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Clothes without an Emperor: Analysis of the Preferential Tariffs in ASEAN

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Abstract: This paper examines the current state of intra-ASEAN trade under the preferential regime of the AFTA. It partly addresses some data problems and employs a gravity model to arrive at alternative ways of gauging the importance of preferences in the absence of data on the actual utilisation of AFTA preferential tariffs. Our results confirm the wide-spread notion that the AFTA preferential scheme is of very little consequence to intra-regional trade. However, in that limited range of products where AFTA might have an influence, preferences seem to matter only when the differential margin between the MFN and preferential tariff rates reaches a critical amount, allowing regional exporters to cover the costs of requesting preferences.

JEL Codes: F13, F14, F15

Keywords: ASEAN trade policy, free trade areas, empirical estimates of preference utilisation

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1. Introduction

Ambitions of regional integration are steadily increasing in Southeast Asia, especially after having seen the completion of an ASEAN[I] Free Trade Area (AFTA) in January 2002. The next project is no less than the establishment of an ASEAN Economic Community (AEC) by the year 2020, and possibly even earlier, by 2015.[II] Yet, the view is wide-spread that the most basic of instruments offered by AFTA, namely, the preferential tariffs, are hardly ever used in practice, with the utilisation rate purportedly reaching merely 5% of total intra-ASEAN imports[III]. The significant fall of MFN tariffs, partly explains the diminished importance of preferences, while others point to the high administrative costs of utilisation and other non-tariff measures (NTMs) which raises the effective price of intra-regional imports.

Unilateral liberalisation can favour the creation of more trade, reveal the strong intent of transforming the region into an attractive production base, and indeed, gives substance to the rhetorics of open regionalism. On the other hand, the hurdles posed by NTMs, and other high costs implied by administrative and rules of origin compliance, are obviously more malign, casting doubts on the sustainability of future regional efforts. ASEAN has been or currently negotiating a series of FTAs with third parties, which includes an FTA with China by 2012, a Comprehensive Economic Partnership (including elements of a possible FTA) with Japan, also by 2012, and an FTA with India at the earliest by 2011, latest by 2016. Bilateral FTAs between individual members and non-ASEAN are numerous: 8 WTO-notified agreements and a total of 26 non-reported initiatives (ADB, 2006; pp. 277- 278). If the obstacles of free trade within ASEAN can not be sufficiently addressed, then the prospects of new agreements which permit an even more limited market opening can only be pessimistic.

[I] Association of South East Asian Nations, established by Indonesia, Malaysia, Philippines, Singapore and Thailand in 1967. Membership was expanded to include Brunei (1984), Vietnam (1995), Laos (1997), Myanmar (1997) and Cambodia (1999).

[II] In the most recent ASEAN Summit of December 2005, the Heads of States discussed the possibility of advancing the target date. The proposal will be subjected for further study.

[III] See for instance: Baldwin (2006), Severino (2006), The Economist (07/29/04), Cuyvers et al (2005).

While considerable work has been done on estimating the probable impact of AFTA, as well as its possible trade diverting and creating effects[IV], there is no study known to the authors which sought to evaluate the actual impact of preferences and the extent of the chilling effects of NTMs on intra-ASEAN trade. This is hardly surprising given the numerous data problems that would draw against any such attempt. Data sharing is merely voluntary in ASEAN, and so is the reporting on the incidence of preference utilisation. According to the Bureau of Economic Integration of the ASEAN Secretariat, there is not one single year since the CEPT Scheme began in 1993, where data from the so-called Form D[V] is available for all 6 original AFTA countries[VI], and if some data exist for some countries, the information is often on a quarterly basis and incomplete for the relevant year. This means that existing estimates, such as the 5% utilisation rate often quoted in the literature is based on interviews or extrapolation but not on actual utilisation data. Another problem stems from the fact that product codes used in the submission of trade and tariff data are inconsistent, and even differ across some member countries, making the actual trade coverage of various rates of preferential tariffs impossible to track and compare across all AFTA participants.

The evaluation of AFTA's success or failure is thus often based on the number of tariff lines covered by the liberalisation scheme, and on the extent of tariff reduction under the preferential scheme. On both grounds, a rather positive judgement could be rendered. From the very start of the Common Effective Preferential Tariff (CEPT) Scheme in 1993, product coverage was already as high as 88.1%, and at present, preferences are applicable to 98.8% of the tariff lines. In terms of tariff liberalisation, average tariff rates imposed on ASEAN imports, fell from an average of 12.76% in 1993 to 1.87% at present, while unilateral tariff reduction among ASEAN-6

[IV] See for instance Frankel and Wei (1996), Soloaga and Winters (1999), Cernat (2001), Clarete, Edmonds, and Wallack (2002), Gosh and Yamarik (2002), Dee and Gali (2003), Elliot and Ikemoto (2004), Lee and Park (2005).

[V] The total amount of intra-ASEAN imports granted preferential rates under the CEPT Scheme can be extracted from the Form D certificates.

[VI] Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand.

has also been substantial, as seen from the drop of MFN tariffs from 20% in 1994 to 8.16% in 2003 (ASEAN Secretariat, CEPT tariff database)[VII].

The critical question is clearly the extent to which AFTA has induced more trade among its members. In absolute terms, trade within the region is low, with intra-ASEAN exports and imports in 2004 accounting for only 22.55% and 21.96% of total, respectively. Relative to 1993 figures, this is an improvement of only 1.4 percentage points for exports and 4.6 for imports.

AFTA must not be judged in the traditional Vinerian sense, but seen as part of a regional competitiveness strategy, especially in the context of the spectacular rise of China and the emerging dynamism of India. It is therefore FDI and MFN liberalisation that matters. In a series of recent studies and policy recommendations internal to the ASEAN Secretariat, it has nonetheless been strongly noted, that the key threat to competitiveness is the continued fragmentation of the regional market, which hinders the full exploitation of the complementarities of member economies, and increases the costs of doing business in the region (Schwarz and Villinger,2004). To make ASEAN an attractive FDI destination, there is therefore a renewed thrust to assess the remaining tariff and especially, non-tariff barriers, and identify the principal constraints limiting the use of the AFTA preferential scheme.

