

Some practical guidance for the computation of free trade agreement utilization rates

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Keywords: Free trade agreement, Certificates of Origin, FTA Utilization

JEL classification: F10; F13; F15

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Some Practical Guidance for the Computation of Free Trade Agreement Utilization Rates

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Abstract: The literature on the use of free trade agreements (FTAs) has recently been growing because it is becoming more important to encourage the use of current FTAs than to increase the number of FTAs. In this paper, we discuss some practical issues in the computation of FTA utilization rates, which provide a useful measure to discover how much FTA schemes are used in trade. For example, compared with the use of customs data on FTA utilization in imports, when using certificates of origin data on FTA utilization in exports, there are several points about which we should be careful. Our practical guidance on the computation of FTA utilization rates will be helpful when computing such rates and in examining the determinants of those rates empirically.

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1. Introduction

Against the background of the explosive increase in free trade agreements (FTAs), it has become more important to encourage FTA utilization in trade. According to the World Trade Organization (WTO) website, as of 31 July 2013, around 600 regional

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trade agreements have been notified to the WTO. FTAs are expected to reduce not only tariff rates but also various kinds of non-tariff barriers because recent FTAs include various kinds of advanced provisions, such as on intellectual property rights. Nevertheless, the primary effect of FTAs on trade is still tariff reduction. The use of an FTA will generate benefits for firms in terms of saving on tariff payments as the preferential rates are lower than the most favoured nation (MFN) tariff rates. Based on the increasing availability of lower FTA preferential rates, it has become more important to know the extent of FTA utilization.

Recently, there has been a debate on how to measure FTA utilization. Some measures have been proposed. The FTA coverage ratio is defined as the share of trade values for FTA eligible products in total trade values (Candau et al., 2004). The share of trade values under FTA schemes in total trade values has been referred to as the utility ratio (Inama, 2003). In measuring FTA utilization, the share of the number of FTA users in the total number of trading firms (exporters or importers) is also used in Hayakawa et al. (2013a). However, the most widely-used measure on FTA utilization is on a value-basis rather than on a number-basis, and it is to measure FTA utilization rates, defined as the share of trade values under FTA schemes in total trade values for FTA eligible products. For example, Keck and Lendle (2012) analyze the utilization rates of both unilateral and bilateral preferences not only by the EU and the US but also by Australia and Canada. Hayakawa et al. (2013c) examine the utilization rates of the ASEAN-Korea FTA (FTA) using Korea's imports from ASEAN countries.¹

In this paper, we discuss some practical issues in the computing of FTA utilization rates. Keck and Lendle (2012) discuss how to aggregate product-level FTA utilization rates into the total FTA utilization rates. They examine three kinds of aggregation. In this paper, of the three, we focus on "utilization rates by trade values," which are defined as the share of aggregated trade values for FTA eligible products under FTA schemes in the aggregated trade values for FTA eligible products. As discussed in the following sections, there are several issues to be considered when computing FTA utilization rates. For example, although most of the studies on FTA utilization rates compute those in imports by employing customs data on imports according to tariff

¹ Most of the studies on utilization rates investigate those of unilateral preferential imports, those in the generalized scheme of program (GSP). Bureau et al. (2007) examine GSP utilization as granted by the European Union (EU) and the United States (US) to developing countries in the agri-goods sector, while Cadot et al. (2006) focus on the trade of the EU and the US with their preferential trading partners. Francois et al. (2006) and Manchin (2006) examine the preferential trade relations of the EU and non-least-developed African, Caribbean, and Pacific (ACP) countries under the Cotonou Agreement, while Hakobyan (2013) examines US GSP utilization by 143 GSP-eligible countries.

schemes, it is also possible to compute those in exports by using the information in certificates of origin (CoOs). Indeed, Hayakawa (2012) and Hayakawa and Laksanapanyakul (2013) use such data for computing FTA utilization rates in exports from Thailand. However, compared with the use of customs data, when using CoO data, there are several points about which we should be careful.

Our practical guidance for the computation of FTA utilization rates will contribute to the literature on FTA utilization rates. As mentioned above, that literature has recently been growing because it is becoming more important to encourage the use of current FTAs than to increase the number of FTAs. Compared with the case of imports, FTA utilization in exports has not been exploited much. Given the fact that the number of countries in which FTA utilization data are available is limited, however, the data based on CoOs provide an important source for examining FTA utilization rates in exports. Such data are as useful as customs data on FTA utilization in imports as long as we recognize the limitations and problems. In sum, several issues raised in this paper will be helpful in computing FTA utilization rates.

The rest of this paper is organized as follows. The next section discusses several issues in the computation of FTA utilization rates. The FTA utilization rates in Thailand's trade are reported in Section 3. After further discussing advanced issues on the use of FTA utilization data in Section 4, Section 5 concludes the paper.

2. Measurement of FTA Utilization Rates

As mentioned in the introductory section, FTA utilization rates are defined as the share of trade values under FTA schemes in the total trade values of FTA eligible products. In this section, we discuss several issues in the computation of FTA utilization rates.

2.1. General Issues

This subsection discusses several general issues in computing FTA utilization rates. First, the denominator, i.e. the total trade values of FTA eligible products, should not include trade values in FTA *ineligible* products. To do this, it is necessary to categorize all products into FTA eligible and FTA ineligible products. FTA eligibility differs not only with regard to tariff-line products but also in terms of the years concerned. Furthermore, in some FTAs, such as the ASEAN-China FTA (ACFTA) or the ASEAN-Korea FTA (AKFTA), a "reciprocal tariff rate treatment" is adopted. Roughly speaking, this treatment allows each member not to give preferential access for

a product against members who do not sufficiently open that product under ACFTA.² This treatment means that products eligible under the ACFTA scheme in exports to China differ from ASEAN country to ASEAN country. In sum, the coverage of products in the denominator is different in terms of its various dimensions.

