, India, Japan, Korea, and New Zealand.

Although some studies use the same variable, the results may be different due to the differences in the purpose and scope of the study. For example, Wignaraja

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<sup>21</sup> ASEAN6 are the six largest countries in ASEAN, which are Indonesia, Singapore, Thailand, Philippines, Vietnam and Malaysia.

(2014) and Ing et al. (2016) find different results for the same dummy variable for firms that are located in industrial clusters. Firms' age also produces mixed results in Wignaraja (2014) and Hayakawa (2014a). In the two studies, firms' age or years in operation is calculated by subtracting the year of the survey to the establishment year of the firm.

Another example is the dummy variables for FDI firms. This dummy variable is not used in Hayakawa et al. (2009) and Hiratsuka et al. (2009) since these studies focus on Japanese firms operating abroad and capitalized by FDI. On the other hand, Takahashi and Urata (2008)<sup>22</sup> use a dummy variable for domestic Japanese firms that have affiliates or FDI in an FTA-country. Ing et al. (2014) also use a dummy variable to differentiate between local and FDI firms since the study focuses on firms in ASEAN countries. Although the last two studies focus on domestic firms, the differences in the sample result in different findings. Ing et al. (2014) find a positive association between FTA use and locally financed firms, while Takahashi and Urata (2008) find that local firms with an FDI firm abroad are more likely to use FTAs.

Another difference in results is in the significance of firms' size. Most studies use the log of employment or the log of the number of employees to represent the size of the firm. However, Takahashi and Urata (2008), Hiratsuka et al. (2009), Hayakawa et al. (2009), and Ing et al. (2016) find that large firms have a positive

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<sup>22</sup> Takahashi and Urata (2008) uses dummy variables for the all of the explanatory variables, including for number of employees (1 for firms that employs more than 100 workers). This attempt has been criticized by Wignaraja (2014) for presenting a model with "weak explanatory power."

association with FTA use, while Wignaraja (2014) find a negative association. Takahashi and Urata (2008) also use three dummy variables for firms' employees, asset value, and overseas sales.

The different results seem to arise from the differences in the sampled population or the structure of the trade-in-task network. Hiratsuka et al. (2009) and Hayakawa (2014a) use the JETRO firm-level surveys that sample on Japanese-affiliated firm, or in other words, Japanese FDI firms. Takahashi and Urata (2008) use domestic Japanese firms. Wignaraja (2013) and Ing et al. (2016) use ERIA data, which consists of local and FDI firms operating in different ASEAN countries. Each study focused on different type of firms. The structure of the trade-in-task network in Asia also provide some explanations on the different result. In Asia's production network, the large FDI firms of Japan act as the producer of final goods after procuring materials and intermediate goods from suppliers located in ASEAN member countries. These suppliers may consist of local or FDI firms of various characteristics. Hence, the different results on firms' size may arise from the differences in the sampled population and the structure of the trade-in-task network in the Asia Pacific.

The differences in the results of firm-level study could arise from the differences in the scope, objective, sampling, and context of the study. Nevertheless, further testing of each variable could create comparability of results.

### **Manager characteristics**

As far as the author's knowledge, no firm-level empirical study has included manager characteristics. Only one study by Wignaraja (2014) has included a dummy variable for firms that "have acquired relevant in-house FTA expertise" or managers with FTA knowledge. Thus, all the independent variables on manager characteristics are part of an exploratory empirical study that is unique to this dissertation.

Intuitively, the manager's level of education, age, and professional experience represent the process of learning-by-doing in FTA use. The managers' level of education is represented by the manager's years of schooling. The manager's professional experience is represented by the manager's years of work experience in export and import. With regard to the managers' knowledge of FTA, the study by Wignaraja (2014) uses a dummy variable to represent firms' awareness of FTAs. Hence, dummy variables can be included to represent the managers' attendance to government-organized awareness campaigns and the manager's knowledge of various FTAs.

### **Tariff Margin**

The importing country's tariff schedule is used to calculate the tariff margin or the differences between the FTA tariff and the MFN tariff set by the WTO.

Empirical studies on FTA use in products have calculated the tariff margin at the 6-digit HS Code (Candau et al., 2004), 8-digit (Bureau et al. 2007; Hakobyan, 2015; and Keck and Lendl, 2012) or 10-digit tariff lines (Kim and Cho, 2010; and

Hayakawa et al., 2014). Studies employing the 6-digit HS code may have the advantage of comparability from one country to another. However, a calculation at the tariff lines provides a more precise tariff margin.

One example would be the 4-digit “0706” that represents the heading for ‘Carrots, turnips, salad beetroot, salsify, celeriac, radishes and similar edible roots, fresh or chilled.’ The 6-digit HS Code “0706.90” represents the subheading of ‘Vegetables other than Carrots and Turnips.’ The 9-digit tariff line of “0706.90.010” represents the tariff line for ‘Burdock’ with an MFN tariff of 2.5% and the 9-digit tariff line “0706.90.090” represents the tariff line for ‘Vegetables other than Carrots, Turnips, and Burdock’ at an MFN tariff of 3%. In studies that use 6-digit HS Code, the tariff may need to be averaged for the two tariffs at the 9-digit tariff line, resulting in a tariff average of 2.75%. Hence for specificity, the tariff margin is best to be constructed for each tariff line of the receiving country.

### **Rules of Origin**

The information on the type of ROO criteria for each tariff line is in the FTA written agreement. In empirical studies at product-level, three methodologies have been employed to depict the restrictiveness level of the ROO criteria: by using a dummy variable for the type of goods or industry (Keck and Lendl, 2012; and Hakobyan 2015); by using cumulative or cumulation ROO (Augier et al., 2005; and Hayakawa, 2012); or by using an ordinal index as proposed by Estevadeordal (1999 and 2000).

The first methodology, introduced in studies by Keck and Lendl (2012) and Hakobyan (2015), use dummy variables to differentiate products based on the WTO classification of primary and non-primary products. These studies assume that the ROO for primary products is more straightforward than the ROO for manufacturing products since the latter uses various inputs of different origin. The use of a dummy variable is a practical choice considering that both studies cover numerous countries and various FTAs.

The second methodology uses cumulative ROO. By definition, cumulative ROO widens the scope of products that are classified as originating from an FTA-member country as it allows foreign materials originating from a party outside of the agreement to be counted as part of the FTA-members' originating materials. Cumulative ROO allows for materials from an FTA-member country A to be processed or added to materials from FTA-member country B, and treated as if the whole final good have originated from FTA-member country B. Some FTA also allows foreign materials from certain non-FTA members to be counted as part of FTA-member country A's originating materials because FTA-member B also has a separate FTA with those non-FTA members. This cumulative aggregation provides more flexibility in the sourcing of materials.

Studies that observe the impact of the ROO to FTA use by using cumulative ROO have the advantage of describing the hub-and-spoke and the trade-in-task network pattern of FTAs, as cumulative ROO describes the value-adding process from intermediate goods to final goods. However, cumulative ROO is mostly used in



comparative studies. One study compares trade flow under EU FTA in the before-and-after application of cumulative ROO (Augier et al., 2005) while another study compares the trade flows of two countries that are both engaged in two different FTAs with different types of cumulative ROO (Hayakawa, 2012). The cumulative ROO is most useful to be used in comparative studies.

The third methodology uses an ordinal index of ROO as pioneered by Estevadeordal (1999 and 2000). The index is developed following the specific CTC rules:

*$\Delta$  Change in Chapter >  $\Delta$  Change in Heading >  $\Delta$  Change in Sub – heading >  $\Delta$  Change in Tariff Line*

The Estevadeordal Index takes on the value of 1 to 7. The highest score is assigned to the ROO criteria that require a CTC at the 2-digit Chapter (CC) level. The higher score is assigned due to the complex transformation of the input material to the finished product. At the CC level, the transformation is considered to be more substantial and more challenging to fulfill by firms. A decreasing or lower value is assigned consecutively to changes at the 4-digit Heading (CH), and 6-digit Subheading (CS) level. Changes in the tariff line or at the product level (CI) are considered to be less challenging to fulfill and are assigned the lowest score. Additional scores are added to other CTC criteria such as the RVC, EXC, TECH, and WO.

As an illustration, the toasted bread is classified under HS Chapter 19. The input materials of the toasted bread are flour and butter. They are from HS Chapter 11 and HS Chapter 4, respectively. For the toasted bread to be eligible for an FTA tariff, the ROO criteria require a CC from the input materials of HS Chapter 11 and HS Chapter 4 to the final good of HS Chapter 19. The change from one Chapter to another, or the CC, implies a significant transformation from the original material to the finished product. Thus, the CC is assigned a high score in the Estevadeordal Index.

On the other hand, the CS implies a minor transformation. As an illustration, plastic made of the polymer of propylene is classified as HS Subheading 3920.20, while parts and accessories to measure electrical quantities are classified as HS Subheading 9030.90. The change from Subheading 3920.20 to Subheading 9030.90 implies a minor transformation as it only changes the function of the product without changes of input materials. The CS is thus assigned a lower score in the Estevadeordal Index. Hence, the more significant the transformation of the material, the more challenging the ROO criteria. The more restrictive the ROO, the higher the assigned score in the Estevadeordal Index.

The choice of methodology in observing the ROO restrictiveness level depends on the objective and scope of the study. ROO dummy is practical to use in studies that examine and compare multiple FTAs as it is quite cumbersome to assign scores according to the Estevadeordal index to all of the 6-digit Subheading of each FTA. By using cumulative ROO as a variable, the study can also observe the added-

value process in the production of goods. However, the study needs to be designed to observe the before-and-after impact of the ROO cumulative to trade flows (Augier et al., 2005) or to compare the flow of trade of two countries that are engaged in FTA with cumulative ROO (Hayakawa, 2012). Although the Estevadeordal index is criticized as “abstract” (Inama, 2009) and “arbitrary,”<sup>23</sup> it presents a more precise comparative measure of ROO restrictiveness at each tariff line. The index has also been widely used in studies that demonstrate the use of ROO as a government policy (Estevadeordal, 1999 and 2000; Estevadeordal et al., 2004; and Cadot et al., 2002), compare the restrictiveness level of various FTAs (Estevadeordal et al., 2004), and compare factors associated with the utilization of FTAs (Hayakawa, 2013; Hayakawa et al., 2014; and Kim and Cho, 2010). Although all methodologies share the same objective of reflecting the restrictiveness of ROO, the Estevadeordal index provides better comparability and precision by tariff line if compared to the use of dummy variables, and it does not require comparative observations such as in the case of cumulative ROO.

The restrictiveness level of the ROO is represented differently in firm-level studies. Some models use dummy variables to differentiate the sector, industries, and the product that firms trade. Dummy variables are used in Takahashi and Urata (2008) to differentiate between manufacturers and non-manufacturers, in Takahashi

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<sup>23</sup> Inama (2009) argues that the score assigned according to the Estevadeordal Index may not fully represent the actual technical and commercial assessment of the product and the relative impact of ROO for each country's industrial capacity

and Urata (2010) to differentiate between 9 industrial sectors, and in Hayakawa et al. (2009) to differentiate between 18 industrial sectors. Hayakawa (2014a) and Hiratsuka (2009) both introduce the share of local inputs in total inputs since firms that produce using a high proportion of local input would more easily comply with the ROO. Hayakawa et al. (2014) use the Estevadeordal index to represent the restrictiveness of ROO. Among these studies, the use of the Estevadeordal index provides the most precise measure of the restrictiveness level of the ROO.

### **Non-Tariff Measures and Interaction Variable of the ROO and Tariff Margin**

As far as this study notes, no studies on FTA use has included a variable related to the NTM or an interaction variable of the ROO and the Tariff Margin. The inclusion of the NTM in the study is meant to reduce the possibility of omitted variable bias, while the interaction variable is added to examine their association with FTA use by firms at the product-level.

One of the difficulty of quantifying NTMs and its impact to FTA use is due to the wide-ranging definition of NTM and the types of policies that it covers. Much effort has been dedicated to categorize and record NTMs – and yet the available database does not cover all NTMs administered by a country. The recorded NTMs in the UNCTAD TRAINS database for example, rely on the voluntary self-reporting mechanism from each UNCTAD member countries. Nevertheless, TRAINS is the “most widely available source of information on NTMS” and “the most frequently used in research” (Ferrantino, 2006).

The UNCTAD TRAINS database lists each HS Chapter, HS Code and tariff line that has an NTM applied to it. The list can be used to construct an NTM dummy variable to be included in an empirical model. All HS Chapter, HS Code and Tariff lines that have at least one NTM applied, will take on the value of one. On the other hand, those that are free from any NTM, will take on the value of zero. The dummy variable can be constructed to only include the most common NTMs, such as the Sanitary and Phytosanitary (SPS) measures that regulate food safety and protect the domestic ecosystems from the invasion of alien biological species and the Technical Barriers to Trade (TBT) measures that require goods to meet certain technical regulations, standard, testing and certification procedures. Or it can also include more technical NTMs such as the pre-shipment inspection, contingent trade protective measures, quantity and price control measures and export-related measures.

The interaction variable of the ROO and Tariff Margin can be constructed by multiplying the ROO restrictiveness score and the tariff margin. The interactive association between the ROO restrictiveness score and tariff margin on FTA use corresponds to the coefficient of the interaction variable. A statistically significant coefficient of the interaction variable suggest that the association of ROO restrictiveness on FTA use depends on the level of tariff margin.

## **The Intensity of Trade, Trade Value, and Pattern of Trade**

One study by Ing et al. (2016) examines the association of FTA use with the firms' intensity of trade using panel data. The study uses variables that represent the firms' share of export and import to FTA countries. The study finds that a one percent increase in firms' export share leads to a 0.2 percent likelihood of use, while a one percent increase in firms' import share reduces the likelihood of using an FTA by 0.4 percent. In studies that use cross-sectional data, firms' intensity of trade can be calculated as the proportion of the firm's trade value to the FTA-market over the total of the firms' trade value to all markets.

As far as the author's knowledge, no firm-level study has included the value per-shipment or the frequency of shipments as variables in its model. Among the possible explanations are because respondents may not make the details of these two variables available to enumerators, or they may not remember all the value and frequency of shipments made in a year. Therefore in firm-level studies, the intensity of trade can be represented by the proportion of the firms' trade value to an FTA-market.

In product-level studies, the intensity of trade can be represented by both the value of trade and the trade pattern, or in the value per shipment and the frequency of shipments. The firms' intensity of trade cannot be obtained from customs data, as it does not contain information on the proportion of each firm's trade with an FTA-market. Technically, firm-level transactions or the value per shipment reported by firms on their customs documents are best to be used (Hayakawa et al., 2013).

Studies that use firm-level transaction data can use the logit or Probit model since the dependent variable takes on a value of one for each firm-level transaction that uses an FTA and otherwise. Unfortunately, accessibility to transaction-level data is scarce. Only one study by Hayakawa et al. (2014) comes close to using firm-level transaction data. The study treats transaction-level customs records as a single firm-level shipment.

In studies that do not use transaction-level data, the value of firm-level transactions are replaced by proxies such as the yearly import value (Bureau et al., 2007), the average yearly exports (Kim and Cho, 2010), or the monthly import data at customs district/member level (Keck and Lendl, 2012). In these models, the utilization rate is calculated as the proportion of the proxy value that uses FTA tariffs over the value of total import that is eligible for FTA tariff within the period of observation. Although these proxies may create a 'bias' in the model by overestimating the coefficient of import value – since yearly and monthly data consist of many transaction-level data, they are yet the best available observations for trade value. Another possible methodology is the use of the yearly average trade value at the product-level as published by the government of the receiving or importing FTA-country. The average yearly imports can be calculated by adding all monthly values and dividing the sum by twelve months. Hence in the absence of transaction-level data, studies often use proxies to represent trade value per shipments.

As previously discussed in Section 2.3 of this Chapter, no study has yet observed the association between the firms' shipment pattern and FTA use. The

yearly shipment pattern variable can be represented by the coefficient of variation of the monthly shipment. The coefficient of variation in monthly shipment represents the variability or dispersion of shipments value and pattern within the year. A high coefficient of variation indicates that firms engage in a less frequent or a seasonal pattern of shipment to save on the cost of paying multiple COO documents. On the other hand, a small coefficient of variation indicates that firms send regular, continuous shipments. Since the mean is different for each period of observation, the study can use the coefficient of variation as a comparable measure from one period to another. Therefore the firms' trade pattern is represented by the coefficient of variation in monthly shipment.

In conclusion, the methodology employed in past empirical studies provides a wealth of examples in establishing the dependent and independent variables. This dissertation can build upon past studies for comparability purposes and includes new factors to be further tested.

## **2.5 Wither IJEPA?**

This section presents the historical background and the existing research on the IJEPA. The IJEPA is the primary bilateral trade agreement between Indonesia and Japan. Discussions on the establishment of the IJEPA was first held on the sidelines of the APEC Economic Leaders Meeting in November 2004, when the then President of Indonesia, Susilo Bambang Yudhoyono underlined the need of having an Economic Partnership Agreement (EPA) to Prime Minister Junichiro Koizumi.



The IJEPA study group reported that as of 2004, Japan was the largest trade partner of Indonesia. Japan accounted for 19.06% and 13.07% of Indonesia's export and import, respectively. To Japan, Indonesia accounts for 1.6% and 4.11% of Japan's export and import, respectively (IJEPA Study Group, 2005). Indonesia consistently ran into a trade surplus with Japan between the period of 1998 to 2007 (WTO, 2009). In 2007, Japan's largest export to Indonesia was in machinery, vehicles, base metals, and chemicals. Indonesia's largest export to Japan consisted of textiles, machinery, minerals, and base metals. By supplying raw materials, Indonesia became part of the burgeoning regional supply chain of Japan within the trade-in-task network. Given the large volume and value of trade between Indonesia and Japan, both countries decided to establish the IJEPA.

The IJEPA was signed on 20 August 2007. It became Indonesia's first bilateral FTA and Japan's fourth bilateral FTA with an ASEAN-member country after Singapore, Malaysia, and Thailand.

Although the IJEPA has entered into force for more than a decade, research on the IJEPA use has been rather scarce. Past studies presents the impact of the IJEPA to trade flow using ARIMA method (Setiawan, 2012; and Ardiyanti, 2012), the utilization rate of the IJEPA in trade (Pangestu, 2010; and Sitepu et al., 2012), IJEPA use by firms (Salam et al., 2012; Damuri et al., 2014) and the comparative restrictiveness of the IJEPA ROO to other FTAs' ROO (Maulana, 2013). These studies highlight the limited utilization rate of the IJEPA, the moderate awareness in selected sectors, the tendency of use by large firms, and the relatively restrictive

ROO. All of these studies provide useful indications on factors associated with IJEPA use by firms in the early period of IJEPA enactment.

In light of this, a more recent study that covers a longer period could provide a better understanding of the level of IJEPA use. Firms' awareness may have increased over time, and trade level may have normalized after the impact of the global economic crisis. The IJEPA entered into force on 1 July 2008, just at the peak of the global economic crisis. Athukorala (2011) noted that from April 2008 to June 2009, global trade contracted by 20%. The East Asian countries experienced a higher contraction than other countries in Asia. Japan was the hardest hit. The US market, the epicenter of the crisis, was Japan's main destination for capital goods and high-end durable consumer goods. The contraction in demand for final products has impacted countries in the lower production chain, including the demand for imports from Indonesia (Athukorala, 2011). Therefore in light of the possible increase in firms' awareness and the normalized trade after the global economic crisis, the use of panel data with a longer observation period would be useful to observe a possible increase in IJEPA use.

Recent data provide reasons to believe that IJEPA use has increased over time - although with a caveat. According to the Ministry of Trade of the Republic of Indonesia (MOTRI) statistics, the issuance of the IJEPA COO has increased from 63,273 applications in 2012 to 77,664 applications in 2016 or an average yearly increase of 5.3% within four years. The IJEPA also provides a broader tariff

coverage<sup>24</sup> than the ASEAN China FTA (ACFTA). By comparison, ACFTA has 6,682 duty-free tariff lines (Ginting, 2011) while IJEPA has 7,318 duty-free tariff lines (WTO, 2009). The increase in COO applications and the extensive tariff coverage present the possibility of an increase in IJEPA use over time. However, there is a caveat to such a possibility. In a comparative study of the ROO of the ACFTA, the ASEAN-Korea FTA (AKFTA) and the IJEPA, Maulana (2013) finds that the IJEPA scored at a weighted average of 5.31 in the Estevadeordal Index. The ACFTA and the AKFTA subsequently score four (lenient) and 4.55 (moderate). Even though the IJEPA provides a broader tariff coverage, its ROO tends to be more restrictive than other FTA.

As far as this dissertation notes, only two firm-level surveys have been conducted to observe IJEPA use by firms in Indonesia: the ad-hoc research by the MOTRI (Salman et al., 2012) and the yearly survey by the JETRO and the Japan Bank for International Cooperation. The two research on the IJEPA use different sampling methodologies and carry different objectives. Salman et al. (2012) use purposive sampling to selected firms in 6 Indonesian cities in the fisheries, chocolate and candies, garment, furniture, and plastic sectors to examine firms' use of the IJEPA, while JETRO surveys sample on Japanese-affiliated or FDI firms that are operating in Indonesia. The use of FTAs by firms is just one of the many topics

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<sup>24</sup> Tariff coverage is the numbers of products or tariff lines that get a tariff reduction or become duty-free.

covered in the JETRO survey as the main objective of the survey is to observe business opportunities.

In addition to the IJEPA-specific firm surveys, other firm-level surveys have been conducted in Indonesia. They have mostly examined the use of ASEAN FTA and ASEAN+1 FTA by firms (Damuri et al., 2014; Wigjoseptina et al., 2015; and Wignaraja, 2015). Both the IJEPA-specific and the general FTA firm-level surveys present descriptive statistics on the characteristics of the sampled firms that use FTAs. Only Wignaraja (2014) presents an empirical estimation on the association of the use of FTAs in Indonesia and firm characteristics. Thus there is a knowledge gap for an empirical study on the characteristics of firms that use the IJEPA.

The descriptive statistics presented by past surveys indicate several characteristics of firms that use the IJEPA or other FTAs in Indonesia. Salam et al. (2012) find that the majority of the sampled IJEPA-users are large firms. While in firm-level surveys on the use of various FTAs, Wignaraja (2014), Damuri et al. (2014), and Wigjoseptina et al. (2015) find that large firms consist around 42% to 77% of the sampled firms. However, Wignaraja (2014) also finds that firms' size has no significant association with FTA use in Indonesia. Instead, firms that are older and located in industrial clusters tend to use FTAs. Hence, even though the descriptive statistics present that that FTA users in Indonesia tend to be large firms, an empirical study can be useful to test the association of firms' size with FTA use.

The descriptive statistics also describes firms' awareness of an FTA. Awareness level of the IJEPA is found to be moderate in Salman et al., (2012), with

46.2% respondents knowing about the IJEPA, 17.9% have heard of the IJEPA, 10.3 % understood the IJEPA, while the rest did not answer or have not heard<sup>25</sup>. In his empirical results, Wignaraja (2014) finds that firms that have acquired relevant in-house FTA expertise and used FTA support services are more likely to use FTAs. Hence, the association of FTA use to firms or managers' awareness merit further examination.

Firms and managers' awareness are often established through the introduction of FTAs through government or private sector-organized awareness campaigns, such as outreach events and training. These government or private sector "institutional support systems ... provide information, training, technical advice, and other services" (Kawai and Wignaraja, 2011). Studies found that firms in developing and developed countries respond differently to these FTA institutional support systems. In a developing country like Indonesia, managers highly expect the government's assistance and outreach programs (Wigjoseptina, 2015). The expected assistance includes how to fill in COO forms, mainly in filling information on the traded goods' production cost structure and in choosing the right HS Code for their products according to the ROO criteria (Salman et al., 2012). On the other hand, firms in developed countries like Japan tend to rely more on private sector institutional support systems (Kawai and Wignaraja, 2011). Kawai and Wignaraja

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<sup>25</sup> The survey by Salman et al. (2012) does not specify the number of sampled firms.

(2011) attribute this phenomenon to “the better-functioning markets for support services, including those for exporting through FTAs.”

Firms also respond differently to these awareness campaigns. Big corporations and firms in the manufacturing industry recognize the seminars or advice provided by JETRO, chambers of commerce, and industry associations as catalyst and trigger for FTA use (Japan’s METI White Paper, 2014). SMEs and firms in non-manufacturing industries, on the other hand, do not respond well to these programs. The campaigns also appear to be less useful to exporting firms that use FTAs after the request of importers. (METI White Paper, 2014). Thus, responses to government-offered awareness campaigns depend on the development level of the country and the needs of the related sector.

The firm-level surveys also sought firms’ views on the tariff and the ROO. FDI and local firms are found to have differing views on tariffs. Japanese-affiliated firms would consider IJEPA use at an average tariff of 4.3% or “lower by 1% than the average of South-East Asian countries” (JETRO, 2009). On the other hand, Indonesian exporters saw that the FTA tariff has no direct influence on their pricing or profit margin, as the tariff saving benefit is reaped by Japanese importers (Salam et al., 2012; and Damuri et al., 2014). Nevertheless, some exporters recognized that without the FTA lower tariff, Japanese importers might buy from other suppliers or countries (Salam et al., 2012; and Damuri et al., 2014).

Since the ROO differs from one industry to another, firm-level surveys cannot be used to compare firms’ perspectives on the restrictiveness of the ROO. Firm-level

surveys instead look into the cost and difficulty of processing the COO and complying with the ROO. FDI and local firms give mixed reviews on the difficulties of processing the COO. Japanese-affiliated firms view the processing of COO in Indonesia as the simplest and most 'user-friendly' among Southeast Asian countries (Hiratsuka et al., 2009). On the other hand, Damuri et al. (2014) find that only 5% out of the 173 firms in Indonesia saw the IJEPA COO as easier to obtain than other FTAs COO. Wignaraja (2014) finds that 25% of firms saw delays and administrative processing costs as hindrances.

In terms of timing and cost, the processing of a COO in Indonesia takes within a "reasonable length" of one to three days the most (JETRO, 2009; and Wigjoseptina, 2015) or between 1-5 hours up to more than seven days (Damuri et al., 2014). Most surveys find that the cost of applying for COOs in Indonesia is relatively low. The processing cost of the IJEPA COO ranges from Rp. 5.000 (the official fee) up to Rp. 70.000 (Salman et al., 2012), or Rp. 300.000,- (Damuri et al., 2014), or US\$0.5 (Hayakawa et al.,2013). The cost of processing the COO in Indonesia is much cheaper than in Japan at US\$25.1, and in Cambodia at US\$15-US\$50 (Hayakawa et al., 2013). Hence, Japanese-affiliated firms tend to have more positive views than firms that were surveyed in Indonesia with regards to the cost and process of applying for COO in Indonesia. Japanese affiliated-firms considers the tariff margin as an important factor in their decision to use an FTA, while Indonesian firms do not see the benefit of better pricing. They instead use an FTA to maintain their competitiveness.

## **2.6 Conclusion**

FTAs have proliferated at a staggering number even though various studies found limited use of FTAs in trade. This chapter discusses the internal and external factors that possibly contribute to the formation and proliferation of FTAs. Governments engage in FTAs as part of their strategic trade policy of protecting important industries and supporting firms to reach economies of scale. With such an objective, governments negotiate for an FTA tariff structure that supports the export of competitive products and the import of competitively priced inputs materials. FTAs are used as external pressure schemes in initiating domestic reform and a legal agreement that limit retaliation from other countries and adversely-impacted domestic sectors. Governments would engage in FTAs under the condition that substantial welfare is generated. These governments' interest grew upon the failure of the Doha Round and the growing trade-in-task network. The discriminatory nature of FTAs tariffs has made countries wary of being left out. Countries hence increasingly use and join FTAs to secure market-access vis-à-vis competing countries, creating the proliferation of FTAs.

With the increasing number of FTAs, there is also an increasing concern about whether firms are using FTAs. In response to those concerns, this dissertation presents several general hypotheses on firm and manager characteristics that are associated with FTA use by firms.

With regard to firm and manager characteristics, FTA use is expected to be positively associated with firms' size, years in operation, and FDI status. In the



presence of financial constraints to comply with the ROO, large firms are expected to face fewer constraints in resources when engaging in new initiatives such as the use of an FTA. Older firms, with their accumulated experience and credibility, are also more likely to be able to expand their financial resources compared to younger firms. FDI firms, on the other hand, can tap into a vast network of information that may not be available to local firms. FTA use is expected to have a positive association with the age, the professional experience and the level of education of the managers, as well as managers that have attended government-organized awareness campaign and have knowledge of various FTAs. To use an FTA, managers have to go through a process of learning-by-doing and have a certain level of awareness.

With regard to the firms' product, FTA use is expected to be negatively associated with the ROO, but positively associated with the tariff margin. A positive association with the firms' intensive trading activity to the FTA-market is also expected as in the long run the ROO fixed cost becomes negligible and firms produce at a point where the marginal cost is equal to the marginal revenue. The firms' intensity of trade can be attributed to a high-value trade which allows firms to accumulate larger tariff savings to compensate for the ROO fixed cost, or to an infrequent trade bout, which allows firms to save on the cost of paying multiple COO documents. Trade bouts are represented by a high coefficient of variation. To reduce the possibility of omitted variable bias, a dummy variable on the NTMs has been included. The model also includes an interaction variable of the ROO restrictiveness

score and the tariff margin. Both variables are expected to have a negative association with FTA use. These hypotheses are tested in Chapters three and four.

By taking into account the advantages and limitations of the various methodologies employed in past studies, this dissertation applies a two-prong approach. The first study uses cross-sectional data obtained from a firm-level survey. The second study uses panel data of trade value. The firm-level survey has the advantage of collecting cross-sectional data of the characteristics of FTA-using firms, and the perception and experience of firms of using an FTA - albeit for a limited sample of firms and industries. While to obtain detailed information on FTA use by industries and products over a long period, panel data of trade value recorded by the government of the receiving country are often used to eliminate possible discrepancies.

To test the proposed hypotheses, the IJEPA is a potential case study given the limited number of studies to date and the limited proportion of trade that uses the IJEPA.

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## **Chapter 3 Product-related Factors Associated with FTA Use**

### **3.1 Introduction**

Firms use Free Trade Agreements (FTA) so to benefit from the tariff margin or the difference between the higher Most Favored Nations (MFN) tariffs and the lower FTA tariffs. However, the low figures of FTA utilization indicate that not all traded products use FTA tariffs (Kawai and Wignaraja, 2011; China Customs, 2014; and Menon, 2013). The limited use could be due to the fact that a majority of products are already subject to a low or duty-free MFN tariff. Firms may also prefer to use MFN tariffs because the FTA tariff margin is considered to be too small compared to the Rules of Origin (ROO) fixed cost that firms have to pay. Hence, firms respond to the magnitude of tariff margin and ROO fixed cost, and weigh the cost and benefit of FTA use. The more beneficial the FTA, the higher the utilization rate, or the proportion of FTA trade over the total trade that is eligible for FTA tariffs.

This Chapter attempts to examine factors associated with the FTA utilization rate empirically. The factors consist of the tariff margin, the ROO restrictiveness, the interaction variable of the tariff margin and the ROO restrictiveness, the application of Non-Tariff Measure, the average monthly import value, and the yearly coefficient of variation in imports. The last two variables are included to represent the scale and pattern of trade under an FTA. In observing factors that firms take into account in the use of FTAs, the study uses panel data of Indonesian exports to Japan under the Indonesia Japan Economic Partnership Agreement (IJEPA).

The association of utilization rate to the FTA tariff and ROO structure is among others discussed in Bureau et al. (2007), Keck and Lendl (2010), Schaub (2012), and Hayakawa (2013). In addition to those two factors, Hayakawa et al. (2013) included the scale of trade or the value per transaction as a variable and found that it contributed ten times larger to the FTA utilization rate than the tariff margin or ROO restrictiveness. This dissertation introduces the application of the non-tariff measures (NTM), the interaction variable of the ROO and tariff margin, and the trade pattern or the coefficient of variation as new variables, and examines their association with the FTA utilization rate. As far as the author's knowledge, no study has included these variables. The inclusion of trade pattern is not only to observe its significance to FTA use, but it is also used to control for the possible overestimation in the coefficient of the average monthly import. The inclusion of a dummy variable for NTMs application is meant to reduce possible omitted variable bias. The model also introduced an interaction variable of the ROO and tariff margin so to examine their interaction with FTA use.

The rest of this Chapter is organized into five additional sections. The second section briefly presents the testable hypotheses and theoretical framework. The third section discusses the research methodology of the empirical study, including the descriptive statistics of each factor as contained in the FTA. The fourth section describes the empirical strategy, the model, the descriptive statistics, and the results and analysis of the estimation. The last section concludes.

### 3.2 Testable Hypotheses

This section briefly discusses the testable hypotheses derived from the general hypotheses presented in Chapter 2. The general hypotheses are adjusted according to the availability of product-level data from the Japan Customs website, the information contained in the IJEP Annex 2 document and the UNCTAD TRAINS database. Since this study uses import data, two assumptions need to be made. Firstly, both the exporting and importing firms choose to use an FTA, and both bear the cost of complying with the ROO. Secondly, each FTA traded good is priced under the condition that the MFN tariff ( $t_{MFN}$ ) is larger than the FTA tariff ( $t_{FTA}$ ) plus the cost of ROO ( $\theta$ ). Under these assumptions, the importing firms benefit from the savings due to the lower payment of tariff, while the exporting firms' products become more competitively priced vis-à-vis firms from non-FTA countries.

- *Testable Hypothesis 1: FTA use is expected to have a positive association with products that have a large tariff margin and to have a negative association with products that have a restrictive ROO.*

Tariff margin is the difference between the FTA tariffs and the MFN tariffs. Firms that imports using the FTA tariffs save on their tariff payments. The higher the tariff margin, the bigger the tariff discount. Hence, FTA use is expected to have a positive association with the tariff margin. The larger the tariff margin, the higher the proportion of trade that uses an FTA.

The ROO criteria require that traded goods contain input materials from or undergo technical processing in an FTA-member country. Firms comply with the ROO criteria to be eligible for the FTA's tariffs. To comply with those criteria, firms incur a fixed cost. The more restrictive the ROO criteria, the more costly it is for firms to comply (Krueger and Krishna, 1995; and Krishna, 2004). Hence, a restrictive ROO is expected to have a negative association with FTA use. The more restrictive the ROO, the lower the proportion of trade that uses an FTA.

- *Testable Hypothesis 2: FTA use is expected to have a positive association with the average monthly import value and the coefficient of variation of yearly import. FTA use is expected to have a negative association with the interaction variable of the ROO and the tariff margin and the NTM dummy.*

The tariff and ROO represent different components in the firms' cost structure. Tariff payment is a variable cost, while the ROO is a fixed cost. The magnitude of firms' tariff payment depends on the value of the shipment. The larger the scale or the higher the shipment value, the bigger the tariff discount that firms amass. In other words, a large scale of imports creates a significant reduction in tariff payment. On the other hand, the ROO fixed cost is a one-time fee paid in advance of the FTA use. To save on the tariff payments, firms send high-value shipments to outweigh the ROO fixed cost. High-value shipment is particularly important in products with low tariff margin and costly ROO criteria. Hence, FTA use is expected to have a positive

association with the average monthly import value. The larger the average monthly import value, the more likely it is that firms use an FTA.

Another cost component of FTA use is the cost of processing the Certificate of Origin (COO). The COO cost is paid per shipments. Firms that trade frequently using an FTA within a year incur multiple costs for processing the COO. Firms are thus expected to send shipments infrequently to save on the COO cost. In order to represent trade pattern, this study uses the coefficient of variation of yearly import. A small coefficient of variation implies that shipments are made regularly at a similar value. On the other hand, a large coefficient of variation implies that shipments are made irregularly in a variety of value. A positive association between the coefficients of variation with the utilization rate indicates that firms save on the cost and timing of processing the COO by sending large or small shipments at an irregular value. A negative association, on the other hand, indicates that the FTA tends to be used for regular shipments and firms incur multiple COO costs. In order to save on the COO cost, the FTA utilization rate is expected to have a positive association with an irregular pattern of shipment.

The interaction variable of the ROO and the tariff margin are expected to have negative association with FTA use, suggesting that the FTA structure offers a high tariff margin for products with a high ROO restrictiveness level. The inclusion of the interaction variable is to empirically examine the proposition made by Gibbons (2010) and Cadot et al. (2006) that “tariff lines with the highest preference margins are normally subject to the most restrictive ROO”.

Lastly, the NTM dummy variable is expected to have a negative association with FTA use, suggesting that any NTM requirement increases the cost of the firm in producing and importing the traded product.

### **3.3 Research Methodology**

This Chapter uses panel data of monthly import value from the Japan Customs website to calculate the utilization rate, the average monthly import value, and the coefficient of monthly import variation. All variables are calculated using the base price of 2013<sup>26</sup>. The Japan Customs records import data based on customs declaration forms. The data contains the total volume and value of imports from Indonesia, as well as the volume and value of imports that use the IJEPA tariff from April 2012<sup>27</sup> to March 2017. Since every April marks the beginning of the Japanese fiscal year and the change in Japan import tariffs, this study groups the data into the five fiscal years, containing 12 months of trade starting from April to March of the next year. Japan Customs' website publishes 4,017 tariff lines of trade between Indonesia and Japan for each fiscal period. The estimations in this study use all published data. Tariff margin is calculated from Japan's tariff schedule under the WTO and the IJEPA as published in the Japan Customs website. The website contains the most updated tariff by fiscal year, as well as the adjustments made by

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<sup>26</sup> For tariff lines that do not record trade in 2013, the base year is the year in which the first trade is recorded within the period of observation.

<sup>27</sup> The Japan Customs website reports import value that use FTA starting from January 2012 onwards



the World Customs Organization (WCO)<sup>28</sup>. The ROO restrictiveness score is constructed from the IJEPA Annex 2 document. The NTM dummy variable is constructed from the UNCTAD TRAINS database. Further details on the dependent and independent variables, as well as their descriptive statistics, are presented below.

### 3.3.1 Utilization Rate of the IJEPA

The dependent variable in this study is the FTA utilization rate. The utilization rate is calculated as the share of imports from Indonesia that use FTA tariffs over the share of total imports from Indonesia that is eligible for FTA tariffs<sup>29</sup>. The FTA utilization rate is defined as follows:

$$u_{it} = \frac{\text{Value of import using the IJEPA of product } i \text{ in period } t}{\text{Value of total import of product } i \text{ in period } t \text{ that is eligible for the IJEPA}}$$

The utilization rate of the IJEPA or the  $u_{it}$  of the product  $i$  in the period  $t$  is calculated by the value of import of the product  $i$  at the period  $t$  that uses the IJEPA preferential tariff over the value of total import of the product  $i$  in the period  $t$  that is eligible for the IJEPA preferential tariff. The product  $i$  refers to the observation in each tariff line, while the period  $t$  refers to the 12-months Japanese fiscal year of

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<sup>28</sup> Every five years, the WCO adjust the HS Code nomenclature by introducing new or merging the HS Code. The IJEPA was negotiated using the HS Code of the year 2002. Ever since then, the 2002 HS Code nomenclature has changed into the HS Code nomenclature of the year 2007, 2012 and 2017.