The absence of key facts about the actual impact of preferences on intra-ASEAN trade is one of the most important obstacles faced by analysts and policymakers alike. Without complete reporting of preference utilisation by Member countries, one can only rely on the actual trade and tariff data. Further problems arise from the data due to the lack of congruence between the product codes used. Moreover, detailed comparison of individual country trade patterns is hampered by lack of uniformity in data submissions at the most disaggregated level.

This paper is therefore a tentative attempt to examine the current state of intra-ASEAN trade under the preferential regime of the AFTA. It partly addresses some data problems and explores alternative ways of gauging the importance of preferences in the absence of actual data on its usage. The incidence of non-tariff measures will also be scanned, focusing on the products carrying high preferences but which are revealed to be underexploited. Our results confirm the

[VII] See Consolidated CEPT Package data : http://www.aseansec.org/12025.htm.

wide-spread impression that the AFTA preferential scheme is of very little consequence to intra-regional trade. However, in that limited range of products where AFTA might have an influence, preferences seem to matter only when the differential margin between the MFN and preferential tariff rates reaches a critical amount, allowing regional exporters to cover the costs of requesting preferences.

The paper is organized as follows: the following section provides a brief overview of the literature quantifying the possible trade and welfare effects of AFTA. The third section discusses data sources and methodology, while the fourth section lays out the results. Section 5 give gives a summary and concludes.

2. Regionalism Effects in ASEAN

Empirical work carried out on ASEAN is largely focussed on the trade creation and trade diversion impact of preferential trade regimes in the region. While net trade creation is clearly the superior result in efficiency terms, the fact that policies are produced in the political market shifts expectations towards a trade-diverting outcome. In this context, the predominantly trade-creating result of ASEAN regionalism that emerges from various empirical studies (see Table 1) may seem unusual, but it is hardly surprising if one is reminded of the heavy external orientation of ASEAN trade.

The most commonly-used approach in empirically testing the trade effects of regionalism is the gravity model which attempts to establish what would have been the natural bilateral trading pattern one may expect based on income, distance, language and other country characteristics. Policy shocks, such as the formation of a discriminatory grouping is often introduced to the model through the use of dummy variables, in order to determine whether or not these have led to a concentration of trade among members at the expense of trade with the rest of the world.

Using this approach, Frankel and Wei (1996) found the intra-ASEAN bias to be significant for every year of the period under study (1970 – 1992)[VIII]. This means that though simple trade shares portray regional trade to be less significant relative to ASEAN's external trade, two members trade 600% more than two otherwise identical economies.[IX] This bias persists even if the entrepot role of Singapore is addressed, through the addition of an additional dummy for bilateral trade that involves Singapore. Moreover, the intra-ASEAN orientation is only slightly reduced when the openness of ASEAN, which is significantly more than what is predicted by the model, is accounted for. The ASEAN effect, however, disappears when the East Asian bloc is tested simultaneously. This would imply that the earlier observed bias may not be due to preferentialism within ASEAN itself, but part of a more prevailing propensity to trade within the larger East Asian bloc. This is consistent with the finding of Lee and Park (2002), who likewise find ASEAN regionalism to have a significantly positive effect on intra and extra-regional trade, but find the statistical significance of the AFTA bloc also fading out when estimated with the ASEAN+3 grouping (China, Japan and South Korea). In terms of extra-bloc openness, Frankel and Wei (1997) found some (albeit insignificant) indication of decline due to the 1991 decision to form an AFTA. Compared to 1980, though, external openness has increased in 1992, the last year of the sample.

(table 1 about here)

A slightly different picture emerges from the gravity estimates produced by Soloaga and Winters (1999). Investigating 9 major blocs over the period of 1980 to 1996, they find a highly significant increase in the extra-bloc coefficients, together with a fall in intra-ASEAN trade. In an Asian Development Bank study by Clarete, Edmonds and Wallack (2002), which extends the analysis up to 2000, they instead showed that AFTA might have reduced extra-ASEAN trade, and found no evidence of an effect on the pattern of intra-regional exports and imports. The

[VIII] However, this is close to the median and mode of the yearly estimates from 1965 - 1992 made by Frankel (1996) of the 6 FTAs considered : EC, EFTA, US-Canada FTA, Mercosur, Andean Group and ASEAN (Frankel, 1996).

[IX] They do issue a reminder, however, that for groupings with fewer members, the estimate of regional bloc bias is rather imprecise as suggested by the accompanying large standard error. Extra-bloc measures, instead, are more accurate and reveal a strong outward orientation by members.

inclusion of the new ASEAN members, namely, Cambodia, Myanmar, Laos and Vietnam in the 1990s, may have diluted the impact of regionalism, being less outward oriented and less developed relative to the rest of ASEAN.

The overall welfare effects of bloc formation, on the other hand, is better addressed employing a computable general equilibrium (CGE) model which can simulate real income effects as well as changes in sectoral production and factor prices. Earlier studies using the ASEAN linked CGE model[X] point to a positive but minimal effect of an AFTA on overall income and trade flows. Adams and Park (1995), for instance, report a welfare change of 0.6% for Indonesia and 0.67% for the Philippines, and 1.34% for Thailand and 1.6% for Malaysia (1.6). Results from more recent CGE Studies using the GTAP model and data base also range around the same magnitudes. Park (2000) using the GTAP 3 version, find a percentage change in GDP of only 0.65% for ASEAN, with Indonesia experiencing the lowest gain (0.1) and the largest increase accruing to the Philippines (1.54). However, the results of Ando and Urata (2005) show that transforming AFTA into East-Asian FTA that would include China, Japan and South Korea, leads to a significant rise in ASEAN output, especially in chemical products (12%), machinery (6%), and electronic machinery (10). These findings reflect the weight of East-Asian trade for ASEAN, and the importance of capital accumulation, institutional convergence and trade facilitation, which Ando and Urata (2005) attempted to take into account in their work.

3. Structure of ASEAN trade under the Common Effective Preferential Tariff Scheme

Data Sources

Although trade and tariff data are available at the most disaggregated level for ASEAN through the ASEAN Secretariat database[XI], they can not be combined for regression purposes due to frequent changes in the product codes used across countries and years. A harmonized product

[X] See for example Adams & Park (1995), Nadal de Simone (1995), Imada, Montes & Naya (1991), Felipe and Wescott (1992)

[XI] See http://www.aseansec.org/12025.htm.

nomenclature in ASEAN, the AHTN, has only been recently in force[XII], and is used only for the reporting of the Common Effective Preferential Tariff (CEPT) rates. Trade values and MFN tariffs, however, are not reported with the same ASEAN nomenclature, but with the 9-digit HS classification instead. Thailand further adds to the unevenness of the data by employing a 7-digit HS classification in its submissions. To address these problems, it has been necessary to limit the number of years and countries under study, and to converge the preferential tariff rates sourced from the ASEAN secretariat with the MFN and trade data base of WITS[XIII].