Second, in practice, positive trade values under FTA schemes may appear under FTA *ineligible* products in the original data. Moreover, such positive values appear even in the Harmonized System (HS) codes that do not exist. Namely, the numerator may include non-zero values for FTA ineligible products or non-existing HS codes. One of the reasons for such non-zero values is simply mistakes by customs officers or companies. Unless we have a good reason, we should not include these values in the calculation of the numerator.³ Thus, it is, in practice, important to check whether the numerator does not include trade values under FTA schemes in FTA ineligible products.

Third, FTA eligible products sometimes do not have lower tariff rates than general tariff rates such as MFN rates. In particular, due to reductions in the MFN rates, some FTA eligible products have the same tariff rates as the MFN rates, mostly zero, and some have even higher preferential tariff rates than the MFN rates. In this case, there are *basically* no advantages to using an FTA. Especially since the use of FTA schemes requires exporters, in particular, to bear additional costs, it is natural for firms not to use FTA schemes. However, as well as this second issue, trade values under FTA schemes in such products are not necessarily zero in the original data. Whether to include those products in the computation of FTA utilization rates becomes a difficult question. The difficulty lies in the fact that, unlike the second issue, this one is due not only to mistakes by companies but also to companies' rational decision-making. In the case of multilateral FTAs, as discussed in Section 4.3, there is a chance that one can enjoy some advantages in using FTA rates even if they are not lower than the MFN rates. Thus, whether to include these products or not might depend on the purpose behind the computation of the FTA utilization rates.

Fourth, in computing FTA utilization rates, trading country pairs should be in

² More specifically, Annex 2 in the Agreement on Trade in Goods says: The reciprocal tariff rate treatment of tariff lines placed by a Party in the Sensitive Track shall be governed by the following conditions: (i) the tariff rate for a tariff line placed by a Party in the Sensitive Track must be at 10% or below in order for that Party to enjoy reciprocity; (ii) the reciprocal tariff rate to be applied to a tariff line placed by a Party in the Sensitive Track shall be either the tariff rate of that Party's tariff line, or the Normal Track tariff rate of the same tariff line of the other Party or Parties from whom reciprocity is sought, whichever is higher; and (iii) the reciprocal tariff rate to be applied to a tariff line placed by a Party in the Sensitive Track shall in no case exceed the applied MFN rate of the same tariff line of the Party or Parties from whom reciprocity is sought.

³ One possible reason is that companies fill in CoOs using codes in the earlier HS version (e.g. HS 2002).

common with the numerator and denominator. As examined more closely in Section 4.3, in the case of multilateral FTAs, member countries can trade with multiple countries under the same FTA scheme. For example, Thai imports under the ACFTA are not consistent with Thai imports from China under the FTA scheme. This is because the former includes Thai imports from other ASEAN countries under the ACFTA. Thus, in computing FTA utilization rates, it is necessary to obtain the data on trade values under FTA schemes according to trading partners.

2.2. Export-specific Issues

In this subsection, we discuss export-specific issues. There are three points to be discussed. First, the data on FTA utilization in exports are not necessarily available. FTA utilization data are usually obtained from customs in the case of imports and from CoOs in the case of exports. In certifying the “origin” of goods, there are mainly two systems. One is “third-party certification”, which refers to the system in which an exporter provides a third-party organization (a government or a designated agency) with information to prove that its export products satisfy rules of origin (RoOs). Then, the third-party organization, upon a judgment of the origin of such products, issues a CoO. The other is a self-certification system, in which all exporters certify the origins of their products on their own responsibility. Thus, in the case of FTAs adopting the self-certification system⁴, since CoOs are kept in each exporting company, we cannot know the whole picture regarding preferential exports.

Second, as in the case of regular trade data, it is believed that import data are more accurate than export data. Particularly in the case of FTA utilization data, it is known that the CoO data are likely to overestimate preferential exports. This overestimation is because exporters do not necessarily succeed in exporting their products under FTA schemes, even if they already have obtained CoOs. For example, as found in Hayakawa et al. (2013b), FTA preferential exports in the CoO data are likely to be overestimated in products with higher demand volatility or those with a larger number of tariff-line products within the same HS six-digit code. Therefore, in employing FTA utilization data based on CoOs, we should recognize that the preferential exports are likely to be overestimated. As a result, there is even a possibility that the preferential exports based on CoOs exceed total exports.

Third, the source of the data for the denominator of FTA utilization rates becomes

⁴ For example, these include NAFTA, the US-Australia FTA, the US-Singapore FTA, the Trans-Pacific Partnership, the Singapore-New Zealand FTA, the Thailand-New Zealand FTA, the Australia-New Zealand FTA, the Mexico-Chile FTA, the US-Korea FTA, and so on.

important. There are two kinds of sources here. While one is the data from the exporting countries, the other is the data from the importing countries. In the case of the data from the exporting countries, the denominator is forced to include the exports of FTA ineligible products. This is because FTA eligibility is usually set at the tariff-line level of the importing countries, but the comparable trade data in the exporting countries are available at an HS six-digit level because the most detailed internationally-comparable HS digit is six-digit.⁵ Thus, unless all tariff-line products in an HS six-digit code are FTA eligible products, six-digit level export data from the exporting countries include those in FTA ineligible products. On the other hand, employing the tariff-line level data from the importing countries allows for the exclusion of FTA ineligible products. However, while the numerator from the CoO data in the exporting countries is on an FOB basis, the denominator is on a CIF basis, which includes not only pure exports but also transport costs. As a result, there is the issue of choosing between biases that arise from including the exports in FTA ineligible products and those arising from the difference between the CIF basis and the FOB basis. The higher the FTA liberalization level is in terms of product number-basis, the smaller the former kind of bias becomes.