<sup>29</sup> In Chapter 3, the dependent variable or 'the use of IJEPA' takes on the value of 1 for firms that uses the IJEPA to export to Japan, and takes the value of 0 for firms that do not use the IJEPA to export to Japan.

April to March of the next year. The utilization rate can take on the value between zero to one for each observation.

Table 3-1 presents the total value of Japan's import from Indonesia classified according to four types of tariff classification. Table 3-1 row (A) presents imports that use zero or duty-free MFN tariffs. Imports that are subject to MFN ad-valorem tariffs that are larger than zero are in Table 3-1 row (B). These types of imports are not eligible for preferential treatment, and the IJEPA tariffs are of equal value to the MFN tariffs. Table 3-1 row (C) presents imports that do not use the FTA scheme even though the MFN and FTA tariffs have values larger than zero. The imports that use the IJEPA preferential tariff is in Table 3-1 row (D). Table 3-1 row (F) presents the yearly utilization rate of the IJEPA.

The proportion of imports that use the IJEPA tariff over the total imports from Indonesia is found to be somewhat limited, ranging from 10.6% to 13.9% (Table 3-1 column '%' and row D). This low figure is due to at least three factors. Firstly, 80% of imports enter Japan at duty-free MFN tariffs as described in Table 3-1 row (A). Secondly, there were cases of 'missed opportunities' or imports that do not use the IJEPA even though they are eligible, such as described in Table 3-1 row (C). From April 2012 – March 2013, around 2.3% of imports did not use the IJEPA preferential tariff even though they were eligible. Lastly, there are still approximately 5,054 tariff lines that do not record any trade out of the 9,071 tariff lines in Japan's tariff schedule (WTO, 2017). Chapter 93 on 'List of Arms and ammunition; parts and accessories thereof', for example, does not record any trade activities.

Table 3-2 presents the utilization rate at the HS Section level for April 2012 – March 2013 and April 2016 – March 2017. Table 3-2 column D illustrates the high utilization rate of more than 80% for Sections of live animals; vegetable products; animal or vegetable fats and oils; prepared foodstuff; chemical products; plastics and rubber; wood products; textiles; stone and glass products; and metal products.

Despite the high utilization rate, the value of IJEPA eligible import in some sections are relatively small compared to the total absolute import to Japan. For example, the HS Section 3 on Animal or Vegetable Fats and Oils had 5,483 million JPY imports that use the IJEPA tariff out of the total eligible FTA trade of 5,589 million JPY from April 2012 to March 2013. The utilization rate for HS Section 3 is 98.1%. The remaining 106 million JPY did not use the IJEPA even though it was eligible, creating or 1.9% ‘missed opportunities’. The 5,483 million JPY represented 95.6% of the total import within the HS Section 3. Although HS Section 3 had a high utilization rate, its trade value is minuscule compared to the total value of imports from Indonesia of 2800 billion. HS Section 11 on Textiles also had a high utilization rate of 82.5% from April 2012 – March 2013. Around 102,570 million JPY used the IJEPA tariff out of the total of 124,328 million JPY eligible for IJEPA. Another compelling case is the HS Section 5 on Mineral Products and the HS Section 16 on Machinery and Electrical Equipment import. Although both record high import value, the utilization rate is very limited at 0.2% and 1.4%, respectively. Both HS Sections have a large number of tariff lines that are duty-free MFN tariff, while the tariff margin is very small or much less than 5%. These cases demonstrate Sections with a high

utilization rate may have very small trade value and do not contribute to a higher IJEPA trade proportion. Other Sections contribute a higher total value of import, and yet they are not eligible for FTA tariff. As a result of this tariff structure, the proportion of imports that use the IJEPA from April 2012 to March 2013 is at a limited 10.6%.

In conclusion, although the IJEPA utilization rate is more than 80%, the proportion of IJEPA imports never surpasses 13.9% in each of the five fiscal years. Table 3-1 demonstrates the reasons: a majority of Japanese imports are subject to duty-free MFN tariffs; many FTA-eligible imports entered with MFN tariff creating cases of 'missed opportunity', many FTA-eligible tariff lines do not record any trade activities and tariff lines with high utilization rate represent a small value of imports.

### **3.3.2 Tariff and Tariff Margin**

IJEPA Tariff commitment is scheduled in IJEPA Annex 1 document and made using the HS Code of 2002. Before the enactment of the IJEPA in 2008, 3714 or 41.7% tariff lines of Japan were already duty-free on an MFN basis. Upon IJEPA enactment, each tariff lines are subject to a different schedule of elimination in the span fifteen years<sup>30</sup>, with some commodities attaining duty-free tariff in 2023. The bulk of

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<sup>30</sup> Tariff liberalization is scheduled into ten categories: A, B3, B5, B7, B10, B15, P, Q, R, and X. The 3,604 tariff lines that are immediately eliminated upon the enactment of the IJEPA are part of category A. Category B3, B5, B7, B10, and B15 consist of 7.2% tariff lines and are eliminated progressively within the period of three, five, ten and fifteen years. In the year 2011, 25 tariff lines became duty-free. In the year 2015, another 250 tariff lines became duty-free. Another 202 lines are expected to be duty-free by 2018 and another 78 tariff lines in 2023. Tariff lines under category P are eliminated based on different timetables for each of the FTA-member country. Category Q consists of imported products that are subject to a quota. Category R contains a list of products to be renegotiated. Category X consists of products that are not subject to liberalization. From 2018 to 2023, tariff lines that are subject to duties beyond 30% are to be liberalized. Tariff lines with duties beyond 40% are excluded from the agreement.

liberalization from 2008 to 2023 consist of tariff lines that were subjected to a 10% duty or less. The largest number of liberalized tariff lines is under the section of 'Textiles and Textile articles' with 1966 tariff lines and 'Chemicals and Chemical Products' with 620 tariff lines. By 2023 it is expected that 89.2% of Japan's tariff lines or 7,950 tariff lines are to be liberalized under the IJEPA (WTO, 2009).

Therefore, 41.7% of Japan's tariff schedule has been duty-free prior to the enactment of the IJEPA, and 40.4% immediately becomes duty-free upon the implementation of the IJEPA. Ever since then, an additional 0.03% of Japan's tariff schedule has become duty-free. Another 0.03% is expected to be duty-free by the year 2023. The rest of the tariff line or around 1604 tariff line, which includes the 290 tariff lines of agricultural products and the 435 tariff lines of prepared food, remain dutiable.

The tariff margin is calculated by subtracting the IJEPA tariff from the MFN tariff at the 9-digits tariff line. The estimations only use observations with ad-valorem tariffs (or tariffs in percentage amount). Observations with specific tariffs (or in a fixed amount per unit of import) are omitted due to the difficulty of calculating their ad-valorem equivalent<sup>31</sup>. There are currently around 275 tariff lines with specific tariffs out of the 9,071 tariff lines in Japan's current tariff schedule. The number of observations with a specific tariff is relatively small enough to omit without resulting

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<sup>31</sup> A consistent pattern of imports is required to obtain the ad-valorem equivalent for each period of observation. Not all products have such a consistent import pattern.

in any bias in the estimation. Hence, this study uses all observations that have an ad-valorem value.

Table 3-3 presents the structure of Japan's MFN and IJEPA ad-valorem tariffs and tariff margins from April 2012 to March 2013. The majority of IJEPA tariff margins or around 971 tariff lines are at less than 5%. The rest of the tariff margin is between 5% to 10% in 765 tariff lines, and between 10% and 20% in 186 tariff lines. Around 246 tariff lines do not apply IJEPA tariffs. In these tariff lines, the IJEPA tariff is treated as equal to the MFN tariffs. Thus 50% of the IJEPA tariff lines offer a tariff margin that is less than 5%.

The utilization rate of products also differs by tariff margin. By section, all tariff lines in the HS Sections 10, 17 and 21 are already at duty-free. Hence as demonstrated in Table 3.2 columns C and D, these Sections do not record any IJEPA trade. Sections with a tariff margin of less than 5%, such as the HS Sections 6, 7, and 15 reports different utilization rates. HS Section 6 on Chemical Products records a high utilization rate, while the HS Section 7 on Plastics and Rubber and the HS Section 15 on Metal Products do not. Hence, in products that have a tariff margin of less than 5%, firms are expected to carefully weigh in the savings from tariff payments against the ROO fixed cost. The highest tariff margin is offered in tariff lines under the HS Section 11 on Textile Products and HS Section 12 of Footwear. As expected, the HS Section 11 on Textile Products also records high-value trade and high utilization rate of 81.9% and 66.9%, respectively (Table 3-1).

The high utilization rate in these sections is in line with the proposed hypothesis on the positive association between the tariff margin and the FTA utilization rate.

In conclusion, tariff lines that have duty free MFN tariffs do not record any IJEPA trade. In tariff lines that have a tariff margin of less than 5% of firms, utilization rate tends to vary. In tariff lines that have a high tariff margin, the utilization rate tends to be high.

### **3.3.3 Rules of Origin Restrictiveness Index**

This study uses the ROO Restrictiveness index pioneered by Estevadeordal (1999 and 2000) to construct the ROO Restrictiveness score at the 6-digit HS Code. The index assigns a score from one to seven, with a higher score indicating a more restrictive ROO. The lowest score of three is assigned to Changes in Subheading (CS) and Regional Value Content (RVC) of 40%. The highest score of seven is assigned to Changes in Chapter (CC) and Wholly Obtained (WO) criteria. Those in between, such as changes in Heading (CH), exceptions (ECTC) and technical requirements (TECH), are assigned scores that are in between three to seven.

The IJEPA ROO criteria are obtained from Chapters 3 and 4 of the IJEPA legal document, with articles 29 to 40 on the ROO criteria and articles 41 to 50 on the technicalities of the COO. The IJEPA article 29.1 presents the originating criteria, including the PSR criteria (CTC, QVC, TECH criterion) for imported goods. The CTC criterion mostly applies to industrial products, namely animal or vegetable fats and oils (HS Chapter 15), beverages, spirits and vinegar (HS Chapter 22), residues and

wastes (HS Chapter 23) and tobacco (HS Chapter 24). Agricultural products contained in the HS Chapters 1-14 and 16-21 are among the most restrictive ROO as the ROO requires a CC to be eligible for the IJEPA tariff. The QVC criterion requires that imported industrial products contain a minimum of 40% value of materials from the originating country. The TECH criterion applies to some cases of chemical and plastic products (HS Chapters 28-40). The most complicated TECH requirements applies for Textiles (HS Chapters 50-55 and 60) and apparel (HS Chapters 61-63), in which the process of dyeing, spinning and weaving in textiles and the process of knitting, crocheting or weaving ought to be complemented by either two or more of the 48 TECH method as contained in IJEPA Annex 2 document. Hence, agricultural products and textiles are among products with the most restrictive ROO.

Table 3-4, Table 3-5 and Table 3-6 presents the classification under the Estevadeordal Index for the 31 types of IJEPA ROO in the 4,043<sup>32</sup> tariff lines by HS Sections one to nine and ten to twenty one, respectively. The most frequent ROO is the 'Changes in Subheading' and the 'Regional Value Content'. They are assigned a score of three and have occurred 1662 times mostly under the HS Section 15 on Metal Products and the HS Section 16 on Machinery and Electrical Equipment. Metal Products and Machinery supports Japan's manufacturing industry. Seven is another

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<sup>32</sup> Due to the changes in the nomenclature of HS 2002 to HS 2017, some new tariff lines are not covered in the IJEPA Annex 2 document. As a result, 25 observations were omitted due to lack of information on their ROO.



frequent score assigned to tariff lines that have to go through the 'Changes in Heading', to be 'Wholly Obtained', or to fulfill 'Technical Requirements'. The score of four occurs 458 times, mostly in the HS Section 11 on Textile Products. These three sections, HS Sections 11, 15 and 16, are also sections with the most ROO assigned to each tariff line.

In conclusion, one-third of the IJEPA tariff lines have a ROO that tends to be less restrictive with a score of three, one-tenths are very restrictive with a score of seven, and less than two-thirds are relatively restrictive with scores between three and seven.

#### **3.3.4 NTM dummy variable and the interaction variable of the ROO and tariff margin**

The NTMs dummy is constructed using the UNCTAD TRAINS database that contains all reported NTMs that are applied to either the HS Chapter, HS Code and tariff line level. Any HS Chapter, HS Code and Tariff lines that have at least one NTM applied will have a dummy variable that take on the value of one. Those that are free from any NTM will take on the value of zero. The dummy variable is constructed only for the most common NTMs: the Sanitary and Phytosanitary (SPS) measures that regulate food safety and protect the domestic ecosystems from the invasion of alien biological species and the Technical Barriers to Trade (TBT) measures that require goods to meet certain technical regulations, standard, testing and certification procedures.

In order to have a better understanding on the interaction variable of the ROO and the tariff margin, this study calculates the weighted average tariff margin and ROO score for each HS Section and presents it in [Figure 3-1](#). [Figure 3-1](#) is a quadrant that classifies products by HS Section into products that have high tariff margin and less restrictive ROO, high tariff margin and restrictive ROO, low tariff margin and restrictive ROO, and low tariff margin and less restrictive ROO.

The first quadrant consists of products that have a high tariff margin and less restrictive ROO. Intuitively, firms will benefit from exporting products that have a high tariff margin and low ROO. Products in this quadrant mostly feed into the manufacturing industry.

The second quadrant consists of products that have a low tariff Margin and less restrictive ROO. Among the products in this quadrant are Machinery, Precision Machinery, as well as stones and minerals that feed into industries. Intuitively, firms would tend to use MFN tariffs since the tariff margin tend to be very small.

The third quadrant consist of consumer goods, such as Footwear, Foodstuff, and Textiles, as well as industrial inputs such as wood product and plastics. It is interesting to note that the HS Section 8 on Leather, HS Section 9 on Wood, HS Section 11 on Textile Products and HS Section 12 on Footwear has the highest tariff margin but also the most restrictive ROO. The most restrictive ROO also happens to be applied coincidentally to products in which Indonesia has comparative advantages.

The fourth quadrant consist of products that have restrictive ROO and low tariff margin. Among the products in this quadrant are the sacred agricultural products that is highly protected by Japan. Firms would be discouraged to export these products as the tariff margin may not compensate for the ROO fixed cost.

The quadrant in [Figure 3-1](#) demonstrates the characteristic of the IJEPA by HS Section. Firms that produce consumer goods can save on a high tariff margin by fulfilling restrictive ROO criteria. Firms that supplies input to manufacturing industries are either enticed with a high tariff margin and less restrictive ROO, or allowed to enter with an already low MFN tariff. Firms that supplies agricultural products are the ones less rewarded given the low tariff margin and restrictive ROO. Hence, the application of different tariff liberalization schedules and the ROO criteria to different tariff lines reflects the strategic trade policy dimension of an FTA.

### **3.3.5 Average Monthly Trade Value and Yearly Trade Pattern**

Due to the unavailability of transaction-level data, this study uses the monthly import data from the Japan Customs website. The average monthly import value is used as a 'proxy' to represent firm-level transaction data. The average monthly import value is calculated by summing the monthly import value within the Japanese fiscal year and divide it into 12 months.

This study uses the coefficient of variation of monthly imports to examine the pattern of imports. The coefficient of variation is calculated by dividing the standard deviation of monthly import value to the yearly average import value, for each

Japanese fiscal year from 2012 to 2017. The coefficient of variation represents the dispersion of shipments value within a year. A small coefficient of variation indicates that products are imported regularly at a similar value. Products with a large coefficient of variation are imported in a variety of value.

In addition to testing the significance of import pattern, the coefficient of variation is included to control for the possible overestimation in the coefficient for the average monthly import value. Since one month of trade data consists of one to many firm-level transactions or shipments, the result of the estimation could lead to the conclusion that small transactions do not use FTA. Hence, the coefficient of variation serves as a variable to control for a possible overestimation in a study that uses the average monthly import data as 'quasi' individual shipments.

Table 3-7 presents the average coefficient of variation of yearly imports from April 2012 to March 2017. Perishable goods, such as the HS Section 1 on Live Animals and the HS Section 3 on Animal and Vegetable Fats and Oils, have a coefficient of variation that is of lower value. These products are somehow expected to be shipped regularly at a consistent value compared to durable goods such as HS Section 21 of Works of Art and Antiques. Manufacturing inputs, such as the HS Section 5 on Mineral Products and the HS Section 7 on Plastics and Rubber, also tend to be shipped in more frequent shipments compared to consumer goods such as the HS Section 11 on Textile Products and the HS Section 12 on Footwear and others. Although the nature of the product can influence the import pattern, the

results of the study could indicate the association of FTA use with the general pattern or trade under the IJEPA.

### **3.4 Empirical Study**

#### **3.4.1 Empirical Strategy**

The objective of this section is to estimate the association of the IJEPA utilization rate as a dependent variable to the six factors at the product level: the tariff margin, the ROO restrictiveness, the interaction variable of the ROO and tariff margin, the NTM application, the average monthly import value, and the yearly pattern of imports or the coefficient of import variation. The model builds upon similar works by Keck and Lendl (2010) and Hayakawa (2014)<sup>33</sup>. This model is used to run two estimations. The first estimations use all observations ( $u_{it} \geq 0$ ). By including all of the available observations, this study seeks to avoid selection bias and to obtain a more robust conclusion on the association of FTA utilization rate and its related factors. The second estimation uses all of the observations with a positive tariff margin ( $Tariff\ Margin_{it} > 0$ ). These observations are used to observe the utilization rate of products that are eligible for FTA tariffs.

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<sup>33</sup> Both models include tariff margin, log of average trade value, and ROO restrictiveness as variables. The only difference between the two model is the use of the Estevadeordal index in Hayakawa et al. (2014) study and the use dummy variable to differentiate primary products from others in Keck and Lendl's (2010) study.

This Chapter uses Double-Hurdle regression techniques for the estimations, as well as OLS, Poisson and Fixed Effect techniques for robustness check. The Double-Hurdle model is first introduced by Cragg (1971) as an alternative to the Tobit model. Tobit is useful to manage a rightly-skewed distribution of dependent variable that is due to a large number of observations with the value of zero and one. However, unlike the Tobit model that determines the probability of a positive value and the actual value by using the same parameter, the Double-Hurdle model provides a more flexible alternative as the outcomes are determined through a separate two-stage model: a Probit model in the first tier and truncated normal model in the second tier (Burke, 2008). Poisson on the other hand has a distribution with a point mass at zero and has a continuous component. Fixed effect is used so as to account the time-variant observations of the panel data, given that the Double-Hurdle techniques only works on pooled data.

These regression techniques are chosen due to a large number of zero-valued dependent variables. There are two explanations for such a large number of zero-valued dependent variables. Firstly, the dependent variable in the model, or the FTA utilization rate, is calculated by dividing the value of imports that use FTA tariffs over to the total value of imports eligible for FTA tariffs. A large number of these observations are imports that enter without using FTA tariffs, imports that are subject to duty-free MFN tariff, or imports in which FTA tariffs do not apply. These observations have a utilization rate of zero. Lastly, since trade occurs episodically within the period of the study, the utilization rate of FTA is reflected in both

continuous and discrete zero values. The distribution of the dependent variable is by nature non-negative and rightly skewed due to the many dependent variables with zero-values – yet it is also similar to a count variable.

The association is estimated using the following equation:

$$\begin{aligned}
 u_{it} = & \beta_0 + \beta_1 \text{Tariff Margin}_{it} + \beta_2 \ln \text{Yearly Average Value}_{it} \\
 & + \beta_3 \text{ROO Restrictiveness Score}_i \\
 & + \beta_4 \text{Coefficient of Variation}_{it} + \beta_5 \text{ROO Restrictiveness Score}_i \\
 & * \text{Tariff Margin}_{it} + \beta_6 \text{NTM Dummy}_i + \lambda_t + \delta_i + e_{it}
 \end{aligned}$$

The utilization rate of the IJEPAs or the  $u_{it}$  of product  $i$  in the period  $t$  is expected to have a positive association with the tariff margin and average monthly import value. The utilization rate is expected to have a negative association with the ROO restrictiveness score and the coefficient of variation. Product ( $i$ ) is classified according to the Japanese 9-digit tariff line. Period ( $t$ ) is from April to next year's March or the Japanese fiscal year. Thus there are five fiscal years from April 2012 to March 2017. The  $\text{Tariff Margin}_{it}$  is the difference between the MFN tariff and the IJEPAs tariff of product  $i$  at time  $t$ . The  $\text{ROO Restrictiveness Score}_i$  is the restrictiveness level of the ROO criteria of product  $i$ . The interaction variable  $\text{ROO Restrictiveness Score}_i * \text{Tariff Margin}_{it}$  is calculated by multiplying the restrictiveness level of the ROO criteria of product  $i$  to the tariff margin or the difference between the MFN tariff and the IJEPAs tariff of product  $i$  at time  $t$ . The

$\ln$  Yearly Average Value $_{it}$  is the log of the yearly average import value. The log is used to create a better fit in the model. The Coefficient of Variation $_{it}$  is the standard deviation of monthly import value divided over the yearly average import value of product  $i$  at time  $t$ . The NTM Dummy $_i$  takes on the value of 1 for product  $i$  that have any NTM applied to it, or otherwise.

To exploit the within-group variation, the OLS, Poisson use the dummy variable  $\lambda_t$  which controls for time and the industrial dummy variable  $\delta_{c2}$  to represent the 97 Chapters of the 2-digit HS Chapter. The dummy variable is also used in Hayakawa et al. (2013) to represent the differences in the ROO characteristics given the type of industry. [Table 3-8](#) summarizes all the expected associations in the model.

### 3.4.2 Descriptive Statistics

[Table 3-9](#) presents the descriptive statistics of all the import data obtained from Japan Customs website from April 2012 to March 2017. [Table 3-10](#) presents the descriptive statistics of import data that has a utilization rate equal to zero ( $u_{it} = 0$ ), while [Table 3-11](#) presents the descriptive statistics of import data that has a utilization rate larger than zero ( $u_{it} > 0$ ). Out of the 20,085 observations in the five fiscal periods, around 15,191 observations have a utilization rate equal to zero ( $u_{it} = 0$ ). They consist of 813 observations with an MFN tariff that is equal to the IJEPA tariff, and both tariffs are larger than zero; 5,043 observations with an MFN tariff that is larger than the IJEPA tariff; and 9,335 observations in which the IJEPA tariff and the MFN tariff are both equal to zero. The 5,043 observations are cases of ‘missed



opportunities' since no imports use the IJEPAs to enter Japan. As [Table 3-11](#) demonstrates, only 4,894 observations utilize the IJEPAs. They consist of 2,134 observations that fully utilize the IJEPAs ( $u_{it} = 1$ ), and 2,753 observations that partially use the IJEPAs ( $0 < u_{it} < 1$ ). Seven observations use the IJEPAs even though the MFN tariff and the IJEPAs Tariff are both equal to zero. Hence, within the five fiscal years, around 75% of the number of observations have a  $u_{it} = 0$ .

[Table 3-9](#) demonstrates that the average ROO restrictiveness score of the non-IJEPAs trade is smaller at 4.225 than the IJEPAs-using trade at 5.641. It also demonstrates that the tariff margin of the non-IJEPAs trade is smaller at 3.1% than the IJEPAs-using trade at 6%. Hence, firms are more likely to use the IJEPAs for products that have a high tariff margin even though it has a more restrictive ROO.

### 3.4.3 Estimation Results

[Table 3-12](#) presents the results of the Tobit estimation for all observations ( $u_{it} \geq 0$ ), for the three groupings of April 2012 to March 2017, April 2012 to March 2015, and April 2014 to March 2017 respectively. [Table 3-13](#) presents the results of the Tobit estimation for observations that have a tariff margin larger than zero ( $Tariff\ Margin_{it} > 0$ ) for the same three groupings of years. [Table 3-14](#) presents the results for the linear and Poisson regression for all observations ( $u_{it} \geq 0$ ) and [Table 3-15](#) presents for the results of the Linear and Poisson regression observations that have a tariff margin larger than zero ( $Tariff\ Margin_{it} > 0$ ) for the same three groupings of years. The results of the Linear, Poisson and Tobit Fixed

Effect for the three groupings of years are presented in [Table 3-16](#) for all observations ( $u_{it} \geq 0$ ) and [Table 3-17](#) for observations that have a tariff margin larger than zero ( $Tariff\ Margin_{it} > 0$ ). [Table 3-18](#) presents the first and second tier of the Double-Hurdle estimation for all observations ( $u_{it} \geq 0$ ), in which columns one to five, six to ten, and 11 to 15 present the results of the estimation for the three groupings of April 2012 to March 2017, April 2012 to March 2015, and April 2014 to March 2017 respectively. [Table 3-19](#) presents the results of the first and second tier of the Double-Hurdle estimation for observations that have a tariff margin larger than zero ( $Tariff\ Margin_{it} > 0$ ) for the same three groupings of years.

Across all specifications under the Tobit, Double-Hurdle Tier 2, Linear, Poisson, and Linear, Poisson and Tobit Fixed Effect with all observations ( $u_{it} \geq 0$ ) and for observations that have a tariff margin larger than zero ( $Tariff\ Margin_{it} > 0$ ), the estimation presents a positive association between the FTA utilization rate and the average monthly shipment value. In line with the hypothesis, the utilization rate increases with the scale of the shipments or value of trade. By sending large scale high-value shipments, firms amass higher tariff discounts that compensate for the restrictive and costly ROO. Since FTA tariff is a variable cost, firms that sends large scale or high-value shipments for products in quadrant three of [Figure 3-1](#) will amass even larger savings to compensate the costly ROO. High-value shipments also create larger tariff savings in the trade of products with a low tariff margin. As reported in [Table 3-3](#), half of the IJEPA tariff margin or around 971 tariff lines have a tariff margin of less than 5%. Hence, large scale or high-value shipments allow

firms to save large tariff payment, for both products with a restrictive ROO and a high tariff margin or products with a less restrictive ROO and a low tariff margin.

As a control variable, the NTM dummy and the FTA utilization rate also show a consistent negative association across all specification under the Tobit of [Table 3-12](#) and [Table 3-13](#), the Linear and Poisson regression of [Table 3-14](#) and [Table 3-15](#) and the Double-Hurdle Tier 2 of [Table 3-18](#) and [Table 3-19](#). This confirms the hypothesis that firms are less likely to use FTA for products that has an NTM as it increases the cost and paperwork requirements that firms need to fulfill in addition to the ROO fixed cost set under the FTA.

The coefficient of variation variable on the other hand show mixed association with the FTA utilization rate. Under the Tobit in [Table 3-12](#) and [Table 3-13](#), and OLS and Poisson in [Table 3-14](#), the coefficient of variation of monthly shipment show a negative association with the FTA utilization rate. This result indicate that FTA tend to be used for shipments that have the same value as the yearly average shipment value. In other words, firms tend to use the IJEPA to send shipments in a regular pattern and of similar values for products within the same industry. However, under the Linear Fixed Effect, Poisson Fixed Effect and Tobit Fixed Effect in [Table 3-16](#) and [Table 3-17](#), and the Double Hurder Tier 2 of [Table 3-18](#) and [Table 3-19](#), the coefficient of variation of monthly shipment show a positive association with the FTA utilization rate indicating that the shipment value tend to be highly dispersed around the yearly average shipment value. Given these mixed results, this study cannot precisely define the association of the pattern of shipment value to FTA use.

Tariff margin is found to have a negative association upon the exclusion of the interaction variable under the Tobit model in [Table 3-13](#), under the Double-Hurdle Tier 2 in [Table 3-18](#) columns one to three, five to seven and nine to ten, in [Table 3-19](#) under the Double-Hurdle Tier 1 in columns five to eight and Double-Hurdle Tier 2 in columns one to three, five to seven and nine to ten. The negative association is also found under the Fixed Effect Poisson of [Table 3-16](#) and [Table 3-17](#) (with a positive interaction variable). The results under the Tobit model and the Double-Hurdle Tier 2 suggest that firms tend to use FTA to trade goods with a low tariff margin in observations that only includes tariff lines with a positive tariff margin. The Double-Hurdle Tier 1 in columns five to eight presents the association for the specific sub-period of 2012 to 2014, and the Fixed Effect Poisson presents the association for the specific sub-period of 2014-2017.

Upon the inclusion of the interaction variable in most specifications, the tariff margin and the ROO present a significant negative association with the FTA utilization rate. This suggest that the interaction term contributes meaningfully to the predictive ability of the model, in such that the association of the tariff margin (independent variable) to the FTA utilization rate (dependent variable) depends on the value of the ROO restrictiveness score (independent variable).

Although the positive association between the ROO and utilization rate is not consistent with the results of prior studies and may be counter-intuitive to the proposed hypotheses that firms are expected to use FTA to trade goods with a high tariff margin and less restrictive ROO, the result highlights four possibilities.

Firstly, upon the inclusion of the interaction variable, the association of the tariff margin to the FTA utilization rate is mediated by the value of the ROO restrictiveness score. Hence the positive association between the ROO Restrictiveness Score and the FTA utilization rate and between the tariff margin and the FTA utilization rate cannot be interpreted individually. Nevertheless, the positive coefficient of the ROO restrictiveness score tends to be very small, and the negative coefficient of the interaction variable tends to be large. Hence, the overall association of the ROO restrictiveness score to the FTA utilization rate is negative.

Secondly, the IJEPA is structured in such that the highest tariff margin are extended to tariff lines with the most restrictive ROO. This is confirmed by the negative association between the FTA use and the interaction variable of the ROO and tariff margin across all of the specification. This negative association suggest that the more positive the effect of the tariff margin to FTA use, the more restrictive the ROO, and vice-versa. The third quadrant of Figure 3-1 consist of products that have the highest tariff margin and most restrictive ROO. Coincidentally, these products also happen to be Indonesia's most competitive products. Textiles, leather, and footwear are labor intensive industries (Thorbecke, 2009) and Indonesia has an abundance of labor with a relatively low labor cost. Hence, the peculiar findings on the positive association of FTA use and the ROO restrictiveness score may have come as a result of the IJEPA or FTA structure: the highest tariff margin is extended to tariff lines that the FTA-partner has the most competitive advantage, yet at the same time these tariff lines have the most restrictive ROO.

Thirdly, while studies rarely find a positive association between the ROO and utilization rate, one study by Hayakawa (2014b) on the bilateral and multilateral FTA between Japan and Thailand has produced similar results. Although Hayakawa (2014b) attributes the positive association with “the way of scoring ROOs used in the previous studies” that is “not appropriate in the context of AJCEP and JTEPA”, there are possibilities that in the empirical examinations of bilateral FTAs or FTAs between two countries the association between the FTA utilization rate would more likely reflect firms’ response to the FTA structure and highlight the specific nature of the trade relations between the two countries.

Fourthly, since FTA use tend to be associated with the trading of goods with high-tariff margin and restrictive ROO, or goods with low-tariff margin and less restrictive ROO, firms would have to resort to large-scale or high-value shipments to benefit from FTA use. The results of this study demonstrate that there is a consistent positive association between the FTA utilization rate and the average monthly shipment value. Hence, to amass the highest tariff margin benefit and compensate for the most restrictive ROO, firms send high-value shipments. The results related to the tariff margin and shipment scale are in line with prior studies by Hayakawa et al. (2013). These four possibilities seek to respond to the unlikely result of the positive association between FTA utilization rate and a restrictive ROO.

In conclusion, FTA use is positively associated with the trade of products that have a high tariff margin and restrictive ROO. To amass a higher tariff discount to

compensate for the costly ROO fixed cost, firms send large-scale or high-value shipments.

### **3.5 Conclusion**

The first part of this Chapter presents several explanations for the modest proportion of trade that uses the IJEPA: a majority of Japanese tariff lines are already at duty-free MFN tariffs, some FTA-eligible imports entered Japan with MFN tariffs, and many tariff lines do not record any trade between Indonesia and Japan. The second part of this Chapter finds that although the utilization rate for the IJEPA is slightly above 80% for each the period of this study, products that score a high FTA utilization rate only represent a small value of import to the total Japanese import. These conditions have created a very small proportion of trade that uses the IJEPA.

The third part of this Chapter empirically examines the association of the FTA utilization rate to four factors, namely tariff margin, ROO restrictiveness, interaction variable of the tariff margin and ROO restrictiveness score, NTM application, trade value, and trade pattern. Various empirical studies use the utilization rate to observe whether firms have used an FTA in trading products. A high utilization rate indicates that firms intensively or frequently use an FTA in the trade of goods. It also indicates that firms choose to use an FTA as it is beneficial for them. Firms are expected to seek the highest tariff margin as the savings in terms of tariff payments outweigh the cost of complying with the ROO. In products that have a tariff margin that is large enough to compensate for the ROO fixed cost, exporting firms get better pricing for

their products, and importing firms gain substantial savings in tariff payments. Utilization rate is expected to be high for these type of goods. On the other hand, a limited utilization rate suggests that the FTA's tariff margin cannot compensate for the fixed cost of complying with the ROO. Firms that produce goods with small tariff margin and restrictive ROO, would have to resort to the shipments of high-value imports. Hence firms' behavior is a response to the structure of the tariff and ROO of an FTA or the FTA structure.

From April 2012 to March 2017, this study finds that firms tend to use the IJEPA to trade goods that have the highest tariff margin and the most restrictive ROO, or to use the IJEPA to trade goods that have a low tariff margin and less restrictive ROO. The peculiar positive association between FTA use and the restrictive ROO arises from the IJEPA tariff and ROO structure that provides the highest tariff margin for products with the most restrictive ROO. To compensate for the costly and restrictive ROO, firms send goods in large-scale or high-value shipments so to amass larger tariff savings benefit. Firms also tend to use FTA for products that does not have an NTM. The positive association between the ROO fixed cost and the utilization rate is in contrary to the hypothesis and the results of past studies. However, the result highlights the policy characteristics of a bilateral FTA and raises further questions on the characteristics of firms that can afford to engage in the production and trade of products with costly and restrictive ROO.

This study highlights how the ROO does not always have a negative association with the utilization rate, especially in ROO that is applied on tariff lines in



which the partnering FTA-country has a competitive advantage and on tariff lines with significant amount of tariff savings. From a public policy point of view, this positive association does not justify the need to impose restrictive ROO in FTAs. As demonstrated by Cadot et al. (2006) and Gibbons (2010), cumbersome ROO cancels out the benefit amassed from the tariff margin. Costly ROO may also act as a barrier to firms that intends to use FTAs for the first time. Nevertheless, the general findings of this Chapter highlight how FTAs' tariff margin and ROO are indeed instruments of strategic trade policy used by countries to protect their domestic market or advance their industries. It is possible that during the IJEPA negotiations, Japan has sought to protect its market from the over flooding of Indonesian consumer goods, while in return, Indonesia has requested a high tariff discount for its more competitive consumer goods. As a result, firms' utilization rate of an FTA is a response to the FTA's tariff structure and the restrictiveness of the FTA's ROO.

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## Chapter 4 Firm and Manager Characteristics in the Use of FTAs

### 4.1 Introduction

It is widely believed that upon the enactment of a Free Trade Agreement (FTA), firms immediately benefit from the lower tariff payments that the FTA scheme offers. In reality, before using FTAs firms need to gain awareness of the FTA itself, the FTA tariff rate, the possible profit, the processing of FTA documents, and the compliance criteria to use FTA. To meet the compliance criteria set by the FTA's Rules of Origin (ROO), firms often incur an additional fixed cost (Krueger and Krishna, 1995; and Krishna, 2004) on top of its optimal cost of production. Thus FTA use is not free to firms, and not all firms use FTAs to trade. Studies associate FTA use to firms of specific characteristics (Takahashi and Urata, 2008 and 2010; Hayakawa et al., 2009; Hiratsuka et al., 2009; Wignaraja, 2014; Hayakawa, 2014a; and Ing et al., 2016). This condition is reminiscent of Melitz's (2003) pioneering theory on the selection mechanism of exporting firms: only highly-productive firms can profit from trading activity after paying a fixed cost to export. Since the lack of awareness of FTAs and the ROO fixed cost can limit FTA use by firms, what firm characteristics are associated with FTA use?

The purpose of this Chapter is to contribute to the existing literature by providing empirical evidence on the association of firm and manager characteristics with FTA use. The observed characteristics are namely the firms' size by the number of employees, years in operation, export proportion to the FTA-market, source of capital (Foreign Direct Investment or local). Manager characteristics are namely age, years of education, years of work experience, attendance to FTA campaigns, and knowledge of various FTAs. In order to examine these characteristics, a firm-level survey was conducted to exporting firms in the Greater Jakarta Area in 2017 to observe their use of the Indonesia Japan Economic Partnership Agreement (IJEPA).

Prior empirical studies on the characteristics of FTA-using firms have examined the characteristics of FDI firms (Hayakawa et al. 2009; and Hiratsuka et al. 2009) or a population of firms in a country (Takahashi and Urata, 2008; Wignaraja, 2014; and Ing et al., 2016). This study, on the other hand, specifically examines a population of firms that have market access and FTA awareness, and observes the association of their characteristics and their choice of using an FTA. By controlling for market access and awareness, this study applies the theoretical framework proposed by Demidova and Krishna (2007) on firms' decision to use FTA tariffs over MFN tariffs, and observes the significance of awareness in FTA use. This study also examines variables related to manager characteristics as part of an exploratory empirical study.

The rest of this Chapter is organized into six additional sections. The second section briefly presents the testable hypothesis and theoretical framework. The third section discusses the research methodology of the firm-level survey, including the setting or location, the population, the sampling methodology, the questionnaire format, and the data collection procedure. The fourth section analyzes the findings from the qualitative interview. The fifth section presents the empirical study, mainly the descriptive statistics, the empirical strategy, the linear, logistic, and probit model, and reports the estimation results and the analysis of the computation. The last section concludes.

## **4.2 Testable Hypotheses**

This section briefly presents the testable hypotheses. Given the limitation of the data collected from the firm-level survey, the general hypotheses presented in Chapter 2 have been adjusted as testable hypotheses. This study also builds upon two assumptions. Firstly, the ROO fixed cost is borne by both the exporting and importing firms. Secondly, both exporters and importers

agree to trade at a price under the condition that the MFN tariff ( $t_{MFN}$ ) is larger than the FTA tariffs ( $t_{FTA}$ ) plus the cost of ROO ( $\theta$ ), or under the conditions that  $t_{MFN} > (t_{FTA} + \theta)$ . Hence by using an FTA, the importing firms benefit from the discounted tariff, while the exporting firms benefit from the competitive pricing of their product. Therefore, even though this study exporting firms, but this study assumes that exporters and the importers mutually benefit from FTA use.