Sectoral and country structure of AFTA preferences

Table 2 describes the structure of AFTA preferences per sector for the periods 2001 to 2003, given the data assembled for this study. Both MFN and CEPT tariffs are relatively higher in plastics, footwear, textile & clothing, and machineries sectors than in other sectors. The average CEPT rates fall within the allowable range of 5% and below[XIV], while for most sectors, the average difference between MFN and CEPT tariff rates hover around the 10-15% range, with the exception of stone (7.7%) and metals (5.2%) sectors.

(*table 2 about here)*

However, using a more disaggregated breakdown of sectoral trade (HS6), it becomes immediately apparent that for most of intra-ASEAN products, the margin between MFN and CEPT rates is actually zero. On one hand, as table 3 shows, 94.3% of tariff lines already fall within the 5% AFTA limit[XV], covering 90.9% of total intra-ASEAN imports in 2003 .[XVI] Half of

[XII] The ASEAN Harmonized Tariff Nomenclature (AHTN), that took effect in 2004, is at an 8-digit level of classification for over 10,000 items, and is consistent with the 6-digit HS classification of 2002.

[XIII] WITS is a combined database from UN's COMTRADE, UNCTAD's TRAINS and the WTO's database.

[XIV] Under the AFTA, members are allowed to impose up to 5% tariffs on ASEAN imports, and higher than 5% tariffs for products recently transferred from temporary exclusion and/or the list of sensitive products into the normal liberalisation track.

[XV] Under the CEPT Scheme, tariffs must be brought down to the range of 0-5%.

[XVI] Including Singapore, whose trade is 100% duty-free, then the coverage slightly rises to 95.7% of tariff lines and 93.2% of total value of imports. Thailand, however, is not included given the incompleteness of

intra-ASEAN imports in terms of trade value are also covered by duty-free tariffs under the AFTA. But since MFN tariffs have also fallen rapidly in the last decade[XVII], the low CEPT rates do not translate into significant advantages or benefits for regional traders. In fact, for about 84%[XVIII] of total trade in 2001 and 2003, the difference between MFN and CEPT rates is merely 5 percentage points and below. While ASEAN has fulfilled its agreement to eliminate import duties on 60% of the products in their normal inclusion lists by 2003[XIX], the continuing process of unilateral liberalisation of MFN tariffs, has led to the redundancy of preferences for a large range of products.

(*table 3 about here)*

With the exception of Malaysia and Singapore, most of the CEPT tariff lines are pegged at the maximum AFTA rate of 5% tariffs (see last column, table 3). In terms of trade values, however, it is the zero CEPT rate that covers most of imports for Indonesia, Malaysia, Philippines and Singapore in 2003. As far as the top imports (in value terms) of these countries (see table A.1 in Annex) are concerned, all carry zero or low CEPT and MFN rates so that for the most important products traded across ASEAN, preferential rates have negligible impact.

Table 3 also illustrate that the product space where preferential tariffs could stimulate intra-ASEAN trade is indeed quite limited. The ASEAN trade value shares of products having preferential tariff margins of above 5 percentage points is only 14.86% (12.62%) of total imports in 2001 (2003)[XX]. Given the high documentation and other administrative costs incurred in complying with the requirements of the preferential scheme (Schwarz and Villinger, 2004), one

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data for 2003. The rates of 94.3% and 90.9% are derived by summing the first two columns of the CEPT rates in Table 3.2 for ASEAN.

[XVII] Zero MFN tariffs are applied to slightly more than a third of imports for Indonesia, Philippines and Thailand, and two thirds for Malaysia and 99.8% for Singapore. See table A.1 in Annex for more details on the breakdown of MFN tariffs.

[XVIII] Sum of first two columns of Preference Margins in Table 3.

[XIX] This target was reached in 2004 when Thailand and the Philippines have complied with their commitment under the Protocol to eliminate intra-ASEAN import duties. As of writing, 64.19% of products in the inclusion list are duty-free within ASEAN (AFTA Council, 2005).

[XX] Sum of trade value shares of products having preferential margins of 6% and above.

would expect that only sufficiently high differentials between MFN and CEPT rates would prompt regional producers and traders to take up the preferences accorded by AFTA. As shown in Table 3, products where margins go over 10 percentage points account for only 10.77% of total imports in 2001 and 7.13% in 2003.

4. Empirical Analysis

Analysis at aggregate level

We initially conduct an experiment that tests the importance of preferential tariffs, employing data at the aggregate level. As earlier mentioned, data availability constrains us to limit the analysis to the period of 2001 – 2003. Reporting (importing) countries in the analysis include Indonesia, Malaysia, Philippines and Thailand. Annex A.3 lists all partner countries which comprises all available trading partners. The decision to focus on only four countries, is due to the fact that preferences no longer matter for Singapore and Brunei given the predominance of zero MFN tariffs. The new members, on the other hand, are yet to fully implement the CEPT scheme[XXI], and together account for a small share in intra-ASEAN trade.