Combining the second and third issues, we can say that the direction of bias is ambiguous in the computation of FTA utilization rates that uses CoO data. Due to the second issue, the numerator in the utilization rates is always over-estimated. The third issue also uncovers the overestimation of the denominator in using either the export or import side of the data. As a result, since both the numerator and denominator are overestimated, the direction of bias in FTA utilization rates becomes ambiguous in the case of using CoO data.

3. FTA Utilization Rates in Thailand

In this section, after listing the FTAs concluded by Thailand, we compute FTA utilization rates for Thailand in 2011. We also give a brief overview of observable fixed costs for FTA use.

⁵ The fact that the data on FTA utilization in exports are available at an HS six-digit level also yields some problems in econometric analyses of the determinants of FTA utilization rates in exports. In the literature, studies listed in the introductory section investigate the role of the tariff margin, i.e. the difference between the general and preferential tariff rates. The data on tariff margins are available at a tariff-line level, while the dependent variable, i.e. the FTA utilization rates in exports, is defined at an HS six-digit level. Thus, it is necessary to aggregate arbitrarily the tariff margin at a tariff-line level to that at an HS six-digit level. As a result, the HS six-digit level variable of the tariff margin may contain measurement errors.

3.1. FTAs

As of October 2013, Thailand has concluded several FTAs. Since the launch of the ASEAN Free Trade Area (AFTA) in 1993, Thailand has signed and implemented five bilateral FTAs with Australia, New Zealand, India, Japan, and Peru. In addition, Thailand, together with the other ASEAN members, has concluded five regional agreements with China, Japan, Korea, India, and Australia and New Zealand. Table 1 summarizes all the FTAs in which Thailand has been engaged. Except for the FTA with Peru, which was implemented in 2012, most of the preferential tariffs of traded goods are approaching zero.

==== Table 1 ====

Before computing the FTA utilization rates, we take a brief overview of the observable fixed costs for FTA use by looking at the fees for the issuance of CoOs. Table 2 shows the fees for the issuance of CoOs in major ASEAN countries and Japan, and it indicates that fees vary depending on the country. Viet Nam and Malaysia do not charge any fees for the issuance of CoOs. Instead, they charge only paper fees, which are US\$1.0 and US\$0.4, respectively, meaning that the costs necessary for the issuance of CoOs are borne by government subsidies. Thailand and Indonesia also charge marginal fees of US\$1.0 and US\$0.5, respectively. The fees in the other countries vary roughly from US\$3 to US\$25. In the case of Japan, in which Japan's Chamber of Commerce works as the third party for the issuance of a CoO, the fee per CoO costs US\$25.1. The Cambodian government, under which the competent authority is the Ministry of Commerce, charges by far the highest amount among the 10 countries, US\$50 per CoO, even though the fee for CoOs for small quantities is US\$15, if the number of items is less than 2,000 for clothing and 200 for shoes.⁶

==== Table 2 ====

⁶ There are some issues regarding the fees for the issuance of CoOs. First, recent and complicated logistics demands may require exporters to obtain multiple CoOs for sub-divided goods. For instance, in case exported goods are kept in stock in one country and there is re-export of part of the stocks to third countries using FTAs, it is necessary to obtain CoOs a number of times. Higher fees are likely to hinder the flexible flow of goods utilizing FTAs. Second, while the third party certification system requires the competent authority or relevant third party to collect fees in order to cover costs, the self-certification system can be free from fees to third parties. However it should be taken into consideration that self-certification might increase risks of intended or unintended fraud declarations and as a result verification costs might surpass those for maintaining a third party certification system.

3.2. FTA Utilization Rates in Imports

This subsection computes the FTA utilization rates for Thailand’s imports. The data on imports under the FTA schemes are obtained from the Thai customs at a tariff-line level, i.e. an HS eight-digit level. Those on total imports at a tariff-line level are from the World Trade Atlas. Various figures are shown in Table 3. “AANZFTA” includes figures only for Australia. “Total” and “Eligible” refer to total imports and imports in products with lower preferential rates than MFN rates, respectively. “FTA” refers to imports under FTA schemes. In “FTA”, “ALL” and “MFN>FTA” restrict products only to all products and products with lower preferential rates than MFN rates, respectively. We examine “Others” in the next section.

==== Table 3 ====

There are several noteworthy findings in Table 3. As mentioned in Section 2.1, the difference between (C) and (D) means that FTA schemes are used in importing even products that do not have lower preferential tariff rates than the MFN rates, although such a difference in bilateral FTAs (i.e. TAFTA and JTEPA) seem to be simple mistakes by companies.⁷ Here, we focus on the FTA utilization rates for products with the lower preferential tariff rates. The total imports for such products and the imports for such products under FTA schemes are reported in (B) and (D), respectively. The FTA utilization rates when importing such products are shown in (II). From this column, we can see that FTA utilization rates are highest in TAFTA (45%), followed by ACFTA (40%). JTEPA and AKFTA also have relatively high rates, which are 21% and 22%, respectively. In addition to the FTA utilization rates, the share of imports under FTA schemes in total imports (i.e. the utility ratio) is also an important measure. This is reported in Column (I). In the above, we found the highest FTA utilization rates in TAFTA, but such imports under TAFTA occupy just 9% of the total imports.⁸ The highest share can be found in ACFTA at 20%.