- *Testable Hypothesis 1: FTA use is expected to have a positive association with firms that are engaged in intensive trade activity to an FTA-market and in the trading of products that have a high tariff margin and less restrictive ROO.*

In its trading activity, firms from FTA-countries have the choice of using the FTA or the Most Favored Nations (MFN) tariffs. By using an FTA scheme, firms obtain savings in the amount of the tariff margin, of the difference between the lower FTA tariff and the higher MFN tariff. Hence, FTA use is expected to have a positive association with the tariff margin. The larger the tariff margin of the product that the firm produces, the more likely it is that the firm uses an FTA.

To be eligible for an FTA scheme, firms comply with the ROO criteria and incur an additional fixed cost on top of their optimal production cost. The firms' production cost increases because the choice of input to produce the traded goods is more constrained under an FTA than under the MFN scheme, (Krishna, 2004). The magnitude of the fixed cost varies according to the restrictiveness level of the ROO. ROO that requires a substantial transformation, higher proportion of 'originating' input material, or specific technological processing puts further constraints to the firms' production curve. FTA use is thus expected to have a negative association with the ROO. The more restrictive the ROO, the less likely a firm uses an FTA.

Firms will have to engage in an intensive trade activity to an FTA-market to maximize profit after incurring the ROO fixed cost. Through the firms' intensive trading activity, the ROO fixed cost becomes negligible in the long run. The intensive trading activity is reflected in the proportion of the firms' trade with an FTA-market over its total trade. Hence, FTA use is expected to have a positive association with the firms' trade proportion to an FTA-market. The larger its proportion of export to an FTA-market, the more likely it is that the firm uses an FTA.

- *Testable Hypothesis 2: FTA use is expected to have a positive association with firms that have the characteristics of being large, in operation for many years, and capitalized by Foreign Direct Investment (FDI).*

The ROO fixed cost associated with FTA use is in the same vein as Melitz's (2003) theory on the fixed cost that firms pay to engage in export. Theoretically, firms with high-productivity tend to stay and profit in the export market, while those that are less productive tend to exit the export market to serve the domestic market over time. A similar argument is proposed by Demidova and Krishna (2007). Upon FTA enactment, highly productive firms pay a ROO fixed cost to use and FTA and gain profit. Lower productivity firms tend to use the MFN scheme. Although the theoretical framework lacks the definition of highly-productive firms, some empirical studies present a positive association between the firms' productivity and size, including by the number of employees or value of yearly sales (Wagner, 2002; Biesebroeck, 2005; Demidova and Krishna, 2007). Demidova and Krishna (2007) have also theoretically demonstrated that an increasingly restrictive ROO would demand more labor. FTA use is thus expected to have a positive association with the firms' number of employees and the firms' yearly sales value.

Other firm characteristics are also expected to have a positive association with FTA use. FDI firms have the advantage of being part of a network of trading firms. FDI subsidiary firms also often act as producers of intermediate goods or agents of trade and are often requested by their parent firms to use an FTA. Hence, these firms have a better chance than local firms to access resources and information on FTAs. Firms' age has been associated with increased learning abilities over time (Evans, 1987; and Wignaraja, 2014). As firms gain experience from exporting over the years, they are more likely to be familiar with the rules and regulations to exporting to the international market and the specific conditions related to the Japanese market (such as customs procedures, the tariff structure, and the ROO criteria). Once faced with capacity constraints, older firms are also more at ease than newly established firms in borrowing additional capital due to their track record. FTA use is expected to have a positive association with FDI-capitalized firms, and firms that have been in operation for many years.

- *Testable Hypothesis 3: FTA use is expected to have a positive association with managers' years of schooling and work experience in the trading business, and with managers that have attended training on an FTA and have the knowledge of various FTAs.*

In the empirical literature on the behavior of exporting firms, manager characteristics are frequently stressed as a significant factor in the internationalization of firms (Leonidou et al., 1998; Cavusgil et al., 1994; and Zou and Stan, 1998). Some of the notable characteristics are age (Simpson and Kujawa, 1974), years of professional experience in the export and import business, and level of education (Harveston et al., 2000). These factors emphasize the learning-by-doing process of the managers. In the use of FTAs, managers also expected to possess

characteristics that reflect the leaning-by-doing-process. Hence, age, years of professional experience, and level of education are expected to have a positive association with FTA use.

Empirical models rarely examine the association of awareness in FTAs use although several firm-level studies describes the lack of FTA awareness as one of the main reasons for firms' lack of FTA use (Kawai et al., 2009; Takahasi et al., 2010; Zhang, 2010; Hiratsuka et al., 2009; and Wignaraja, 2014). On the other hand, governments often organize FTA awareness campaigns and training to introduce FTAs to firms. Managers that attend these training are expected to know how to apply their knowledge in trading with various FTAs. Hence managers' attendance to awareness campaigns and knowledge of various FTAs are expected to have a positive association with FTA use.

In closing, this section has presented three hypotheses on the association of firm and manager characteristics to FTA use. Firstly, FTA use is expected to have a positive association with the proportion of firms' trade with an FTA-market, since in the long run the ROO fixed cost becomes negligible. Products that have a high tariff margin and less restrictive ROO is also expected to have a positive association with FTA use. Secondly, FTA use is expected to have a positive association with firms that have these characteristics: being large, long years in operation, and capitalization by FDI. Size and length of operation are among others related to the ROO fixed cost that firms have to pay to use an FTA. Thirdly, FTA use is expected to have a positive association with the managers' age, years of schooling, and years of work experience in the trading business, as well as managers that have attended FTA training and have knowledge of various FTAs.

### 4.3 Research Methodology

The firm-level survey sought to gather primary data on the characteristics of firms and managers that use the IJEPA, as well as qualitative information on managers' perception and experience of using the IJEPA. The survey was conducted by a team employed by the National Graduate Institute for Policy Studies (GRIPS) from 29 August 2017 to 31 October 2017. The team consisted of four enumerators, one team leader, and the author. The author personally conducted 45 individual interviews from 27 August to 22 September 2017.

The team used a questionnaire ([Appendix I](#)) to obtain the qualitative information as well as quantitative data on the firms' size by the number of employees, source of capital, year of establishment, the exported goods in 6-digit HS Code, as well as the manager's age, years of work experience in the trading business, years of schooling, attendance in FTA awareness campaign, and knowledge of various FTAs. The dependent variable is obtained by asking whether a firm had market access or exported to Japan in 2016. Firms were also requested to declare whether they used the IJEPA in their 2016 export. Hence, the dependent variable takes on the value of one for IJEPA-using firms and the value of zero for firms that do not use the IJEPA to export to Japan in 2016.

The firm-level survey sampled firms registered in the e-ska database of the Ministry of Trade of the Republic of Indonesia (MOTRI)<sup>34</sup>. This survey sampled two types of firms in the MOTRI database: firms that use the IJEPA and firms that do not use the IJEPA in their exporting

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<sup>34</sup> The MOTRI e-ska is a web-based application system used by exporting firms in Indonesia to obtain a COO for export. Firms register themselves through the MOTRI e-ska website, print out of the numbered COO application form, and submit the hardcopy to an IPSKA office for approval and signature. There are currently 89 IPSKA offices located around Indonesia. The IPSKA offices are government offices that process and certify the COO. The e-ska database contains firms' names, contacts, export destinations, and the 6-digit HS Code of their exported goods, as well as the IPSKA Office of their choice.



activity to Japan in 2016. Firms that do not use the IJEPA are sampled from firms that used the ASEAN-China FTA (ACFTA).

There are three reasons for using ACFTA users as proxies for firms that do not use the IJEPA to export to Japan. Firstly, there is no available data of firms that have exported to Japan but do not use the IJEPA in 2016. The MOTRI database enables this study to obtain firms that have market access and FTA awareness and to carry out the firm-level survey more efficiently. On the other hand, the total population of firms that exports to Japan and do not use the IJEPA is larger than the number of firms registered in the MOTRI ACFTA database. Nevertheless, the sampling of ACFTA users as a proxy is the best alternative method given the lack of government records of firms that export to Japan without using the IJEPA. Secondly, the number of COO issued for the IJEPA and ACFTA in the year 2012-2016 is similar, as presented in [Table 4-1](#). Lastly, this study also takes into consideration that within the structure of the trade-in-task network in Asia, China and Japan import intermediate goods from ASEAN countries and play the role of the last frontiers of the assembly lines or the trade-in-task network in Asia (Athukorala, 2011). The two countries procure intermediate goods and resources from ASEAN countries, including Indonesia. The sample thus consists of firms that are IJEPA-users, ACFTA users, and users of both the IJEPA and ACFTA.

The location, number of firms, sampling methodology, and questionnaire of the survey are presented in detail below.

### 4.3.1 Location Setting

The firm-level survey was conducted in the Greater Jakarta area<sup>35</sup>. The area consists of the largest industrial clusters and represents the largest concentration of COO issued in Indonesia. According to the MOTRI database, of the total 77,664 COO issued in 2016, around 35% or 27,128 COO were issued in the Greater Jakarta area. While the second-largest number, of 16,446 COO or 21%, were issued in the East Java province. The rest of the COO were issued to the other 31 other provinces of Indonesia. This Chapter thus benefited from the concentration of industrial clusters if not naturally steered to sample from industrial clusters in the Greater Jakarta area.

The industrial clusters in the Greater Jakarta grew after the 1970s industrialization policy of the late President Soeharto. State-owned enterprises were granted land to build industrial estates with the aim of attracting FDI in manufacturing and reducing Indonesia's dependency on oil and gas revenue (Firman, 1998). The private sector were allowed to build the second generation of industrial estates under the spirit of deregulation (Wie, 2006). The manufacturing shares started to decline in Jakarta as factories began to migrate to the Greater Jakarta area after the development of intercity corridors in the 1980s (Hill et al., 2009). The deregulation policies from 1982–1997 further “reinforced the agglomeration of economic activities” around the periphery of the Greater Jakarta area (Firman, 1998). The geographical concentration of industries has enabled the agglomeration of economic activities – whether by lowering

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<sup>35</sup> The area of the Greater Jakarta or Jakarta Metropolitan area is often referred to as “Jabodetabek”, an acronym of the five largest cities Jakarta – Bogor – Depok – Tangerang – Bekasi located on the northern region of West Java. Jabodetabek is the most populated urban area in Indonesia with a total area of 6,392km square - or roughly the size of the Gunma prefecture in Japan. The area encompasses three provincial government units, mainly (i) the provincial government of the Jakarta Special Region (DKI Jakarta), and the municipalities (Kotamadya) and districts (Kabupaten) within the jurisdiction of (ii) the provincial government of West Java (Jawa Barat), such as Kabupaten Bogor, Kabupaten Bekasi, Kotamadya Bogor, Kotamadya Bekasi, and Kotamadya Depok, and (iii) the provincial government of Banten, such as Kabupaten Tangerang, Kotamadya Tangerang and Kotamadya Tangerang Selatan.

transaction costs due to proximity, developing the labor market, creating spillovers of information (Sonobe and Otsuka, 2006). As a result of the strings of government policies, Hernon and Kuncoro (1996) empirically find that firms in Java locate and relocate themselves according to the level of wages, market size, and infrastructure in their local region. Some firms had preferences towards locations that have mature plants from related industries – as they “offer a built-up stock of local trade secrets concerning local market conditions, local institutions and politics, and technology” (Hernon and Kuncoro, 1996).

Taking into account the vast area of the firm-level survey, the historical development of the various industrial cluster, and the differences in infrastructure and industrial environment, the empirical model in this study includes a dummy variable for location.

#### **4.3.2 Population and Sampling**

Sampling is conducted by contacting a list of firms that are randomly selected by the author. The number of firms from the Greater Jakarta area that applied for the IJEPA and ACFTA COO in 2016 is listed at 1192 firms in the MOTRI database. The list includes 328 IJEPA-using firms, 477 ACFTA-using firms, and 193 firms that use both the IJEPA and the ACFTA<sup>36</sup>. Each week, 20 to 45 firms are contacted for an appointment and presented with formal letters from the GRIPS, the MOTRI, and the Ministry of Small and Medium Enterprises of the Republic of Indonesia.

[Table 4-2](#) presents the result of the sampling activity. Non-answering telephone lines are noted as ‘unreachable’ after ten phone calls at different timings. Firms that refused an interview after a phone call, send a rejection email, or respond negatively are noted as ‘refused.’ Firms

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<sup>36</sup> One firm was found to have registered using two different e-ska account, thus the discrepancy of data between the total firm and the final list.

with an exporting division or processing factories located outside of the Greater Jakarta are classified as 'out of area'. A couple of firms have declared themselves bankrupt. A few phone numbers came back as the wrong phone numbers.

The survey contacted 937 firms of which 100 participated in the survey. Out of the 100 firms, 94 firms provided usable responses, and six firms were dropped. Four firms provided insufficient information since the newly recruited staff were not aware of the firms' use of an FTA. One firm refused to continue the interview for concerns of exposing trade, tax, and company secrets. One firm was used as an 'undername' for another firm that exports without being registered to the MOTRI database.

[Table 4-3](#) describes the number of population and samples of the IJEPA and ACFTA firms. Out of the 94 usable questionnaires, 39 are firms that use the IJEPA, 39 firms use ACFTA, and 16 firms use both the IJEPA and ACFTA. After some data cleaning and checking, only 73 valid questionnaires is used since 14 firms did not export to Japan at all in 2016 and seven firms gave contradictive answers to the MOTRI database.

[Table 4-4](#) presents the characteristics of the sampled firms. According to the classification made by the Badan Pusat Statistik of Indonesia (Statistical Central Agency), out of the 73 sampled firms, 11 are medium, 55 are large, and the rest are micro and small firms. These small firms either export simple goods, commodities or raw material or operate freight forwarding services that export on behalf of other firms. The sample consists of 27 local and 46 FDI firms. By years of establishment, 18 firms was established before 1990, 20 firms within the decade leading to and after the Asian Economic Crisis of 1998, 16 firms leading to the 2008 Global Financial Crisis, and 18 firms from 2010-2017. Therefore the sample tends to be dominated by large and FDI firms, while the age of firms tends to vary.

[Table 4-5](#) presents the type of goods that are produced by firms arranged under the 6-digit HS Code. The majority of firms in the sample are producing Textile articles and Chemicals. These two products have the most tariff lines with a duty-free IJEPA tariff and the most restrictive ROO compared to other products (WTO, 2010).

Taking into account the resources and the time constraints, the number of rejection, the non-working phone lines, and the unresponsive potential respondents, the firm-level survey has resulted in direct interviews with 100 firms or 10.67% of the total 1192 ACFTA and IJEPA firms of the MOTRI database, and 94 usable questionnaires of which 73 are valid.

Given the small 73 firms sample-size, this study may suffer from potential selection bias and may result in a less conclusive outcome. Since this classical sample-selection problem is almost impossible to overcome, this study seeks to identify associations instead of a claiming causal relationship between the dependent and independent variables.

### **4.3.3 Survey methodology and Questionnaire Format**

The respondents that participated in the survey span from CEO-level, seasoned export managers to novice export administrators, even though the interviews were initially aimed at export managers.

The questionnaire consists of four parts. The first part gathers quantitative information on the general use of the IJEPA and of another FTA, the second part covers the decision-making process and the administration of the IJEPA, the third part covers the decision-making process and the administration of another FTA, and the last part gathers information on the firms' procurement process and the possible involvement of SMEs. Before the firm-level survey, a pre-test of the questionnaire was run to three export managers, four Ph.D. students, and one Officer

from the MOTRI. Some questions and response options were adjusted accordingly. Each interview lasted around one hour to one hour and a half.

In terms of quantitative data, the managerial' characteristics that are examined in the survey are the manager's (i) age (Question No. 10), (ii) years of education (Question No. 10a), (iii) years of working experience in the export-import business (Question No. 12), (iv) years of export experience to Japan (Question No. 20), (v) knowledge of the IJEPA (Question No. 25), (vi) knowledge of other FTAs (Question No. 36), attendance to the government's outreach events or training related to the IJEPA and another FTA (Question No. 31 and Question No. 38). Firm characteristics that are examined in the survey are the firms' (i) location (Question No. 2), (ii) years in operation (Question No. 15), (iii) size by the number of employees (Question No. 16), (iv) yearly sales value (Question No. 18), (v) asset value (Question No. 19), (vi) source of capital (Question No. 20), (vii) years of export experience to Japan (Question No. 50), (viii) number of export destinations (Question No. 47), and (ix) proportion of export to Japan over total export (Q44).

The qualitative part of the questionnaire is used to identify the manager's perception and experience of using the IJEPA and exporting to Japan, the decision-making process in FTA use, and the processing of the COO. The questionnaire uses open-ended questions, as well as a semantic differential scale<sup>37</sup>, Likert scale<sup>38</sup>, and rating scale<sup>39</sup> to increase the response rate. The interview results are presented in the next section, followed by the estimation and interpretation of the quantitative results.

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<sup>37</sup> Example of semantic-differential scale are: very useful – useful – neutral – not so useful – useless.

<sup>38</sup> Example of Likert-scale are: strongly agree – agree – neutral – disagree –strongly disagree.

<sup>39</sup> Example of rating-scale are assigning value from 1 to 10.

#### **4.4 Analysis of the Qualitative Data: Firms and Managers' Perception of FTAs**

This section presents some highlights from the qualitative interview on the managers' perception and experience of using the IJEPA. The total number of responses vary from one question to another since managers were not obligated to answer all questions, and some questions allowed for multiple answers.

The interview starts with firms' experience in finding market access to Japan and their first use of the IJEPA. Figure 4-1 presents firms' perception on the demand of Japanese buyers. Around 55% of the responding firms perceive Japanese importers as buyers that highly demand for stringent quality control. Figure 4-2 presents firms' first export experience to Japan. Around 44% or 32 of the responding firms conveyed that their first export was due to the request of Japanese buyers; 36% or 26 firms attributed their first export experience to the establishment of the firm as a trade partner or FDI of a Japanese firm; and 14% or 10 firms attribute their first export to the firms' self-promotion activity or participation in government-organized trade events. With regard to the firms' first IJEPA use in Figure 4-3, out of the 60 responding firms, around 32 firms or 53% of the responding firms received request for IJEPA use from importers, 17 firms or 28% of the responding firms received top-down instruction from the head of the firm or the parent firm, six firms or 10% of the responding firms received advice from a third-party firm, and three firms or 5% of the responding firms received staff's suggestion. Hence, the majority of sampled firms used the IJEPA for the first time after the request of importers and tend to be passive in finding market access to Japan.

Concerning managers' knowledge of the IJEPA and other FTAs, almost all managers have heard of the IJEPA except for a few managers that use third-party services to process their export administration. The survey found that managers in the woodwork and textile articles

industry were the most knowledgeable on FTAs. The reason is that the export of wood and wood products is subject to stringent rules and requires a lot of certifications and export paperwork. Meanwhile, the textile and garment industry was once subject to rigorous quotas by the WTO fiber agreement. These days, the industry is facing fierce competition from China and new players from South Asia. Given the challenges that their industries face, these managers tend to form groups to exchange information and actively participate in business associations meetings to learn and update themselves on FTAs. In all of the interviews, only one manager saw the strategic benefit that FTAs can provide to his company. His food and beverage company is currently losing competitiveness vis-a-vis products from Thailand due to the lower FTA tariffs agreed between Japan and Thailand. He hoped that both the Indonesian and Japanese governments would review the IJEPA tariffs so that his products become competitive again. Although the IJEPA is widely known among the IJEPA and ACFTA-using firms, most managers tend to only know the process of using an FTA and lack the understanding of the strategic importance of an FTA.

Government-sourced information is considered as the primary source of information with regards to FTA. As demonstrated respectively in [Figure 4-4](#), [Figure 4-5](#), and [Figure 4-6](#), 27 firms or 37% of the responding firms depend on the government as the first source of IJEPA information, 35 firms or 61% of the responding firms perceive the government as the main source of IJEPA information, and 33 firms or 56% of the responding firms consider the government as the main stakeholder that could assist firms in the use of the IJEPA. [Figure 4-7](#) presents the best methodology to learn FTA according to the managers. Around 38 managers or 52% of the responding managers voted for attendance to government-organized awareness campaigns as the best methodology to learn FTA amidst time constraints, lengthy travel time to the venue, and



limited permission from supervisors to attend these campaigns. Training by third-party consultants is the least preferred method, followed by government-organized web-based training (including video conferences).

As the restrictiveness of ROO varies from one industry to another, the survey did not seek managers' perception of the IJEPA ROO's restrictiveness. Instead, the survey captured managers' experience in filling out the IJEPA COO. Out of the 73 responses, only 17 managers or 23% of the responding managers face difficulty in filling out column number four on the goods' cost structure and HS Tariff classification and column number five on the preference criterion. The other 56 managers or the 77% either did not find any difficulty or did not disclose their views. Some managers mentioned that the first COO application was the most challenging. However, as most firms specialize in the production and export of the same goods, repeat transactions have eased the processing of the COO. Upon facing challenges, most managers were not hesitant to contact the MOTRI's help desk and fellow export managers or to find further information on the internet. Thus by engaging in repeat transactions, managers gain experience and find the filling of the COO to be less arduous.

On the issue of COO processing, 38 firms choose to use in-house resources, 15 firms outsource, and three firms do both. [Figure 4-8](#) presents the reasons why firm outsource the processing of the COO to freight forwarding company, customs brokers, or individual contractors. The majority of firms that outsource COO, use the services of COO providers due to time and cost-effectiveness, the limited number of human resources, and the predictability of the administration process. [Figure 4-9](#) presents firms that use in-house resources to process the COO. These firms use in-house resources as it is more cost-effective given the adequate human resources that the firm has. Time-effectiveness relates to the unpredictable traffic conditions and

the distance to the nearest IPSKA office, and not to the processing time of the COO. The three firms that use both in-house resources and outsource services process their COO depending on the type of goods or the timing of the export. Hence the majority of firms choose to use in-house resources to process the FTA's COO for cost-effectiveness given their adequate human resources. On the other hand, other firms find it more cost-effective to outsource given their limited human resources.

The price of processing the IJEPA COO ranges from Rp. 0 to Rp.750.000,- (USD\$53). The cost consists of the price of the COO form, which can be free but officially priced at Rp. 5.000 to Rp. 50.000,- (USD\$0.35 to USD\$3.5), and the cost of processing the form which usually ranges between Rp. 0 to Rp. 750.000,-. Firms that process their COO in-house internalize their processing cost. Forms can be obtained for free from the management of an industrial area in which the firm is a member, or by printing the COO form from the online e-ska MOTRI website. Some firms buy forms in bulk from local government offices to lower the price and shorten the processing time of the COO. The processing of the COO is quite brief, with the majority of managers mentioning one to three days of processing. This finding is in line with Hayakawa et al. (2013) which states that the processing of the COO in Indonesia is relatively speedy and less pricey than in other countries.

Figure 4-10 presents that taking advantage of the preferential tariff margin is not much of a priority to exporters. To exporters, the IJEPA is useless without market access, importers' requests and attention, or substantial shipment or export value. In terms of benefit, Figure 4-11 presents that a majority of managers believed that the IJEPA gives them better pricing, helps their firm to remain competitive, increases profit and export quantity, and ensures long-term market access to Japan. Figure 4-12 presents how some managers perceived the better pricing

as increasing their export revenue by less than 10% (12 managers), between 10-20% (10 managers), 20-30% (5 managers), and higher than >30%. (2 managers). This perceived value is somewhat contrary to the finding of Damuri et al. (2014) which states that “lower preferential tariffs have no effect on the price of the exported products, nor to the profit margin obtained by exporters.” The other 29 managers did not see the monetary benefit and even saw FTAs as an additional cost. Few managers process the COO as a service to customers and many managers do not mind the additional cost and processing of the COO, as they get long-term customers. These non-monetary benefits highlight the strategic thoughts on the use of an FTA that is more than just the one-off reason of fulfilling importer’s requests.

In conclusion, export managers in Indonesia mainly obtain FTA information from government sources. Most managers’ first introduction to the IJEPA is by attending government awareness campaigns or fulfilling importers’ request. Although managers often face some challenges in processing their first COO, repeat orders have eased the subsequent processing of the COO. When they face a challenge in filling out the COO, managers look for FTA information independently through the internet. The cost and timing to process the IJEPA are relatively short and cheap. Despite some general views that importers reap most of the tariff margin benefit, some export managers experience better pricing by using the IJEPA. Only a few managers saw the strategic long-term non-monetary benefits in IJEPA use, namely to maintain export competitiveness, increase profit and export quantity, and gain long-term partners in Japan. The next section discusses the factors that are associated with to use of the IJEPA by way of quantitative analysis.

## 4.5 Empirical Study

### 4.5.1 Descriptive Analysis

[Table 4-6](#) presents the descriptive statistics. On average, the sampled firms have been in operation for 19.47 years and had 13 years of export experience to Japan. IJEPA and non-IJEPA users have relatively same average years of export experience to Japan of 13 and 12 years, respectively. The majority of firms are capitalized by Foreign Direct Investment (FDI) schemes. In 2016, firms had on average four countries as export destinations with IJEPA-users export a significant portion to Japan at 43.98% and non-IJEPA users at 14.28%. Hence, IJEPA-users tend to have a higher concentration of exports to the Japanese market.

In terms of employment numbers, the average number of employees is 83 people. Under the Badan Pusat Statistik of Indonesia (Statistical Central Agency), firms with 20 to 99 employees are categorized as a medium enterprise. The mean yearly sales value is 35.7 billion Rupiah (2.5 million USD). According to the Indonesian Law no. 20 of the year 2008 on Small, Micro, and Medium Enterprises (SMME), firms with yearly sales value between 2.5 billion Rupiah to 50 billion Rupiah are classified as medium enterprises. Firms have an average asset value (not including building and land) of 7.57 billion Rupiah. Under the SMME Law, firms with asset value between 500 million Rupiah to 10 billion Rupiah are classified as medium enterprises. Thus the average sampled firms are classified as medium enterprises under the Indonesian law.

Tariff margin is constructed using the IJEPA tariff schedule of the Japan Customs website and information from the MOTRI database. The database contains the 6-digit Internationally Harmonized Code (HS) that firms use to export. Since the 6-digit HS Code represent a group of goods at 9-digit tariff lines, this study calculates the average tariff rate for all goods under the 9-digit tariff lines to obtain the 'average tariff' rate for the 6-digit HS Code. For firms that export

different type of goods, the 'average tariff' rate at 6-digit HS Code are again averaged for all the goods that the firm exports to Japan. Eventually, each firm has one average tariff rate. The same method is used for non-IJEPA users with the assumption that the firm export the same goods to Japan as listed in their MOTRI ACFTA database. According to the calculations, the combined average tariff of all the exported goods under the MFN tariffs is 3.8% and 0.30% under the IJEPA tariffs. This computation is important to reject the possible claims that non-IJEPA users could have forgone IJEPA use because the average tariff under the MFN is already 0%. The calculation demonstrates that the goods exported by the non-IJEPA users are on average, not duty-free under the MFN tariffs. According to the computation, there is a significant difference in the amount of tariff paid. The average tariff paid by the IJEPA-users is 0.20% while the non-IJEPA users paid an average of 3.9%.

The ROO restrictiveness score is constructed using the Estevadeordal index at the 6-digit HS Code according to the IJEPA Annex 2 document and the information from the MOTRI database. Since most products have the same ROO criteria under the 6-digit HS Code, there was no need to average the ROO restrictiveness score. Each product's ROO criteria is precise at the 6-digit HS Code. The ROO restrictiveness score is averaged only for firms that export different types of goods. Eventually, each firm has one average ROO restrictiveness score. The same method is used for non-IJEPA users with the assumption that the firm export the same goods to Japan as listed in their MOTRI ACFTA database. The average ROO restrictiveness score for all firms is at 4.8, which is considered rather restrictive according to the Estevadeordal index.

With regard to manager characteristics, the average age of the managers is 38.23 years old. Managers have an average of 14.85 years of schooling. This suggests that most of the

managers have attained more than upper secondary education (of twelve years) or hold an Associate Degree from a 2-3 year institution. On average, managers have 10.6 years of work experience in export and import as well as 10.2 years of experience in exporting to Japan.

It is suspected that the manager's knowledge of the IJEPA does not come solely from their attendance to government-offered awareness campaigns since only 57% of the managers in IJEPA-using firms and 50% managers in non-IJEPA firms have attended government-organized awareness campaigns on the IJEPA. On a different note, all managers in non-IJEPA firms know of another FTA in contrast to the 84.3% of managers in IJEPA-using firms that know of another FTA. This descriptive statistic indicates that managers' knowledge or specialization of an FTA develops according to firms' destination market.

Table 4-7 and Figure 4-13 describe the location of firms. The differences in location are included in the model through dummy variables for location. Locations are categorized into ten different regencies and municipalities. The firm-level survey observes that firms in Bogor, Bekasi, Tangerang, and Karawang area tend to have their headquarters and production facilities in the same location. These industrial areas are located around 65 km from Central Jakarta. Most of the firms in the North and East Jakarta also have their headquarters and production facilities in the same location in the inner city of Jakarta. On the other hand, firms in South and Central Jakarta are either trading firms, representative offices, or headquarters of large firms that have separate processing facilities. No IJEPA-users nor non-IJEPA users were sampled in Depok, and only IJEPA-users were sampled in Northern and South Jakarta. Given the differences in location and arrangements between companies, the location dummy is included to control for possible bias.

#### 4.5.2 Empirical Strategy

This section examines firm and manager characteristics associated with IJEPAs use. The model builds on the works of Takahashi and Urata (2008) and Wignaraja (2014). This study employs linear regression, logit, and probit since they produce almost similar goodness-of-fit measures amidst the different parameter estimates. Either one of them can be used as a robustness check for the other. The model is defined as such:

$$\Pr(y_{ijepa_i} = 1) = \beta_0 + \beta_1 X_i + \beta_2 M_i + \delta_i + e_i$$

- (1) The dependent variable in this model ( $y_{ijepa_i}$ ) is a binary variable that takes on the value of 1 if a firm uses the IJEPAs, and zero if otherwise.
- (2)  $X_i$  are the independent variables related to the characteristics of firm  $i$ ,
- (3)  $M_i$  are the independent variables related to the characteristics of the manager in firm  $i$ ,
- (4)  $\beta_1$  is the vector of coefficients of the variables related to firm characteristics,
- (5)  $\beta_2$  is the vector of coefficients of the variables related to manager characteristics,
- (6)  $\delta_i$  is the dummy location, and
- (7)  $e_i$  is the vector of error terms.

In this model, the dependent variable  $y_{ijepa_i}$  takes on two values: zero or one. For firms that have been granted the IJEPAs COO in the MOTRI database to export to Japan in 2016, their  $y_{ijepa_i}$  value is denoted by 1. For firms that do not use the IJEPAs to export to Japan in 2016, their value of  $y_{ijepa_i}$  is denoted by 0. The set of independent variables are explained below.

The firms' main characteristics are represented by three variables: firms' age by years in operation and firms' size by the number of employees and the value of yearly sales. Firms' age is expected to take on a positive association with IJEPAs use. Older firms with more experience, good track record, and credibility are expected to use FTAs as they have accumulated

experience and profit. Since the ROO criteria often increase the firms' production cost in the short-term, older firms with built-up credibility have more chances than new firms to tap into the resources of financial institutions.

Firms' size is expected to have a positive association with IJEPA use. The theoretical framework proposes that highly productive firms tend to profit from export and FTA use. Large firms tend to have a high yearly sales value and tend to have abundant resources. They can tap into the pool of skills, information, knowledge, and institutional memory on IJEPA use. The high yearly sales value enable these firms to amass large profit and pay the fixed cost of complying with the ROO. Moreover, the higher firms' productivity and the more ROO criteria they have to comply with, the larger firms grow in the long run (Demidova and Krishna, 2008). Since the majority of sampled firms are either classified as medium or large firms, firm size is included as log of the number of employees and log of yearly sales value to create a better fit in the model.

Two variables represent the overseas connections and activities of the firms: firms' ratio of export to Japan or firms' intensity to export and firms' source of capital. These two variables are expected to have a positive association with IJEPA use. A high proportion of export to Japan indicates an intensive export activity to Japan. As firm send multiple shipments to Japan, the ROO fixed cost becomes negligible in the long run. FDI status is also expected to have a positive association with IJEPA use. Since FDI firms tend to supply and to be integrated into the trade-in-task network, they have a better chance than local firms to access resources and information on the IJEPA ROO.

The products that the firms are exporting are represented by two variables: the tariff margin and the ROO restrictiveness score. The tariff margin is expected to have a positive association with IJEPA use since a large gap between the MFN tariff and the IJEPA tariff



represents a higher saving in terms of tariff payments. The tariff margin also has an industry-specific characteristic and could serve as a control to the model. For example, firms that export textiles (HS Chapter 63) amass higher tariff savings under the IJEPA compared to firms that export Machinery (HS Chapter 84). Machinery has duty-free MFN tariffs. The ROO restrictiveness score is expected to have a negative association with IJEPA use as a more restrictive score represents a higher ROO fixed cost. The ROO also has an industry-specific characteristic that could serve as a control to the model. For example, firms that export textiles (HS Chapter 63) face a higher cost since the ROO criteria require specific technological processing. Technological processing is considered as among the most restrictive ROO criteria under the Estevadeordal index.

The manager characteristics are represented by three variables, the manager's age, years of education, and years of experience in the export and import business. The manager's age is expected to have a positive association with IJEPA use since an increase in years also represents an increase in work experience and in the possibility that the manager sits in a position of authority and influence. Manager's education in years is expected to have a positive association with IJEPA use since the ROO criteria tend to be complex and require a good understanding and learning ability of the manager. The manager's work experience in export and import in the number of years is also expected to be positively associated with IJEPA use since with time managers increase their knowledge on ways to access the market, comply with the ROO, calculate the benefit of an FTA, and process of the COO. The result of the multicollinearity test for each variable is attached in the [Appendix 2](#).

Awareness is represented by two variables: the manager's attendance to a training or government awareness campaign events and the manager's knowledge of various FTAs.

Manager's attendance in training activity and awareness campaign is expected to have a positive association with IJEPA use. In this model, the dummy variable takes on the value of one for managers that have attended the government-offered awareness campaigns or paid training, and take on the value of zero for managers that have never attended those events. Awareness campaign events usually last for about 2-4 hours, while training or workshops usually last more than just four hours. As they are deemed to have the same purpose of introducing an FTA to the manager, the two events are not differentiated in the model. The manager's knowledge of various FTAs is expected to have a positive influence on IJEPA use since the mechanism of complying with the ROO and processing the COO tends to be similar from one FTA to another.

The dummy variable for the geographical location of firms is introduced in the model given the historical migration of industrial clusters, the vast area covered by the firm-level survey, and the different site-specific characteristics of each area, such as the availability of infrastructure and the distance between the headquarters and processing locations. [Table 4-8](#) summarizes all the explanatory variables and expected signs.

### **4.5.3 Estimation Results**

[Table 4-9](#) presents the results of the estimation for the association of IJEPA use to firm and manager characteristics. The results of the linear regression are presented in columns one and four, logit in columns two and five, and probit in columns three and six. Columns four, five, and six include the location dummy. Location ten is automatically omitted due to collinearity. Location one and three are omitted because there are no non-IJEPA users sampled in the area. Location nine is omitted because there are no firms sampled in the area. Due to these omitted locations,

only 65 firms are included in the Logit and Probit estimation. It should be noted that the 'location' variable has no economic interpretation. All columns use robust standard errors.

Concerning firm characteristics, the firms' age shows no significance without the location dummy. Firms' age only shows significance after the location dummy is introduced under probit and logit. Although firms' age is insignificant without the location dummy, and the number of sampled firms is different for different models, the coefficient for firms' age remains positive. By using the location dummy, this study confirms the hypothesis that the more years the firm operates, the more likely it is that the firms uses the IJEPA. This result is in line with Wignaraja (2014), which finds that older manufacturing firms with more experience tend to use FTAs in Indonesia. It also highlights the possibility that older firms may have the first-mover advantage in the use of the IJEPA since the IJEPA was enacted in 1 July 2008 or a few years in advance of the ACFTA which was enacted in 1 January 2010. With their accumulated profit, years of experience, and long built-up credibility, firms that have been in operation for longer years would have a better chance to tap into the initial opportunity of using an FTA if compared to new firms. Newer firms would have more challenges in tapping into external financial sources upon facing capacity constraints to pay the ROO fixed cost.

The firm's size, represented by the firm's yearly sales value and the number of employees result in a negative association under the linear regression. This result is contrary to the hypothesis. One plausible explanation is that ACFTA using firms tend to be larger than IJEPA using firms. In the descriptive statistics of [Table 4-6](#), non-IJEPA users employs on average 91 employees. IJEPA users on average employs 80 employees. Non-IJEPA users have an average yearly sales value of 39,500 million of Rupiah. IJEPA users have an average yearly sales of 34,000 million of Rupiah. Hence, the specific characteristics identified in this firm-level study

presents the relative or comparative conditions of firms that use the IJEPA to firms that use the ACFTA.

The firms' FDI status presents a positive association with IJEPA use upon the introduction of the location dummy. The clustering of firms by their location has highlighted the dominant characteristic of FDIs. FDI firms tend to use the IJEPA as they are more regionally and globally connected to the trade-in-task network and have better access to information on IJEPA use than local firms.

The firms' intensity to export to Japan shows a consistent significant positive association with IJEPA use across all specifications. Firms that concentrate their exports to the Japanese market are more likely to use the IJEPA. This result is in line with the profit maximization theory. In the long run, the ROO fixed cost becomes negligible as firms concentrate their export activities to an FTA-market. The result is also in line with Ing et al. (2016), which see a positive association between the use of ASEAN and ASEAN+1 FTA and firms' intensity to export. Hence, even though the non-IJEPA users have market access or trade with Japan, they do not concentrate their trade with Japan and are more likely engaged in ad-hoc or sporadic trade with Japan.

With regards to the products that firms' trade, the tariff margin does not result in a significant association, even though the results show positive signs. There is a possibility that the tariff margin has become imprecise due to the averaging of the tariff margin at the products' 6-digit HS Code and by firms. On the other hand, the ROO restrictiveness score shows a negative association upon the inclusion of location dummy as expected in the hypothesis. Unlike the tariff margin, the average ROO score that is assigned to each firm is precise at the 6-digit HS Code.