To measure the importance of trade preferences on intra-ASEAN trade flows we use a gravity model which explains the volume of bilateral trade flows between countries. The origins of the model date back to Tinbergen (1962) and Pöyhonen (1963) and the theoretical derivation of the gravity model has been further developed by Anderson (1979), Bergstrand (1985), Deardorff (1995), Eaton and Kortum (2002), Anderson and van Wincoop (2003). Anderson and Wincoop (2003) argue that bilateral trade flows depend on the destination and origin price effects, which are themselves related to the existence of trade barriers, which they call "multilateral resistance". They propose a method which consistently and efficiently estimates gravity equations by controlling for price effects in both the destination and origin markets (and for other regional specificities which would be omitted) by including origin and destination fixed effects in all equations. Since our

[XXI] Cambodia, Laos, Myanmar and Vietnam have later deadlines to implement the CEPT scheme: Vietnam by 2006, Laos and Myanmar by 2008 and Cambodia by 2010.

dataset ranges over time, prices should also change over time. To control for these changes, we therefore include origin and destination fixed-effects, interacted with time dummies.[XXII]

For the analysis at the aggregate level we estimate the following equation:

$$\ln X_{ijt} = \alpha + \beta_1 \ln tariff_{ijt} + \beta_2 \ln D_{ij} + \beta_3 Colony_{itj} + \beta_4 Language_{ijt} + \beta_5 E_{it} + \beta_6 I_{jt} + \beta_7 T_t + u_{ijkt} \quad (1)$$

The dependent variable is $X_{ijt,}$ is the aggregate bilateral import from country *i* to country *j* in period t. The variable *tariff* measures bilateral tariffs between country *i* and *j* in period *t*. D_{ij} is distance between the partner countries which proxies trading costs. To capture historical linkages between trading partners a zero-one type dummy variable was included in the regression for colonial links (Colony). Common language can also greatly reduce transaction costs, hence the inclusion of a dummy for the trading partners having a common language. *Tt* are time fixed effects, while *Eit* and *Ijt* are exporter and importer time varying fixed effects.

Gravity models often include GDP for both reporter and partner countries capturing the size of the economy. In our specification the time varying country fixed effects capture among other things the impact of the size of the economy on trade. Moreover, including time varying reporter and partner fixed effects together with GDP data would give rise to a multicollinearity problem; therefore we adopt the specification proposed by Anderson and Wincoop (2003), dropping the GDP data in the estimation.

The objective of the econometric analysis at the aggregate level is to estimate the effects of preferential AFTA tariffs on trade flows of AFTA member countries. We do not have a precise measure on what extent preferences were used, because the available trade data does not distinguish between products imported under MFN tariffs and those where the privilege to avail lower preferential tariffs was invoked. Even though in principle AFTA member countries apply preferential tariffs between each other, there can be several restrictions, such as rules of origin or other non tariff barriers, which would limit the use of the preferential tariffs within AFTA reducing the importance of AFTA's preferences on its member states. To proxy the importance of preferences for trade between AFTA members the results of two specifications are compared. The

[XXII] See Francois and Woerz (2006) using similar specification.

first specification uses MFN tariffs between ASEAN and their partner countries while the second specification uses preferential tariffs for trade between ASEAN countries and MFN for the rest of the countries. If preferential tariffs indeed exert an impact on intra-ASEAN trade flows, then we should expect the second specification to have a greater explanatory power relative to the first model, as revealed by higher R-squared.

Results of the aggregate regressions

Table 4 presents the results of the OLS regressions performed using the two different model specifications discussed earlier. The first column carries the results of the first regression, which uses the preferential CEPT rates between AFTA countries for the *tariff* variable, while the results shown in the second column refer to the experiment using MFN tariffs, also for country pairs which are eligible for AFTA preferences. Both specifications use time varying country specific dummies and time dummies.

The results in Table 4 indicate that the coefficient of the tariff variable is high and significant for both specifications. This is consistent with the usual expectations with regard to the negative trade effects of tariffs. In this case, a one per cent rise in tariffs would decrease trade by around 180%. More importantly, the results indicate that taking the preferential tariffs between ASEAN members into account does not significantly change the outcomes, with coefficients of all the variables remaining almost the same, and the R-squared of the two different specifications being almost identical. We also implemented a Hausmann specification test to assess if the two specifications are different from each other and the results of the test indicate that the two specifications are not significantly different from each other. This leads us to conclude that preferences applicable between ASEAN countries, have indeed not wielded any important influence on their aggregate trade flows during the period under study.

(table 4 about here)

Analysis at disaggregate level

We now focus the analysis on the disaggregate trade flows in order to further explore the effects of preferences on trade flows and to provide an approximate estimate of the costs of requesting

preferences under the AFTA. Since the data at hand does not distinguish between trade flows using MFN tariffs and those that utilized preferential tariff rates, we carry out the present analysis using normal trade flows. While the obtained estimates do not provide a precise quantification of the costs of preferences because of these data constraints, we nevertheless are able to obtain an indicative estimate of the importance of preferences for trade flows and of the minimum level of preferences needed in order to have a positive trade stimulating effect on intra-AFTA trade flows.

The disaggregate analysis is conducted at 6-digit HS level and includes Indonesia, Malaysia, Philippines and Thailand as reporting countries and the same four countries and Singapore as partner countries. Thus we excluded those trade flows for which the third country tariffs were zero or equal to the preferential tariff. The disaggregated trade data covers the period 2001-2003 which yields a database of 42,268 observations on bilateral trade flows.[XXIII] Data on geographical variables were obtained from the Paris based Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).

The analysis at the disaggregate level also requires a variable which would capture the otherwise omitted price effects. Prices are expected to be different in each sector, thus to correctly account for price effects we include time varying country specific fixed effects interacted with sectoral dummies.[XXIV] The following specification is used for the disaggregated regression:

$$\ln X_{ijkt} = \alpha + \beta_1 \ln PREF_{ijkt} + \beta_2 \ln D_{ij} + \beta_3 Language_{ijt} + \beta_4 E_{itk} + \beta_5 I_{jtk} + \beta_6 T_t + \beta_7 S_k + u_{ijkt} \quad (2)$$

The dependent variable $X_{ijkt,}$ is the bilateral import from country i to country j in period t of product k. Country i and j are limited to 5 ASEAN countries, namely, Indonesia, Malaysia, Philippines, Singapore and Thailand and products k are limited to those for which there is an applicable preferential tariff according to the AFTA. The specification is very similar to those of the aggregate regressions. The main difference is that instead of using bilateral preferential tariffs or MFN tariffs, we include the preference margins (the difference between MFN and preferential

[XXIII] Data for Thailand for the year 2001 is not available.

[XXIV] Chen (2004) also uses sector and country specific fixed effects to capture price effects in each sector and country, however she has a cross-section data and therefore she does not use time varying fixed effects.

tariffs relative to MFN tariffs) in the regressions. The variable *PREF* captures the impact of different preference margins on bilateral trade flows, and is constructed in the following way:

$$PREF = \ln \frac{(MFN - PT)}{(1 + MNF)} * Difference \tag{3}$$

where *PT* is the preferential tariff, *MFN,* the third country tariff, and *Difference* stands for several dummy variables which capture the difference between MFN and preferential tariffs. A total of fifteen dummy variables were interacted with the preference margin, each created for every 5% differential in MFN and preferential rates, all the way up to 50% margin, after which dummies correspond to margins of 10%.[xxv] The coefficient of the preference margin interacted with these dummy variables, thus indicates the region of tariff differentials where an impact on bilateral trade flows can be expected to take effect. E_{tik} and I_{itk} are time varying reporter and partner fixed-effects interacted with sectoral dummies, while T_t and S_k, correspond to time fixed effects and sector specific fixed effects, respectively.