3.3. FTA Utilization Rates in Exports

Next, we compute FTA utilization rates for Thailand’s exports in Table 4. The data on CoOs containing information on FTA use are obtained from Thailand’s Ministry of Commerce. We use two kinds of data sources to calculate the denominator, i.e. the

⁷ As mentioned in Section 2.1., there is a reasonable chance of using FTA schemes in importing such products in the case of multilateral FTAs.

⁸ This low rate will be because the MFN rate for gold, one of the key imports, is already zero.

total trade values, both of which are drawn from the World Trade Atlas. One is the importer-side data at a tariff-line level, the other is the exporter-side data (i.e. the Thai data) at an HS 6-digit level. As mentioned in Section 3.2, the importer and exporter sides of the data enable us to avoid biases resulting from including trade values for non-eligible products or from the CIF-FOB difference. “Total”, “Eligible”, “FTA”, and “Zero MFN” refer to total exports, total exports in eligible products, exports in eligible products under an FTA scheme, and exports in products with zero MFN rates, respectively. The figures in “Total” and “Zero MFN” are computed based on the importer-side data while those in “FTA” are based on the exporter-side data (i.e. CoO data). We compute the figures under “Eligible” by employing both the importer and exporter sides of the data. “AANZFTA” includes figures only for Australia.

==== Table 4 ====

There are some more issues that need clarification. First, at an HS 6-digit level, exports under FTA schemes are set to zero in the case of HS codes that do not exist. Second, as mentioned before, we could not identify whether or not the HS 6-digit level data on exports under FTA schemes include those for FTA ineligible products, because FTA eligibility is defined at a tariff-line level. Third, we restrict FTA eligible products only to those with lower preferential rates than MFN rates. The figures for “Eligible” from the importer-side data do not include exports of products that do not have lower preferential rates than the MFN rates. Fourth, as mentioned in Section 2.2., in some HS 6-digit codes, “FTA” exports from CoO data exceed total exports from the importer-side data. In computing “FTA”, the exports in such codes are set to total exports from the importer-side data.

Table 4 shows some interesting numbers. First, as mentioned in Section 2.2., there is a gap in the total exports of FTA eligible products between the importer (B) and exporter (C) sides of the data. In particular, it is important that the magnitude relation between these two depends on the partners involved. Namely, those based on the export-side data do not always exceed those based on the import-side data, and vice versa. Below, we compute FTA utilization rates based on the importer-side data. The second column (II) shows the highest FTA utilization rates in Thai exports under JTEPA (75%). Around 50% of the FTA utilization rates can be found in Thai exports under TAFTA, ACFTA, and AKFTA. Third, JTEPA shows the highest FTA utilization rates, but the share of exports under JTEPA in the total exports from Thailand to Japan is just 20%. The higher share can be found in exports to Australia under TAFTA (37%). The

lower share in the total exports to Japan is because most of these exports are in products with zero MFN rates. From column (III), we can see that the exports in such products occupy 70% of the total exports from Thailand to Japan. In other words, 10% of the exports from Thailand to Japan are exports of FTA ineligible products with positive MFN rates or those of FTA eligible products under MFN schemes.

4. Advanced Issues on FTA Utilization

This section further discusses some advanced issues regarding FTA utilization. We first examine duty free imports through schemes other than FTAs. Then, it is discussed how we measure FTA utilization rates in countries where multiple FTA schemes are available. Last, we examine the role of “cumulation” provisions in FTA utilization.

4.1. Other Tariff Exemption Schemes

In addition to FTA schemes, there are some other schemes for duty free imports or imports under lower tariff rates than the MFN rates. If firms can enjoy duty free imports with a scheme other than FTAs, they do not need to use FTA schemes. In Table 3, “Others” includes imports under schemes of bonded warehouses, free zones, investment promotion, duty drawbacks under Section 19 bis, and duty drawbacks for re-exports.⁹ Whether or not to exclude such imports in the calculation of the denominator in FTA utilization rates might be a controversial issue. It is obvious that if we exclude such imports, FTA utilization rates rise. Indeed, the size of such imports is not trivial. The table shows that such imports are much larger than imports under FTA schemes in all the sampled exporting countries. Particularly in imports from Japan, the share of such imports in total imports, which is reported in column (III), is 44%. This is consistent with the fact that foreign direct investment (FDI) from Japan occupies the highest share in total inward FDI in Thailand. Namely, a large number of Japanese multinational enterprises in Thailand enjoy duty free imports under, say, investment

⁹ Goods imported under the schemes of bonded warehouses, free zones, and investment promotion may be exempted from customs duties, subject to certain conditions. The duty drawback under Section 19 bis or for re-exports enables exporting firms to obtain a refund on customs duty paid on imported goods when those goods are inputted for goods for export or are re-exported without any transformation. Under these schemes, only firms with the approval of the authorities in charge can claim such privileges. Eligible imported goods and duty privileges vary among the schemes. For example, virtually all goods imported under bonded warehouse and free zone schemes are duty-free. Under the investment promotion scheme, raw materials are duty-free while machinery may be either duty-free or subject to a 50% tariff reduction. On the other hand, machinery is ineligible for a refund on import duty paid under duty drawback schemes.

promotion schemes.