With regard to manager characteristics, the results of the estimation under probit and logit present a negative association between IJEPA use and managers' age. Managers in IJEPA-using firms tend to be younger than those in non-IJEPA firms. However, years of work experience in export and import are noted to have a positive and significant association with IJEPA use. While the latter is in line with the proposed hypothesis, the negative association between IJEPA use and managers' age is unexpected. One possible explanation is that young managers in IJEPA-using firms tend to specialize early on in the export and import business. On the other hand, older managers in ACFTA using firms tend to have prior experience before working in the export and import business. These results indicate the nature of the firms' hiring policy. IJEPA-users tend to hire young managers that specialize early on in the export and import business to Japan.

On the issue of awareness, the study finds that manager's attendance to government-offered awareness campaigns or paid training on FTA has no association with IJEPA use. This finding is in line with descriptive statistics in [Table 4-6](#) that show how managers in IJEPA-using firms and non-IJEPA users have on average a similar 96% knowledge of the IJEPA and 55% attendance to the IJEPA training and outreach. This result suggests that government-organized awareness campaigns on the processing of the COO are useful 'know-how' to managers, but not a sufficient trigger to use the IJEPA. Intuitively, managers learn and improve their knowledge on an FTA through independent study and learning-by-doing. This finding is in line with the positive association between FTA use and the Managers' years of work experience in the trading business and their responses in the interview. Some managers access available sources on FTAs to learn by themselves. Some also mention how they learn on the IJEPA after the request of customers and importers.

Lastly, the coefficient for the manager's knowledge of various FTAs presents a negative sign. This result suggests that the more the manager knows about other FTAs, the less the manager uses the IJEPA. In other words, with the intensive trade activity that a firm has with Japan, the more the manager knowledge on the use of the IJEPA and the less the manager need to know of other FTAs. This finding is contradictory to the hypothesis that knowing one FTA would help the use of other FTAs. The results suggest that managers tend to specialize their FTA knowledge according to the firms' main destination market.

This study concludes that FTA use is positively associated with older FDI firms that have a high proportion of trade with an FTA-market. Firms also tend to use FTA for exporting goods that have less restrictive ROO. IJEPA using firms also tend to be smaller and have lower yearly sales value than ACFTA-users. Lastly, the results on manager characteristics indicate that younger managers with many years of work experience in export-import business tend to use the IJEPA. These conditions also provide some indication of the hiring policy of firms that use the IJEPA. IJEPA-using firms tend to hire young managers that specialize early on in the export and import business. With the firms' high trade intensity with Japan, managers tend to not know of various FTAs. Instead, these managers hone their knowledge of the IJEPA through their years of work experience and the firms' trade concentration to Japan.

## **4.6 Conclusion**

This Chapter starts with an inquiry on the characteristics of firms and managers that are associated with FTA use. It starts with an observation that not all firms use FTAs since the proportion of firms that use FTAs have been noted to be limited in various studies. This study identified two factors as the possible explanations for the limited use: the lack of awareness and

the costly nature of the FTA's ROO. This study also examined variables on manager characteristics that were rarely included in past studies.

The first hypothesis states that FTA use is expected to have a positive association with firms that are engaged in intensive trade activity to an FTA-market and in the trading of products that have a high tariff margin and less restrictive ROO. Secondly, FTA use is expected to have a positive association with firms that have the characteristics of being large, operating for many years, and capitalized by Foreign Direct Investment (FDI). Thirdly, FTA use is expected to have a positive association with the managers' years of schooling and work experience in the trading business, as well as managers that have attended government-organized awareness campaign on FTAs and have the knowledge of various FTAs.

In order to test the hypotheses, this study took samples of firms that were granted the IJEPA and ACFTA COO in the Greater Jakarta area, as recorded in the rarely-published MOTRI database. The ACFTA-using firms are used as a proxy of firms that export to Japan in 2016 but do not use the IJEPA. This empirical study is the first attempt of its kind in the context of Indonesian firms that export to Japan under the IJEPA. This study has also taken a new approach by sampling and controlling for firms that have market access to Japan in 2016 and awareness of FTAs. This sampling method has enabled the empirical study to test the significance of the manager's FTA knowledge on FTA use.

The first key finding of this Chapter is that IJEPA use is positively associated with the firms' trade intensity to Japan or the FTA-market. The higher the firms' export percentage to Japan, the more likely it is that they use the IJEPA. This conclusion aligns with the proposed hypothesis on firms' profit maximization objective: in the long term, the ROO fixed cost becomes negligible as firms engage in an intensive trade with an FTA-market. There is a possibility that

IJEPA-using firms have long traded with Japan before the IJEPA enactment or received consistent requests from Japanese buyers after the IJEPA enactment. However this study cannot identify such causality. Nevertheless, the intensive trading activity to Japan has made the ROO fixed cost a reasonable investment.

The study also finds that IJEPA use is positively associated with the firms' years in operation and FDI status. In other words, older and FDI firms tend to use the IJEPA. Older firms have honed the habit of exporting and using an FTA. They also tend to have more credibility when tapping into the resources of financial institutions and have the first-mover advantage of using an FTA compared to newer firms. FDI firms, on the other hand, tend to have better access than local firms to an extensive information-sharing network on the use of FTAs.

The finding related to firms' size, sales value and manager characteristics may be contextual to the IJEPA. Managers that use the IJEPA tend to be younger, yet they have more years of experience in the export and import business. These managers also have lesser knowledge of other FTAs. The introduction of the IJEPA through government-organized awareness campaigns and paid training is insignificant to IJEPA use - even in the presence of market access. The results suggest that managers in IJEPA using firms joined the export-import business early on in their career. These managers develop their IJEPA knowledge through work experience, independent learning, and the firms' intense trade activity to Japan. Attendance to government-organized awareness campaigns is not a significant factor in IJEPA use. Hence, knowing of an FTA is one thing, but making use of such knowledge is another. FTA use and knowledge develop with the managers' years of experience in the export and import business and firms' FTA-market concentration.



The study demonstrates that the ROO fixed cost has created a 'selection effect' of FTA-using firms. Firms use an FTA upon the prospect of trading intensively with an FTA-market as the ROO fixed cost becomes negligible in the long run. Older firms with their accumulated profit, abundant resources, built-up credibility, and years of experience have a better chance to increase their capacity in the face of the ROO capacity constraints. FDI firms have an advantage over local firms in terms of their access to FTA and trade information. In turn, the firms' intensive trade activity to an FTA-market has created managers that are FTA-market specialist. These managers develop their FTA knowledge through independent learning and years of work experience.

The ROO fixed cost selection effect may have contributed to the limited use of an FTA. Firms that engage in ad-hoc trade to FTA-markets or do not pass the 'selection effect' are not using FTAs. Government-organized awareness campaigns are useful to introduce firms to the know-how of FTA use, but they do not trigger FTA use even among firms that have market access. Awareness campaigns can be further enhanced by introducing firms to use FTA more strategically and to more sustainable trade opportunities.

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## Chapter 5 Conclusions

Amidst the remarkable growth in the number of FTAs in the Asia-Pacific region and the given benefits offered by FTAs, it would be expected that firms would be using FTAs. It is widely believed that upon the enactment of an FTA, firms immediately benefit from the lower FTA preferential tariffs. However, studies found that the proportion of trade that uses such a preferential treatment is somewhat limited for various FTAs in the Asia-Pacific region. These results indicate that not all traded products or firms use the preferential scheme.

This dissertation seeks to acquire a better understanding of the limited use of preferential scheme, by examining factors associated with FTA use by firms in the context of the Indonesia Japan Economic Partnership Agreement (IJEPA). In order to conduct a thorough examination, two methodologies or a two-prong approach is used. The first methodology is a firm-level survey that gathers primary data on the characteristics of exporting firms and managers, and records firms' perception and experience of FTA use. The second methodology uses customs data to examine factors related to the imports of products. Thus, this dissertation comprises of two studies that employ different methodology and data sets: one examining firms' export activities and the other examining import activities. Hence, two sides of the FTA coin.

Discussions on the theoretical framework, general hypotheses, policy aspects, and the IJEPA are presented in Chapter 2. In its formulation of the general hypotheses, this dissertation takes into account the relevant theoretical framework, such as theories on heterogeneous firms and trade as pioneered by Melitz (2003) and developed by Demidova and Krishna (2008), and theories on the Rules of Origin (ROO) as presented by Krishna and Krueger (1995) and Krishna (2004). In its exploration of the policy aspect of FTAs, this dissertation notes that governments engage in FTAs as part of their strategic trade policy or the policy of protecting and supporting

the growth of competitive domestic industries within the context of the trade-in-task network. Even though FTAs provide a tariff discount that make traded goods more competitively priced, governments also includes a ROO that acts as a “hidden protection”. Restrictive ROO cancels out the benefit from the lower FTA tariff. “Tariff lines with the highest preference margins are normally subject to the most restrictive ROO” (Gibbons, 2001). As a result of this condition, there is a “growing consensus amongst trade economist” on the association of ROO restrictiveness and under-utilization of FTA. Nevertheless, governments continue to engage in FTAs to remain competitive, to generate substantial welfare, and to reduce retaliation risk. This policy, along with the geopolitical conditions in the region and the halted negotiations in the multilateral trading system, have contributed to the formation and proliferation of FTAs.

There are several reasons for choosing the IJEPA as the study case in this dissertation. First, it was among the least studied agreements. The latest study on IJEPA was conducted in 2011. Second, it was also reported as one of the least utilized FTAs, with only 17% use over the total export from Indonesia to Japan in 2010 (Pangestu, 2010). Third, it allows for an isolated analysis as there is no other FTA between Indonesia and Japan that overlaps with the IJEPA. Lastly, the firm-level survey immensely benefited from the access to the rarely-published Ministry of Trade of the Republic of Indonesia’s (MOTRI) database which contains a list of firms that use the IJEPA to export in 2016.

Chapter 3 empirically examines the association of the utilization rate of the IJEPA with factors related to the products that firms trade, namely the tariff margin, the ROO restrictiveness, the average monthly import value, and the yearly pattern of import. The study uses panel data of Japanese imports from April 2012 to March 2017 obtained from the Japan Customs website. To the author’s knowledge, the inclusion of the yearly pattern of imports, represented by a

coefficient of variation of monthly import value, is the first in this type of study. This study presents the results of two estimations. The first estimation includes all observations that have a utilization rate valued at zero, and the second estimation includes observations that have a tariff margin that is larger than zero.

Chapter 4 examines the association between FTA use and firm characteristics, namely, firm size, years in operation, source of capital, and trade intensity. In addition to the introduction of trade intensity as a new variable, this study also introduces variables related to manager characteristics, such as managers age, years of schooling and professional experience in the trading business, and variables related to FTA awareness, such as manager participation in government-offered awareness campaigns and manager knowledge of various FTAs. The cross-sectional data used to estimate the association was obtained from a firm-level survey to 73 firms located in the Greater Jakarta area in 2017. Unlike prior studies, this study samples firms that have an awareness of FTAs and had market access to Japan in the year 2016. Users of the ASEAN-China FTA (ACFTA) are treated as proxies for firms that did not use the IJEPA in their exporting to Japan. Thus this study presents the first examination of the association between FTA use and firm and manager characteristics of firms that choose FTA tariffs over MFN tariffs; and it also uses a different sampling methodology from prior studies that mostly examine the characteristics of firms that use and do not use FTAs - whether or not they have market access or FTA awareness. Chapter 3 also presents the results of the qualitative interview of the firm-level survey.

One notable finding in this dissertation is the differing results of Chapter 3 and Chapter 4 with regards to the association of FTA use and the ROO restrictiveness score. In the study of products in Chapter 3, FTA use is found to have a positive association with the ROO. On the

other hand, in the study of firms in Chapter 4, FTA use is found to be negatively associated with the ROO. There are several possible explanations for the differences in the results.

Firstly, the product study uses panel data that include all types of products that are traded under the IJEPA. On the other hand, the firm-level study uses cross-sectional data of 73 firms and do not include all firms and products that trade using the IJEPA. The differences of scope may have contributed to the differences in result.

Secondly, the ROO results in the product study reflect the general trend in the trade of two countries as a result of the firms' response to the ROO and tariff structure of the IJEPA bilateral trade agreement. The IJEPA structure is found to offer the highest tariff margin for some consumer goods with a highly restrictive ROO. These consumer goods happen to be produced by industries in which Indonesia has a comparative advantage over Japan. Hence, the product study has captured firms' response to the IJEPA structure: to amass the highest tariff savings to compensate for the highly restrictive ROO, firms engage in large-scale high-value shipment. By sending in large bulk, firms save more on tariff payments to compensate for costly ROO.

On the other hand, the firm-level study captures the comparative ROO between IJEPA users and non-IJEPA users. In this study, the ROO is found to have a negative association with FTA use. In other words, FTA is unlikely to be used for the trade of products with restrictive ROO. ROO results in the firm-level study reflects the decision that firms make in deciding whether or not to use the IJEPA. The more restrictive the ROO criteria, the higher the ROO fixed cost that firms pay (Krishna and Krueger, 2000) due to the tighter constraints on the choices of input to firms (Krishna, 2005). The ROO fixed cost would become negligible by sending multiple large scale and high-value shipments. Hence, firms that do not engage in an intensive trade activity with the FTA-market would rather use the MFN tariff instead of paying the initial ROO fixed cost.

Thirdly, a positive association between the ROO and the FTA use was also found in a study that examines bilateral FTAs between a developed and developing country (Japan and Thailand) (Hayakawa, 2014b). Studies that found a negative association between the ROO and FTA use have mostly controlled for the differences within industries by including a dummy variable and used (Hayakawa et al., 2014; and Keck and Lendl, 2012) or examine the use of various FTAs involving many countries (Cadot et al., 2006). Hence examinations of bilateral FTAs are more likely to present firms' response to the specific structure of the FTA's tariff and ROO in light of the FTA-countries' bilateral comparative advantage, while studies that observe the use of various FTAs in many countries tend to be unbiased to the structure of a specific FTA.

Fourthly, upon the inclusion of the interaction variable, the ROO and tariff margin both show a positive association with FTA use across all specifications in the product study. The positive association between the ROO Restrictiveness Score and the utilization rate and between the tariff margin and the utilization rate cannot be interpreted individually. Nevertheless, the positive coefficient of the ROO restrictiveness score tends to be very small compared to the negative coefficient of the interaction variable. Hence, upon the inclusion of the interaction variable the overall association of the ROO restrictiveness score to the FTA utilization rate is negative.

The product study shows a positive association between the scale of shipments and FTA use, across all specifications. In other words, firms tend to use the FTA for large scale or high-value shipments. By sending shipments in bulk, firms amass higher savings in terms of tariff payments, since the tariff and the ROO represent different cost components to the firm. Tariffs are variable costs paid according to the value of the shipment. Meanwhile, the ROO represents a fixed cost to be paid to comply with the FTA's ROO criteria. In turn, the large tariff savings

compensate for the high ROO fixed cost. These results are in line with a past finding by Hayakawa et al. (2014) which highlight the larger contribution of the scale effect to FTA use than the tariff margin or ROO effects. As firms trade products with high tariff margin and highly restrictive ROO, they also resort to large-scale or high-value shipment so to amass higher tariff savings to compensate for the highly restrictive ROO.

Given these results, what could be the characteristics of firms that use the IJEPA? The estimation results on the association of FTA use and firm characteristics present a positive association between FTA use and firms' proportion of trade with an FTA-market, years in operation, and FDI status.

The proportion of firms' export to an FTA-market is found to have a positive association with FTA use. In other words, FTA-using firms have a larger proportion of trade to the FTA-market than to other markets. The proportion of export to the FTA-market is larger in FTA-using firms than in non-FTA using firms even though both export to the same FTA-market. This result is in line with the findings of Ing et al. (2016). Although the study cannot determine whether such a large proportion of trade with an FTA-market comes after or before FTA use, the results suggest that the FTA tends to be used by firms that specialize their trade to the FTA-market. In other words, firms that trade intensively to an FTA-market tend to use an FTA. A possible reason is that as firms concentrate a large proportion of their production and trade with an FTA-market, the ROO fixed cost becomes negligible in the long run. Another possible reason is the different ROO fixed costs that firms have to pay for each FTA. By complying with one specific FTA ROO, a firm will reach economies of scale. However, to comply with many FTA ROO, a firm need to incur a high cost – since compliance to each FTA ROO implies an additional ROO fixed cost (Bhagwati, 1995). Hence, the highly restrictive and costly ROO tends to hinder firms to use

different FTAs at once. Firms that adhere to one FTA ROO and trade intensively to an FTA-market, will see the ROO fixed cost spread into multiple shipments. In the long run, the ROO fixed cost becomes negligible.

The characteristics of managers in FTA-using firms also suggest an association with firms' trade concentration to an FTA-market. The results of the estimation in the firm-level study show that FTA use is positively associated with the manager's years of work experience in export and import. FTA use is also negatively associated with the managers' age and their knowledge of FTAs other than the IJEPA. The results of the estimation also suggest that knowledge obtained from attending the government-organized awareness campaigns is of little value to increase FTA use. These findings suggest that FTA use is associated with export managers who join the trading business early in their careers. These managers develop their knowledge of an FTA through years of working experience and the firms' intensive trade activity to an FTA-market. Knowledge of various FTAs and attendance to government-organized awareness campaigns are useful know-how to managers, but do not trigger FTA use. Nevertheless, generalization of the results related to manager characteristics should be made cautiously given the specific context and the exploratory nature of this examination.

The operational longevity of firms is another characteristic that is positively associated with FTA use. In addition to their accumulated profit and experience from learning and doing trade with an FTA-market, older firms also have an advantage over new firms in terms of their ability to overcome capacity constraints created by the ROO. In other words, older firms have the first-mover advantage in FTA use upon the initial launch of a new FTA. The ROO fixed cost is equivalent in the long run but "not equivalent in the short run where capacity constraints can exist" (Krishna and Krueger, 2000). Given the existence of a short term financial constraint to



export and to comply with the ROO, newly established firms do not have the advantage of the older firms' long built-up credibility and good track record to ease them in finding additional financial resources. Another possible reason is that older firms have the advantage of offering lower pricing due to their long years of operation and negligible ROO fixed cost. Hence, firms that have been in operation for a long time tend to use FTAs.

Lastly, firms' FDI status is also positively associated with FTA use. In other words, FDI firms tend to use FTAs. FDI firms that are subsidiaries of foreign firms are part of and continuously supply to the trade-in-task network. These firms have an advantage over local firms in terms of their wider access to opportunities to supply to the FTA-markets and access FTA information.

In light of those results, the firm-level study also finds a negative association between FTA use and firms' size – as representation of the firms' productivity. In this study firms' size is represented by two variables: the firms' number of employees and yearly sales value. This negative association is contrary to hypothesis and to the results of previous studies. Firm size is found to have a significant association in empirical studies that sample on Japanese affiliated firms (Takahashi and Urata, 2008; Hiratsuka et al., 2009; and Hayakawa et al., 2014), but it is found insignificant in the context of firms operating in Southeast Asian countries (Wignaraja, 2014; and Ing et al., 2016).

The negative association between firm size and FTA use suggests two possibilities. First, firms located at the center or the final assembly line of the Asia-Pacific trade-in-task network, such as firms in Japan, could have different characteristics to firms located at the periphery of the network, such as firms in South-East Asia. Hence, further empirical research may be conducted to test whether firms of various sizes in the periphery indeed supply to the larger firms

at the center of the network. Second, the results of the descriptive statistics present that non-IJEPA users have an average of 91 employees. IJEPA users have on average 80 employees. The average yearly sales value of Non-IJEPA users is 39,500 million of Rupiah. IJEPA-users have an average yearly sales of 34,000 million of Rupiah. Non-IJEPA users are large firms that do not concentrate their export to the Japanese market. These firms engage in ad-hoc or sporadic trade to the Japanese market and tend to use MFN tariff.

Hence, the limited use of FTA are among others due to the structure of the ROO and tariff, and the ROO fixed cost 'selection effect'. The FTA's ROO and tariffs are endogenous variables that determines the utilization rate of an FTA given the comparative advantage of the FTA-member countries. In the case of the IJEPA, firms respond to the tariff and ROO by trading products that have the most restrictive ROO and yet the highest tariff margin, in large scale shipments, on a regular pattern, and at a similar value. The ROO fixed cost selection effect has created IJEPA use among firms that have a large proportion of trade to the Japanese market, long years in operation, and capitalization by FDI. These results suggest that firms use the IJEPA as long as there are long term prospects for regular, high-value, and multiple shipments which would make the ROO fixed cost becomes negligible in the long run. The results also suggest that firms that engage in ad-hoc trade to Japan or do not pass the 'selection effect' are not using the IJEPA. Future research can use transaction-level data to test such an association.

Given the results of the estimation, this dissertation recommends two policies to increase the proportion of trade that uses the IJEPA.

Firstly, governments need to look into tariff lines with a zero or less than 100% utilization rate and tariff lines that do not record trade activities under the IJEPA, and consider reviewing the IJEPA tariff and the ROO. Among the possible causes for such a limited use are (i) the small

tariff margin that the IJEPA provides compared to the tariff margin offered by other FTAs that Japan has with other countries, (ii) the small IJEPA tariff margin that cannot compensate for the ROO fixed cost, or (iii) the lack of capacity of Indonesian exporters to comply with the IJEPA ROO fixed cost.

Secondly, since the government remains the primary source of FTA information, it could consider organizing FTA awareness campaigns differently. FTA awareness campaigns could be more targeted to local, new, or small export-oriented firms that produce goods with a sizeable tariff margin. In order to assist these firms, government can ease export credit, organize export promotion assistance, and enhance capacity building to meet the ROO.

Awareness campaign programs could also go beyond the technicalities of filling out COO forms and complying with the ROO. Instead, firms and managers can be taught to use FTAs more strategically to attract long-term clientele. Firms can be taught to identify market opportunities among FTAs that provide better tariff margin, to use FTAs as a service to build long-term clientele, and to take advantage of the relatively value-for-money and fastidious processing of the COO in Indonesia. The government needs to make clear to firms that the tariff margin does not only benefit importers. Exporters can also negotiate better pricing that is slightly higher than the pricing set by competitors from non-FTA countries. Hence, awareness campaigns can be enhanced by introducing firms to strategic opportunities and creating sustainable trade opportunities. All in all, the government should consider to switch its role from tariff revenue administrator to trade facilitator.

Although the Indonesia-Japan Economic Partnership Agreement operates within the context of Japan and Indonesia and some elements of the two studies presented here are specific to the contextual bilateral relation of the two countries, the results of the analysis are

relatively general and in line with the strand of literature. Firms respond to the tariff and ROO structure offered by an FTA and ROO represents hidden costs to firms. As a consequence of the FTA structure and the fixed cost that firms need to pay to comply with the ROO criteria, only firms with certain characteristics may find the advantage in paying the initial ROO fixed cost and profiting from an FTA. In their effort to maximize profit from the use of an FTA, such firms concentrate their trade with an FTA-market, send regular high-value shipments, and seek the highest tariff margin. In the long run, the ROO fixed cost becomes negligible. In conclusion, this selection effect created by the FTA tariff and ROO structure and the ROO fixed cost has contributed to the limited use of an FTA - whether in the characteristics of firms or the products that firms trade.

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## References

- Asian Development Bank (ADB) Asia Regional Center: Tracking Asian Integration. Website.  
Retrieved from <https://aric.adb.org/fta-country>
- Ando, M. (2009). Impacts of FTAs in East Asia: CGE Simulation Analysis. *RIETI Discussion Paper Series 09-E-037*. Retrieved from <https://www.rieti.go.jp/jp/publications/dp/09e037.pdf>
- Anson, J., Cadot, O., Estevadeordal, A., De Melo, J., Suwo-Eisenmann, A., & Tumurchudur, B. (2005). Rules of Origin in North-South Preferential Trading Arrangement with an application to NAFTA. *Review of international Economics*, 13:3, 501-517.  
doi: 10.1111/j.1467-9396.2005.00520.x
- Ardiyanti, S.T. (2015). The Impact of Indonesia-Japan Economic Partnership Agreement (IJEPA) on Bilateral Trade Performance. *Bulletin Ilmiah Litbang Perdagangan, Ministry of Trade of the Republic of Indonesia*, 9:2. Retrieved from [www.kemendag.go.id/files/pdf/2016/06/20/-1466384449.pdf](http://www.kemendag.go.id/files/pdf/2016/06/20/-1466384449.pdf)
- Athukorala, P. (2010). Production Network and Trade Patterns in East Asia: Regionalization or Globalization? *ADB Working Paper Series on Regional Economic Integration*, No.56. Retrieved from [https://aric.adb.org/pdf/workingpaper/WP56\\_Trade\\_Patterns\\_in\\_East\\_Asia.pdf](https://aric.adb.org/pdf/workingpaper/WP56_Trade_Patterns_in_East_Asia.pdf)
- Augier, P., Gasiorek, M., & Tong, C.L. (2005). The impact of rules of origin on trade flows. *Economic Policy*, 20:43, 567-624. doi: [10.1111/j.1468-0327.2005.00146.x](https://doi.org/10.1111/j.1468-0327.2005.00146.x)
- Baldwin, R. E. (2005). Asian regionalism: promises and pitfalls. In C.Y. Ahn, R.E. Baldwin, & I. Cheong (Eds), *East Asian Economic Regionalism: Feasibilities and Challenges* (pp. 157-174). Springer, Boston, MA. doi: 10.1007/0-387-24331-3\_9

- Baldwin, R., Kawai, M., & Wignaraja, G. (Eds). (2014). A World Trade Organization for the 21st Century: The Asian Perspective. Asian Development Bank Institute. Retrieved from <https://www.adb.org/sites/default/files/publication/159306/adbi-wto-21st-century-asian-perspective.pdf>
- Bhagwati, J. (1995). US Trade Policy: The infatuation with FTAs. *Discussion Paper Series*, 726. Retrieved from <https://core.ac.uk/download/pdf/161436448.pdf>
- Bagwell, K., Brown, C., & Staiger, W. (2015). Is the WTO Passé? *Policy Research Working Paper*, 7304. World Bank Group. Retrieved from <http://documents.worldbank.org/curated/en/355041467999116686/pdf/WPS7304.pdf>
- Bagwell, K., & Staiger, R. (1999). An Economic Theory of GATT. *The American Economic Review*, 89:1, 215-248. Retrieved from [https://www.jstor.org/stable/116986?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/116986?seq=1#metadata_info_tab_contents)
- Bonaccorsi, A. (1992). On the Relationship between Firm Size and Export Intensity. *Journal of International Business Studies*, 23:4, 605-635. Retrieved from [https://www.jstor.org/stable/155151?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/155151?seq=1#page_scan_tab_contents)
- Brander, J.A. (1995). Strategic Trade Policy. In G. Grossman & K. Rogoff (Eds), *Handbook of International Economics* (3<sup>rd</sup> ed., pp. 1395-1455). Elsevier Science. doi: [10.1016/S1573-4404\(05\)80007-3](https://doi.org/10.1016/S1573-4404(05)80007-3)
- Brander, J.A., & Spencer, B.J. (1985). Export Subsidies and Market Share Rivalry. *Journal of International Economics*, 181, 83-100. doi: [10.1016/0022-1996\(85\)90006-6](https://doi.org/10.1016/0022-1996(85)90006-6)
- Budiarti, F.T. & Hastiadi, F.F. (2015). Analisis Dampak the IJEPA terhadap Price-Cost Margins Industri Manufaktur Indonesia. *Jurnal Ekonomi dan Pembangunan Indonesia*, 15:2, 192-

209. Retrieved from <https://media.neliti.com/media/publications/80580-ID-analisis-dampak-indonesia-japan-economic.pdf>

Bureau, J.C., Chakir, R., & Gallezot, J. (2006). The Utilization of EU and US Trade Preferences for Developing Countries in the Agri-Food Sector. *Institute for International Integration Studies Discussion Paper*, 193. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.149.2914&rep=rep1&type=pdf>

Bureau, J.C., Chakir, R., & Gallezot, J. (2007). The Utilisation of Trade Preferences for Developing Countries in the Agri-food Sector. *Journal of Agricultural Economics*, 58:2. doi: [10.1111/j.1477-9552.2007.00097.x](https://doi.org/10.1111/j.1477-9552.2007.00097.x)

Cadot, O., De Melo, J., Estevadeordal, A., Suwo-Eisenmann, A., & Tumurchudur, B. (2002). Assessing the Effect of NAFTA's Rules of Origin. World Bank Publication. Retrieved from [http://web.worldbank.org/archive/website00894A/WEB/PDF/CADOT\\_RU.PDF](http://web.worldbank.org/archive/website00894A/WEB/PDF/CADOT_RU.PDF)

Cadot, O., De Melo, J. & Suwa-Eisenmann, A. (2005). Rules of Origin in North–South Preferential Trading Arrangements with an Application to NAFTA. *Review of International Economics*, 13:3, 501-517. DOI: [10.1111/j.1467-9396.2005.00520.x](https://doi.org/10.1111/j.1467-9396.2005.00520.x)

Cadot, O., Carrère, C., de Melo, J. & Tumurchudur, B. (2006). Product-specific rules of origin in EU and US Preferential Trading Arrangements: An Assessment. *World Trade Review*, 5:2, 199-224. doi: [10.1017/S1474745606002758](https://doi.org/10.1017/S1474745606002758)

Cadot, O., & Ing, L.Y. (2016). How Restrictive are ASEAN's Rule of Origin? *Asian Economic Papers*, 15:3, 115-134. doi: [10.1162/ASEP\\_a\\_00461](https://doi.org/10.1162/ASEP_a_00461)

Candau, F., Fontagne, L. & Jean, S. (2004). The Utilization Rate of Preferences in the EU. Draft to be presented at the 7th Global Economic Analysis Conference. Washington DC. Retrieved from <https://www.gtap.agecon.purdue.edu/resources/download/1935.pdf>

- Carrere, C., Cadot, O., De Melo, J., Tumurchudur. (2011). Product Specific Rules of Origin in EU and US Preferential Trading Arrangements: An Assessment. Retrieved from <https://halshs.archives-ouvertes.fr/halshs-00564704/document>
- Carrere, C., & De Melo, J. (2015). Are Different Rules of Origin Equally Costly? Estimates from NAFTA. In O. Cadot, O., A. Estevadeordal, A. Suwa-Eisenmann, & T. Verdier (Eds), *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, (pp. 191-212). Retrieved from [http://mddb.apec.org/Documents/2006/CTI/FTA-RTA/06\\_fta-rta1\\_005.pdf](http://mddb.apec.org/Documents/2006/CTI/FTA-RTA/06_fta-rta1_005.pdf)
- Cavusgil, S.T., & Zou, S. (1994). Marketing strategy-performance relationship: an investigation of the empirical link in export market ventures. *Journal of Marketing*, 58, 1-21. doi: 10.2307/1252247
- Cheong, D. (2010). Methods for Ex-Post Economic Evaluation of Free Trade Agreements. *ADB Working Paper Series on Regional Economic Integration*. Retrieved from <https://www.adb.org/sites/default/files/publication/28538/wp59-evaluating-fta.pdf>
- Cheong, I. & Cho, J. (2009). An Empirical Study on the Utilization Ratio of FTAs by Korean Firms. *Journal of Korea Trade*, 132, 109-126. Retrieved from [http://ktra.ccpshost.com/h\\_board/download.php?&bbs\\_id=e12&page=1&type=1&doc\\_num=85&PHPSESSID=e6509469062404e32dcc62905bcc7b55](http://ktra.ccpshost.com/h_board/download.php?&bbs_id=e12&page=1&type=1&doc_num=85&PHPSESSID=e6509469062404e32dcc62905bcc7b55)
- Cheong, I., H. Kim, H. & J. Cho, J. (2010). Business Use of FTAs in Korea.' *RIETI Discussion Paper Series 10-E-038*. Retrieved from: <https://core.ac.uk/download/pdf/6544404.pdf>
- Demidova S. & Krishna, K. (2007). Firm Heterogeneity and Firm Behavior with Conditional Policies. *Economics Letters*, 98:2, 122-128. doi: 10.1016/j.econlet.2007.04.020



- Damuri, Y.R., Atje, R., Mugijayani, W., Anas, T., & Setyoko, R. (2014). Impacts of FTAs in Indonesia: Study and Business Perspective Survey Results 2013. *Center for Strategic and International Studies*. Retrieved from [https://www.csis.or.id/uploaded\\_file/research/an\\_assessment\\_of\\_economic\\_impacts\\_of\\_ftas\\_in\\_indonesia.pdf](https://www.csis.or.id/uploaded_file/research/an_assessment_of_economic_impacts_of_ftas_in_indonesia.pdf)
- Dhawan, R. (2001). Firm size and productivity differential: theory and evidence from a panel of US firms. *Journal of Economic Behavior and Organization*, 44:3, 269-293. doi: [10.1016/S0167-2681\(00\)00139-6](https://doi.org/10.1016/S0167-2681(00)00139-6)
- Dixit, A. & Norman, V. (1980). Theory of International Trade: A Dual, General Equilibrium Approach. *Cambridge University Press*.
- Duttagupta, R. & Panagariya, A. (2003). Free Trade Areas and Rules of Origin: Economics and Politics. *IMF Working Paper*, 03/229. Retrieved from <https://www.imf.org/external/pubs/ft/wp/2003/wp03229.pdf>
- Estevadeordal, A. (1999). Negotiating Preferential Market Access: The Case of NAFTA. *Inter-American Development Bank Working Paper*, 3. Retrieved from <https://publications.iadb.org/en/publication/negotiating-preferential-market-access-case-nafta>
- Estevadeordal, A. (2000). Negotiating Preferential Market Access. *Journal of World Trade*, 34:1, 141-166. Retrieved from <https://heinonline.org/HOL/LandingPage?handle=hein.kluwer/jwt0034&div=11&id=&page=>

- Estevadeordal, A. & Suominen, K. (2004). Rules of Origin in FTAs in Europe and in the Americas: Issues and Implications for the EU-Mercosur Inter-Regional Association Agreement. *Inter-American Development Bank Working Paper*, 15. Retrieved from [https://publications.iadb.org/publications/english/document/Rules-of-Origin-in-Europe-and-in-the-Americas-Issues-and-Implications-for-the-EU-Mercosur-Inter-Regional-Association-Agreement.pdf](https://publications.iadb.org/publications/english/document/Rules-of-Origin-in-FTAs-in-Europe-and-in-the-Americas-Issues-and-Implications-for-the-EU-Mercosur-Inter-Regional-Association-Agreement.pdf)
- Evans, D. S. (1987). The relationship between firm growth, size, and age: Estimates for 100 manufacturing industries. *Journal of Industrial Economics*, 35:4, 567-581. doi: 10.2307/2098588
- Falvey, R. & Reed, G. (1998). Economic Effects of Rules of Origin. *Weltwirtschaftliches Archiv*, 134:2, 209-229. Retrieved from: <https://www.jstor.org/stable/40440647>
- Firman, T. (1998). The restructuring of Jakarta Metropolitan Area: A Global City in Asia. *Cities*, 15:4, 229-243. doi: [10.1016/S0264-2751\(98\)00015-8](https://doi.org/10.1016/S0264-2751(98)00015-8)
- Francois, J., Hoekman, B. & Manchin, M. (2006). Preference Erosion and Multilateral Trade Liberalization. *World Bank Economic Review*, 20:2, 197-216. Retrieved from <https://elibrary.worldbank.org/doi/abs/10.1093/wber/lhj010>
- General Administration of China Customs – Office of Rules of Origin. (2014). China FTA Utilization Analysis. Presentation at the World Customs Organization, January 2014. Retrieved from <http://www.wcoomd.org/~media/wco/public/global/pdf/events/2013/wco-origin-conference-2014/65-chinawu.pdf?la=en>
- Gibbons, P. (2010). Rules of Origin of the European Union's Preferential Trade Agreements with special Reference to the EU-ACP Economic Partnership Agreements. In Y. Nganjoh-Hodu and F.A.S.T Matambalya (Eds), *Trade Relations Between the EU and Africa:*

*Development, Challenges and Options Beyond the Cotonou Agreement* (pp 75-96).  
Routledge .

Grossman, G. M. & Helpman, E. (1995). The Politics of Free-Trade Agreements. *American Economic Review*, 85:4, 667-690. Retrieved from <https://www.jstor.org/stable/2118226>

Hadi, D.A. (2015). Preferential Rules of Origin: Disusun Berdasarkan ROO ASEAN Trade in Goods Agreement. *Prestise Publishing*. Bandung. Indonesia.