Results of the disaggregate regressions

While the results from analyzing aggregate trade flows showed that preferences offered under AFTA did not have a significant effect on trade flows of beneficiary countries, we nonetheless intend with the subsequent analysis to determine the margin of preferences relative to MFN rates, where AFTA might have a stimulating impact on trade.

From the results based on disaggregated data presented in Table 5, it is apparent that distance has a smaller negative effect on intra-ASEAN trade than on ASEAN countries' trade with the rest of the world. Although high internal land transport costs are said to characterize much of ASEAN, port logistics between the main regional trade routes (largely involving Singapore) are believed to be cost efficient.

Turning to the role of preferences, fifteen variables were included in the regression to capture the importance of preference margin on trade flows. Results reveal that the preference

[xxv] In other words the fifteen dummies capture when the difference between third country tariffs and MFN tariffs are 0-5%, 5-10%, 10-15%, 15-20%, 20-25%, 25-30%, 30-35%, 35-40%, 40-45%, 45-50%, 50-60%, 60-70%, 70-80%, 80-90%, or more than 90%.

margin has a negative significant effect on trade when the difference between third country tariffs and preferential tariffs are lower than five per cent. This might be because the costs of requesting the preferences, such as administrative costs, and the costs of complying with the rules of origin requirements of AFTA are higher than the benefits expected from obtaining the preferential treatment. When the difference between preferential and MFN tariffs are between five to 10 per cent, the coefficient remains negative but becomes insignificant. While margins of 10 to 25 percentage points register a slightly positive effect, the coefficient is insignificant. Preferences start to have a trade stimulating effect only when preferential tariffs are at least 25 percentage points lower than the MFN rates. These results suggest that the costs of requesting preferences within AFTA might be in the range of 10-25%. Nevertheless, one has to bear in mind that these results are not based on actual utilization rates but normal intra-regional trade flows which do not take into account whether preferential tariffs were actually applied or not.

The cost estimates obtained are somewhat larger than those found in the literature for other preference schemes. Herin (1986) estimates that in EFTA countries, the costs of documentation and the administration of origin rules, which is the principal part of increased costs for preferential trade, add some 3 per cent of the value of the goods traded to total exporter costs. Manchin (2006) finds that costs of requesting preferences for ACP countries under the Cotonou preference scheme of the EU is around 4-4.5 per cent of the value of goods traded. More recent work on NAFTA by Carrère and de Melo (2004) finds that average total compliance costs were 6.2% in 2001. Using double-censored tobit estimation techniques, they obtain a compliance cost estimate of 3.9% for products where the utilization rate is below 100%.[xxvi] Estimating the costs for NAFTA Cadot et al. (2005) estimates the trade-weighted compliance (administrative) costs to be 6.8% (1.9%) and for the Pan-European preference scheme to be around 8% (6.8%).

(*table 5 about here)*

[xxvi] See also Anson et al. (2005), who estimate that in the case of NAFTA average compliance costs are around 6 percent, offsetting the preferential tariff differential of about 4 percent.. Administrative costs chewed up about half of the value of preferential access for Mexican firms.

Interestingly, for products with very high preference margins, the impact of preferences is reversed and turns negative. The immediate explanations that come to mind are the presence of NTMs that inhibits trade, the negligible supply of the product within the region, or redundancy due to other regional import substitution instruments in place.

A dummy variable was included in the regression (see second column in Table 5) capturing the effects when traders can choose between satisfying the value-added requirement or an alternative rule requiring specific production processes to be performed in order to obtain the originating status for the product[XXVII]. The variable is significant and the coefficient is negative indicating that trade in these products is lower than what would be normally expected. The results imply that despite the provision of a more flexible origin rule, the requirements for obtaining originating status for these products might still be too restrictive. It is also true that ASEAN sources its textiles imports largely from outside the region such as China, US, EU and South Asia. This would imply that the amount of preferential margins given textiles, are insufficient to alter the competitive position of regional producers vis-a-vis their non-ASEAN counterparts.

Table 6 examines in detail some of the products that register the highest margin of preferences, looking at the incidence of non-tariff measures, and the value of imports as a share of total intra-ASEAN trade. For Thai imports of women's / girls' silk blouses (HS 620610) from ASEAN, for instance, a preference margin of 60 percentage points is applicable, but out of the total imports of Thailand for this product, only 5.58% is sourced from ASEAN. In fact, for half of the product groups in this list, trade shares hover around the 1 percent range. This propensity to extend high preferences on products where little or no intra-ASEAN trade takes place is sometimes referred to as the 'snow-plough' effect (Menon, 2005), referring to the failed ASEAN Preferential Trading Arrangement[XXVIII] where preferences are given mostly to trade-

[XXVII] Since 1995, an alternative change of tariff heading (CTH) rule is allowed for textiles and clothing products.

[XXVIII] The ASEAN Preferential Trading Agreement (PTA) was instituted in 1977. See Cuyvers and Pupphavesa (1996) for discussion of the pre-AFTA economic cooperation policies of ASEAN.

irrelevant products such as snow-ploughs. Incidentally, a remnant of this proverbial example can still be seen here: (HS 870310), vehicles especially designed for travelling in snow.

Countries that confer the highest margins also appear to be the ones that impose non-tariff measures on these same products. Indonesia, Malaysia, Philippines and Thailand, for instance, offer high margins for vehicles in the HS 870310 category, but all four countries likewise impose non-tariff measures on that product. Malaysia, also imposed quantity control measures on vehicle products, some of which register the highest margins found in ASEAN (148%). The coincidence of large tariff discounts and NTMs, clearly reveal the remaining areas of import substitution which are resistant to liberalisation even if limited to AFTA countries.