4.2. Multilateral FTA versus Bilateral FTA

Two countries sometimes have multiple FTA schemes. Such a pair usually has both bilateral and multilateral FTA schemes. For example, Thailand has both bilateral and multilateral FTA schemes with Australia, India, Japan, and New Zealand. In this case, firms' decisions on FTA use will be qualitatively different from those regarding exports to countries with a single FTA scheme. Specifically, firms will choose their tariff scheme from general tariff rates (e.g. the MFN rates), bilateral FTA rates, and multilateral FTA rates rather than simply between general rates and FTA rates. Another issue is the difficulty in computing FTA utilization rates in trade with countries with multiple FTA schemes. The source of this difficulty lies in the difference in the denominator of FTA utilization rates, i.e. the differences in eligible products among the FTA schemes. Thus, for example, we cannot simply aggregate FTA utilization rates in two FTA schemes.

One simple aggregation is to calculate the denominator by adding trade values in products eligible in either an FTA scheme. Table 5 reports imports of Thailand from Japan under AJCEP (multilateral FTA) and JTEPA (bilateral FTA), according to these FTAs' eligibility and the magnitude relation in preferential rates between these two FTAs. The above-suggested denominator is total imports (1,288 billion THB) minus imports in products ineligible in both AJCEP and JTEPA (632 billion THB). The numerator is the sum of total imports under AJCEP and JTEPA (1.6 billion THB + 136 billion THB). As a result, the utilization rate for FTA schemes in imports from Japan is 21%, which is almost the same as that for JTEPA and much higher than that for AJCEP. The trivial difference between the aggregated rates and the JTEPA utilization rates is because the total imports under AJCEP (1.6 billion THB) and the total imports of products eligible only in AJCEP (8 billion THB) are trivial, compared with imports in products that are eligible under JTEPA.

==== Table 5 ====

4.3. Cumulation

FTAs usually include the provision on "cumulation". There are three main kinds of cumulation rules. In bilateral cumulation, which applies to bilateral FTAs, materials originating in one country can be considered as originating in the partner country, and vice versa. On the other hand, diagonal cumulation applies to FTAs among more than

two countries. In diagonal cumulation, materials originating in one country can be considered as originating in all of the FTA partner countries. This enables FTA users to cumulate the value of intermediates from not only the exporting country but also from other member countries when determining the status of origin for the products to be exported. It is also worth noting that full cumulation is more flexible than diagonal cumulation, and it allows FTA users to cumulate all materials used in the preferential area. In some multilateral FTAs, this rule of diagonal cumulation has been adopted in addition to full cumulation (for more details, see, for example, Augier et al., 2005).

All ASEAN+1 FTAs include the diagonal cumulation rule. Importantly, this rule creates some incentive to use an FTA scheme even if FTA preferential rates are not lower than MFN rates. Suppose three countries (A, B, and C) are members of one multilateral FTA with a diagonal cumulation provision and that Country B is planning to export textile products to Country C under the FTA scheme. Such textile products are produced using fabrics made in Country A. Suppose that RoOs in exporting textile products require fabrics to originate in Country B. Since diagonal cumulation is allowed in this FTA, the fabrics made in Country A can be seen as originating in Country B. However, it is necessary for Country B to import fabrics from Country A under the FTA scheme, even if the MFN rates in Country B for the fabrics are zero or lower than the FTA preferential rates for the fabrics. Thus, if the MFN rates in Country C for textile products are very high, Country B imports fabrics from Country A under the FTA scheme even if such imports are costly compared with imports under the MFN rates. This is one of the reasons for observing positive trade values under FTA schemes for products that do not have lower preferential rates than MFN rates, as mentioned in Section 2.1.

We can check, by examining FTA utilization, how much member countries in multilateral FTAs enjoy such cumulation rules. Table 6 reports the utilization values of ASEAN+1 FTAs in Thailand's exports and imports in 2011. It is natural that FTA utilization values are large in trading with plus-one countries (e.g., AJCEP utilization values in trading with Japan) because ASEAN countries can already enjoy AFTA in trading with other ASEAN countries. However, we can find one noteworthy figure, AJCEP utilization values in exporting from Thailand to Viet Nam. These are larger even than AJCEP utilization values in exports from Thailand to the plus-one country, Japan. One of the reasons for such large values in exports to Viet Nam will be due to diagonal cumulation. The largest AJCEP utilization values in exports to Viet Nam can be found in "Woven fabrics of cotton (HS520932)". Thus, it is expected that, for example, woven fabrics of cotton produced in Thailand are exported to Viet Nam, where the fabrics

undergo processes of cut, make, and trim. Then, the garment products are exported to Japan under the AJCEP scheme.¹⁰ Another interesting observation is the large figure for exports to Singapore under multilateral FTA schemes because almost all the products have zero MFN rates in Singapore. Thus, it is also expected that some trade, at least among Singapore, Thailand, and plus-one countries, enjoys diagonal cumulation rules.

==== Table 6 ====

5. Concluding Remarks

In this paper, we discussed some practical issues in the computing of FTA utilization rates, which are a useful measure for discovering to what extent FTA schemes are used in trade. Our practical guidance for the computation of FTA utilization rates will be helpful in computing these rates and in examining the determinants of these rates empirically. Below, we list the issues raised in this paper.