Hakobyan, S. (2015). Accounting for Underutilization of Trade Preference Programs: US Generalized System of Preferences. *Canadian Journal of Economics*, 48:2. doi: [10.1111/caje.12131](https://doi.org/10.1111/caje.12131)

Harveston, P.D., Kedia, B.L., & Davis P.S. (2000). Internationalization of Born Global and Gradual Globalizing Firms: The Impact of the Manager. *Advances in Competitiveness Research*, 8:1, 92-99. Retrieved from: <http://go.galegroup.com/ps/anonymous?id=GALE%7CA78630769&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=10770097&p=AONE&sw=w>

Hayakawa, K., Hiratsuka, D., Shiino, K., & Sukegawa, S. (2009). Who Uses FTAs? Japan External Trade Organization. *Institute of Developing Economies Discussion Papers*, 207. Retrieved from <http://www.eria.org/ERIA-DP-2009-22.pdf>

Hayakawa, K. (2011). Measuring Fixed Costs for Firms' Use of a Free Trade Agreement: Threshold Regression Approach. Japan External Trade Organization. *Institute of Developing Economies JETRO Discussion Papers*, 275. Retrieved from <https://www.ide.go.jp/English/Publish/Download/Dp/275.html>

- Hayakawa, K. (2012). Impact of Diagonal Cumulation Rule on FTA Utilization: Evidence from Bilateral and Multilateral FTAs between Japan External Trade Organizations. *Institute of Developing Economies JETRO Discussion Papers*, 372. Retrieved from: <https://www.ide.go.jp/English/Publish/Download/Dp/372.html>
- Hayakawa, K., Kim, H., Laksanapanyakul, N., & Shino, K. (2013). FTA Utilization: Certificate of Origin Data versus Customs Data. Japan External Trade Organization. *Institute of Developing Economies JETRO Discussion Papers*, 428. Retrieved from: <https://www.ide.go.jp/English/Publish/Download/Dp/428.html>
- Hayakawa, K. (2014a). Does Firm Size Matter in Exporting and Using FTA Schemes? *The Journal of International Trade and Economic Development*, 24:7, 883-905. doi: 10.1080/09638199.2014.967282
- Hayakawa, K. (2014b). "Impact of diagonal cumulation rule on FTA utilization: Evidence from bilateral and multilateral FTAs between Japan and Thailand. *Journal of the Japanese and International Economies*, 32:C, 1-16. doi: 10.1016/j.jjie.2013.12.005
- Hayakawa, K., Kim H., & Lee, H., (2014). Determinants on Utilization of the Korea-ASEAN Free Trade Agreement: Margin Effect, Scale Effect, and ROO Effect. *World Trade Review*, 13:3, 499-515. doi: 10.1017/S1474745613000323
- Helpman, E. (1984). Increasing returns, imperfect markets, and trade theory. Handbook of International Economics. *Handbook of International Economics*, 1, 325-365. Retrieved from: <https://www.sciencedirect.com/science/article/pii/S1573440484010108>
- Helpman, E., Melitz, M.J., & Yeaple, S.R. (2004). Export versus FDI in Heterogeneous Firms. *The American Economic Review*, 94:1, 300-316. Retrieved from: <https://www.jstor.org/stable/3592780>

- Henderson, J. V., & Kuncoro, A. (1996). Industrial Centralization in Indonesia. *The World Bank Economic Review*, 10:3, 513-540. Retrieved from:  
<http://documents.worldbank.org/curated/en/107101468284127078/pdf/771260JRN0WB ER0Box0377291B00PUBLIC0.pdf>
- Hill, H., Resosudarmo, B.P. & Vdyattama Y. (2009). Economic geography of Indonesia: location, connectivity, and resources. In H. Yukon, & A. Magnoli Bocchi. (Eds). *Reshaping Economic Geography in East Asia*, (pp. 115-134).  
Retrieved from:  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.630.5322&rep=rep1&type=pdf>
- Hiratsuka, D., Isono, I., Sato, H., & Umezaki S. (2008). Escaping from FTA Trap and Spaghetti Bowl Problem in East Asia: An insight from the Enterprise survey in Japan. In Soesastro, H. (Ed), *Deepening Economic Integration in East Asia: The ASEAN Economic Community and Beyond*, ERIA Research Project Report (2007-1-2, pp. 304-327). Retrieved from:  
[http://www.eria.org/uploads/media/Research-Project-Report/RPR\\_FY2007\\_1-2\\_Chapter\\_16.pdf](http://www.eria.org/uploads/media/Research-Project-Report/RPR_FY2007_1-2_Chapter_16.pdf)
- Hiratsuka, D., Hayakawa, K., Shiino, K., & Sukegawa, S. (2009). Maximizing benefits from FTAs in ASEAN. In J. Corbett & S. Umezaki (Eds.), *Deepening East Asian Economic Integration*. ERIA Research Project Report (2008-1, pp. 407–545) Retrieved from  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.491.5614&rep=rep1&type=pdf>
- Hudalah, D. (2015). Beyond the developmental state: Globalization and the politics of peri-urban mega-projects in Jakarta Metropolitan Area. Paper presented at the RC21 International Conference on The Ideal City: Between Myth and Reality. Representations, Policies, Contradictions and Challenges for Tomorrow's Urban Life. Retrieved from

<https://www.rc21.org/en/wp-content/uploads/2014/12/F1.3-Hudalah.pdf>

Hudalah, D. (2017). Governing industrial estates on Jakarta's Peri-urban area: From shadow the government to network governance. *Singapore Journal of Tropical Geography*, 38:1, 58-74. Doi: [10.1111/sjtq.12177](https://doi.org/10.1111/sjtq.12177)

IJEPA Joint Study Group Report. (2005). Retrieved from <https://www.mofa.go.jp/region/asia-paci/indonesia/summit0506/joint-3-2.pdf>

Inama, S. (2009). Rules of Origin in International Trade. Cambridge University Press. Cambridge.

Ing, L.Y., Urata, S. & Fukunaga, Y. (2015). How do Exports and Imports Affect the Use of Free Trade Agreements? Firm-Level Survey Evidence from Southeast Asia. In Ing L.Y. & Urata S. (eds), The use of FTAs in ASEAN: Survey Based Analysis. Economic Research Institute for ASEAN and East Asia. Retrieved from: <http://www.eria.org/ERIA-DP-2016-01.pdf>

IDE JETRO – WTO. (2011). Trade Patterns and Global Value Chains in East Asia: From Trade in Goods to Trade in Tasks. Retrieved from [https://www.wto.org/english/res\\_e/publications\\_e/stat\\_tradePAT\\_globvalchains\\_e.htm](https://www.wto.org/english/res_e/publications_e/stat_tradePAT_globvalchains_e.htm)

Ju, J. & Krishna, K. (1998). Firm Behavior and Market Access in a Free Trade Area with Rules of Origin. *Canadian Journal of Economics*, 38:1. doi: [10.1111/j.0008-4085.2005.00281.x](https://doi.org/10.1111/j.0008-4085.2005.00281.x)

Johnson, H.G. (1955). Economic Expansion and International Trade. *The Manchester School Journal*, 232, 95-112. Doi: [10.1111/j.1467-9957.1955.tb00960.x](https://doi.org/10.1111/j.1467-9957.1955.tb00960.x)

Kawai, M., & Wignaraja, G. (2009). The Asian Noodle Bowl: Is It Serious for Business? *Asian Development Bank Institute Working Paper Series*, 136. Retrieved from <https://www.adb.org/sites/default/files/publication/155991/adbi-wp136.pdf>

- Kawai, M., & Wignaraja, G. (2010). Asian FTA: Trends, Prospects and Challenges. *Asian Development Bank Economics Working Paper Series*, 226. Retrieved from <https://www.adb.org/sites/default/files/publication/28273/economics-wp226.pdf>
- Keck, A. & Lendl, A. (2012). New Evidence on Preference Utilization. World Trade Organization Economic Research and Statistics Division, *Staff Working Paper, ESRD-20120-12*. Retrieved from [https://www.wto.org/english/res\\_e/reser\\_e/ersd201212\\_e.pdf](https://www.wto.org/english/res_e/reser_e/ersd201212_e.pdf)
- Kim, H. & Cho, M. (2010). Impact of Rules of Origin on FTA Utilization in Korean FTAs. *Korea Institute for International Economic Policy Working Paper No. 10-08*. Retrieved from <http://www.kiep.go.kr/sub/view.do?bbsId=working&nttId=185473&searchIssue=&searchWrt=&pageIndex=7>
- Kohpaiboon, A. (2008). Exporter' Response to AFTA Tariff Preferences: Evidence from Thailand. *Performance of ASEAN Free Trade Area*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.497.7860&rep=rep1&type=pdf>
- Kohpaiboon, A., & Ramstetter, E.D. (2008). Producer Concentration, Conglomerates, Foreign Ownership, and Import Protection: Thai Manufacturing Firms a Decade after the Crisis. *International Centre for the Study of East Asian Development Working Paper*. Retrieved from <http://www.agi.or.jp/workingpapers/WP2008-05.pdf>
- Kohpaiboon, A. (2010). Exporters' Response to FTA Tariff Preferences: Evidence from Thailand. *RIETI Discussion Paper Series, 10-E-039*. Retrieved from: <https://www.rieti.go.jp/jp/publications/dp/10e039.pdf>
- Koskinen, M. (1983). Excess Documentation Costs as a Non-tariff Measure: an Empirical Analysis of the Import Effects of Documentation Costs, *Working Paper, Swedish School of Economics and Business Administration*.

- Kowalczyk, C. & Riezman, R. (2009). Trade Agreements. Mimeo. Tufts University.  
Retrieved from: <https://www.biz.uiowa.edu/faculty/rriezman/papers/KRPH-051909.pdf>
- Krishna, K. and Krueger, A. (1995). Implementing Free Trade Areas: Rules of Origin and Hidden Protection. *National Bureau of Economic Research. Working Paper, 4983*. Retrieved from: <http://www.nber.org/papers/w4983.pdf>
- Krishna, K. (2004). Understanding Rules of Origin. *National Bureau of Economic Research. Working Paper, 11150*. Retrieved from: <https://www.nber.org/papers/w11150.pdf>
- Krueger, A. (1993). Free Trade Agreements As protectionist Devices: Rules of Origin. National Bureau of Economic Research. Working Paper, 4352. Retrieved from: <https://www.nber.org/papers/w4352>
- Krugman, P.R. (1979). Increasing Returns, Monopolistic Competition and International Trade. *Journal of International Economics, 9*, 469-479. Doi: [10.1016/0022-1996\(79\)90017-5](https://doi.org/10.1016/0022-1996(79)90017-5)
- Krugman, P.R. (1987). Is Free Trade Passé? *The Journal of Economic Perspectives, 12*, 131-144. Retrieved from: <https://www.jstor.org/stable/1942985>
- Kumar, S. (1992). Policy issues and the formation of the ASEAN free trade area. In P. Imada & S. Naya (Eds.). *AFTA: The way ahead*. Singapore: Institute of Southeast Asian Studies (pp. 71-94).
- Leonidou, L. C., Katsikeas, C. S., & Piercy, N. F. (1998). Identifying managerial influences on exporting: past research and future directions. *Journal of International Marketing, 6:2*, 74-102. Retrieved from <https://www.jstor.org/stable/25048728>
- Magee, C.S.P. (2008). New Measures of trade creation and trade diversion. *Journal of International Economics, 75*, 349-362. Doi: [10.1016/j.jinteco.2008.03.006](https://doi.org/10.1016/j.jinteco.2008.03.006)



Manchin, M. (2006). Preference utilization and tariff reduction in EU imports from ACP countries.

*The World Economy*, 29:9, 1243-1266. Doi: [10.1111/j.1467-9701.2006.00838.x](https://doi.org/10.1111/j.1467-9701.2006.00838.x)

Manchin, M. & Pelkmans-Balaoing, A.O. (2007). Rules of Origin and the Web of East Asian

Free Trade Agreements. *World Bank Policy Research Working Paper*, 4273. World Bank,

Washington DC. Retrieved from

<https://openknowledge.worldbank.org/handle/10986/7456>

Manger, M. (2005). Competition and Bilateralism in Trade Policy: The Case of Japan's Free

Trade Agreements. *Review of International Political Economy*, 125, 804–828. doi:

[10.1080/09692290500339800](https://doi.org/10.1080/09692290500339800)

Maulana, D.E. 2013. Impact of Restrictiveness of Rules of Origin (ROO) on Indonesia's

Utilization of FTAs: Focusing on FTAs with China, Japan and Korea. *Master's Thesis*.

Graduate School of Public Administration. Seoul National University. Retrieved from

<http://s-space.snu.ac.kr/bitstream/10371/130329/1/000000012519.pdf>

Medvedev, D. (2010). Preferential Trade Agreements and Their Role in World Trade. *Review of*

*World Economics*, 146:2, 199-222. Retrieved from:

<https://www.jstor.org/stable/40865261>

Melitz, M.J. (2003). The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry

Productivity. *Econometrica*, 71:6, 1695-1725 Retrieved from

<https://www.jstor.org/stable/1555536>

Menon J. (2013). Preferential and Non-Preferential Approaches to Trade Liberalization in East

Asia: What Differences do Utilization Rates and Reciprocity Make? *Asian Development*

*Bank Working Paper Series on Regional Economic Integration*, 109. Retrieved from

<https://www.adb.org/sites/default/files/publication/30203/orei-wp-109-preferential-non-preferential-approaches-trade.pdf>

Ministry of Trade of the Republic of Indonesia (MOTRI). (2007). Indonesia-Japan Economic Partnership Agreement the IJEPA and Its Effects on Indonesian and Japanese Economy. Presentation made on 30 November 2007 in Tokyo.

Retrieved from:

<http://www.indonesia-investments.com/upload/documents/Indonesia-Japan-Economic-Partnership-Agreement-IJEPA-Indonesia-Investments.pdf>

Ministry of Economics, Trade and Industry of Japan (METI). (2014). Utilization of EPAs/FTAs and the provision of information to encourage their use. White Paper. Retrieved from:

<http://www.meti.go.jp/english/report/downloadfiles/2014WhitePaper/3-1-4.pdf>

Mulgan, A.G. (2008). Japan's FTA Politics and the problem of Agricultural Trade Liberalization.

*Australian Journal of International Affairs*, 622, 164-178. Retrieved from:

<http://www.tandfonline.com/doi/full/10.1080/10357710802060535?scroll=top&needAccess=true>

Panagariya, A. (2000). Preferential Trade Liberalization: The Traditional Theory and New Developments. *Journal of Economic Literature*, 38, 287–331.

Retrieved from <https://www.jstor.org/stable/2565291>

Pangestu, M. (2010). The Challenges for Trade Policy in a Dynamic World and Regional Setting: An Indonesian Perspective. Richard Snape Lecture, Australian the government Productivity Commission, Melbourne. Retrieved from <https://www.pc.gov.au/news-media/lectures/pangestu/2010-pangestu.pdf>

- Plummer, M., Cheong, D., & Hamanaka, S. (2010). Methodology for Impact Assessment of Free Trade Agreements. Asian Development Bank. Retrieved from: [https://aric.adb.org/pdf/FTA\\_Impact\\_Assessment.pdf](https://aric.adb.org/pdf/FTA_Impact_Assessment.pdf)
- Ratananarumitsorn, T., Piyanirun T. & Laksanapanyakul N. (2008). The Utilization of Free Trade Agreement Preferences: The Case of Thai Agricultural Exports. *TDRI Quarterly Review*, 233, 11-18. Retrieved from <http://tdri.or.th/wp-content/uploads/2012/09/t5s2008002.pdf>
- Salam A.R., Rayadiani S., & Lingga I. (2012). IJEPA dan Implikasinya terhadap Kinerja Perdagangan Indonesia – Jepang. *Buletin Ilmiah Litbang Perdagangan*, 6:1, 19-36. Retrieved from <http://jurnal.kemendag.go.id/index.php/bilp/article/view/136>
- Schaub, M. (2012). Utilization of Free Trade Agreements (FTA's) by Companies Trading in Goods. *Doctoral Thesis*. University of St. Gallen. Retrieved from [https://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/4041/\\$FILE/dis4041.pdf](https://www1.unisg.ch/www/edis.nsf/SysLkpByIdentifier/4041/$FILE/dis4041.pdf)
- Setiawan, S. (2012). Dampak Indonesia-Japan Economic Partnership Agreement Terhadap Indonesia dan Jepang. The Impact of the IJEPA towards Indonesia and Japan. *Jurnal Ilmiah Ekonomi Bisnis*, 172, 99-112. Retrieved from <https://ejournal.gunadarma.ac.id/index.php/ekbis/article/view/524/456>
- Simpson, C.L. & Kujawa, D. (1974). The Export Decision Process: An Empirical Inquiry. *Journal of International Business Studies*, 5:1, 107-117. doi: 10.1057/palgrave.jibs.8490815
- Sitepu E.M.P, & Nurhidayat, R. (2015). Mengukur Tingkat Pemanfaatan FTA yang telah dilakukan Indonesia. Studi Kasus dengan menggunakan FTA Preference Indicator. *Kajian Ekonomi dan Keuangan*, 193, 284-298. Retrieved from <https://fiskal.kemenkeu.go.id/ejournal/index.php/kek/article/view/147>

- Takahashi, K. & Urata, S. (2008). On the use of FTAs by Japanese Firms. *RIETI Discussion Paper, 08-E-002*. Retrieved from <https://www.rieti.go.jp/jp/publications/dp/08e002.pdf>
- Takahashi, K. & Urata, S. (2009). On the use of FTAs by Japanese Firms: Further Evidence. RIETI Discussion Paper, 09-E-028. Retrieved from <http://www.rieti.go.jp/jp/publications/dp/09e028.pdf>
- Tambunan, T., Chandra, A.C. (2014). Utilisation Rate of Free Trade Agreements FTAs by Local Micro-, Small- and Medium-Sized Enterprises: A Story of ASEAN. *Journal of International Business and Economics, 22*, 133-163. Retrieved from [http://jibe-net.com/journals/jibe/Vol\\_2\\_No\\_2\\_June\\_2014/9.pdf](http://jibe-net.com/journals/jibe/Vol_2_No_2_June_2014/9.pdf)
- Thorbecke, W. (2009). An Empirical Analysis of AEAN's Labor-Intensive Exports. ADBI Working Paper Series No. 166. ADB Institute. Retrieved from <https://www.adb.org/sites/default/files/publication/156021/adbi-wp166.pdf>
- Sonobe, T. & Otsuka, K. (2006). Cluster-Based Industrial Development: An East Asian Model. Palgrave MacMillan.
- Stott, D.A. (2008). The Japan-Indonesia Economic Partnership: Agreement between Equals? *The Asia Pacific Journal: Japan Focus, 67*, 1-15. Retrieved from <https://apjif.org/-David-Adam-Stott/2818/article.html>
- Ulloa, A., & Wagner, R. (2013). Why don't all exporters benefit from free trade agreements? Estimating Utilization Costs. *Inter-American Development Bank Working Paper Series, 388*. Retrieved from <https://publications.iadb.org/en/publication/11302/why-dont-all-exporters-benefit-free-trade-agreements-estimating-utilization-costs>
- United Nations Conference on Trade and Development (2001). Improving Market Access for Least Developed Countries. United Nations Conference on Trade and Development

Document No. UNCTAD/DITC/TNCD/4. Retrieved from  
<http://unctad.org/en/Docs/poditctncd4.en.pdf>

Urata, S. & Okabe, M. (2007) The Impacts of Free Trade Agreements on Trade Flows: An Application of the Gravity Model Approach. *RIETI Discussion Paper Series, 07-E-052*. Retrieved from  
<http://www.rieti.go.jp/jp/publications/dp/07e052.pdf>

Urata, S. (2002). Globalization and the Growth in Free Trade Agreements. *Asia Pacific Review Journal, 9:1*, 20-32. Doi: [10.1080/13439000220141569](https://doi.org/10.1080/13439000220141569)

Viner, J. (1950). The Customs Union Issue. New York: Carnegie Endowment for International Peace

Wagner, J. (2002). The Causal Effects of Exports on Firm Size and Labor Productivity: First Evidence from a Matching Approach. *Economic Letters. 77:2*, 287-292. Doi: [10.1016/S0165-1765\(02\)00131-3](https://doi.org/10.1016/S0165-1765(02)00131-3)

Whalley, J. (1998). Why do Countries Seek Regional Trade Agreements? In J.A. Frankel, (Ed.) The Regionalization of the World Economy. (pp. 63-90). University of Chicago Press. Retrieved from <https://www.nber.org/Chapters/c7820>

Wie, T.K. (2006). Policies for Private Sector Development in Indonesia. *Asian Development Bank Institute Discussion Paper, 46*. Retrieved from:  
<http://www.bdsknowledge.org/dyn/be/docs/112/IndonesiaPSD-ADBi2006.pdf>

Wigjoseptina, C., L. Yunita & Y. Sofiyandi. (2015). Survey on the Utilization of Free Trade Agreements in Indonesia. In L.Y. Ing and S. Urata (Eds.). The use of FTAs in ASEAN: Survey-based Analysis. *ERIA Research Project Report, 2013-5*. Retrieved from  
[http://www.eria.org/RPR\\_FY2013\\_No.5\\_Chapter\\_5.pdf](http://www.eria.org/RPR_FY2013_No.5_Chapter_5.pdf)

- Wignaraja, G., R. Olfindo, W. Puppavesa, J. Panpiemras, & S.Ongkittikul. (2010). How Do FTAs Affect Exporting Firms in Thailand? *Asian Development Bank Institute Working Paper Series*, 190. Retrieved from <https://www.adb.org/sites/default/files/publication/156045/adbi-wp190.pdf>
- Wignaraja, G. (2011). South-South free trade agreements: A work in progress? Vox EU Centre for Economic Policy Research. Retrieved from <https://voxeu.org/article/south-south-free-trade-agreements-work-progress>
- Wignaraja, G. (2013). Can SMEs Participate in Global Production Network: Evidence from ASEAN Firms. In Elms, D. & Low, P. (eds.), *Global Value Chains in a Changing World*. World Trade Organization. Retrieved from [https://www.wto.org/english/res\\_e/booksp\\_e/aid4tradeglobalvalue13\\_e.pdf](https://www.wto.org/english/res_e/booksp_e/aid4tradeglobalvalue13_e.pdf)
- Wignaraja, G. (2014). The determinants of FTA use in Southeast Asia: A firm-level analysis. *Journal of Asian Economics*, 35, 32-45. doi: [10.1016/j.asieco.2014.10.002](https://doi.org/10.1016/j.asieco.2014.10.002)
- World Trade Organization (WTO). Website on Regional Trade Agreements: Facts and Figures. Retrieved from [https://www.wto.org/english/tratop\\_e/region\\_e/regfac\\_e.htm](https://www.wto.org/english/tratop_e/region_e/regfac_e.htm)
- World Trade Organization (WTO). (2009). Factual Presentation: Economic Partnership Agreement between Japan and Indonesia (Goods and Services). Report by the Secretariat. Retrieved from [https://docs.wto.org/dol2fe/Pages/FE\\_Search/ExportFile.aspx?id=83007&filename=Q/W T/REG/241-1.pdf](https://docs.wto.org/dol2fe/Pages/FE_Search/ExportFile.aspx?id=83007&filename=Q/W T/REG/241-1.pdf)
- World Trade Organization (WTO). (2009). World Trade Report 2009: Trade Policy Commitments and Contingency Measures. Retrieved from [https://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/wtr09-2b\\_e.pdf](https://www.wto.org/english/res_e/booksp_e/anrep_e/wtr09-2b_e.pdf)

- World Trade Organization (WTO). (2015). The 12th Trade Policy Review of Japan.  
Retrieved from [https://www.wto.org/english/tratop\\_e/tpr\\_e/tp410\\_e.htm](https://www.wto.org/english/tratop_e/tpr_e/tp410_e.htm)
- World Trade Organization (WTO). (2017). The 13th Trade Policy Review of Japan.  
Retrieved from [https://www.wto.org/english/tratop\\_e/tpr\\_e/s351\\_e.pdf](https://www.wto.org/english/tratop_e/tpr_e/s351_e.pdf)
- Yi, J. (2015). Rules of origin and the use of free trade agreements: a literature review. *World Customs Journal*, 91, 43-58. Retrieved from [http://worldcustomsjournal.org/Archives/Volume%209%2C%20Number%201%20\(Mar-Apr%202015\)/WCJ\\_V9N1%20Yi.pdf](http://worldcustomsjournal.org/Archives/Volume%209%2C%20Number%201%20(Mar-Apr%202015)/WCJ_V9N1%20Yi.pdf)
- Zhang, Y. (2010). The impact of Free Trade Agreements on Business Activity: A Survey of Firms in the People's Republic of China. *Asian Development Bank Institute Working Paper Series*, 251. Retrieved from <https://www.adb.org/publications/impact-free-trade-agreements-business-activity-survey-firms-peoples-republic-china>
- Zou, S., & Stan, S. (1998). The Determinants of Export Performance: A Review of the Empirical Literature between 1987 and 1997. *International Marketing Review*, 15:5, 333-356. doi: [10.1108/02651339810236290](https://doi.org/10.1108/02651339810236290)

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### 5-1. Japanese Imports from Indonesia by Tariff Type, April 2012 – March 2017

Import Type	April 2012 – March 2013		April 2013 – March 2014		April 2014 – March 2015		April 2015 – March 2016		April 2016 – March 2017	
	Value	%	Value	%	Value	%	Value	%	Value	%
All Imports	2,781.2	100%	2,804.2	100%	2,516.2	100%	2,592.0	100%	2,450.9	100.0%
(A). MFN tariff = 0	2,314.7	83.2%	2,303.9	82.2%	2,017.1	80.2%	2,097.3	80.9%	1,953.7	79.7%
(B). MFN tariff > 0 and EPA tariff is not defined	106.1	3.8%	108.7	3.9%	98.3	3.9%	88.9	3.4%	88.3	3.6%
(C). MFN tariff > EPA tariff > 0, but EPA tariff is not used	64.8	2.3%	70.2	2.5%	78.2	3.1%	74.5	2.9%	69.0	2.8%
(D). MFN tariff > EPA tariff > 0, and EPA tariff is used	295.5	10.6%	321.2	11.5%	322.5	12.8%	331.3	12.8%	339.7	13.9%
(E). Imports that are eligible for EPA (= C + D)	360.3		391.5		400.8		405.8		408.8	
(F). Utilization Rate for All EPA Eligible Imports (=D/(C+D))		82.0%		82.1%		80.5%		81.6%		83.1%
Number of observations	4018		4001		3994		3983		3942	

Notes: Value are billion JPY and adjusted using 2013 base price. Data represents value of imports that use ad valorem Tariffs. Imports that use specific tariffs are not included in the data. Source: Author's Calculation



Table 5-2. The IJEPA Utilization Rate by HS Section, April 2012 - March 2013 and April 2016 – March 2017

No.	HS Section Description	2012					2016				
		(A) Total Import Value	(B) Total Import Value that is not EPA eligible	(C) Total Import Value that is EPA eligible	(D) % of EPA Imports in all EPA Eligible Imports	(E) % of EPA imports in all HS Section	(F) Total Import Value	(G) Total Import Value that is not EPA eligible	(H) Total Import Value that is EPA eligible	(I) % of EPA imports in all Eligible Import	(J) % of EPA import in all HS Section
1	Live Animals	68,057	23,780	44,277	99.1%	64.5%	41,440	12,796	28,644	99.2%	68.5%
2	Vegetable Products	21,677	18,497	3,181	89.7%	13.2%	19,414	15,935	3,480	93.0%	16.7%
3	Animal or Vegetable Fats & Oils	5,737	148	<b>5,589</b>	98.1%	95.6%	24,369	411	<b>23,957</b>	100.0%	98.3%
4	Prepared Foodstuffs	28,965	19,552	9,413	81.7%	26.6%	33,863	23,534	10,328	94.6%	28.9%
5	Mineral Products	1,625,092	1,608,028	17,064	0.2%	0.0%	1,246,418	1,229,863	16,555	1.2%	0.0%
6	Chemical Products	48,154	9,885	38,269	90.8%	72.2%	60,091	11,682	48,410	93.6%	75.4%
7	Plastics and Rubber	166,687	120,294	46,393	97.1%	27.0%	182,658	133,874	48,783	95.3%	25.5%
8	Leather Products	3,403	945	2,458	60.0%	43.3%	4,415	579	3,836	88.6%	76.9%
9	Wood Products	98,035	72,633	25,402	95.1%	24.7%	94,231	68,971	25,261	95.5%	25.6%
10	Paper Products	59,264	59,264	-	0.0%	0.0%	44,294	44,294	-	0.0%	0.0%
11	Textiles Products	125,355	1,026	124,328	82.5%	81.9%	147,931	642	147,289	79.6%	79.3%
12	Footwear and others	23,019	2,603	20,416	75.5%	66.9%	33,300	5,944	27,356	90.8%	74.6%
13	Stone, Ceramics & Glass Products	6,437	3,750	2,687	89.7%	37.5%	5,663	2,947	2,716	92.1%	44.2%
14	Pearls and Precious Stones	9,574	9,132	442	63.7%	2.9%	15,103	14,560	543	66.0%	2.4%
15	Metal Products	172,	165,846	6,802	94.2%	3.7%	154,146	148,555	5,591	93.9%	3.4%
16	Machinery and Electrical Equip.	216648,739	206,608	10,131	1.4%	0.1%	233,918	222,714	11,204	1.2%	0.1%
17	Transport Equipment	45,715	45,715	-	0.0%	0.0%	59,385	59,385	-	0.0%	0.0%

18	Precision Machinery	24,795	24,795	-	0.0%	0.0%	23,821	23,821	-	0.0%	0.0%
19	Arms and Ammunition	-	-	-	-	-	-	-	-	-	-
20	Misc. Manufactured Articles	31,881	28,376	3,505	82.0%	9.0%	26,425	21,583	4,843	91.5%	16.8%
21	Works of Art and Antiques	4	4	-	0.0%	0.0%	11	11	-	0.0%	0.0%

Notes: Value are in million JPY and adjusted using 2013 base price. Data represents value of imports that use ad valorem tariffs. Imports that use specific tariffs are not included in the data. Source: Author's Calculation

Table 5-3. MFN and IJEP Tariffs and IJEP Tariff Margin by HS Section, April 2012-March 2013

HS Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Total
MFN = 0	23	51	2	23	71	93	74	21	44	103	15	5	73	25	294	619	70	168	0	80	6	1860
MFN < 5%	67	23	11	9	15	203	124	6	47	0	233	20	45	6	107	11	0	3	0	48	0	978
5% < MFN < 10%	13	23	3	52	4	10	8	12	65	0	557	19	1	14	17	0	0	2	0	11	0	811
10% < MFN < 20%	12	13	1	45	2	1	0	30	6	0	156	0	0	1	0	0	0	2	0	0	0	269
20% < MFN < 30%	3	4	2	41	0	2	0	7	0	0	0	21	0	0	0	0	0	0	0	0	0	80
30% < MFN < 40%	0	0	0	1	1	0	0	13	0	0	0	21	0	0	0	0	0	0	0	0	0	36
40% < MFN < 50%	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
50% < MFN < 60%	0	2	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
EPA = 0	38	77	13	41	80	304	194	23	136	103	961	21	118	38	416	630	70	175	0	138	6	3582
EPA < 5%	19	19	2	24	6	2	12	31	0	0	0	23	1	8	2	0	0	0	0	1	0	150
5% < EPA < 10%	0	7	0	9	5	1	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	39
10% < EPA < 20%	0	1	0	8	2	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	25
20% < EPA < 30%	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30% < EPA < 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40% < EPA < 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50% < EPA < 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO EPA TARIFF	61	12	4	94	1	2	0	18	26	0	0	28	0	0	0	0	0	0	0	0	0	246
TMARG = 0	23	50	2	23	71	93	74	21	44	103	15	5	73	25	294	619	70	168	0	80	6	1859
TMARG < 5%	31	25	12	14	21	204	124	7	47	0	233	28	45	11	107	11	0	3	0	48	0	971
5% < TMARG < 10%	3	29	1	38	0	9	8	24	44	0	557	11	1	10	17	0	0	2	0	11	0	765
10% < TMARG < 20%	0	1	0	5	1	0	0	6	1	0	156	14	0	0	0	0	0	2	0	0	0	186
20% < TMARG < 30%	0	0	0	2	0	1	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	16
30% < TMARG < 40%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40% < TMARG < 50%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50% < TMARG < 60%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO TARIFF MARGIN	61	12	4	94	1	2	0	18	26	0	0	28	0	0	0	0	0	0	0	0	0	246

Abbreviations are as follows: MFN = Most Favored Nations Tariff, EPA = Economic Partnership Agreement Tariff, TMARG = Tariff Margin. Source: Author's Calculations

Table 5-4. IJEPA ROO types, HS Section 1 to 10

No	ROO Type	Score	Total	HS Section								
				1	2	3	4	5	6	7	8	9
0	..	-	30	9	0	0	11	1	1	0	0	3
1	CS, CS fr S		4	0	0	0	1	0	2	0	0	0
2	CS or RVC, CS fr S	3	1,688	0	0	0	0	28	0	0	0	2
3	CS or RVC or TECH, CS fr S		120	0	0	0	0	0	112	8	0	0
4	CS, CS fr H		7	0	0	0	4	0	3	0	0	0
5	CS + ECTC, CS fr H	4	7	0	0	2	2	0	3	0	0	0
6	CS or RVC, CS fr H		23	0	0	0	0	23	0	0	0	0
7	CS or RVC or TECH, CS fr H		155	0	0	0	0	0	98	57	0	0
8	CS, CS fr C		55	0	8	0	11	11	0	0	0	9
9	CS + ECTC, CS fr C		99	0	9	3	63	0	16	0	0	4
10	CS or RVC, CS fr C		21	0	0	0	0	21	0	0	0	0
11	CS or RVC or TECH, CS fr C		1	0	0	0	0	0	1	0	0	0
12	CS + RVC, CS fr C		2	0	0	0	2	0	0	0	0	0
13	CS + RVC + ECTC, CS fr H., CS fr C	5	1	0	0	0	1	0	0	0	0	0
14	CH, CH fr H		108	0	0	0	6	0	0	0	0	94
15	CH + ECTC, CH fr H		72	0	0	4	0	0	1	0	0	37
16	CH or RVC, CH fr H		7	0	0	0	0	0	0	0	0	0
17	CH or RVC or TECH, CH fr H		148	0	0	0	0	0	61	87	0	0
18	CH + ECTC + TECH, CH fr H		29	0	0	0	0	0	0	0	0	0
19	CH + ECTC or RVC or TECH, CH fr H		5	0	0	0	0	0	5	0	0	0
20	CH, CH fr C		496	117	104	6	33	2	0	0	89	14
21	CH + ECTC, CH fr C		117	2	0	6	51	0	4	0	0	0
22	CH or RVC, CH fr C		10	0	0	0	0	9	0	0	0	0
23	CH + RVC, CH fr C	6	6	0	0	0	6	0	0	0	0	0
24	CH or RVC or TECH, CH fr C		55	0	0	0	0	0	1	54	0	0
25	CH + TECH or WO, CH fr H		6	0	0	0	0	0	0	0	0	0
26	CH + ECTC + TECH or WO, CH fr H		240	0	0	0	0	0	0	0	0	0
27	CH + ECTC + WO + TECH, CH fr H		65	0	0	0	0	0	0	0	0	0
28	CH + WO + TECH, CH fr C		463	0	0	0	0	0	0	0	0	0
29	CH + ECTC + TECH or WO, CH fr C	7	42	0	0	0	0	0	0	0	0	0
30	CH + ECTC + WO + TECH, CH fr C		25	0	0	0	0	0	0	0	0	0
31	WO		5	0	0	0	0	0	5	0	0	0
Total			4,112	128	121	21	191	95	313	206	89	163

Abbreviations are as follows: CS= Change of Subheading, CH = Change of Heading, RVC=Regional Value Content, ECTC = Exception, WO = Wholly obtained, TECH = Technical Process/Specification, CS fr S = Change to Subheading from another Subheading, CS fr H = Change to Subheading from Heading, CS fr C = Change to Subheading from Chapter, etc.