The only high margin item in Table 6 with a large share in total intra-ASEAN imports is vehicle bodies (HS 870710), 97% of which consists of Malaysian imports from Thailand. Here, imports are mainly driven by an industrial complementation scheme[XXIX], wherein the buyer, source, and brand are pre-specified under the terms set by the said regional program. Other than tariff preferences, products included in this program also enjoy local-content accreditation, and other non-tariff incentives. The large margins observed here for vehicle bodies are therefore likely to be redundant, and moreover, they originate not from the importer, which is Malaysia, but from the principal exporter, Thailand. The substantial differential in preferences in this case therefore merely reflects Thailand's import substitution policy in this sector, as shown by the high MFN rates of 80% .

(*Table 6 about here*)

One important reason for preference underutilization in ASEAN may be found in the nature of the regional production chains where non-ASEAN import content could be very high. Significant part of the manufacturing sector in ASEAN has been established through FDIs by multinationals who bring in major components from parent companies outside the southeast Asian

[XXIX] The Brand-to-Brand Complementation Scheme was set in 1988 to encourage joint production in ASEAN. This was later phased out in 1995 and incorporated into a new ASEAN Industrial Cooperation (AICO) Scheme. See for example Yoshimatsu (2002) and Lecler (2002), for analysis and examples of Industrial Cooperation Agreements of ASEAN.

region. Although the rules of origin of AFTA requiring at least 40% cumulative regional content could be considered relatively liberal compared to some other regional agreements due to full cumulation and the relatively lower value-added required, exporters of heavily traded goods such as electronics, may be unable to cumulate the necessary local or regional content.

Table 7 a and b provide an indication of the extent of this problem, showing the import content and the local value-added of key manufacturing sectors in ASEAN. Calculations are based on data taken from the GTAP 6 data base for 2001, the latest year available. As expected, the import content of electronics and machineries are the highest for ASEAN, the sum of the direct and indirect import content (reported in italics in Table 7 *a* and *b*) being 67.8% and 60.6%, respectively. The share of imports is particularly high in these sectors for Singapore and Malaysia. The figures reported here are most likely understated (for import content) and overstated (for value-added) since the data do not differentiate between output destined for local consumption and output for exports. One would expect the import content for exports to be higher than for those sold in the local market because of various fiscal incentives (i.e., import duty drawbacks), which is available for export production in most countries. In terms of value-added, AFTA members appear to be unable to meet the 40% (for AFTA) regional value content (RVC) rule for most of the key sectors featured here.

5. Conclusions

While the potential gains offered by a fully implemented free trade area in ASEAN has been examined in both theoretical and empirical literature, the nature and magnitude of actual trade and production effects are unknown. This paper aims to provide some indication of the extent of influence preferentialism might have in ASEAN given the trade and tariff data converged for the years 2001 to 2003. The results confirm the popular notion that the preferences offered under AFTA do not exert any apparent effects on intra-ASEAN trade. The gravity model specified using MFN tariffs display the same explanatory power as a similar model where CEPT rates are instead used.

A closer look at disaggregated data offers some probable explanations underpinning this result Although the empirical analysis could not be carried out using data on utilization of preferential tariffs, nevertheless the results suggest that CEPT tariffs might be expected to be exploited when difference between third country tariffs and preferential tariffs are higher than 10-25 per cent. According to our estimate the positive effects of preferences become significant when the preference margin is higher than 25 per cent which covers 9.2% of total sum of tariff lines in Indonesia, Malaysia, Philippines and Thailand, and accounts for 7.8% of the aggregate value of their joint imports. The rough utilisation rate estimate of 5% (of total import value) based on firm interviews thus comes rather close to the regression estimates derived here.

The effects of margins below 5%, and those above 80% have a significant negative effect on trade flows; the former implying that administrative and other costs related to obtaining preferences exceed the benefits due to margins; and the latter due to the larger incidence of NTMs in these products, or the simultaneous implementation of a regional program which is exerting a more determinant role on production and trading patterns.

Although preference underutilisation is not unique to ASEAN, the rates envisaged here is certainly low relative to the known record of other discriminatory schemes. Brenton and Manchin (2003), for instance, reported that 35% of eligible exports from the CEEC countries enter the EU using the available preferential rates. Inama (2003), examined the utilisation of the General System of Preferences (GSP) of the QUAD countries, and found that of the 62% of imports of Quad countries originating from all beneficiaries of GSP schemes covered by preferences, 39% of these were effectively traded under the lowest available rates.

The limited extent of trade affected by preferences in AFTA, however, need not be entirely equated to implementation failures of the preferential scheme, nor to the high administrative costs of acquiring preferences. As shown in the analysis of the tariff and trade structure of the CEPT scheme, even if preferences would have been fully utilized, no matter how marginal, the amount of trade affected would only be in the region of 35% - 37%[xxx] of total

[xxx] As shown in Table 3, products where the difference between MFN and CEPT rates is zero account for 62.78% and 65.34% of total value of intra-ASEAN imports in 2001 and 2003, respectively.

intra-ASEAN imports. Assuming that the costs of documentation and the administration of origin rules are comparable to the (EU-based) estimates of 3 – 4.5% of total value of goods imported, as indicated by Herin (1986) and Manchin (2006), then the relevant shares fall to around 16% of the total value of regional trade for ASEAN.

It is true that there exist small pockets of intra-ASEAN preferences are important (especially for Thailand[xxxi]). Overall, however, the fact that discriminatory tariffs now influence only a small area of regional trade may mean that attempts to enhance the utilisation of AFTA preferences may not yield sizable results in terms of further increasing regional trade. Current efforts linked to the harmonisation of custom procedures and other trade facilitation measures, which affect both ASEAN and non-member products may yet prove to be more effective in extending the frontiers of intra- and extra-ASEAN trade.

[xxxi] The standard deviation of Thailand's MFN rates is high relative to the rest of the ASEAN-5, which also leads to a higher standard deviation for its preferential margins.