- We should carefully classify all products into FTA eligible and ineligible products because such FTA eligibility depends not only on each product but also on the year and the country pair involved.
- Check whether or not the data on FTA utilization include trade values under FTA schemes in FTA ineligible products or in products of HS codes that do not exist.
- The positive trade values under FTA schemes may appear for FTA eligible products that do not have lower preferential rates than MFN rates.
- Obtain the data on trade values under multilateral FTA schemes according to the trading partners.
- The CoO data on FTA utilization in exports are available only in the case of FTAs that do not adopt a self-certification system.
- The preferential trade values differ between data from customs and data based on CoOs, even for the same trade flow.
- The denominator of FTA utilization in exports includes biases resulting from the

¹⁰ However, taking a closer look at this possibility, we can see something puzzling. Viet Nam has a bilateral FTA with Japan (the Japan – Viet Nam Economic Partnership Agreement, JVEPA), which entered into force in 2009. Here, textile products are eligible under JVEPA for exports from Viet Nam to Japan (but are ineligible under GSP in Japan). Importantly, under JVEPA, a special rule that is similar to the diagonal cumulation is available for some products, including textiles. Namely, when exporting textile products from Viet Nam to Japan, even under JVEPA, the use of fabrics made in Thailand is allowed. This implies that the large AJCEP utilization values in exports from Thailand to Viet Nam may not be due to benefits arising from the diagonal cumulation rule in AJCEP. Furthermore, there are no differences in terms of preferential tariff rates because the rates for textile products are zero in exports to Japan under both AJCEP and JVEPA.

inclusion of exports in FTA ineligible products in the case of using export-side data or biases resulting from the difference between the CIF basis and the FOB basis in the case of using import-side data.

- FTA utilization rates based on CoO data always contain some biases, in which the direction of the bias is ambiguous.
- It is controversial as to whether or not the trade values under a duty-free scheme other than FTAs are excluded in the calculation of the denominator in FTA utilization rates.
- It is controversial as to how we measure single FTA utilization rates for trading pair countries with multiple FTA schemes.
- We may check, by examining FTA utilization according to trading pairs, to what extent member countries in multilateral FTAs enjoy the benefits of cumulation rules.

References

- Augier, P., Gasiorok, M., and Tong, C.L., 2005, The Impact of Rules of Origin on Trade Flows, *Economic Policy*, **20**(43), 567-624.
- Bureau, J., Chakir, R., and Gallezot, J., 2007, The Utilisation of Trade Preferences for Developing Countries in the Agri-food Sector, *Journal of Agricultural Economics*, **58**(2): 175-198.
- Cadot, O., Carrere, C., de Melo, J., Portugal-Perez, A., 2005, Market Access and Welfare under Free Trade Agreements: Textiles under NAFTA, *World Bank Economic Review*, **19**(3): 379-405.
- Cadot, O., Carrere, C., De Melo, J., and Tumurchudur, B., 2006, Product-specific Rules of Origin in EU and US Preferential Trading Arrangements: An Assessment, *World Trade Review*, **5**(2): 199-224.
- Candau, F., Fontagné, L., and Jean, S., 2004, The Utilisation Rate of Preferences in the EU. Paper presented at the 7th Global Economic Analysis Conference, Washington D.C., 17-19 June 2004.
- Demidova, S. and Krishna, K., 2008, Firm Heterogeneity and Firm Behavior with Conditional Policies, *Economics Letters*, **98**(2), 122-128.
- Francois, J., Hoekman, B., and Manchin, M., 2006, Preference Erosion and Multilateral Trade Liberalization, *World Bank Economic Review*, **20**(2): 197-216.
- Hakobyan, S., 2013, Accounting for Underutilization of Trade Preference Programs: U.S. Generalized System of Preferences, Forthcoming in *Canadian Journal of Economics*.
- Hayakawa, K., 2012, Impact of Diagonal Cumulation Rule on FTA Utilization: Evidence from Bilateral and Multilateral FTAs between Japan and Thailand, IDE Discussion Papers 372.
- Hayakawa, K., Hiratsuka, D., Shiino, K., and Sukegawa, S., 2013a, Who Uses Free Trade Agreements?, *Asian Economic Journal*, **27**(3): 245-264.
- Hayakawa, K., Kim, H., Laksanapanyakul, N., and Shiino, K., 2013b, FTA Utilization: Certificate of Origin Data versus Customs Data, IDE Discussion Papers 428.
- Hayakawa, K., Kim, H., and Lee, H., 2013c, Determinants on Utilization of the Korea-ASEAN Free Trade Agreement: Margin Effect, Scale Effect, and ROO Effect, Forthcoming in *World Trade Review*.
- Hayakawa, K. and Laksanapanyakul, N., 2013, Impacts of Common Rules of Origin on FTA Utilization, IDE Discussion Papers 429.

- Inama, S., 2003, Trade Preferences and the World Trade Organization Negotiations on Market Access, *Journal of World Trade*, **37**(5), 959-976.
- Keck, A. and Lendle, A., 2012, New Evidence on Preference Utilization, World Trade Organization, Staff Working Paper ERSD-2012-12.
- Manchin, M., 2006, Preference Utilisation and Tariff Reduction in EU Imports from ACP Countries, *The World Economy*, **29**(9): 1243-1266.
- Olarreaga, M. and Ozden, C., 2005, AGOA and Apparel: Who Captures the Tariff Rent in the Presence of Preferential Market Access?, *The World Economy*, **28**(1): 63-77.
- Ozden, C. and Sharma, G., 2006, Price Effects of Preferential Market Access: Caribbean Basin Initiative and the Apparel Sector, *World Bank Economic Review*, **20**(2): 241-259.