Table 5-5. IJEPA ROO types, HS Section 10 to 21

No.	ROO Type	Score	HS Section										
			10	11	12	13	14	15	16	17	18	20	21
0	..	-	0	0	0	0	0	0	4	0	0	1	0
1	CS, CS fr S		0	0	0	0	0	0	0	0	1	0	0
2	CS or RVC, CS fr S	3	106	0	11	117	13	398	631	70	177	129	6
3	CS or RVC or TECH, CS fr S		0	0	0	0	0	0	0	0	0	0	0
4	CS, CS fr H		0	0	0	0	0	0	0	0	0	0	0
5	CS + ECTC, CS fr H		0	0	0	0	0	0	0	0	0	0	0
6	CS or RVC, CS fr H	4	0	0	0	0	0	0	0	0	0	0	0
7	CS or RVC or TECH, CS fr H		0	0	0	0	0	0	0	0	0	0	0
8	CS, CS fr C		0	0	0	0	0	6	0	0	3	7	0
9	CS + ECTC, CS fr C		0	0	0	0	0	1	0	0	0	3	0
10	CS or RVC, CS fr C		0	0	0	0	0	0	0	0	0	0	0
11	CS or RVC or TECH, CS fr C		0	0	0	0	0	0	0	0	0	0	0
12	CS + RVC, CS fr C		0	0	0	0	0	0	0	0	0	0	0
13	CS + RVC + ECTC, CS fr H., CS fr C		0	0	0	0	0	0	0	0	0	0	0
14	CH, CH fr H	5	0	8	0	0	0	0	0	0	0	0	0
15	CH + ECTC, CH fr H		0	5	3	0	22	0	0	0	0	0	0
16	CH or RVC, CH fr H		0	0	0	0	0	7	0	0	0	0	0
17	CH or RVC or TECH, CH fr H		0	0	0	0	0	0	0	0	0	0	0
18	CH + ECTC + TECH, CH fr H		0	29	0	0	0	0	0	0	0	0	0
19	CH + ECTC or RVC or TECH, CH fr H		0	0	0	0	0	0	0	0	0	0	0
20	CH, CH fr C		0	34	73	2	11	11	0	0	0	0	0
21	CH + ECTC, CH fr C		0	50	0	0	0	0	0	0	0	4	0
22	CH or RVC, CH fr C		0	0	0	0	0	1	0	0	0	0	0
23	CH + RVC, CH fr C		0	0	0	0	0	0	0	0	0	0	0
24	CH or RVC or TECH, CH fr C	6	0	0	0	0	0	0	0	0	0	0	0
25	CH + TECH or WO, CH fr H		0	6	0	0	0	0	0	0	0	0	0
26	CH + ECTC + TECH or WO, CH fr H		0	240	0	0	0	0	0	0	0	0	0
27	CH + ECTC + WO + TECH, CH fr H		0	65	0	0	0	0	0	0	0	0	0
28	CH + WO + TECH, CH fr C		0	463	0	0	0	0	0	0	0	0	0
29	CH + ECTC + TECH or WO, CH fr C		0	42	0	0	0	0	0	0	0	0	0
30	CH + ECTC + WO + TECH, CH fr C	7	0	25	0	0	0	0	0	0	0	0	0
31	WO		0	0	0	0	0	0	0	0	0	0	0
	Total		106	967	87	119	46	424	635	70	181	144	6

Source: Author's Construction based on the IJEPA Annex 2 document

Table 5-6. IJEPA ROO Restrictiveness Score by HS Section

No.	HS Section	Total	Score				
			3	4	5	6	7
.		30					
1	Live Animals	119	0	0	0	119	0
2	Vegetable Products	121	0	0	17	104	0
3	Animal or Vegetable Fats & Oils	21	0	2	7	12	0
4	Prepared Foodstuffs	180	1	6	83	90	0
5	Mineral Products	94	28	23	32	11	0
6	Chemical Products	312	114	104	84	5	5
7	Plastics & Rubber	206	8	57	87	54	0
8	Leather Products	89	0	0	0	89	0
9	Wood Products	160	2	0	144	14	0
10	Paper Products	106	106	0	0	0	0
11	Textiles	967	0	0	42	395	530
12	Footwear	87	11	0	3	73	0
13	Stone, Ceramics and Glass Products	119	117	0	0	2	0
14	Pearls & Precious Stones	46	13	0	22	11	0
15	Metal Products	424	398	0	14	12	0
16	Machinery & Electrical Equipment	631	631	0	0	0	0
17	Transport Equipment	70	70	0	0	0	0
18	Precision Machinery	181	178	0	3	0	0
19	Arms & Ammunition	0	0	0	0	0	0
20	Misc. Manufactured Articles	143	129	0	10	4	0
21	Works of Art and Antiques	6	6	0	0	0	0
	Total	4112	1812	192	548	995	535

Source: Author's Calculations based on the IJEPA Annex 2 document

Table 5-7. Coefficient of Variation by HS Section, April 2012 – March 2017

HS Section	Section Name	Number of Observations	Average Coefficient of Variation (b.2013)	Standard Deviation
1	Live Animals	478	0.891	1.018
2	Vegetable Products	525	1.085	1.106
3	Animal or Vegetable Fats & Oils	85	0.870	0.946
4	Prepared Foodstuffs	694	1.013	1.071
5	Mineral Products	359	0.985	1.117
6	Chemical Products	1301	1.056	1.136
7	Plastics & Rubber	968	0.952	1.139
8	Leather Products	375	1.203	1.241
9	Wood Products	705	0.855	0.999
10	Paper Products	445	0.944	1.087
11	Textiles	4212	1.128	1.160
12	Footwear	390	1.160	1.069
13	Stone, Ceramics & Glass Products	470	1.127	1.139
14	Pearls & Precious Stones	220	1.234	1.161
15	Metal Products	1729	1.026	1.252
16	Machinery & Electrical Equip.	2746	1.069	1.191
17	Transport Equipment	330	1.157	1.179
18	Precision Machinery	757	1.191	1.246
19	Arms & Ammunition	n/a	n/a	n/a
20	Misc. Manufactured Articles	637	1.106	1.112
21	Works of Art and Antiques	25	1.677	1.261
	Total	17451	1.068	1.158

Source: Author's Calculations

Table 5-8. List of Explanatory Variables and Expected Signs

Description	Expected Sign
Tariff Margin (= MFN Tariff – the IJEPA Tariff)	+
Yearly Average Import Value (in log)	+
Restrictiveness Index of ROO	-
Coefficient of Variation	+



Table 5-9. Descriptive Statistics, April 2012- March 2017

Sample	Variable	Obs	Mean	Std. Dev.	Min	Max
A. All	Utilization Rate of the IJEPA	20,085	0.207	0.386	0	1
	Tariff Margin	20,085	0.028	0.038	0	0.305
	MFN Tariff	20,085	0.038	0.058	0	0.525
	EPA Tariff	20,085	0.010	0.046	0	0.525
	ROO Score	20,085	4.570	1.552	3	7
	Total Import Value	20,085	661	11,600	0	600,000
	IJEPA Import Value	20,085	81	752	0	41,400
	Log of Avg. Yearly Import	4,894	7.709	2.510	0.166	15
	Yearly Coeff. of Variation	20,085	0.359	0.826	0	3.3
	Non-Tariff Measures Dummy	20,085	0.61	0.5	0	1
	Int. Var. of ROO and TMargin	20,085	0.17	0.25	0	1.7
B. Utilization Rate = 0	Utilization Rate of the IJEPA	15,191	0	0	0	0
	Tariff Margin	15,191	0.018	0.034	0	0.305
	MFN Tariff	15,191	0.031	0.060	0	0.525
	EPA Tariff	15,191	0.013	0.052	0	0.525
	ROO Score	15,191	4.225	1.470	3	7
	Total Import Value	15,191	754	13,300	0	600,000
	IJEPA Import Value	15,191	0	0	0	0
	Log of Avg. Yearly Import	0	0	0	0	0
	Yearly Coeff. of Variation	15,191	0	0	0	0
	Non-Tariff Measures Dummy	15,191	0.63	0.5	0	1
	Int. Var. of ROO and TMargin	15,191	0.1	0.2	0	1.7
C. Utilization Rate > 0, MFN Tariff > EPA Tariff > 0	Utilization Rate of the IJEPA	4,894	0.848	0.260	0.0002	1
	Tariff Margin	4,894	0.060	0.034	0	0.276
	MFN Tariff	4,894	0.063	0.041	0	0.3
	EPA Tariff	4,894	0.003	0.014	0	0.2
	ROO Score	4,894	5.641	1.288	3	7
	Total Import Value	4,894	370	1,534	14.2	41,700
	IJEPA Import Value	4,894	332	1,497	14.2	41,400
	Log of Avg. Yearly Import	4,894	7.709	2.511	2.651	15.054
	Yearly Coeff. of Variation	4,894	1.473	1.079	0.079	3.317
	Non-Tariff Measures Dummy	4,894	0.5	0.5	0	1
	Int. Var. of ROO and TMargin	4,894	0.4	0.24	0	1.7

Import Value are in billion JPY and adjusted using 2013 base price. Source: Author's Calculation  
Abbreviation: TMargin = Tariff Margin

Table 5-10. Descriptive Statistics with a Utilization Rate = 0, April 2012- March 2017

Sample	Variable	Obs	Mean	Std. Dev.	Min	Max
A. Utilization Rate = 0	Utilization Rate of the IJEPA	15,191	0	0	0	0
	Tariff Margin	15,191	0.018	0.034	0	0.305
	MFN Tariff	15,191	0.031	0.060	0	0.525
	EPA Tariff	15,191	0.013	0.052	0	0.525
	ROO Score	15,191	4.225	1.470	3	7
	Total Import Value	15,191	754	13,300	0	600,000
	IJEPA Import Value	15,191	0	0	0	0
	Log of Avg. Yearly Import	0	0	0	0	0
	Yearly Coeff. of Variation	15,191	0	0	0	0
	Non-Tariff Measures Dummy	15,191	0.63	0.5	0	1
	Int. Var. of ROO and TMargin	15,191	0.1	0.2	0	1.7
B. Utilization Rate = 0, MFN Tariff = EPA Tariff > 0	Utilization Rate of the IJEPA	813	0	0	0	0
	Tariff Margin	813	0	0	0	0
	MFN Tariff	813	0.158	0.121	0	0.5
	EPA Tariff	813	0.158	0.121	0	0.5
	ROO Score	813	5.752	0.449	4	6
	Total Import Value	813	376	1,583	0	28,300
	IJEPA Import Value	813	0	0	0	0
	Log of Avg. Yearly Import	0	0	0	0	0
	Yearly Coeff. of Variation	813	0	0	0	0
	Non-Tariff Measures Dummy	813	0.3	0.45	0	1
	Int. Var. of ROO and TMargin	813	0	0	0	0
C. Utilization Rate = 0, MFN Tariff > EPA Tariff > 0, but no import has been made using EPA tariffs	Utilization Rate of the IJEPA	5,043	0	0	0	0
	Tariff Margin	5,043	0.054	0.039	0	0.305
	MFN Tariff	5,043	0.067	0.053	0	0.5
	EPA Tariff	5,043	0.013	0.045	0	0.525
	ROO Score	5,043	5.381	1.389	3	7
	Total Import Value	5,043	84	866	0	17,800
	IJEPA Import Value	5,043	0	0	0	0
	Log of Avg. Yearly Import	0	0	0	0	0
	Yearly Coeff. of Variation	5,043	0	0	0	0
	Non-Tariff Measures Dummy	5,043	0.54	0.5	0	1
	Int. Var. of ROO and TMargin	5,043	0.31	0.26	0	1.7
D. Utilization Rate = 0, MFN Tariff = EPA Tariff = 0, and no import has been made using EPA tariff	Utilization Rate of the IJEPA	9335	0	0	0	0
	Tariff Margin	9335	0	0	0	0
	MFN Tariff	9335	0	0	0	0
	EPA Tariff	9335	0	0	0	0
	ROO Score	9335	3.468	0.980	3	7
	Total Import Value	9335	1,149	17,000	0	600,000
	IJEPA Import Value	9335	0	0	0	0
	Log of Avg. Yearly Import	0	0	0	0	0
	Yearly Coeff. of Variation	9335	0	0	0	0
	Non-Tariff Measures Dummy	9335	0.7	0.45	0	1
	Int. Var. of ROO and TMargin	9335	0	0	0	0

Import Value are in 000 billion JPY and adjusted using 2013 base price. Source: Author's Calculations  
Abbreviation: TMargin = Tariff Margin

Table 5-11. Descriptive Statistics with a Utilization Rate &gt; 0, April 2012- March 2017

Sample	Variable	Obs	Mean	Std. Dev.	Min	Max
A. Utilization Rate > 0, MFN Tariff > EPA Tariff > 0	Utilization Rate of the IJEPA	4,894	0.848	0.260	0.0002	1
	Tariff Margin	4,894	0.060	0.034	0	0.276
	MFN Tariff	4,894	0.063	0.041	0	0.300
	EPA Tariff	4,894	0.003	0.014	0	0.200
	ROO Score	4,894	5.641	1.288	3	7
	Total Import Value	4,894	370	1,534	14	41,700
	IJEPA Import Value	4,894	332	1,497	14	41,400
	Log of Avg. Yearly Import	4,894	7.710	2.511	0.166	15.054
	Yearly Coeff. of Variation	4,894	1.473	1.079	0.079	3.317
	Non-Tariff Measures Dummy	4,894	0.5	0.5	0	1
Int. Var. of ROO and TMargin	4,894	0.4	0.24	0	1.66	
B. Utilization Rate = 1, MFN Tariff > EPA Tariff > 0	Utilization Rate of the IJEPA	2,134	1	0	1	1
	Tariff Margin	2,134	0.056	0.032	0.010	0.276
	MFN Tariff	2,134	0.059	0.040	0.010	0.3
	EPA Tariff	2,134	0.003	0.015	0	0.2
	ROO Score	2,134	5.585	1.218	3	7
	Total Import Value	2,134	162	621	14	16,600
	IJEPA Import Value	2,134	162	621	14	16,600
	Log of Avg. Yearly Import	2,134	7.083	2.371	0.166	14.138
	Yearly Coeff. of Variation	2,134	1.740	1.134	0.089	3.317
	Non-Tariff Measures Dummy	2,134	0.54	0.5	0	1
Int. Var. of ROO and TMargin	2,134	0.3	0.22	0.051	1.66	
C. 0 < Utilization Rate < 1, MFN Tariff > EPA Tariff > 0	Utilization Rate of the IJEPA	2,753	0.731	0.296	0.001	1
	Tariff Margin	2,753	0.064	0.035	0.010	0.271
	MFN Tariff	2,753	0.066	0.041	0.010	0.3
	EPA Tariff	2,753	0.002	0.012	0	0.133
	ROO Score	2,753	5.689	1.337	3	7
	Total Import Value	2,753	531	1,955	97	41,700
	IJEPA Import Value	2,753	464	1,909	20	41,400
	Log of Avg. Yearly Import	2,753	8.201	2.504	0.507	15.054
	Yearly Coeff. of Variation	2,753	1.261	0.981	0.079	3.317
	Non-Tariff Measures Dummy	2,753	0.5	0.5	0	1
Int. Var. of ROO and TMargin	2,753	0.4	0.26	0.051	1.62	
D. 0 < Utilization Rate < 1, MFN Tariff = EPA Tariff = 0	Utilization Rate of the IJEPA	7	0.142	0.196	0.0002	0.497
	Tariff Margin	7	0	0	0	0
	MFN Tariff	7	0	0	0	0
	EPA Tariff	7	0	0	0	0
	ROO Score	7	4.143	1.464	3	6
	Total Import Value	7	584	895	3605	2,197
	IJEPA Import Value	7	109	288	366	754
	Log of Avg. Yearly Import	7	5.110	2.700	3.416	11.05
	Yearly Coeff. of Variation	7	3.253	0.169	2.869	3.317
	Non-Tariff Measures Dummy	7	0.6	0.5	0	1
Int. Var. of ROO and TMargin	7	0	0	0	0	

Import Value are in billion JPY and adjusted using 2013 base price. Source: Author's Calculations  
Abbreviation: TMargin = Tariff Margin

Table 5-12. Results of the Tobit Regression of the Association of FTA Use with Product-level factors (all observations), 2012-2017

VARIABLES	2012 – 2017			2012 - 2014			2014 - 2017		
	1	2	3	4	5	6	7	8	9
Tariff Margin	11.372*** (0.26)	11.451*** (0.26)	63.336*** (1.16)	10.572*** (0.31)	10.635*** (0.31)	60.788*** (1.45)	12.500*** (0.36)	12.597*** (0.36)	66.145*** (1.17)
ROO Restrictiveness Score	0.137*** (0.01)	0.127*** (0.01)	0.395*** (0.01)	0.147*** (0.01)	0.138*** (0.01)	0.399*** (0.01)	0.122*** (0.01)	0.111*** (0.01)	0.387*** (0.01)
Average Monthly Shipment Value (in log)	0.002 (0.01)	0.005 (0.01)	0.028*** (0.00)	-0.003 (0.01)	0 (0.01)	0.022*** (0.01)	0.008 (0.01)	0.011* (0.01)	0.036*** (0.01)
Coeff. of Var. of Monthly Shipment Value	-0.153*** (0.01)	-0.143*** (0.01)	-0.078*** (0.01)	-0.159*** (0.02)	-0.149*** (0.02)	-0.089*** (0.01)	-0.141*** (0.02)	-0.131*** (0.02)	-0.061*** (0.01)
Non-Tariff Measure Dummy (NTM=1)		-0.127*** (0.02)	0.009 (0.01)		-0.119*** (0.02)	0.012 (0.02)		-0.131*** (0.02)	0.008 (0.02)
Interaction Variable ROO and Tariff			-9.006*** (0.19)			-8.736*** (0.24)			-9.281*** (0.20)
Constant	-0.899*** -0.059	-0.818*** -0.06	-2.421*** -0.071	-0.862*** -0.073	-0.791*** -0.074	-2.340*** -0.088	-0.934*** -0.077	-0.849*** -0.078	-2.516*** -0.089
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	No	No	No	No	No	No	No	No	No
Observations	12,298	12,298	12,298	7,287	7,287	7,287	7,524	7,524	7,524

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-13. Results of the Tobit Regression of the Association of FTA Use with Product-level factors (for observations with tmarg > 0), 2012-2017

VARIABLES	2012 - 2017				2012 - 2014				2014 - 2017			
	1	2	3	4	5	6	7	8	9	10	11	12
Tariff Margin	-1.066*** (0.20)	-1.022*** (0.20)	12.939*** (1.31)	5.280*** (1.86)	-0.707*** (0.24)	-0.676*** (0.24)	12.764*** (1.61)	4.921** (2.25)	-1.632*** (0.29)	-1.578*** (0.29)	13.023*** (1.77)	4.815* (2.47)
ROO Restr. Score	0.033*** (0.01)	0.030*** (0.01)	0.138*** (0.01)	-0.024 (0.02)	0.029*** (0.01)	0.026*** (0.01)	0.132*** (0.01)	-0.031 (0.03)	0.039*** (0.01)	0.036*** (0.01)	0.145*** (0.02)	-0.02 (0.03)
Average Monthly Shipment Value (in log)	0.055*** (0.00)	0.057*** (0.00)	0.060*** (0.00)	0.062*** (0.00)	0.049*** (0.01)	0.051*** (0.01)	0.055*** (0.01)	0.057*** (0.01)	0.066*** (0.01)	0.068*** (0.01)	0.071*** (0.01)	0.072*** (0.01)
Coeff. of Var. of Monthly Shipment Value	-0.041*** (0.01)	-0.034*** (0.01)	-0.025*** (0.01)	-0.017* (0.01)	-0.046*** (0.01)	-0.039*** (0.01)	-0.030** (0.01)	-0.016 (0.01)	-0.023* (0.01)	-0.017 (0.01)	-0.007 (0.01)	-0.006 (0.01)
Non-Tariff Measure Dummy (NTM=1)		-0.076*** (0.01)	-0.059*** (0.01)	-0.105*** (0.02)		-0.071*** (0.02)	-0.056*** (0.02)	-0.094*** (0.02)		-0.072*** (0.02)	-0.056*** (0.02)	-0.109*** (0.03)
Interaction Variable ROO and Tariff			-2.294*** (0.21)	-0.871*** (0.31)			-2.229*** (0.26)	-0.836** (0.38)			-2.373*** (0.29)	-0.817** (0.41)
Constant	0.157*** (0.05)	0.179*** (0.05)	-0.482*** (0.08)	0.679*** (0.23)	0.228*** (0.06)	0.246*** (0.06)	-0.400*** (0.10)	0.780*** (0.29)	0.048 (0.06)	0.07 (0.06)	-0.611*** (0.10)	0.588** (0.29)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes
Observations	6,017	6,017	6,017	6,017	3,605	3,605	3,605	3,605	3,636	3,636	3,636	3,636

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-14. Results of the Linear and Poisson Regression of the Association of FTA Use with Product-level factors (for all observations, with industry dummy), 2012-2017

VARIABLES	2012 - 2017		2012 - 2014		2014 - 2017		2012 - 2017		2012 - 2014		2014 - 2017	
	OLS						POIS					
	1	2	3	4	5	6	7	8	9	10	11	12
Tariff Margin	24.833*** (0.73)	24.995*** (1.30)	24.258*** (0.99)	25.059*** (1.86)	25.361*** (1.05)	24.315*** (1.81)	64.839*** (1.49)	53.320*** (2.66)	60.392*** (1.85)	50.238*** (3.34)	63.933*** (1.86)	74.816*** (5.40)
ROO Restr. Score	0.110*** (0.00)	0.034*** (0.01)	0.117*** (0.01)	0.035*** (0.01)	0.102*** (0.00)	0.032*** (0.01)	0.627*** (0.02)	0.204*** (0.05)	0.615*** (0.02)	0.184*** (0.06)	0.606*** (0.02)	0.304*** (0.06)
Avg. Shipment (in ln)	0.012*** (0.00)	0.017*** (0.00)	0.010*** (0.00)	0.015*** (0.00)	0.015*** (0.00)	0.021*** (0.00)	0.033*** (0.01)	0.059*** (0.01)	0.025** (0.01)	0.051*** (0.01)	0.040*** (0.01)	0.074*** (0.01)
Coeff. of Variation	-0.025*** (0.00)	-0.015*** (0.00)	-0.030*** (0.01)	-0.018*** (0.01)	-0.018*** (0.01)	-0.008 (0.01)	-0.120*** (0.03)	-0.044* (0.03)	-0.139*** (0.03)	-0.051 (0.03)	-0.114*** (0.03)	-0.021 (0.04)
NTM Dummy	-0.006 (0.01)	-0.036*** (0.01)	-0.005 (0.01)	-0.034** (0.02)	-0.004 (0.01)	-0.036** (0.02)	-0.019 (0.03)	-0.103* (0.06)	-0.016 (0.04)	-0.083 (0.07)	-0.048 (0.04)	-0.139* (0.07)
Interaction Variable	-3.291*** (0.11)	-3.503*** (0.22)	-3.254*** (0.15)	-3.546*** (0.31)	-3.309*** (0.16)	-3.353*** (0.30)	-9.767*** (0.27)	-7.484*** (0.49)	-9.144*** (0.33)	-7.102*** (0.61)	-9.478*** (0.34)	-10.759*** (0.92)
Constant	-0.379*** (0.02)	-0.265*** (0.05)	-0.370*** (0.03)	-0.255*** (0.06)	-0.389*** (0.03)	-0.278*** (0.06)	-4.690*** (0.15)	-20.383 (2433.97)	-4.512*** (0.18)	-22.076 (8380.19)	-4.664*** (0.19)	-21.836 (4364.42)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	All Observations											
Observations Num.	12,298	12,298	7,287	7,287	7,524	7,524	12,298	12,298	7,287	7,287	7,524	7,524
R-squared	0.472	0.591	0.471	0.595	0.472	0.588						

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-15. Results of the Linear and Poisson Regression of the Association of FTA Use with Product-level factors (for observations with  $tmargin > 0$ ), 2012-2017

VARIABLES	2012 - 2017		2012 - 2014		2014 - 2017		2012 - 2017		2012 - 2014		2014 - 2017	
			OLS						POIS			
	1	2	3	4	5	6	7	8	9	10	11	12
Tariff Margin	11.750*** (1.07)	4.832*** (1.52)	11.619*** (1.43)	4.406** (1.99)	11.671*** (1.32)	4.588** (1.85)	17.085*** (3.38)	7.054 (5.32)	17.438*** (4.56)	6.92 (7.17)	16.493*** (4.08)	6.532 (6.54)
ROO Restr. Score	0.118*** (0.01)	-0.01 (0.02)	0.122*** (0.01)	-0.006 (0.02)	0.115*** (0.01)	-0.017 (0.02)	0.176*** (0.03)	-0.019 (0.06)	0.186*** (0.04)	-0.012 (0.08)	0.166*** (0.04)	-0.029 (0.08)
Avg. Shipment (in ln)	0.050*** (0.00)	0.053*** (0.00)	0.059*** (0.00)	0.061*** (0.00)	0.045*** (0.00)	0.049*** (0.00)	0.070*** (0.01)	0.078*** (0.01)	0.084*** (0.01)	0.091*** (0.01)	0.063*** (0.01)	0.072*** (0.01)
Coeff. of Variation	-0.008 (0.01)	-0.001 (0.01)	0.008 (0.01)	0.009 (0.01)	-0.013 (0.01)	-0.002 (0.01)	-0.019 (0.03)	-0.002 (0.03)	0.003 (0.03)	0.013 (0.04)	-0.027 (0.03)	-0.003 (0.03)
NTM Dummy	-0.052*** (0.01)	-0.093*** (0.02)	-0.047*** (0.01)	-0.095*** (0.02)	-0.049*** (0.01)	-0.084*** (0.02)	-0.071** (0.03)	-0.143** (0.06)	-0.066 (0.04)	-0.149** (0.08)	-0.067 (0.04)	-0.128* (0.07)
Interaction Variable	-2.086*** (0.17)	-0.796*** (0.25)	-2.118*** (0.23)	-0.744** (0.33)	-2.042*** (0.22)	-0.774** (0.31)	-3.040*** (0.55)	-1.143 (0.89)	-3.181*** (0.74)	-1.139 (1.19)	-2.894*** (0.68)	-1.088 (1.09)
Constant	-0.280*** (0.06)	0.648*** (0.19)	-0.375*** (0.08)	0.563** (0.24)	-0.214*** (0.08)	0.741*** (0.24)	-1.799*** (0.21)	-0.495 (0.59)	-1.971*** (0.27)	-0.635 (0.76)	-1.679*** (0.26)	-0.361 (0.75)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Observations	Observations with Tariff Margin > 0											
Observations Num.	6,017	6,017	3,636	3,636	3,605	3,605	6,017	6,017	3,636	3,636	3,605	3,605
R-squared	0.151	0.285	0.161	0.297	0.139	0.286						

Robust standard errors in parentheses \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Table 5-16. Results of the Fixed Effect Regression of the Association of FTA Use with Product-level factors (for all observations), 2012-2017

VARIABLES	2012-2017	2012-2014	2014-2017	2012-2017	2012-2014	2014-2017	2012-2017	2012-2014	2014-2017
	XTREG			XTPOIS			XTTOB		
	1	2	3	4	5	6	7	8	9
Tariff Margin	-5.202 (11.47)	6.46 (13.02)	-29.261 (19.63)	-9.075 (18.61)	36.582 (46.98)	-38.466* (21.60)	20.713*** (0.74)	22.628*** (0.80)	21.358*** (0.81)
ROO Restr. Score							0.111*** (0.01)	0.104*** (0.01)	0.114*** (0.01)
Avg Shipment (in ln)	0.026*** (0.00)	0.029*** (0.00)	0.019*** (0.00)	0.115*** (0.01)	0.128*** (0.02)	0.083*** (0.02)	0.024*** (0.00)	0.027*** (0.00)	0.018*** (0.00)
Coeff. of Variation	0.013** (0.01)	0.019** (0.01)	0.006 (0.01)	0.066*** (0.02)	0.086*** (0.03)	0.035 (0.02)	0.006* (0.00)	0.010** (0.00)	-0.004 (0.00)
Interaction Variable	1.174 (1.96)	-0.721 (2.20)	5.234 (3.41)	1.713 (3.16)	-5.833 (7.88)	6.614* (3.75)	-2.754*** (0.12)	-2.962*** (0.13)	-2.853*** (0.14)
Constant	0.066* (0.04)	0.018 (0.05)	0.132** (0.06)				-0.507*** (0.03)	-0.510*** (0.03)	-0.460*** (0.03)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	All Observations								
Number of Observations	12,298	7,524	7,287	5,191	2,933	2,964	12,298	7,524	7,287
R-squared	0.035	0.034	0.024						
Number of HS code	3,515	3,189	3,069	1,203	1,038	1,045	3,515	3,189	3,069

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1



Table 5-17. Results of the Fixed Effect Regression of the Association of FTA Use with Product-level factors (for all observations), 2012-2017

VARIABLES	2012-2017	2012-2014	2014-2017	2012-2017	2012-2014	2014-2017	2012-2017	2012-2014	2014-2017
	XTREG			XTPOIS			XTTOB		
	1	2	3	4	5	6	7	8	9
Tariff Margin	-6.886 (15.37)	28.939 (36.61)	-28.701 (17.57)	-9.021 (18.61)	36.631 (46.94)	-38.411* (21.56)	11.341*** (1.74)	11.488*** (1.99)	10.771*** (1.85)
ROO Restr. Score							0.124*** (0.02)	0.130*** (0.02)	0.117*** (0.02)
Avg. Shipment (in ln)	0.064*** (0.01)	0.072*** (0.01)	0.045*** (0.01)	0.115*** (0.01)	0.128*** (0.02)	0.083*** (0.02)	0.063*** (0.00)	0.069*** (0.00)	0.050*** (0.00)
Coeff. of Variation	0.036*** (0.01)	0.050*** (0.02)	0.019 (0.01)	0.066*** (0.02)	0.087*** (0.03)	0.035 (0.02)	0.023*** (0.01)	0.033*** (0.01)	0.003 (0.01)
Interaction Variable	1.355 (2.60)	-4.57 (6.13)	5.012 (3.06)	1.705 (3.16)	-5.838 (7.87)	6.605* (3.75)	-1.989*** (0.29)	-2.096*** (0.32)	-1.907*** (0.31)
Constant	0.07 (0.07)	-0.041 (0.11)	0.254** (0.12)				-0.508*** (0.09)	-0.568*** (0.10)	-0.326*** (0.10)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	Observations with Tariff Margin > 0								
Number of Observations	6,017	3,636	3,605	5,158	2,916	2,959	6,017	3,636	3,605
R-squared	0.082	0.082	0.052						
Number of hscore	1,697	1,535	1,492	1,196	1,032	1,043	1,697	1,535	1,492

Robust standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-18. Results of the Double-Hurdle Regression of the Association of FTA Use with Product-level factors (all observations), 2012-2017

Double Hurdle Model Tier 1												
VARIABLES	2012 - 2017			2012 - 2014				2014 - 2017				
	1	2-4	5	6-8	9	10-12						
Tariff Margin	12.739*** (0.33)	25.222*** (0.48)	12.792*** (0.44)	25.734*** (0.74)	12.619*** (0.42)	24.461*** (0.64)						
ROO Restr. Score	0.177*** (0.01)	0.158*** (0.01)	0.177*** (0.01)	0.148*** (0.02)	0.175*** (0.01)	0.166*** (0.02)						
NTM Dummy (NTM=1)	-0.096*** (0.02)	-0.172*** (0.03)	-0.094*** (0.03)	-0.178*** (0.04)	-0.095*** (0.03)	-0.162*** (0.04)						
Constant	-1.968*** (0.04)	-1.686*** (0.06)	-1.966*** (0.06)	-1.666*** (0.07)	-1.950*** (0.06)	-1.697*** (0.07)						

Double Hurdle Model Tier 2												
VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12
Tariff Margin	-0.835*** (0.13)	-0.954*** (0.13)	-0.935*** (0.13)	12.787*** (0.81)	-1.108*** (0.18)	-1.265*** (0.18)	-1.241*** (0.18)	13.133*** (1.11)	-0.609*** (0.15)	-0.716*** (0.15)	-0.703*** (0.15)	12.640*** (0.99)
ROO Restr. Score	-0.013*** (0.00)	-0.017*** (0.00)	-0.018*** (0.00)	0.088*** (0.01)	-0.010** (0.00)	-0.014*** (0.00)	-0.015*** (0.00)	0.092*** (0.01)	-0.013*** (0.00)	-0.016*** (0.00)	-0.017*** (0.00)	0.089*** (0.01)
Avg. Shipment (in ln)		0.020*** (0.00)	0.022*** (0.00)	0.025*** (0.00)		0.025*** (0.00)	0.027*** (0.00)	0.030*** (0.00)		0.015*** (0.00)	0.017*** (0.00)	0.021*** (0.00)
Coeff. of Variation		0.059*** (0.01)	0.063*** (0.01)	0.073*** (0.01)		0.070*** (0.01)	0.074*** (0.01)	0.084*** (0.01)		0.050*** (0.01)	0.055*** (0.01)	0.065*** (0.01)
NTM (NTM=1)	-0.036*** (0.01)		-0.047*** (0.01)	-0.028*** (0.01)	-0.028*** (0.01)		-0.040*** (0.01)	-0.021** (0.01)	-0.036*** (0.01)		-0.046*** (0.01)	-0.028*** (0.01)
Interaction Variable				-2.254*** (0.13)				-2.329*** (0.18)				-2.210*** (0.16)
Constant	0.990*** (0.02)	0.765*** (0.03)	0.773*** (0.03)	0.109** (0.05)	0.976*** (0.02)	0.702*** (0.04)	0.709*** (0.04)	0.03 (0.06)	0.983*** (0.02)	0.803*** (0.04)	0.809*** (0.04)	0.153*** (0.06)
Observations	20,085	12,298	12,298	12,298	12,051	7,524	7,524	7,524	12,051	7,287	7,287	7,287

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-19. Results of the Double-Hurdle Regression of the Association of FTA Use with Product-level factors (for observations with tmarg > 0), 2012-2017

Double Hurdle Model Tier 1												
VARIABLES	2012 – 2017			2012 - 2014			2014 – 2017					
	1	2-4	5	6-8	9	10-12						
Tariff Margin	-0.522 (0.41)	-1.007 (0.61)	-1.378** (0.56)	-1.770** (0.85)	-0.081 (0.50)	-0.664 (0.75)						
ROO Restr. Score	0.095*** (0.01)	0.140*** (0.02)	0.105*** (0.01)	0.147*** (0.02)	0.083*** (0.01)	0.132*** (0.02)						
NTM Dummy (NTM=1)	-0.034 (0.03)	-0.107*** (0.04)	-0.027 (0.03)	-0.110** (0.05)	-0.037 (0.03)	-0.098** (0.05)						
Constant	-0.452*** (0.06)	0.239*** (0.08)	-0.467*** (0.07)	0.214** (0.10)	-0.398*** (0.07)	0.283*** (0.10)						

Double Hurdle Model Tier 2												
VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12
Tariff Margin	-0.888*** (0.13)	-1.006*** (0.13)	-0.987*** (0.13)	12.209*** (0.81)	-1.209*** (0.18)	-1.360*** (0.18)	-1.335*** (0.18)	12.156*** (1.12)	-0.625*** (0.15)	-0.734*** (0.15)	-0.721*** (0.15)	12.549*** (1.00)
ROO Restr. Score	-0.013*** (0.00)	-0.017*** (0.00)	-0.018*** (0.00)	0.084*** (0.01)	-0.010** (0.00)	-0.014*** (0.00)	-0.015*** (0.00)	0.085*** (0.01)	-0.013*** (0.00)	-0.016*** (0.00)	-0.017*** (0.00)	0.088*** (0.01)
Avg. Shipment (in ln)		0.020*** (0.00)	0.022*** (0.00)	0.025*** (0.00)		0.025*** (0.00)	0.027*** (0.00)	0.030*** (0.00)		0.015*** (0.00)	0.017*** (0.00)	0.021*** (0.00)
Coeff. of Variation		0.059*** (0.01)	0.064*** (0.01)	0.072*** (0.01)		0.069*** (0.01)	0.073*** (0.01)	0.082*** (0.01)		0.051*** (0.01)	0.056*** (0.01)	0.066*** (0.01)
NTM (NTM=1)	-0.036*** (0.01)		-0.047*** (0.01)	-0.028*** (0.01)	-0.027*** (0.01)		-0.039*** (0.01)	-0.021** (0.01)	-0.036*** (0.01)		-0.046*** (0.01)	-0.028*** (0.01)
Interaction Variable				-2.166*** (0.13)				-2.184*** (0.18)				-2.197*** (0.16)
Constant	0.997*** (0.02)	0.770*** (0.03)	0.778*** (0.03)	0.139*** (0.05)	0.985*** (0.02)	0.713*** (0.04)	0.719*** (0.04)	0.081 (0.06)	0.984*** (0.02)	0.802*** (0.04)	0.808*** (0.04)	0.157*** (0.06)
Observations	9,582	6,017	6,017	6,017	5,756	3,636	3,636	3,636	5,741	3,605	3,605	3,605

Standard errors in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5-20. IJEPA and ACFTA COO Applications, 2012-2016

Year	the IJEPA COO Application		ACFTA COO Application	
	Number of COO Application	FOB Value (in million USD)	Number of COO Application	FOB Value (in million USD)
2012	63,273	9,515,	46,646	15,412
2013	68,012	10,954	57,164	22,808
2014	71,194	9,921	68,680	15,562
2015	71,672	8,386	72,387	13,206
2016	77,664	7,596	78,165	15,385

Source: Ministry of Trade of the Republic of Indonesia, Directorate of Trade Export and Import Facilitation.  
Received on 7 March 2017

Table 5-21. Firm Sampling Status

Call Status	Unreachable	Bankrupt	Refused	Out of Area	No Response	Wrong Number	Successful
%	55.7%	0.20%	16.1%	1.50%	13.8%	2.0%	10.70%
937	522	2	151	14	129	19	100

Source: Author's calculation based on Survey Reports.

Table 5-22. IJEPA and ACFTA Firm Population and Samples

	IJEPA Users	ACFTA Users	IJEPA-ACFTA Users	Total
Population from MoT	521	671		1192
Population (divided)	328	477	193	1191*
Sample	39	39	16	94
%	12%	8%	9%	8%

Source: Author's Calculations based on survey reports.

Table 5-23. Statistical Description of the 73 Sampled Firms

	Number of Firms	Year of Establishment				Source of Capital			
		< 1990	1990 - 1997	1998 - 2008	2008 - 2017	Local	FDI Japanese	FDI Others	
IJEPA	36	9	6	11	10	13	18	5	
IJEPA-ACFTA	22	3	9	4	6	8	10	4	
ACFTA	15	6	5	2	2	6	7	2	

	Number of Firms	By Employment				By Yearly Sales*			
		Micro	Small	Medium	Large	Micro	Small	Medium	Large
IJEPA	36	1	4	8	23	2	4	14	15
IJEPA-ACFTA	22	1	0	2	19	1	1	5	15
ACFTA	15	0	1	1	13	0	1	2	12

	Number of Firms	By Asset*				Location	
		Micro	Small	Medium	Large	Bonded	Non Bonded
IJEPA	36	1	5	8	21	9	27
IJEPA-ACFTA	22	1	1	4	16	10	12
ACFTA	15	1	0	3	11	7	8

Source: Author's Calculation Based on e-ska Database and survey reports.

Firms' registration in the e-ska database is used to classify them as IJEPA, IJEPA-ACFTA or ACFTA users.

Note: \*One firm refused to provide information on yearly sales and asset value

Table 5-24. Sampled Firms by HS Section

	IJEPA	IJEPA- ACFTA	ACFTA	TOTAL
SERVICES	4	2	2	6
LIVE ANIMALS; ANIMAL PRODUCTS	3	0	1	4
VEGETABLE PRODUCTS	1	0	1	2
ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PREPARED EDIBLE FATS; ANIMAL OR VEGETABLE WAXES	1	1	0	1
PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES	3	2	5	8
MINERAL PRODUCTS	0	0	1	1
PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES	7	2	1	8
PLASTICS AND ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF	4	1	3	7
RAW HIDES AND SKINS, LEATHER, FURSKINS AND ARTICLES THEREOF; ADDLERY AND HARNESS; TRAVEL GOODS, HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT (OTHER THAN SILK-WORM GUT)	4	1	0	4
WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK	2	0	3	5
PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; RECOVERED (WASTE AND SCRAP) PAPER OR PAPERBOARD; PAPER AND PAPERBOARD AND ARTICLES THEREOF	1	0	0	1
TEXTILES AND TEXTILE ARTICLES	14	5	8	22
FOOTWEAR, HEADGEAR, UMBRELLAS, SUN UMBRELLAS, WALKING-STICKS, SEAT-STICKS, WHIPS, RIDING-CROPS AND PARTS THEREOF; PREPARED FEATHERS AND ARTICLES MADE THEREWITH; ARTIFICIAL FLOWERS; ARTICLES OF HUMAN HAIR	1	0	0	1
ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; CERAMIC PRODUCTS; GLASS AND GLASSWARE	1	1	0	1
BASE METALS AND ARTICLES OF BASE METAL	2	0	4	6
MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES	0	0	4	4
VEHICLES, AIRCRAFT, VESSELS AND ASSOCIATED TRANSPORT EQUIPMENT	4	0	4	8
OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES; MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF	0	0	2	2
MISCELLANEOUS MANUFACTURED ARTICLES	3	1	0	3
	55	16	39	94

Source: Author's Calculations Based on Survey Reports



Table 5-25. Descriptive Statistics of Firms and Managers

	Mean	IJEPA Users	Non IJEPA Users	t-stats
Number of Observations	73	51	22	
<b><u>Firm Characteristics</u></b>				
Age (Years)	19.466 (12.01)	20.098 (12.86)	18 (9.86)	-0.68
Export Experience to Japan (Years)	13.055 (11.82)	13.216 (12.16)	12.682 (11.26)	-0.18
Source of Capital (FDI = 1)	0.63 (0.49)	0.627 (0.49)	0.636 (0.49)	0.07
Number of Export Destination	3.986 (1.22)	3.863 (1.30)	4.273 (0.99)	1.33
Export Percentage to Japan (in %)	35.025 (35.35)	43.975 (37.02)	14.276 (19.39)	-3.55
Number of Employees	83.616 (30.64)	80.431 (32.58)	91 (24.71)	1.36
Log of Number of Employees	4.236 (0.85)	4.18 (0.86)	4.364 (0.85)	0.84
Yearly Sales Value (in Million Indonesian Rupiah)	35,700 (18200)	34,000 (18700)	39,500 (16800)	1.19
Asset Value (in Million Indonesian Rupiah)	7,570 (3640)	7,320 (3780)	8,150 (3310)	0.89
MFN Tariff of Firm's Products (%)	0.038 (0.04)	0.038 (0.03)	0.039 (0.05)	0.13
FTA Tariff of Firm's Products (%)	0.003 (0.01)	0.002 (0.01)	0.005 (0.02)	0.64
Tariff Margin (%)	0.035 (0.03)	0.036 (0.03)	0.034 (0.04)	-0.14
Tariff Paid by Firms (%)	0.013 (0.03)	0.002 (0.01)	0.039 (0.05)	5.42
Rules of Origin Restrictiveness Score	4.8 (1.39)	4.9 (1.35)	4.6 (1.50)	-0.73
<b><u>Manager characteristics</u></b>				
Age (Years)	38.233 (8.14)	38.314 (8.53)	38.045 (7.35)	-0.13
Schooling (Years)	14.849 (1.49)	14.98 (1.46)	14.545 (1.54)	-1.15
Export Experience to Japan (Years)	10.658	10.98	9.909	

	(8.41)	(8.89)	(7.33)	-0.5
Work Experience in Export and Import (Years)	10.24	10.794	8.955	
	(6.82)	(7.38)	(5.24)	-1.06
Heard of the IJEPA (=1)	0.959	0.98	0.909	
	(0.20)	(0.14)	(0.29)	-1.4
Knows of other FTA (=1)	0.89	0.843	1	
	(0.32)	(0.37)	0	2
Manager's Attendance in the IJEPA Training or Outreach (Attendance = 1)	0.55	0.57	0.5	
	(0.50)	(0.50)	(0.51)	-0.53

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Number in parenthesis are standard deviations.