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Annexes

Table A.1 Top 10 Intra-ASEAN imports, 2001 (US$ million)

reporter	partner	product	Value	CEPT	MFN
IDN	THA	acyclic hydrocarbons	1368.36	0	0
IDN	SGP	acyclic hydrocarbons	1434.99	0	0
IDN	MYS	petroleum oils (crude)	1370.52	0	0
IDN	SGP	petroleum oils & oils from bituminous minerals etc. (not crude)	1158.88	0	3.33
IDN	SGP	light-vessels, fire-floats, dredgers etc.; floating docks & platforms	250.91	0	0
IDN	THA	Cane sugar	105.44	5	20
IDN	SGP	parts for use with the machinery of headings 8425-30	104.04	0	0
IDN	MYS	Smoking tobacco	78.73	5	11.67
IDN	SGP	Tugs and pusher craft.	77.83	0	0
IDN	SGP	machine tools for drilling, boring, milling etc.	65.42	0	0
MYS	SGP	parts and accessories for office machines of headings 8469-72, computer accessories	2187.80	0	0
MYS	SGP	electrical capacitors, fixed, variable or adjustable (pre-set); parts	1813.21	0	0
MYS	SGP	petroleum oils & oils from bituminous minerals etc. (not crude)	1615.10	0	2.25
MYS	SGP	electronic integrated circuits and micro assemblies; parts thereof	1563.84	0	0
MYS	SGP	semiconductor devices (diodes, transistors etc.); light-emitting diodes etc.; parts thereof	223.80	0	0
MYS	SGP	parts for television, radio & radar apparatus	141.53	0	6.67
MYS	SGP	electrical transformers, static converters & inductors, parts thereof	205.38	0	0
MYS	SGP	thermionic, cold cathode or photocathode tubes & parts thereof	342.08	0	0
MYS	SGP	Printed circuits.	193.48	0	0
MYS	THA	Natural rubber latex	179.94	0	0
PHL	SGP	electronic integrated circuits and micro assemblies; parts thereof	755.96	0	0
PHL	SGP	parts and accessories for office machines of headings 8469-72, computer accessories	239.02	0	0
PHL	MYS	petroleum oils & oils from bituminous minerals etc. (crude)	239.02	3	3
PHL	SGP	petroleum oils & oils from bituminous minerals etc. (not crude)	237.89	3	3
PHL	IDN	Copper ores	126.70	3	3
PHL	IDN	Bituminous coal	84.33	5	7
PHL	MYS	petroleum gases and other gaseous hydrocarbons	69.35	3	3
PHL	SGP	electrical apparatus for line telephony/telegraphy, telephone sets etc.	56.82	0	0
PHL	THA	food preparations nesoi	83.95	5	6.63
PHL	IDN	portland cement, aluminous cement, slag cement etc.	52.72	3	5
THA	MYS	parts and accessories for office machines of headings 8469-72, computer accessories	797.47	0	0
THA	MYS	thermionic, cold cathode or photocathode tubes & parts thereof	383.12	5	20
THA	MYS	petroleum oils & oils from bituminous minerals etc. (not crude)	485.24	5	15.25
THA	MYS	Petroleum oils	351.07	0	0
THA	IDN	gold (incl. gold plated with platinum) unwrought or in semimnfr or in powder form	160.63	0	0
THA	SGP	articles of plastics nesoi	101.16	15	30
THA	PHL	insulated wire, cable (incl. coaxial cable) etc.; optical fiber cables	145.73	15	20
THA	IDN	fish, frozen (excl. fillets or other fish meat)	109.03	5	5
THA	MYS	wood sawn or chipped length, sliced or peeled; thicker than 6mm	106.52	4	4
THA	MYS	automatic data processing machines; magnetic readers etc. computer hardware	119.44	0	0

Table A.2. Relative importance of preferential tariffs and duty-free MFN tariffs, 2001 - 2003

	MFN is zero per cent		MFN equals preferential tariffs		MFN is higher than preferential tariffs		Total trade
	value	Share of total	value	Share of total	value	Share of total	
Indonesia							
no. of tariff lines	2727	20%	7238	53%	6349	47%	13587
value of imports	4049945	36%	6604567	59%	4683297	41%	11287864
Malaysia							
no. of tariff lines	12066	46%	13802	52%	12697	48%	26499
value of imports	35445289	67%	36989508	70%	15711145	30%	52700653
Philippines							
no. of tariff lines	831	4%	9736	44%	12173	56%	21909
value of imports	6059808	37%	11520174	70%	5038329	30%	16558503
Singapore							
no. of tariff lines	139808	99.97%	139808	99.97%	36	0.03%	139844
value of imports	286929741	99.87%	286929741	99.87%	372172.3	0.13%	287301913
Thailand							
no. of product codes	603	5%	2095	16%	11136	84%	13231
value of imports	6701497	35%	8945374	46%	10338585	54%	19283958
Total							
no. of product codes	156035	73%	172679	80%	42391	20%	215070
value of imports	339186280	88%	350989364	91%	36143528	9%	387132891

Table A.3. List of partner countries

Afghanistan
Albania
Algeria
Andorra
Angola
Anguila
Antigua and Barbuda
Argentina
Armenia
Aruba
Australia
Austria
Azerbaijan
Bahamas, The
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bermuda
Bhutan
Bolivia
Bosnia and Herzegovina
Botswana
Brazil
British Virgin Islands
Brunei
Bulgaria
Burkina Faso
Burundi
Cambodia
Cameroon
Canada
Cape Verde
Cayman Islands
Central African Republic
Chad
Chile
China
Christmas Island
Cocos (Keeling) Islands
Colombia
Comoros
Congo, Dem. Rep.
Congo, Rep.
Cook Islands
Costa Rica
Cote d'Ivoire
Croatia
Cuba
Cyprus
Czech Republic
Denmark
Djibouti
Dominica
Dominican Republic
East Timor
Ecuador
Egypt, Arab Rep.
El Salvador
Equatorial Guinea
Eritrea
Estonia
Ethiopia
Faeroe Islands
Falkland Island
Fiji
Finland
France
French Polynesia
Gabon
Gambia, The
Georgia
Germany
Ghana
Gibraltar
Greece
Greenland
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hong Kong, China
Hungary
Iceland
India
Indonesia
Iran, Islamic Rep.
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Jordan
Kazakhstan
Kenya
Kiribati
Korea, Dem. Rep.
Korea, Rep.
Kuwait
Kyrgyz Republic
Lao PDR
Latvia
Lebanon
Lesotho
Liberia
Libya
Lithuania
Luxembourg
Macao
Macedonia, FYR
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall Islands
Mauritania
Mauritius
Mexico
Micronesia, Fed. Sts.
Moldova
Mongolia
Montserrat
Morocco
Mozambique
Myanmar
Namibia
Nauru
Nepal
Netherlands
Netherlands Antilles
New Caledonia
New Zealand
Nicaragua
Niger
Nigeria
Niue
Norfolk Island
Northern Mariana Islands
Norway
Oman
Pakistan
Palau
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Pitcairn
Poland
Portugal
Qatar
Romania
Russian Federation
Rwanda
Saint Helena
Saint Pierre and Miquelon
Samoa
Sao Tome and Principe
Seychelles
Sierra Leone
Singapore
Slovak Republic
Slovenia
Solomon Islands
Somalia
South Africa
Spain
Sri Lanka
St. Kitts and Nevis
St. Lucia
St. Vincent and the Grenadines
Sudan
Suriname
Swaziland
Sweden
Switzerland
Syrian Arab Republic
Taiwan, China
Tajikistan
Tanzania
Thailand
Togo
Tokelau
Tonga
Trinidad and Tobago
Tunisia
Turkey
Turkmenistan
Turks and Caicos Isl.
Tuvalu
Uganda
Ukraine
United Arab Emirates
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Venezuela
Vietnam
Wallis and Futuna Isl.
Western Sahara
Yemen
Zambia
Zimbabwe