Table 1. FTAs by Thailand

FTAs	Members	Implementation	Type
ASEAN Free Trade Area (AFTA)	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Viet Nam, and Thailand	1993	Regional
Thailand-India FTA (TIFTA): Early harvest	India and Thailand	2004	Bilateral
Thailand-Australia FTA (TAFTA)	Australia and Thailand	2005	Bilateral
ASEAN-China FTA (ACFTA)	Brunei, Cambodia, China Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Viet Nam, and Thailand	2005	Regional
Thailand-New Zealand Closer Economic Partnership Agreement (TNZCEP)	New Zealand and Thailand	2005	Bilateral
Japan-Thailand Economic Partnership Agreement (JTEPA)	Japan and Thailand	2007	Bilateral
ASEAN-Japan Economic Partnership Agreement (AJCEP)	Brunei, Cambodia, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Singapore, Viet Nam, and Thailand	2009	Regional
ASEAN-Republic of Korea FTA (AKFTA)	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Korea, Singapore, Viet Nam, and Thailand	2010	Regional
ASEAN-Australia-New Zealand FTA (AANZFTA)	Australia, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Viet Nam, and Thailand	2010	Regional
ASEAN-India FTA (AIFTA)	Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Viet Nam, and Thailand	2010	Regional
Thailand-Peru Closer Economic Partnership Agreement (TPCEP)	Peru and Thailand	2012	Bilateral

Source: Legal texts of FTAs

Table 2. Fees for the issuance of CoOs

Country	Issuing Authority	Fee (US\$)	Notes
Cambodia	Ministry of Commerce	50	
		15	For small quantities
Japan	Japan Chamber of Commerce	25.1	
Laos	Ministry of Industry and Commerce	5	For invoice values < 10,000USD
		7.5	For invoice values < 30,000USD
		10	For invoice values < 60,000USD
		12.5	For invoice values > 60,000USD
Singapore	Singapore Customs	4.8	Through Tradenet
		8	Manually
Myanmar	Ministry of Commerce	3.9	Fee 3.5 + Paper charge 0.4
Philippines	Bureau of Customs	3.1	(Stamp fee 2.7 + Paper charge 0.4)
Thailand	Ministry of Commerce	1	
Vietnam	Ministry of Industry and Trade	1	Paper charge
Indonesia	Instansi Penerbit Surat Keterangan Asal	0.5	
Malaysia	Ministry of International Trade and Industry	0.4	Paper charge

Source: JETRO

Notes: As of December 2011. Fees are converted to US dollars using annual average rates in 2012, excluding Myanmar. (The average rate between April to October 2012 was used due to data restrictions).

Table 3. FTA Utilization Rates for Imports (2011, Billion THB)

Coverage	Total	Eligible	FTA		Others	(I)	(II)	(III)
	ALL	MFN > FTA	ALL	MFN > FTA	ALL	(D)/(A)	(D)/(B)	(E)/(A)
	(A)	(B)	(C)	(D)	(E)			
AANZFTA	242	41	0.30	0.29	87	0.1%	1%	36%
TAFTA	242	48	27	22	87	9%	45%	36%
ACFTA	930	460	195	185	313	20%	40%	34%
AIFTA	92	26	2.9	2.6	27	3%	10%	29%
TIFTA	92	5	0.68	0.67	27	1%	13%	29%
AJCEP	1,288	439	1.8	1.6	563	0.1%	0.4%	44%
JTEPA	1,288	648	145	136	563	11%	21%	44%
AKFTA	281	135	32	30	109	11%	22%	39%

Sources: Thai Customs; World Trade Atlas

Notes: "AANZFTA" includes figures only for Australia. "Total" and "Eligible" refer to total imports and imports in products with lower preferential rates than MFN rates, respectively. "FTA" refers to imports under FTA schemes. In "FTA", "ALL" and "MFN>FTA" restrict products only to all products and to products with lower preferential rates than the MFN rates, respectively. "Others" includes imports under the schemes of bonded warehouses, free zones, investment promotion, duty drawbacks under Section 19 bis, and duty drawbacks for re-exports.

Table 4. FTA Utilization for Thai Exports (2011, Million USD)

Source	Total	Eligible		FTA	Zero MFN	(I)	(II)	(III)
	Import	Import	Export	Export	Import	(D)/(A)	(D)/(B)	(E)/(A)
	(A)	(B)	(C)	(D)	(E)			
AANZFTA	9,947	6,622	5,850	77	2,054	1%	1%	21%
TAFTA	9,947	7,893	5,946	3,723	2,054	37%	47%	21%
ACFTA	38,595	15,044	12,352	8,135	17,397	21%	54%	45%
AIFTA	5,443	4,116	4,056	957	417	18%	23%	8%
AJCEP	23,546	5,866	7,004	40	16,513	0.2%	1%	70%
JTEPA	23,546	6,343	7,475	4,774	16,513	20%	75%	70%
AKFTA	4,974	1,891	2,148	903	2,195	18%	48%	44%

Sources: Thai Ministry of Commerce; World Trade Atlas

Notes: “Total”, “Eligible”, “FTA”, and “Zero MFN” refer to total exports, total exports in eligible products, exports in eligible products under FTA schemes, and exports in products with zero MFN rates, respectively. The figures in “Total” and “Zero MFN” are computed based on the importer-side data while those in “FTA” are based on the exporter-side data (i.e. CoO data).