T-statistics are used to test means of firms that use and those that do not use the IJEPA

Source: Author's calculations based on Survey reports. Firms that declare their use of the IJEPA are noted as IJEPA users.

Table 5-26. Descriptive Statistics of Locations

Location	Using IJEPA	Not Using IJEPA	Total Firms	Percentage
Location 1 (Northern Jakarta)	5	0	5	6.85
Location 2 (Central Jakarta)	7	1	8	10.96
Location 3 (South Jakarta)	3	0	3	4.11
Location 4 (East Jakarta)	3	3	6	8.22
Location 5 (West Jakarta)	2	1	3	4.11
Location 6 (Bogor)	5	5	10	13.7
Location 7 (Bekasi)	7	9	16	21.92
Location 8 (Depok)	-	-	0	0
Location 9 (Tangerang)	10	1	11	15.07
Location 10* (Karawang)	9	2	11	15.07
<b>Total</b>	<b>51</b>	<b>22</b>	<b>73</b>	<b>100</b>

Source: Author's Calculations based on survey reports.

Table 5-27. List of Explanatory Variables and Expected Signs

Description	Expected Sign
The number of years the firm has been in operation	+
The percentage of Japanese export value as a share to the Firm's total export	+
The firm's source of capital, Dummy variable (1=FDI firm, 0=non-FDI firm)	+
The Average Tariff Difference between MFN and the IJEPA	+
The Average ROO Restrictiveness Score	-
Log of the total Number of Employees	+
Log Square of the total Number of Employees	n/a
Manager's Age (in Years)	+
Manager's Education (in Years)	+
Manager's Work Experience in Export and Import	+
Manager's Attendance in Training/Outreach activities	+
Manager's Knowledge of Other FTA	+
Dummy Variable for Location	n/a

Source: Author's Calculations based on Survey reports.

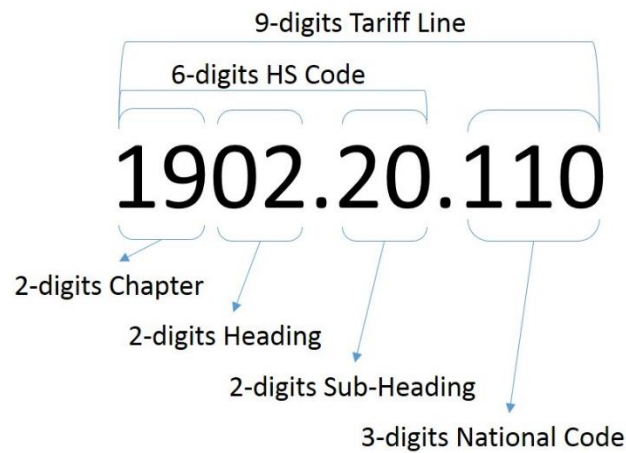
Table 5-28. Results of the Linear, Probit, and Logit Regression of the Association of FTA Use with Firm and Manager Characteristics, 2016

VARIABLES	(1) OLS	(2) Logit	(3) Probit	(4) OLS	(5) Logit	(6) Probit
Firm's Age	0.0080* (0.00)	0.0236 (0.02)	0.0386 (0.03)	0.0093 (0.01)	0.0954*** (0.04)	0.1800* (0.09)
Firm's Yearly Sales Value (in log)	-0.0539* (0.03)	-0.2061 (0.15)	-0.3277 (0.26)	-0.0372 (0.03)	0.1207 (0.35)	0.0308 (0.85)
Firms' Number of Employees (in log)	-0.1398* (0.07)	-0.5275 (0.37)	-0.8978 (0.67)	-0.2420** (0.09)	-2.4555*** (0.74)	-4.1877*** (1.55)
Firms' Capital (FDI=1)	0.061 (0.11)	0.1384 (0.48)	0.2851 (0.86)	0.2171** (0.11)	2.5015*** (0.81)	4.2030*** (1.53)
Firms' Export Portion to Japan	0.0051*** (0.00)	0.0292*** (0.01)	0.0495*** (0.01)	0.0043*** (0.00)	0.0546*** (0.02)	0.1013** (0.04)
Firms' Tariff Margin	1.9429 (2.09)	6.7857 (7.64)	11.2183 (13.32)	2.4941 (1.87)	7.9017 (11.29)	15.7738 (23.79)
Firms ROO Index	-0.0391 (0.05)	-0.0553 (0.15)	-0.0921 (0.26)	-0.1136** (0.04)	-0.7193*** (0.25)	-1.3178** (0.58)
Manager's Age	-0.0181** (0.01)	-0.0802*** (0.03)	-0.1298** (0.05)	-0.0124 (0.01)	-0.1264*** (0.05)	-0.2392** (0.12)
Manager's Education (in years)	0.041 (0.03)	0.1776 (0.12)	0.2972 (0.21)	0 (0.03)	-0.2524 (0.17)	-0.4556 (0.34)
Manager's Work Experience in Trade (in years)	0.0152* (0.01)	0.0797** (0.04)	0.1310** (0.07)	0.0212** (0.01)	0.2026*** (0.05)	0.3558*** (0.11)
Manager's Knowledge of Other FTAs	-0.4100*** (0.11)			-0.3403*** (0.13)		
Manager's Participation in FTA Outreach (Participate = 1)	0.1166 (0.13)	0.5128 (0.43)	0.7963 (0.74)	0.1463 (0.13)	1.0384 (0.89)	2.197 (2.07)
Constant	2.5518** -0.9692	5.8333* -3.514	9.2784 -6.0874	3.7070*** -0.9534	13.6095** -6.8823	28.5351 -21.1834
Observations	73	73	73	73	65	65
R-squared	0.3227			0.5115		

Robust Standard Errors in parenthesis. \*\*\*, \*\*, and \* show 1%, 5%, and 10% significance respectively.

Source: Author's Calculations Based on Survey Data

## Figures



Chapter 19: Preparations of cereals, flour, starch or milk; pastrycooks' products.

Heading 1902: Pasta, whether or not cooked or stuffed (with meat or other substances) or otherwise prepared, such as spaghetti, macaroni, noodles, lasagne, gnocchi, ravioli, cannelloni; couscous, whether or not prepared

HS Code 1902.20: Stuffed pasta, whether or not cooked or otherwise prepared

Tariff Line 1902.20.110: Stuffed pasta, whether or not cooked or otherwise prepared, containing Added Sugar and containing more than 20% by weight of sausage, meat, meat offal, blood, fish or crustaceans, molluscs or other aquatic invertebrates, or any combination thereof, and also containing ebi predominating by weight over each of such other products

Figure 2-1 Tariff Code Example  
Source: Author's Illustration

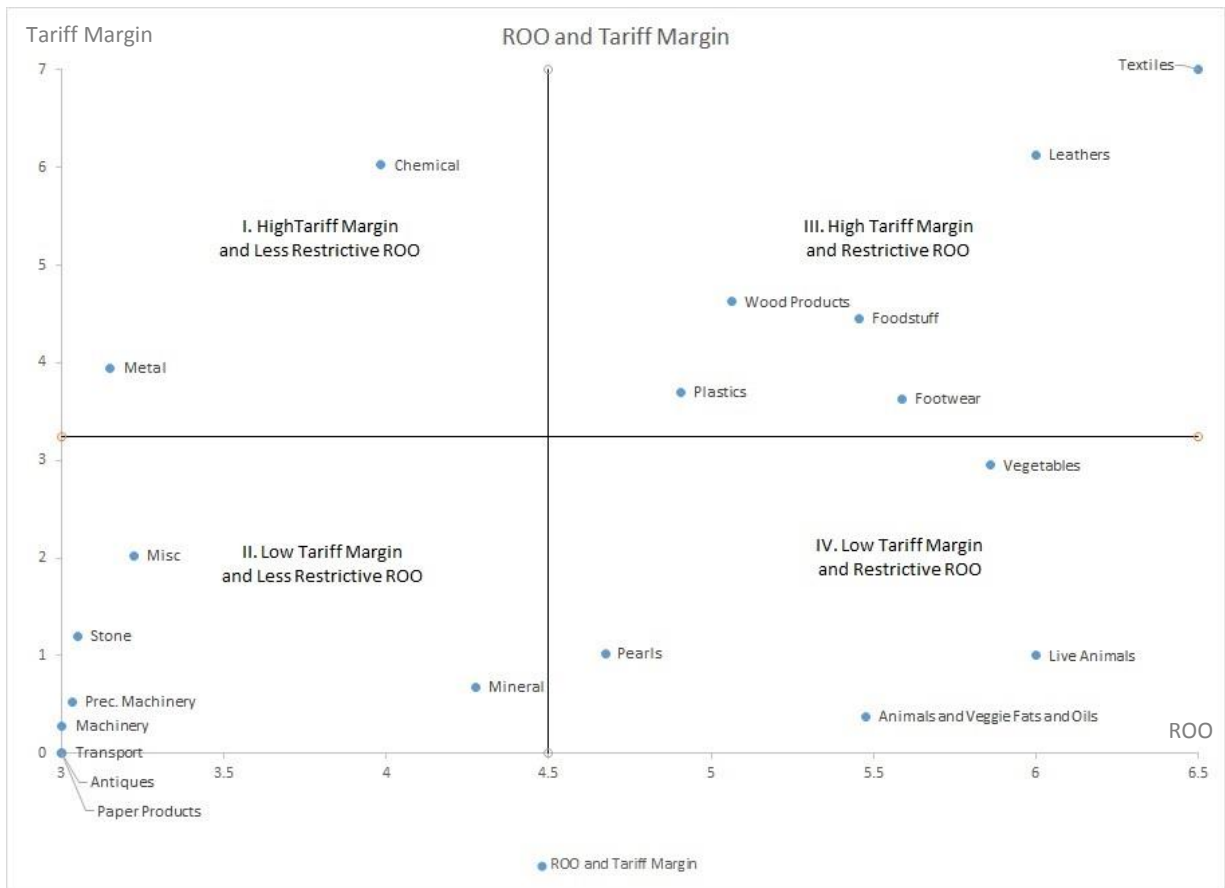


Figure 3-1 ROO and Tariff Margin Quadrant by HS Section  
 Source: Author's Illustration

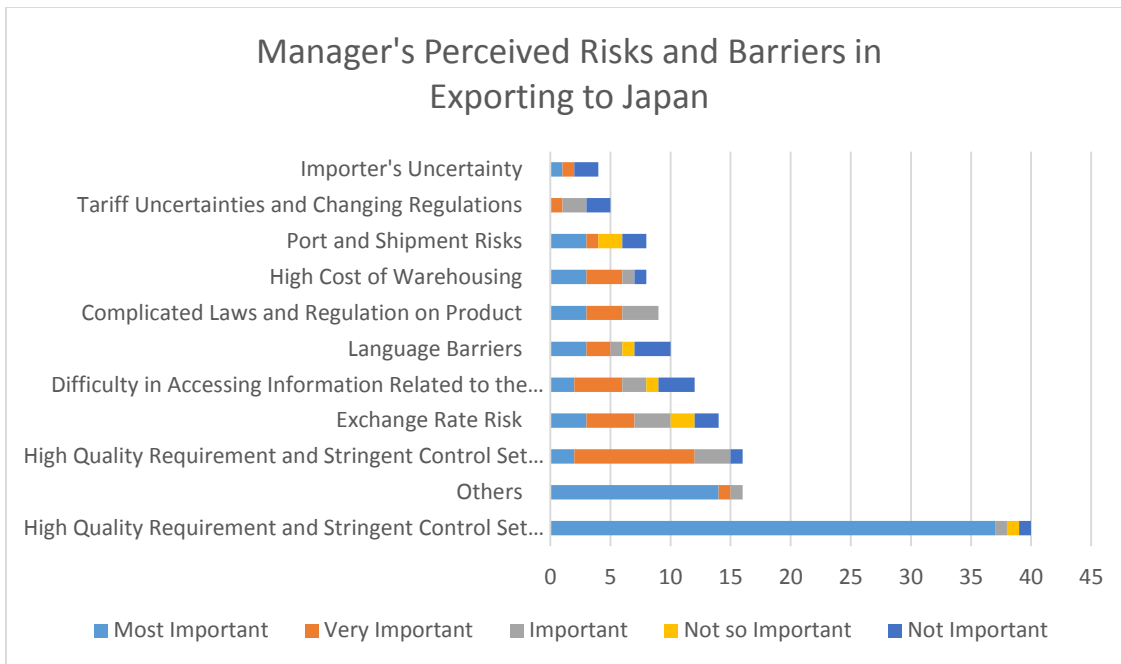


Figure 4-1 Manager's Perceived Risk and Barriers in Exporting to Japan.  
 Source: Author's Calculations Based on Survey Report. N=73. Multiple Answers Allowed.

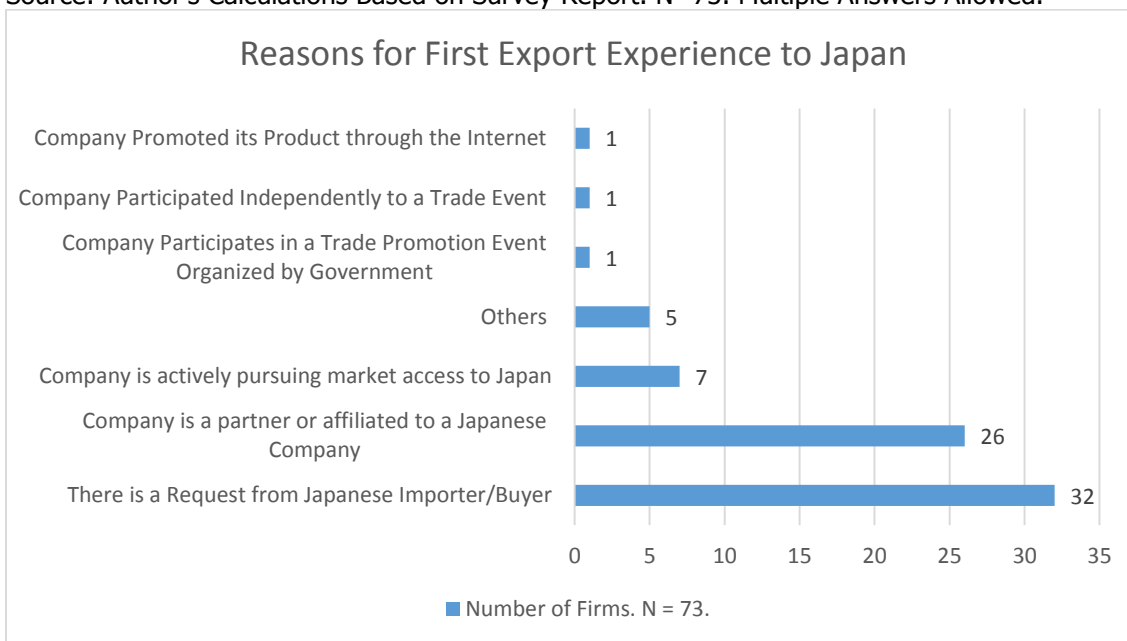


Figure 4-2 Reasons for First Export Experience to Japan.  
 Source: Author's Calculations Based on Survey Reports



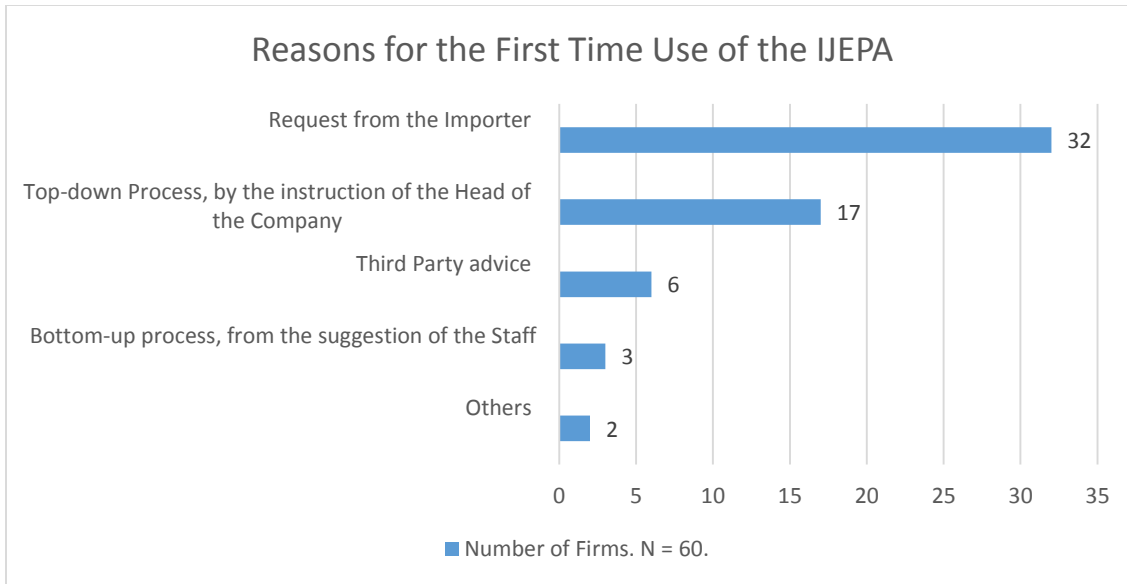


Figure 4-3 Reason for the First Time Use of the IJEPA.  
Source: Author's Calculations Based on Survey Reports.

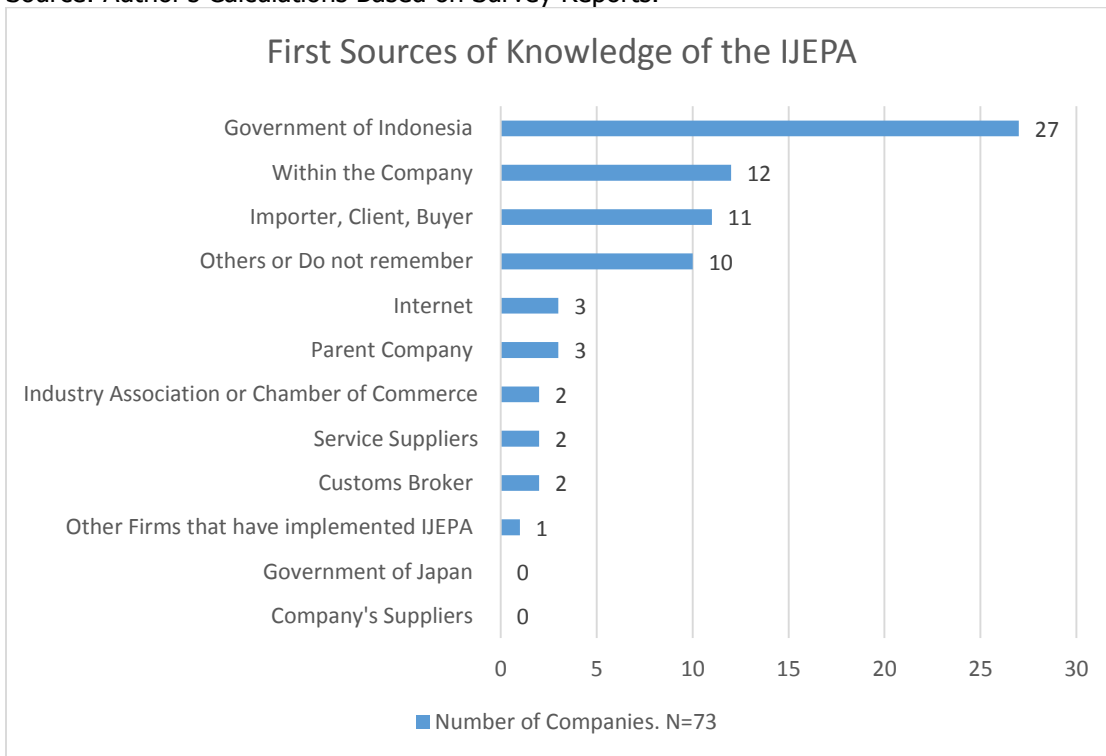


Figure 4-4 First Sources of Knowledge of the IJEPA.  
Source: Author's Calculations Based on Survey's Report.

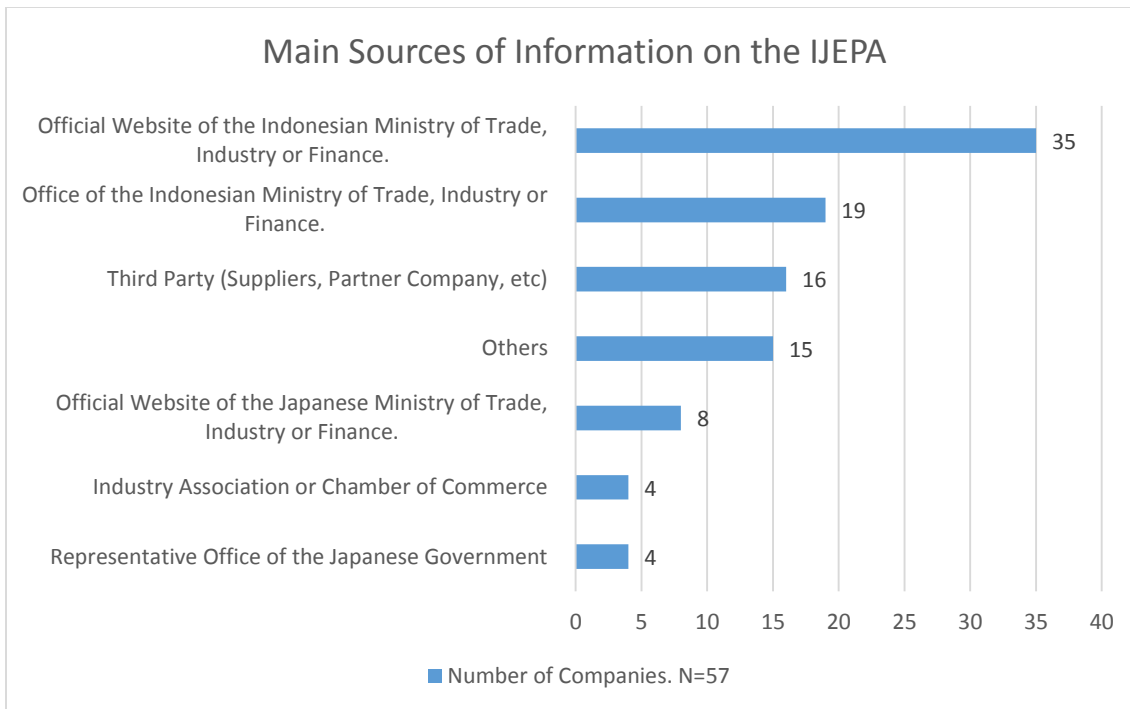


Figure 4-5 Main Sources of Information on the IJEPA  
 Source: Author's Calculations Based on Survey Report. Multiple answers are allowed.

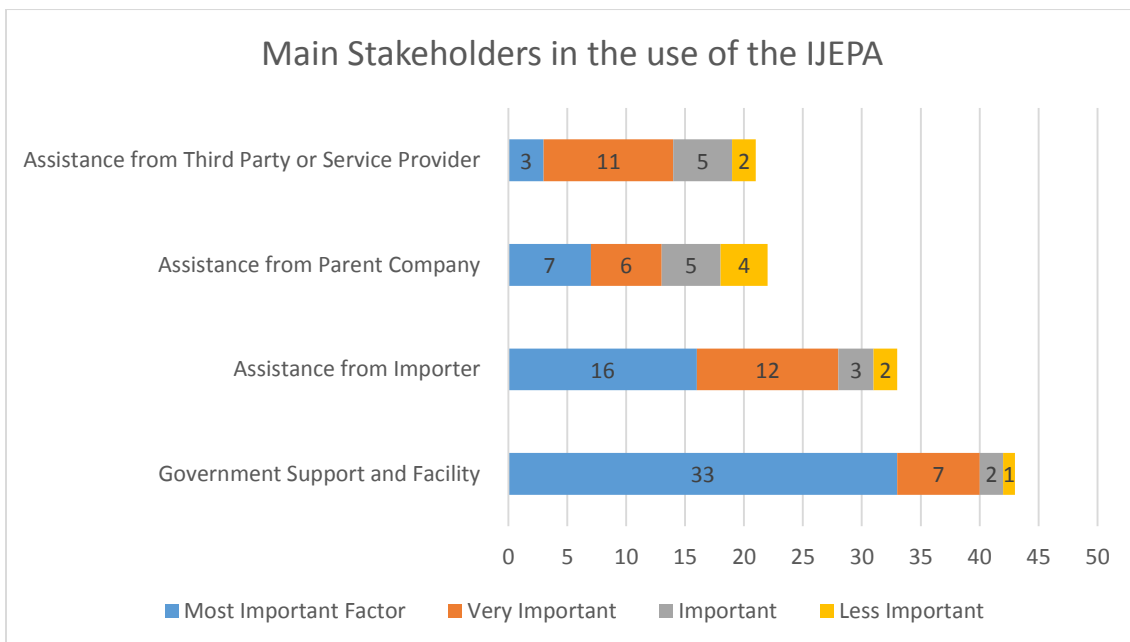


Figure 4-6 Main Stakeholders in IJEPA use.  
 Source: Author's Calculations Based on Survey Report. N=59 firms. Multiple answers are allowed.

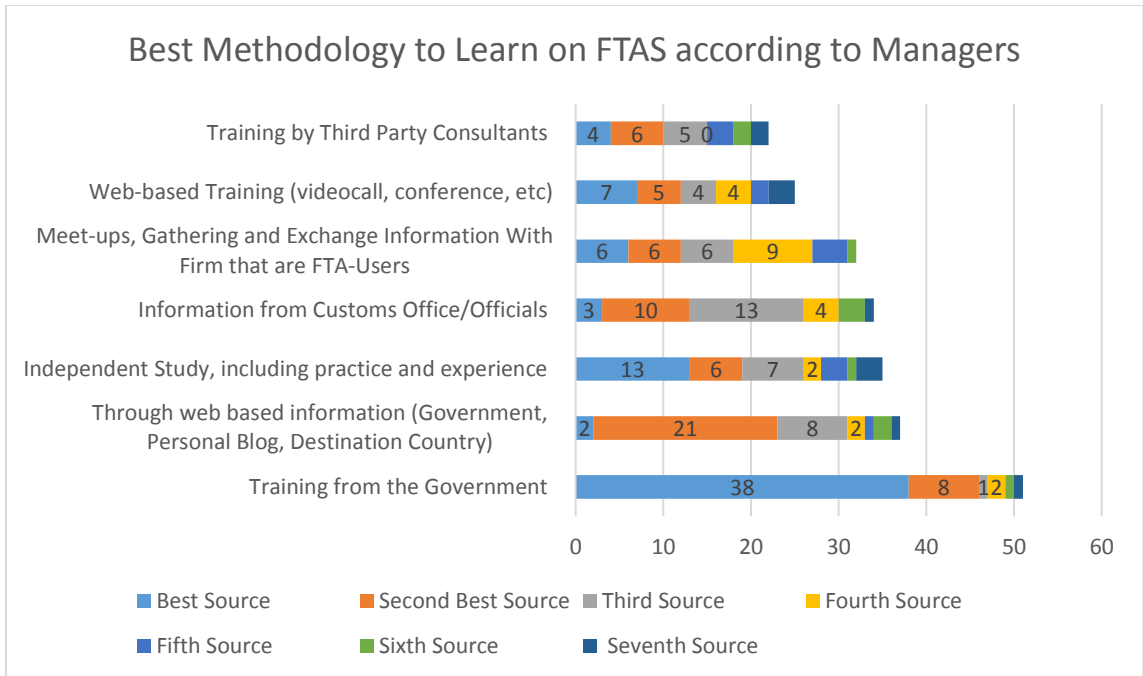


Figure 4-7 Best Methodology to Learn on FTAs according to Managers  
 Source: Author's Calculations Based on Survey Report. N=73 firms. Multiple answers are allowed.

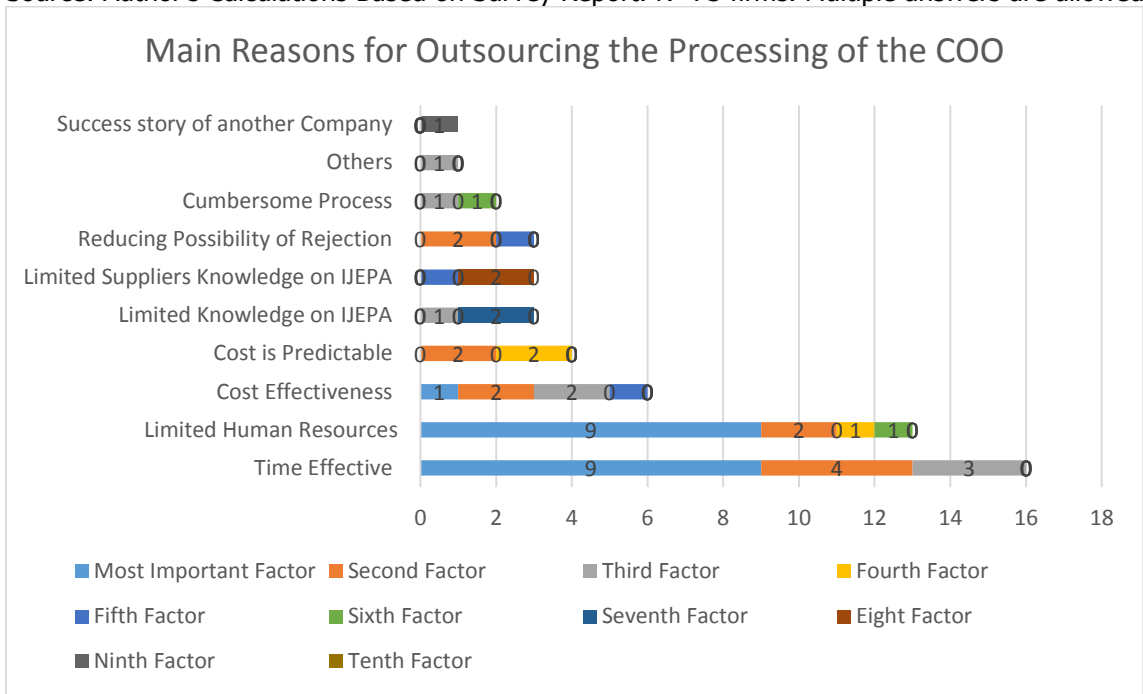


Figure 4-8 Main reasons for Outsourcing the Processing of the COO  
 Source: Author's Calculations Based on Survey Report. N=18. Multiple answers are allowed.

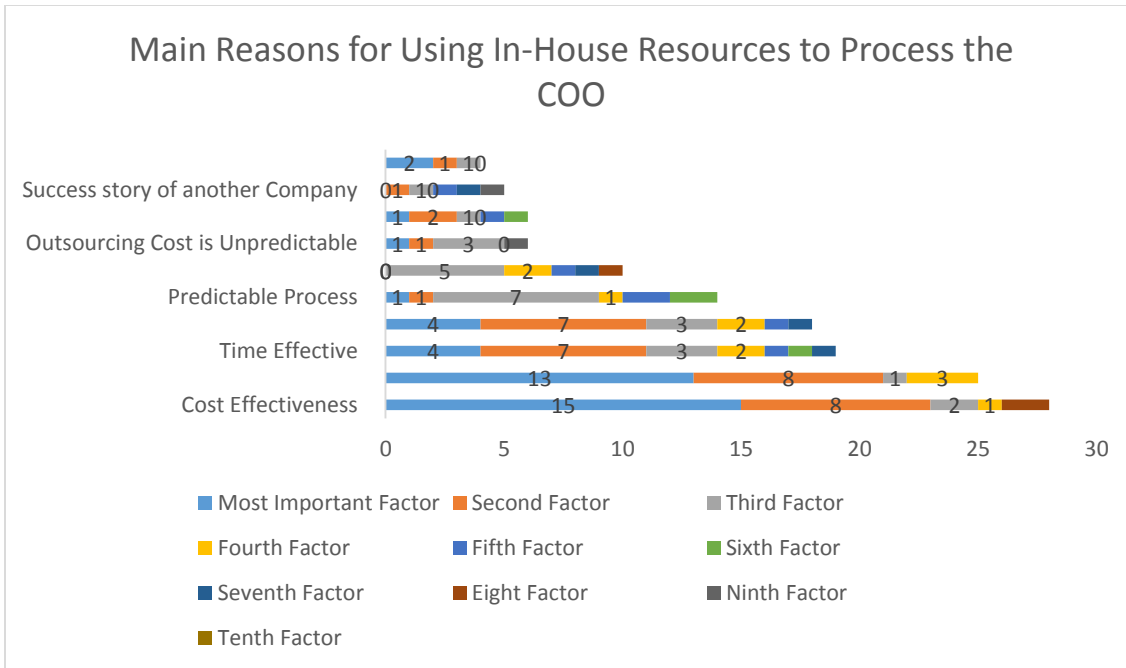


Figure 4-9. Main reasons for Using In-House Resources to Process the COO  
 Source: Author's Calculations Based on Survey Report. N=41. Multiple answers are allowed

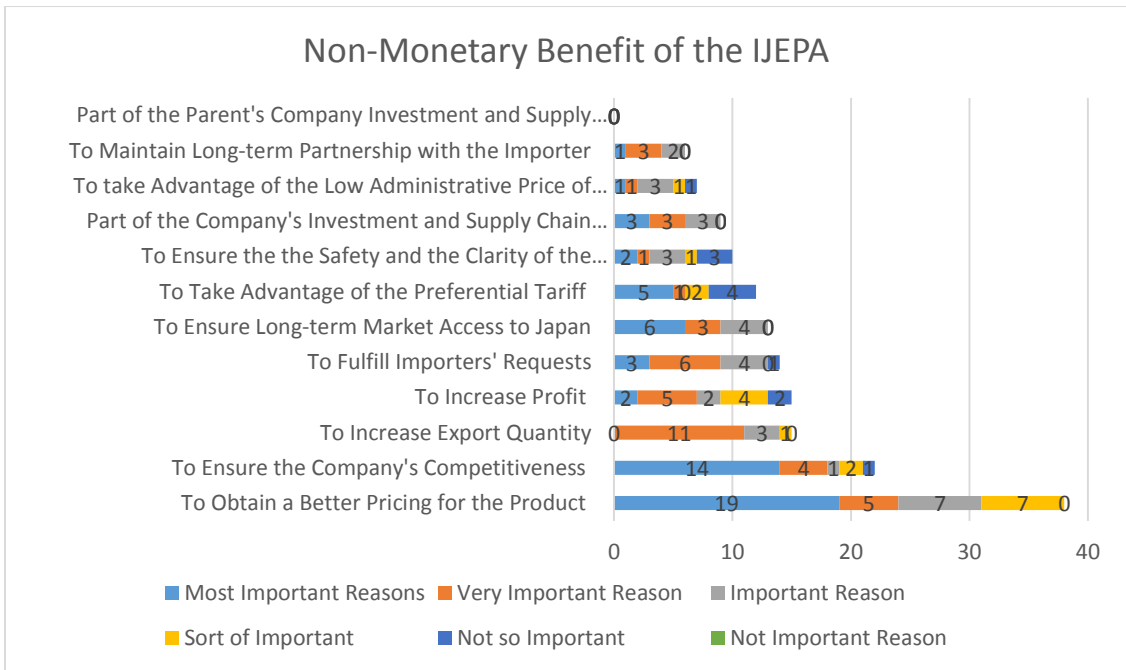


Figure 4-10. Non-Monetary Benefit of the IJEPA  
 Source: Author's Calculations Based on Survey Report. N=55. Multiple answers are allowed

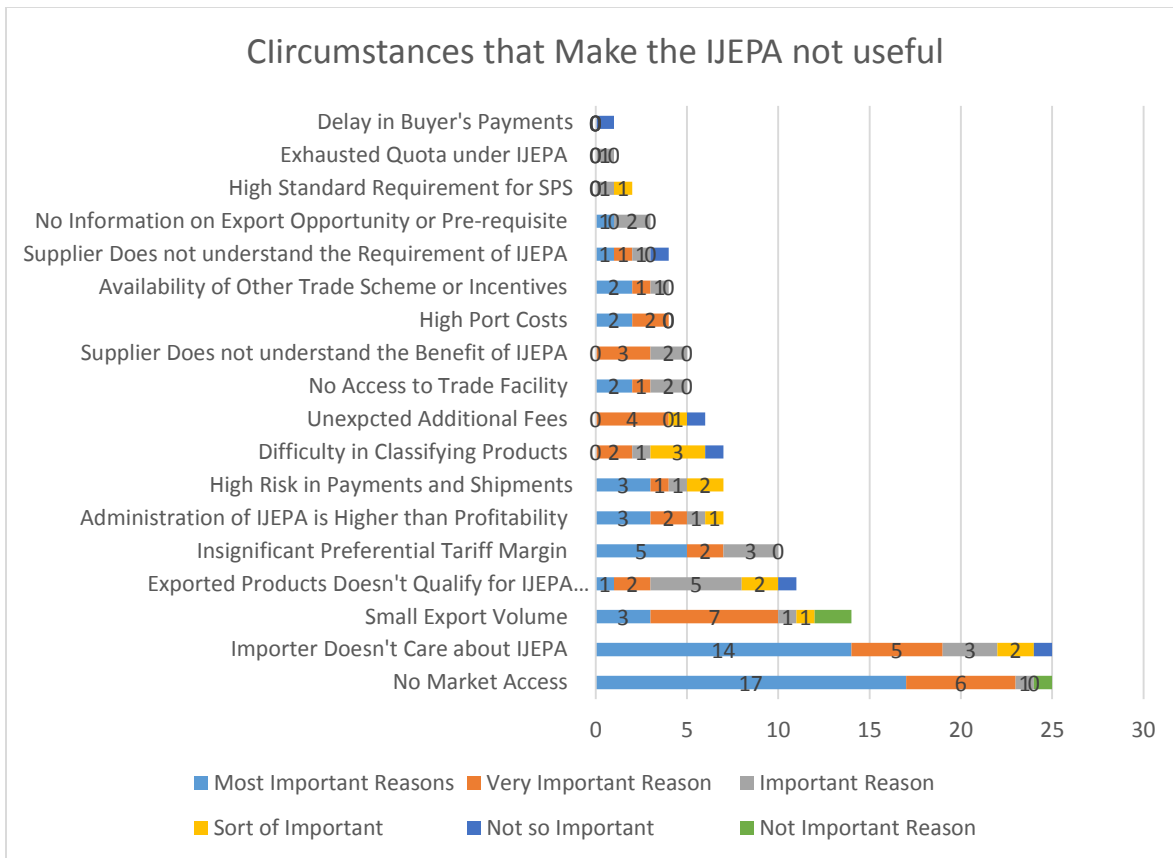


Figure 4-11. Circumstances that Make the IJEPA not useful  
 Source: Author's Calculations Based on Survey Report. N=52. Multiple answers are allowed.

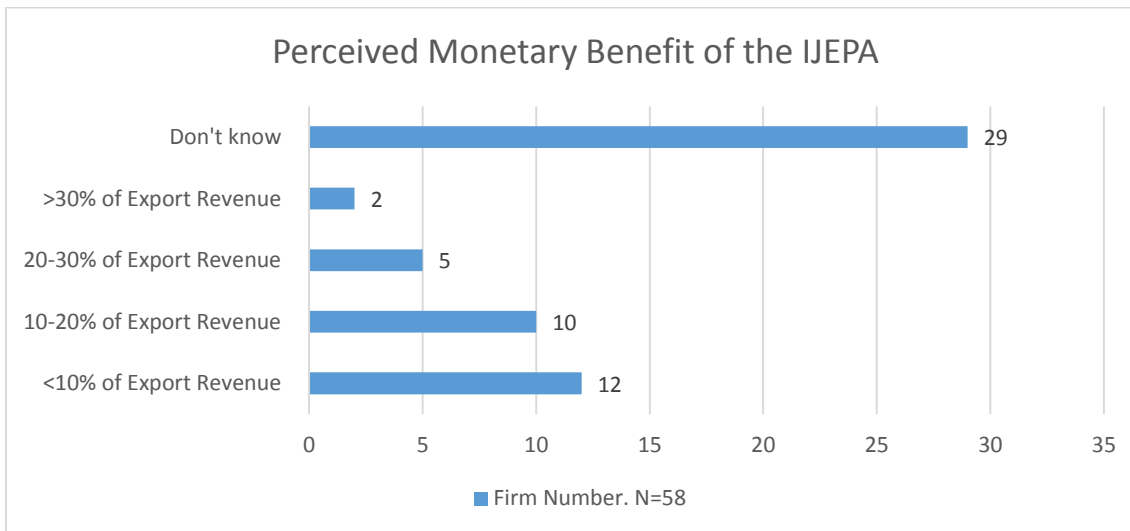


Figure 4-12. Perceived Monetary Benefit of the IJEPA  
 Source: Author's Calculations Based on Survey Report.

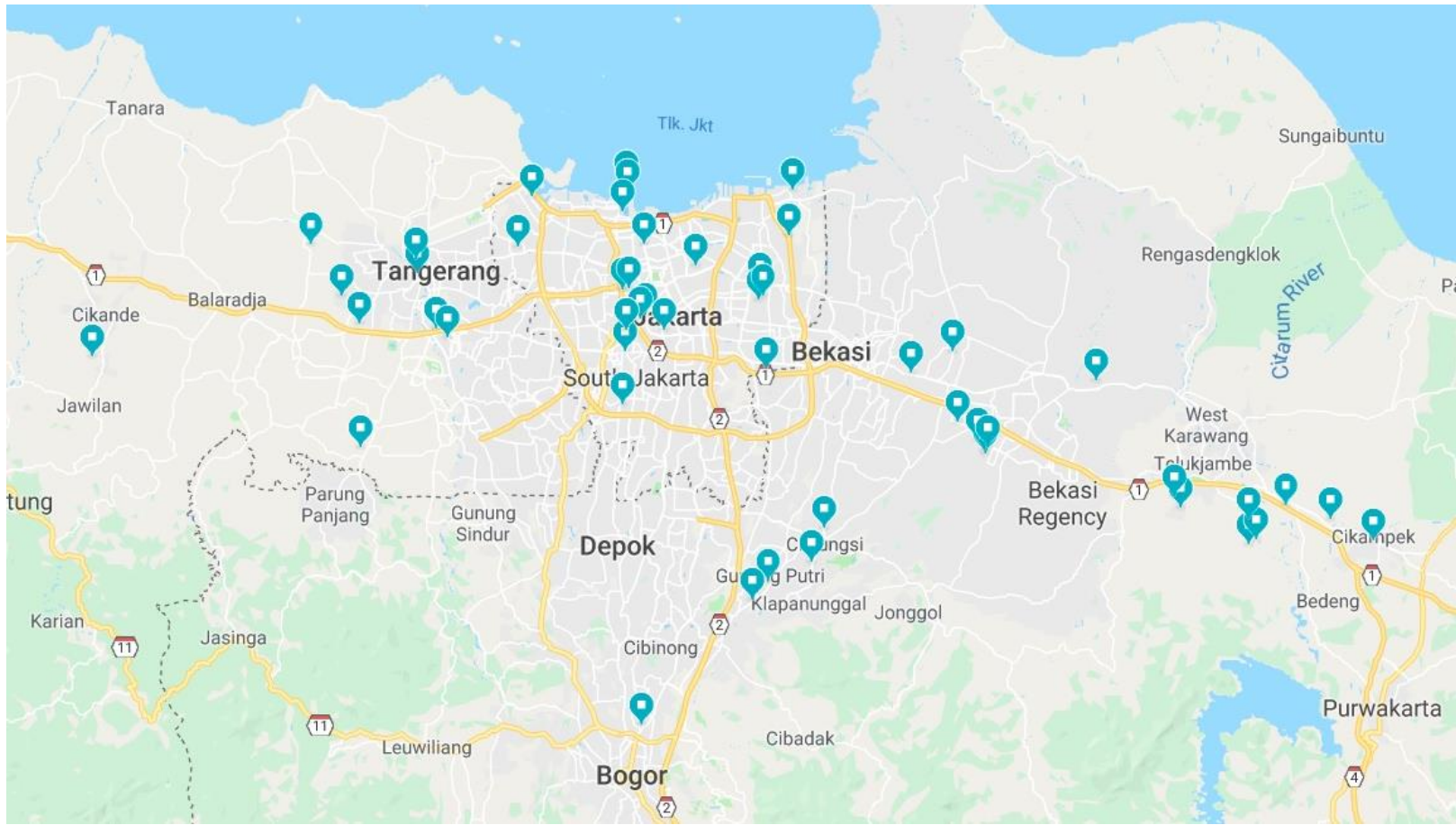


Figure 4-13. The Location of Firms  
Source: Author's Description

## Appendix I. Field-survey Questionnaire

Please read to the respondent:

Good afternoon and thank you very much for the willingness and cooperation of yourself and your company to participate in this voluntary survey.

This Survey is organized by the National Graduate Institute of Policy Studies as an academic research, to formulate a policy recommendation with regard to the implementation of the Indonesia-Japan Economic Partnership Agreement to the relevant institution.

We seek the cooperation, willingness, and openness of the respondent's company in answering the questions in the survey.

All of the answers will be treated discreetly and will be part of a statistical analysis within the context of an academic research. No individual answers will be published individually.

Should you have further specific questions with regard to this survey, please contact the person in charge as such:


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No. Tel: +818078969799

- 
1. Date of Survey : (date) (month) 2017 (Fill in the blank)
  2. Location where survey is conducted: (Fill in the blank)
  3. Name of Enumerator : (Fill in the blank)
  4. Starting Time of the Survey : (Hour) (Minute) (Fill in the blank)

### **Specific Characteristics of the Respondent (Export-Import Manager)**

5. Name of Respondent : (Fill in the blank)
6. Position or Title in the Company: (Fill in the blank)
7. Work Telephone : +62 21 (Fill in the blank)
8. Work Fax : +62 21 (Fill in the blank)

9. Official Email : (Fill in the blank)

10. Age : (Fill in the blank)

10a. Last Level of Education : High School/Associate /Undergraduate/Master's/Ph.D. (Please circle)

11. Length of working experience in the Company: (Choose one below)

a. < 3 years	b. 3-8 years	c. 8-13 years	d. 13 - 18 years	e. >18 years
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12. Total length of working experience in the export-import sector (Choose one below)

a. < 5 years	b. 5-10 years	c. 11-15 years	d. 16 - 20 years	e. 21 - 25 years	f. > 25 years
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**Specific Characteristics of the Company**

13. Name of Company : (Fill in the blank)

14. Headquarter Address : (Fill in the blank and choose one)

a. Jakart a Utara	b. Jakart a Pusat	c. Jakart a Selata n	d. Jakart a Timur	e. Jakart a Barat	f. Bogo r	g. Bekas i	h. Tangerang g	i. Depo k	j. Karawan g
01	02	03	04	05	06	07	08	09	10

15. Date of Establishment : (date) (month) (year) (Fill in the blank)

16. Number of Employee: (according to the classification of the Indonesian Central Agency on Statistics) (Choose one below)

a. < 4 employees	b. 5-19 empl.	c. 20 – 99 empl.	d. > 100 empl.
Micro	Small	Medium	Large

17. Type of Sector/Industry: (Fill in the blank)

18. Yearly Sales (all, export inclusive) : (in accordance with Law no. 20 of 2008 on SMMEs) (Choose one below)

a. <Rp. 300 juta	b. Rp. 300 juta – Rp. 2.5 milyar	c. Rp. 2.5 milyar – 50 milyar	d. > Rp. 50 Milyar
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19. Value of Company's Asset (not including building and land): (in accordance with Law no. 20 of 2008 on SMMEs) (Choose one below)

a. < Rp. 50 juta	b. Rp. 50 – 500 juta	c. Rp. 500 juta – 10 M	d. > 10 M
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20. Affiliation of Capital : (Choose one below)

a. Domestic Investment	b. Foreign Direct Investment (FDI) Japanese	c. Other FDI
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**The Respondent's Export Experience to and Perception of Japan**

21. Does the respondent ever had the experience to export to Japan? (Choose one below)

- a. Yes
- b. No (Continue to question no. 24)

22. When did the respondent starts to export to Japan?

In the year \_\_\_\_\_ (Please specify) (Please continue to question no. 24)

23. Why hasn't the respondent exported to Japan? (choose one below)

- a. No market opportunity
- b. Unavailability of Capital or Export Credit
- c. Difficulty in meeting Japanese requirement
- d. Other \_\_\_\_\_(Please specify)

24. What are the risks often associated with exporting to Japan? (Choose between answers, multiple answers allowed)

	The strict and high standards of products requirement by the Client
	The strict and high standards of products requirement by the government
	The stringent rules and regulations pertaining to the product
	The high cost of possible warehousing
	Exchange rate risk
	Port and shipment risk
	Uncertainty related to the transaction partners
	Language Barriers
	Difficulty in accessing information related to the rules and regulation pertaining to export and the product itself
	Tariff uncertainties and unexpected changes in the implementation of rules
	Others: _____(please specify)

**Respondent's Knowledge of IJEPA**

25. Has the respondent ever heard of IJEPA? (Choose one below)

- a. Yes
- b. No, continue to question no. 36

26. From whom did the respondent FIRST heard of the IJEPA? (Choose one below)

- 1. Indonesian the government outreach
- 2. Japanese the government outreach
- 3. Industry's Association or Chamber of Commerce
- 4. In-house by the (current or prior) management of the company
- 5. Suppliers of the (current or prior) company
- 6. Customs Service Providers of the (current or prior) company

- 7. Service Providers or Partners of the Company (certification agency, etc.)
- 8. Parent (current or prior) company
- 9. Importers
- 10. Similar companies who have had success in implementing IJEPA
- 11. The Internet, news or other media outlets
- 12. Other \_\_\_\_\_ (Please specify)

27. Please explain in detail the respondents' first encounter with the IJEPA, whether prior or after joining the company. (Please specify)

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28. Has the respondent ever been invited to a government outreach of IJEPA? (Choose one below)

- a. Yes
- b. No

29. Has the respondent ever had formal training on how to use the IJEPA (whether from the government or other sources)? (Choose one below)

- a. Yes
- b. No (Continue to question no. 32)

30. Who provided the training on the IJEPA? (Tick all that applies. Please reconfirm after the respondent has given full answer.)

- The Indonesian Government
- The Japanese Government
- Industry's Association or Chamber of Commerce
- Service Providers or Partners of the Company (customs agency, certification agency,)
- Independent Consultants
- In-house within the company
- Other \_\_\_\_\_ (Please specify)

31. How long was the IJEPA training? (Choose one below)

a. < 4 working hours	b. 4 – 8 h.	c. 8 – 16 h.	d. 16 -24 h.	e. > 24 h.
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32. How does the respondent see his/her knowledge of the IJEPA? (10 = very knowledgeable, 6 = sufficient, 1=not knowledgeable)(Choose one below)

a. 10	b. 9	c. 8	d. 7	e. 6	f. 5	g. 4	h. 3	i. 2	j. 1
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**Respondent's Usage of the IJEPA**

33. Prior to joining the current company has the respondent ever used IJEPA? (Choose one below)

- a. Yes

b. No, because \_\_\_\_\_(Please specify) (Continue to question no. 36)

34. How often does the respondent use IJEPA? (Choose one below)

- a. On every opportunity,
- b. 1 out of 2 opportunity,
- c. 1 out of 3 opportunity, or
- d. 1 out of 4 opportunity.

35. How successful is the respondent when using the IJEPA? (Success is measured from smooth administration, delivery and payments) (Choose one below).

- a. On every opportunity,
- b. 1 out of 2 opportunity
- c. 1 out of 3 opportunity, or
- d. 1 out of 4 opportunity.

**Respondent's Knowledge of other EPA/FTA**

36. Does the respondent know of other EPA/FTA? (Choose one below)

- a. Yes
- b. No (Continue to question no. 44)

37. Has the respondent ever had formal training on how to use EPA other than the IJEPA (whether from the government or other sources)? (Choose one below)

- a. Yes
- b. No (Continue to question no. 39)

38. How long was the EPA/FTA training? (Choose one below)

a. < 4 working hours	b. 4 – 8 h	c. 8 – 16 h	d. 16 -24 h	e. > 24 h
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39. How does the respondent see his/her knowledge of an EPA/FTA? (10 = very knowledgeable, 6 = sufficient, 1=not knowledgeable)(Choose one below)

a. 10	b. 9	c. 8	d. 7	e. 6	f. 5	g. 4	h. 3	i. 2	j. 1
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40. Does knowing one EPA/FTA affect the respondent's interest in learning or using another EPA/FTA? (Choose one below)

a. Very Much	b. Yes	c. Neutral	d. No	e. Definitely Not
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**Respondent's General Knowledge and View on other EPA/FTA**

41. Is the respondent aware of any availability of resources that may help in the utilization of EPA/FTA, including the IJEPA? (Choose one below)

- a. Yes
- b. No (Continue to question no. 44)

42. What resources does the respondent know? (Tick all that applies. Please reconfirm after the respondent has given full answer.)

- Official Website of the Ministry of Trade, Industry or Finance of Indonesia
- Office of the Ministry of Trade, Industry or Finance of Indonesia
- Official Website of the Ministry of Economic Trade and Industry, and Customs Office of Japan
- Foreign Representative Office of Japan (Embassy, JETRO, etc.)
- Industry Association or Chamber of Commerce
- Third-party/Service Providers Resources
- Others

43. How often do you receive or seek updates from those resources? (Choose one below)

a. Once a day	b. Once a week	c. Once a month	d. Quarterly	e. Annually
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44. According to the respondent, what would be the best way to learn on EPA/FTA? (Put number by order of preference: 1= best method, 7 = least effective method. Please reconfirm after the respondent has given full answer.)

	Training by the government
	Training by Consultants
	Web-based training (technology based training, examples: video-calls, video-conference, etc.)
	Meeting and exchange of information with companies who have used the IJEPA
	Web-based resources (Ministry's website, personal blogs, destination country's websites)
	Information from Customs Agency
	Independent-learning, including by way of experience

**General Export Behavior/Experience of the Company**

44.a What is the average export contribution if compared to domestic sales?

Domestic \_\_\_\_\_ % Export \_\_\_\_\_% (Fill in the blanks)

45. How much is the contribution of direct export (without traders or intermediaries) to the value of sales of the company (in terms of percentage) \_\_\_\_\_% (Fill in the blank)

46. How much is the contribution of indirect export (through traders or intermediaries) to the value of sales of the company (in terms of percentage) \_\_\_\_\_% (Fill in the blank)

46.a. Has the Company ever experienced on becoming an 'undername'? (Undername, is when another company is using the respondent's company's name to export – due to the lack of legal documents, lengthy registration process or due to quota).

47. Mention the 5 Main Export (Country) Destination of the Company for the year 2016. (Please specify)

1.	2.	3.	4.	5.
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48. Mention the average percentage for each export destination for the year 2016. (Please specify)

1.	2.	3.	4.	5.
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**The Company's Export Experience to and Perception of Japan**

49. Has the company ever exported to Japan? (Choose one below)

- a. Yes,
- b. No (Continue to question no. 52)

50. What year did the company start to export to Japan?

In the year \_\_\_\_\_ (Please specify)

50.a. (Optional), Please provide us with the company name that you are doing business with in Japan.

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_

50.b. How many times in a year does the company ship to Japan on average?  
\_\_\_\_\_ times per year (Fill in the blank)

51. Why did the company export to Japan? (Choose one below)

- 1) The company is a subsidiary of a Japanese parent company
- 2) A Japanese importer ordered the company's product
- 3) The company actively sought to enter Japanese market
- 4) The company took part in a the government trade mission
- 5) The company independently participated in an international exhibition
- 6) The company promote itself through the internet or virtual trade-platform
- 7) Other \_\_\_\_\_(Please specify)

Please continue to question no.53

52. Why does the company not export to Japan? (choose one below)

- a. No market opportunity
- b. Unavailability of Capital or Export Credit
- c. Difficulty in meeting Japanese requirement
- d. Other \_\_\_\_\_(Please specify)

Please continue to question no. 54

**The Company's Export Experience using the IJEPA or other EPA/FTA**

53. Does the company uses the IJEPA to export to Japan? (Choose one below)

- a. Yes,
- b. No

54. Does the company uses other EPA/FTA (non- IJEPA) to export to countries (other than Japan)?

(Choose one below)

- a. Yes,
- b. No

55. Please fill in this table,

	2008	2009	2010	2011	2012	2013	2014	2015	2016
a. Total Export in Value or Volume									
b. Total Export to Japan in Value, Volume or Percentage*									
c. Total Export using the IJEPA, in Value, Volume or Percentage*									
d. Total Export using EPA/FTA, in Value, Volume or Percentage*									
e. Type of Goods									

\*B,C, and D are important to answer

	Use IJEPA	Not Use IJEPA
<b>Export to Japan</b>	<b>b &gt; 0, c &gt; 0</b>	<b>b &gt; 0, c = 0</b>
<b>Not Export to Japan</b>	_____N/A_____	<b>b = 0, c = 0</b>

If b=0 and d=0, then the interview is over. (not exporting to Japan, not using other EPA)

If b=0 and d>0, continue to Part 3 (question no. 62 to no. 77) (not exporting to Japan, but using other EPA)

If b>0 and c=0, continue to Part 4 (question no. 78 to no. 86) (exporting to Japan, but not using IJEPA)

If b>0 and c>0, continue to Part 2 (question no. 62 to no. 63) and Part 4 (question no. 78 to no. 86) (exporting to Japan, using IJEPA)



### **Company's usage of the IJEPA**

56. According to the respondent's knowledge and company's record, how long has the company been using IJEPA? (Choose one below)
- Less than 2 years
  - Within 2 – 5 years
  - Within 5 – 8 Years
57. How did the company decide to use the IJEPA for the first time? (Choose one below)
- Top management or parent companies' instruction (top-down process)
  - Management and staffs' proposal (bottom-up process)
  - Third-party's suggestion (whether customs agency, industry association or certification agency)
  - It wasn't the company's decision, but purely importer's request
  - Other \_\_\_\_\_ (Please specify)
58. When exporting to Japan, how often does the company use IJEPA? (Choose one below)
- On every opportunity,
  - 1 out of 2 opportunity,
  - 1 out of 3 opportunity, or
  - 1 out of 4 opportunity.
59. How successful is the company when using IJEPA? (Success is measured from ease of administration, delivery and payments) (Choose one below).
- On every opportunity,
  - 1 out of 2 opportunity
  - 1 out of 3 opportunity, or
  - 1 out of 4 opportunity.

### **Company's Administration of IJEPA**

- 59.a. How many employees work at the export-import division? (from Managerial level, Marketing staff, up to the export documentation processing)  
\_\_\_\_\_ employee(s) (Fill in the blank)
- 59.b. How many employees work for the export documentation processing?  
\_\_\_\_\_ employee(s) (Fill in the blank)
60. Who takes care of the prerequisite requirement for IJEPA? (Choose one below)
- Always in-house (Continue to question no. 64).
  - Always outsource
  - Both

61. If outsourced, who takes care of the administrative pre-requisite for the IJEPA? (Put by the number of request: 1 = Very Often requested, 7= Never requested. Please reconfirm after the respondent has given full answer.)

	Customs Service Providers
	Certification agency
	Forwarding Company
	Industry Association
	Another company that exports using their name
	Parent company
	Importer
	Others _____(Please specify)

62. What are the reasoning for using another party's services? (Put number by order of preference: 1= Most important, 10 = Not Important. Please reconfirm after the respondent has given full answer.)

	Inadequate human resources
	Cost Effective
	Predictable price by service providers
	Company's lack of knowledge of the IJEPA requirements
	Suppliers/partners lack of knowledge of the IJEPA requirements
	Success stories from other companies
	Less time consuming
	Cumbersome administrative process
	Reducing rejection of the IJEPA Application
	Others _____(Please specify)

63. What is the usual fee that the service provider asks? (Choose one below)

- a. < 100 USD/shipment
- b. 100 – 200 USD/shipment
- c. 200 – 500 USD/shipment
- d. > 500 USD/shipment
- e. Other \_\_\_\_\_(Please specify)

Continue to question no. 65.

64. What are the reasoning for using the company's own resources? (Put number by order of preference: 1 = Main reason, 10 = Not a reason. Please reconfirm after the respondent has given full answer.)

	Adequate human resources
	Cost Effective when internalized
	Uncertainty of pricing by service providers
	Company's familiarity on the IJEPA requirements
	Suppliers/partners familiarity on the IJEPA requirements



	Success stories from other companies
	Less time consuming
	Predictable administrative process
	Reducing rejection of the IJEPA Application
	Others _____(Please specify)

64a. In the IJEPA form, which column is the most difficult to fill in for beginners/first-exporters?  
Column No. \_\_\_\_\_ (Fill in the blank)

64b. Why is such column difficult to fill?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (Please specify)

64c. What is the best way to fill in that column for new beginners?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ (Please specify)

64d. What is the total amount that is paid to process all of the administration, in addition to the fee paid for the IJEPA form? (Example include: Transportation cost, certification of products, or sending related documents to Japan etc.)

Rp. \_\_\_\_\_ (Fill in the blank)

65. What is the official fee that the government charges for the IJEPA form?

- a. < 100 USD/shipment
- b. 100 – 200 USD/shipment
- c. 200 – 500 USD/shipment
- d. > 500 USD/shipment
- e. Unknown
- f. Other \_\_\_\_\_(Please specify)

65a. Which HS Code does the company use to send goods to Japan? Please let us know the tariff rate.

No.	HS Code (6-8 digit)	Tariff without IJEPA	Tariff with IJEPA
1			
2			
3			

66. How often does the company gets update about the rules and regulations that is applied to your product in Japan? (Chose on below)

a. Once a day	b. Once a week	c. Once a month	d. Quarterly	e. Annually
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**Motivation to use IJEPA**

67. What are the main consideration when using IJEPA? (Put number by order of preference: 1 = Most Important, 4=Not Important)

	The availability of support and facility from the government (support)
	There's assistance from the importer's side in the fulfillment of the IJEPA prerequisite (support)
	There's assistance from a third-party or service providers in the fulfillment of the IJEPA prerequisite (support)
	There's assistance from the parent's company (support)

68. What sorts of non-monetary benefit is expected when using IJEPA? (Put number by order of preference: 1= Most Important, 12=Not Important. Please reconfirm after the respondent has given full answer.)

___	To apply parent companies' investment and supply chain strategy
___	To apply companies' investment and supply chain strategy
___	To secure long-term partnership from importer
___	To maintain competitiveness vis a vis competitors
___	To ensure long-term market access to Japan
___	To create more quantity of export
___	To fulfill importer's request
___	To obtain better pricing
___	To obtain additional profit
___	To enhance protection and certainty
___	To take advantage tariff difference between the IJEPA preferential tariff and MFN/General Tariff
___	To take advantage of low-cost in fulfilling the IJEPA pre-requisite if compared to the export value

69. What is the percentage of monetary benefit from profit when using IJEPA? (Choose one below)

- a. <10 % of export revenue
- b. 10 - 20 % of export revenue
- c. 20 - 30 % of export revenue
- d. > 30 % of export revenue

70. Of all the company's exports using the IJEPA, how many has been rejected by the Japanese Government? (Choose one below)

- a. None (Continue to question no. 72)
- b. 1 in 2 exports
- c. 1 in 5 exports
- d. 1 in 10 exports

71. What could be the reasoning? (Tick all that applies)

- Misclassification of HS Code
- Duties was higher than anticipated
- Customs office would not clear the shipment to the importer
- Customs office invokes health, sanitary, or safety issues
- Labeling issues involving a certificate of origin, weight, ingredients, marks, etc.
- Inadequate documentation
- Import or packing regulations issues of the receiving country
- Other \_\_\_\_\_ (Please specify)

72. What are the instances when the IJEPAs are not useful? (Put number by order of preference: 1= Most Useless, 19=Irrelevant. Please reconfirm after the respondent has given full answer.)

	No access to export markets
	No information on export opportunities and requirements
	Suppliers do not know how to fulfill the IJEPAs requirement
	Suppliers do not know the benefit of the IJEPAs
	Possible delayed payments that affects cash flow
	Perceived high risks related to payment and shipment
	Unattainable high requirement of standard, sanitary, health and safety
	Administrative cost does not meet expected profit/sales
	High unanticipated costs
	High cost of harbor facilities
	Insignificant tariff margin between MFN Tariff and the IJEPAs Tariff
	Small trade volume
	No access to trade facilitation (trade financing, information, etc.)
	Importers does not assist the process
	Availability of other schemes or trade or investment incentives
	Exported Product does not qualify for the IJEPAs Tariff
	Difficulty in identifying product classification
	Quota or benefit the IJEPAs Tariff has been exhausted
	Other _____ (Please specify)

**End of Question for the IJEPAs users, continue to Part 4.**



**Company's Administration of EPA/FTA**

73. Who takes care of the administrative pre-requisite for the EPA/FTA? (Choose one below)
- a. Always in-house (Continue to question no. 81.
  - b. Always outsource
  - c. Both

74. If outsourced, who takes care of the administrative pre-requisite for the EPA/FTA? (Put by the number of request: 1 = Very Often requested, 7= Never requested. Please reconfirm after the respondent has given full answer.)

	Customs Service Providers
	Certification agency
	Industry Association
	Another company that exports using their name
	Parent company
	Importer
	Others _____(Please specify)

75. What are the reasoning for using another party's services? (Put number by order of preference: 1= Most important, 10 = Not Important. Please reconfirm after the respondent has given full answer.)

	Inadequate human resources
	Cost Effective
	Predictable price by service providers
	Company's lack of knowledge of the IJEPA requirements
	Suppliers/partners lack of knowledge of the IJEPA requirements
	Success stories from other companies
	Less time consuming
	Cumbersome administrative process
	Reducing rejection of the IJEPA Application
	Others _____(Please specify)

76. How much is the usual fee that the service provider asks? (Choose one below)
- a. < 100 USD/shipment
  - b. 100 – 200 USD/shipment
  - c. 200 – 500 USD/shipment
  - d. > 500 USD/shipment
  - e. Other \_\_\_\_\_(Please specify)

77. What are the reasoning for using the company's own resources? (Put number by order of preference: 1 = Main reason, 10 = Not a reason. Please reconfirm after the respondent has given full answer.)

	Adequate human resources
	Cost Effective when internalized
	Uncertainty of pricing by service providers
	Company's familiarity on the IJEPA requirements
	Suppliers/partners familiarity on the IJEPA requirements
	Success stories from other companies
	Less time consuming
	Predictable administrative process
	Reducing rejection of the IJEPA Application
	Others _____(Please specify)

78. What is the official fee that the government requires? (Choose one below)

- a. < 100 USD/shipment
- b. 100 – 200 USD/shipment
- c. 200 – 500 USD/shipment
- d. > 500 USD/shipment
- e. Unknown
- f. Other \_\_\_\_\_(Please specify)

79. How often does the company gets update about the rules and regulations that is applied to your product in the destination country? (Choose on below)

a. Once a day	b. Once a week	c. Once a month	d. Quarterly	e. Annually
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**Motivation to use EPA/FTA**

80. How did the company decide to use an EPA/FTA (non-IJEPA) for the first time? (Choose one below)

- a. Top management or parent companies' instruction (top-down process)
- b. Management and staffs' proposal (bottom-up process)
- c. Third-party's suggestion (whether customs agency, industry association or certification agency)
- d. It wasn't the company's decision, but purely importer's request
- e. Other (specify)

81. What are the main consideration when using EPA/FTA? (Put number by order of preference: 1 = Most Important, 4=Not Important. Please reconfirm after the respondent has given full answer.)

	The availability of support and facility from the government
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	There's assistance from the importer's side in the fulfillment of the IJEPA prerequisite
	There's assistance from a third-party or service providers in the fulfillment of the IJEPA prerequisite
	There's assistance from the parent's company

82. What sorts of non-monetary benefit is expected when using EPA/FTA? (Put number by order of preference)

	To apply parent companies' investment and supply chain strategy
	To apply companies' investment and supply chain strategy
	To secure long-term partnership from importer
	To maintain competitiveness vis a vis competitors
	To ensure long-term market access to Japan
	To create more quantity of export
	To fulfill importer's request
	To obtain better pricing
	To obtain additional profit
	To enhance protection and certainty
	To take advantage tariff difference between the IJEPA preferential tariff and MFN/General Tariff
	To take advantage of low-cost in fulfilling the IJEPA pre-requisite if compared to the export value

83. What is the percentage of monetary benefit from profit when using EPA/FTA? (Choose one below)

- <10 % of export revenue
- 10 - 20 % of export revenue
- 20 - 30 % of export revenue
- > 30 % of export revenue

84. Of all the company's exports using EPA/FTA, how many has been rejected by the Receiving Government? (Choose one below)

- None (Continue to question no. 86)
- 1 in 2 exports
- 1 in 5 exports
- 1 in 10 exports

85. What could be the reasoning? (Tick all that applies)

- Misclassification of HS Code
- Duties was higher than anticipated
- Customs office would not clear the shipment to the importer
- Customs office invokes health, sanitary, or safety issues
- Labeling issues involving a certificate of origin, weight, ingredients, marks, etc.
- Inadequate documentation

- Import or packing regulations issues of the receiving country
- Others

86. What are the instances which makes EPA/FTA not useful? (Put number by order of preference: 1= Most Useless, 19=Irrelevant. Please reconfirm after the respondent has given full answer)

	No access to export markets
	No information on export opportunities and requirements
	Suppliers do not know how to fulfill the IJEPA requirement
	Suppliers do not know the benefit of the IJEPA
	Possible delayed payments that affects cash flow
	Perceived high risks related to payment and shipment
	Unattainable high requirement of standard, sanitary, health and safety
	Administrative cost does not meet expected profit/sales
	High unanticipated costs
	High cost of harbor facilities
	Insignificant tariff margin between MFN Tariff and the IJEPA Tariff
	Small trade volume
	No access to trade facilitation (trade financing, information, etc.)
	Importers does not assist the process
	Availability of other schemes or trade or investment incentives
	Exported Product does not qualify for the IJEPA Tariff
	Difficulty in identifying product classification
	Quota or benefit the IJEPA Tariff has been exhausted
	Other_____ (Please specify)

**End of Question for non-IJEPA users. The interview is finished.**



87. What products does the company export to Japan? (Please specify)

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*Enumerator need to classify it:*

- *Durable Final Goods*  
(not needing further processing to be used or consumed, such as appliances, furnishings, consumer electronics, toys, sporting goods, photographic equipment, jewelry, motor vehicles)
- *Non-durable Final Goods*  
(not needing further processing to be used or consumed, such as foodstuff, garment)
- *Intermediate Goods*

*(needing further processing to be used or consumed, such as spare parts for machinery and manufactured products)*

- *Capital Goods*  
*(machinery, equipment and tools to produce another goods)*
- *Raw Materials*  
*(unprocessed natural goods used to produce another goods)*

88. Of the three main export products of the company, how many suppliers of the company need to be involved to provide proper documentation as required by the IJEPA? (Choose one below)

Name of Goods .....Type 1 good

a. <5	b. 5-10	c. 10 – 20	d. >20
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Name of Goods .....Type 2 good

a. <5	b. 5-10	c. 10 – 20	d. >20
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Name of Goods .....Type 3 good

a. <5	b. 5-10	c. 10 – 20	d. >20
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89. Of all those suppliers, how many are SMEs? (Choose one below)

Name of Goods .....Type 1 good

a. <10%	b. 10-25%	c. 25% – 50%	d. >50%
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Name of Goods .....Type 2 good

a. <5	b. 5-10	c. 10 – 20	d. >20
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Name of Goods .....Type 3 good

a. <5	b. 5-10	c. 10 – 20	d. >20
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90. What type of goods does those SMEs supply to the company? (Please specify)

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*Enumerator need to classify it:*

- *Durable Final Goods*  
*(not needing further processing to be used or consumed, such as appliances, furnishings, consumer electronics, toys, sporting goods, photographic equipment, jewelry, motor vehicles)*
- *Non-durable Final Goods*  
*(not needing further processing to be used or consumed, such as foodstuff, garment)*
- *Intermediate Goods*  
*(needing further processing to be used or consumed, such as spare parts for machinery and manufactured products)*



- *Capital Goods*  
(*machinery, equipment and tools to produce another goods*)
- *Raw Materials*  
(*unprocessed natural goods used to produce another goods*)

91. What are the consideration for choosing SMEs as supplier? (Put number by order of preference: 1=Most Important, 9=Not Important. Please reconfirm after respondent has provided full answer.)

	Ability to perform just-in-time delivery
	Proximity (distance or location within the industrial cluster)
	Fulfill product quality standard
	Fulfill pricing demand
	Fulfill administrative and other requirements (flexibility in contract, IPR protection, active in research and product development, documentation for EPA)
	Part of the larger supply chain of the parent company
	Long time partners of the company
	Familiar with the IJEPA or FTA requirement
	Other _____(Please specify)

92. What sort of activity characterizes the company's relationship with their SME suppliers in supporting export? (Tick all that applies)

- Information sharing
- Product Training
- Credit or investment
- EPA/FTA Training
- Other \_\_\_\_\_(Please specify)

93. Of all those suppliers in question no. 90, whether large or small companies, how many are Japanese-FDI? (Choose one below)

a. None (End of Interview)	b. <10%	c. 10-25%	d. 25% – 50%	e. >50%
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94. What type of goods does those Japanese affiliated companies supply to the company? (Please specify)

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*Enumerator need to classify it:*

- *Durable Final Goods*  
(*not needing further processing to be used or consumed, such as appliances, furnishings, consumer electronics, toys, sporting goods, photographic equipment, jewelry, motor vehicles*)
- *Non-durable Final Goods*  
(*not needing further processing to be used or consumed, such as foodstuff, garment*)
- *Intermediate Goods*

*(needing further processing to be used or consumed, such as spare parts for machinery and manufactured products)*

- *Capital Goods*  
*(machinery, equipment and tools to produce another goods)*
- *Raw Materials*  
*(unprocessed natural goods used to produce another goods)*

95. What are the consideration for choosing Japanese-FDI as supplier) (Put number by order of preference: 1=Most Important Factor, 9=Not Important Factor. Please reconfirm after respondent has provided full answer.)

	Ability to perform just-in-time delivery
	Proximity (distance or location within the industrial cluster)
	Fulfill product quality standard
	Fulfill pricing demand
	Fulfill administrative and other requirements (flexibility in contract, IPR protection, active in research and product development, EPA documentation)
	Part of the larger supply chain of the parent company
	Long time partners of the company
	Familiar with the IJEPA or FTA requirement
	Other _____(Please specify)

On the length of the questionnaire: end time \_\_\_\_

**GENERAL FEEDBACK:**

- a. On the level of questionnaire clarity: \_\_\_\_\_
- b. On the level of difficulty: \_\_\_\_\_
- c. Any other comments are welcomed:

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**Please read to the respondent:**

We would like to thank you very much for the time and cooperation provided by Mr. /Mrs. of \_\_\_\_\_ Company, to participate in this voluntary survey up till the end. We would like to apologize if there might be any mistakes or shortcomings when we held the survey. If possible, we would like to take a picture with you as part of our documentation. Should you be interested, we can provide you with the end result of the survey. Please fill in this form below:

<input type="checkbox"/>	Respondent would like to receive a copy of the survey to be sent to this address: _____ (email/company address)
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<input type="checkbox"/>	Respondent does not want to receive a copy of the survey.
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We would like to excuse ourselves, and thank you again for your support and assistance.

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## Appendix II. Multicollinearity Check for Independent Variables in Firm-Level Study

Variable	VIF	1/VIF	Label
Fassetlog	3.57	0.280359	Firm Asset (in log)
Fempllog	3.05	0.327987	Firm Number of Employees (in log)
Fsaleylog	2.87	0.348129	Firm Annual Sales Value (in log)
Festy	2.72	0.367329	Firm Years in Operation
fexpjpy	2.52	0.397538	Firm Years of Export Experience to Japan
fjpepper	1.38	0.722391	Firm Export Percentage to Japan
flcl0fdi1	1.69	0.592199	FDI dummy
ftarwtoij	1.29	0.777813	Tariff Margin
mweximexp	1.69	0.592692	Manager Years of Work Experience in Export and Import
msostrainijX	1.65	0.604844	Manager dummy Attendance to FTA Outreach Event
Mage	1.58	0.634878	Manager Age
meduy	1.15	0.868593	Manager Years of Education
mknowot	1.13	0.886275	Manager dummy Knowledge of other FTA
Mean VIF	2.02		

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