Table 5. Multilateral FTA versus Bilateral FTA for Thai Imports (2011, Billion THB)

Eligibility		Preferential Tariff	Number of HS codes	FTA Imports		All Imports
AJCEP	JTEPA			AJCEP	JTEPA	
NO	NO		2,525	0	0	632
YES	NO		70	0.3	0	8
NO	YES		309	0	63	217
YES	YES	AJCEP > JTEPA	2,736	0.2	34	238
YES	YES	AJCEP = JTEPA	2,537	0.9	39	188
YES	YES	AJCEP < JTEPA	123	0.2	0.1	4
Total			8,300	1.6	136	1,288

Sources: Thai Customs; World Trade Atlas

Table 6. Cumulation: FTA Utilization Values for Thailand in 2011 (Thousand USD)

	AANZFTA		ACFTA		AIFTA		AJCEP		AKFTA	
	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports
Australia	9,781	83,901	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Brunei	0	0	0	7,757	0	238	0	0	0	43
China	n.a.	n.a.	6,387,569	9,361,301	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Indonesia	0	0	384	28	130	938	0	2,175	136	0
India	n.a.	n.a.	n.a.	n.a.	95,094	1,221,948	n.a.	n.a.	n.a.	n.a.
Japan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	58,003	48,119	n.a.	n.a.
Cambodia	0	0	0	116	0	0	0	0	0	0
Korea	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1,037,182	2,214,727
Laos	0	0	13	0	0	0	28	800	0	0
Malaysia	0	0	1,612	333	0	0	382	28	341	239
New Zealand	0	7,919	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Philippines	0	0	337	65	0	0	0	35	0	281
Singapore	602	5,018	2,881	1,574	0	673	0	110	40	1,066
Viet Nam	397	486	1,365	692	0	0	955	57,155	0	132
ASEAN	1,000	5,504	6,592	10,566	130	1,849	1,365	60,302	517	1,761
ASEAN / Total	9%	6%	0%	0%	0%	0%	2%	56%	0%	0%
Total	10,781	97,323	6,394,162	9,371,867	95,224	1,223,797	59,368	108,421	1,037,698	2,216,487

Sources: Thai Ministry of Commerce; Thai Customs

Notes: Under AJCEP, the main imports from Japan are “sanitary products (HS481840)” while the main exports to Viet Nam are “Woven fabrics of cotton (HS520932)”.

Appendix. FTA Utilization Rates by Section

Table A1. FTA Utilization Rates for Thai Imports in 2011 by Section

	AANZFTA	TAFTA	ACFTA	AIFTA	AJCEP	JTEPA	AKFTA
Live animals	0%	66%	33%	4%	0%	1%	0%
Vegetable products	1%	36%	94%	20%	14%	35%	5%
Animal/vegetable fats and oils	1%	80%	82%	0%	1%	2%	76%
Food products	0%	86%	71%	23%	1%	33%	16%
Mineral products	0%	22%	30%	0%	2%	21%	53%
Chemical products	0%	27%	36%	5%	0%	19%	11%
Plastics and rubber	0%	31%	38%	20%	1%	26%	37%
Leather products	0%	8%	42%	5%	1%	3%	2%
Wood products	0%	77%	21%	2%	0%	0%	6%
Paper products	13%	47%	2%	6%	11%	6%	47%
Textiles	0%	85%	56%	32%	1%	41%	48%
Footwear	0%	33%	26%	1%	0%	14%	23%
Plastic or glass products	0%	39%	69%	30%	0%	16%	23%
Precision metals	0%	14%	16%	0%	0%	7%	0%
Base Metal	2%	67%	43%	26%	0%	44%	47%
Machinery	0%	29%	28%	8%	0%	11%	8%
Transport equipment	0%	15%	36%	1%	0%	15%	17%
Precision machinery	0%	3%	10%	1%	0%	12%	8%
Arms and ammunition	0%	0%	0%	0%	0%	0%	2%
Miscellaneous	0%	22%	67%	2%	0%	30%	25%
Art products	0%	0%	0%	0%	0%	0%	0%

Sources: Thai Customs; World Trade Atlas

Notes: "AANZFTA" includes figures only for Australia. The FTA utilization rates in this table are computed as in column (II) in Table 2.

Table A2. FTA Utilization Rates for Thai Exports in 2011 by Section

	AANZFTA	TAFTA	ACFTA	AIFTA	AJCEP	JTEPA	AKFTA
Live animals			53%	0%	0%	55%	80%
Vegetable products	0%	52%	73%	7%	0%	80%	36%
Animal/vegetable fats and oils	83%	10%	68%	0%	0%	99%	76%
Food products	0%	74%	73%	57%	1%	83%	41%
Mineral products	0%	0%	67%	19%	0%	43%	63%
Chemical products	0%	63%	84%	38%	0%	87%	48%
Plastics and rubber	1%	60%	61%	30%	1%	79%	69%
Leather products	0%	40%	5%	4%	0%	58%	27%
Wood products	1%	44%	20%	49%	3%	55%	44%
Paper products	0%	68%	46%	37%			
Textiles	16%	35%	35%	35%	1%	56%	39%
Footwear	7%	44%	43%	11%	3%	76%	17%
Plastic or glass products	1%	71%	27%	27%	0%	61%	29%
Precision metals	0%	92%	3%	0%	0%	77%	18%
Base Metal	0%	30%	17%	14%	0%	71%	45%
Machinery	2%	28%	13%	20%	0%	80%	42%
Transport equipment	0%	46%	35%	24%			3%
Precision machinery	19%	38%	3%	16%	0%	6%	15%
Arms and ammunition			0%	0%	0%	0%	
Miscellaneous	0%	74%	32%	13%	0%	88%	59%
Art products				0%			

Sources: Thai Ministry of Commerce; World Trade Atlas

Notes: "AANZFTA" includes figures for only Australia. The FTA utilization rates in this table are computed as in column (II) in Table 3.