Table 1 Gravity model estimates of the effect of AFTA on intra and extra-bloc trade

Authors	Results	
	intra-bloc	extra-bloc
Frankel & Wei, 1996	+	+
Soloaga & Winters, 1999	-	+
Cernat, 2001		+
Clarete, Edmonds, & Wallack, 2002	0	-
Gosh & Yamarik, 2002		+
Dee & Gali, 2003	-	+
Elliot & Ikemoto, 2004	+	+
Lee & Park, 2005	- (but coef. insignificant)	+

Note: A positive sign in the intra-bloc column refers to an intra-ASEAN bias, that is, ASEAN tending to have higher trade within the region beyond what can be expected from their economic, geographic, or cultural characteristics. A positive or negative sign in the extra-bloc column indicates the propensity to under- or over-import from non-members, relative to the normal import rates indicated by the gravity model.

Table 2 Average MFN, preferential tariffs, and difference between MNF and preferential tariffs, 2001 - 2003

Sectors	Average MFN tariffs	Average CEPT tariffs	Average difference	Max difference	Min difference	Standard deviation of difference	Import value
Other	12.7%	2.7%	10.0%	52.5%	0.2%	7.3%	329796
agriculture	14.2%	2.5%	11.7%	153.9%	0.1%	11.0%	6536458
minerals	13.9%	2.7%	11.2%	32.5%	0.0%	7.3%	1389339
chemicals	16.5%	2.9%	13.7%	45.0%	0.3%	10.0%	373756.2
Plastics	18.4%	3.1%	15.3%	35.0%	0.5%	9.3%	55326.31
Leather	17.2%	3.0%	14.2%	60.0%	0.3%	9.4%	818852.4
Wood & paper	14.2%	2.8%	11.4%	35.0%	0.2%	8.1%	937254.6
Textiles & clothing	17.4%	2.9%	14.5%	40.0%	0.2%	10.4%	360269.9
footwear	17.5%	3.1%	14.3%	30.0%	0.3%	8.7%	1372636
Stone	9.7%	2.0%	7.7%	87.5%	0.2%	8.2%	1204271
Metals	6.4%	1.2%	5.2%	27.5%	0.2%	5.2%	606073
machinery	16.9%	2.6%	14.3%	170.0%	0.1%	18.7%	1798039
Total trade	14.6%	2.6%	12.0%	64.1%	0.2%	9.5%	15782071

Source: Own calculations based on data from WITS and ASEAN Secretariat.

Table 3 Importance of preferences in 2001/2003: shares of total intra-ASEAN imports and shares of total tariff lines (in italics) covered by the CEPT Scheme

	CEPT Rates						Preference Margins					Most common CEPT		
	0	0.5 - 5	6 - 10	11- 15	15<	excl/sp	0	0.5-5	6 - 10	11- 15	15<	0	3	5
Indonesia														
2001	40.58	53.06	2.91	0.36	0	3.21	52.28	37.54	5.16	0.43	1.38	40.58		20.01
	29.41	*66.59*	*3.23*	*0.74*	*0.63*							*29.41*		*49.06*
2003	38.38	44.35	3.19	4.17	0	9.92	51.38	25.21	6.99	1.49	5.9	38.38		30.00
	28.59	*66.62*	*3.86*	*0.87*	*0.04*							*28.59*		*51.84*
Malaysia														
2001	68.57	27.91	1.81	0.54	0.09	1.08	80.19	5.39	4.32	5.38	3.64	68.57		9.9
	49.29	*7.25*	*2.33*	*0.74*	*0.04*							*49.29*		*32.03*
2003	66.79	28.9	1.7	0.36	1.38	0.88	78.67	4.92	4.7	5.84	3.92	66.79		9.4
	49.13	*43.53*	*4.25*	*2.01*	*0.9*							*49.13*		*31.98*
Philippines														
2001	43.6	52.08	2.46	0.82	0.18	0.86	64.33	26.97	4.91	1.23	0.65	43.6	33.25	*10.4*
	17.89	*77.5*	*3.93*	*0.36*	*0.34*							*17.89*	*40.34*	*31.07*
2003	52.59	41.76	3.49	0.21	0.3	2.95	65.97	24.38	4.77	2.60	1.63	52.59	30.04	11.16
	18.46	*76.53*	*4.08*	*0.45*	*0.49*							*18.46*	*39.14*	*31.28*
Thailand														
2001	35.93	59.19	2.36	2.43	0.09	0.01	54.31	13.26	1.97	19.37	11.00	35.93		*32.00*
	4.68	*84.71*	*5.85*	*4.62*	*0.33*							*4.68*		*61.02*
ASEAN-4														
2001	47.17	48.06	2.38	1.04	0.09	1.29	62.78	20.79	4.09	6.60	4.17	47.17		18.08
	25.32	*59.01*	*3.84*	*1.62*	*0.34*							25.32		43.3
2003	52.59	38.33	2.79	1.58	0.56	4.58	65.34	18.17	5.49	3.31	3.82	52.59		16.85
	32.06	*62.23*	*4.06*	*1.11*	*0.48*							47.78		44.39

Note: Shares in terms of total tariff lines (HS6) are reported in italics. Data for Thailand is incomplete for the year 2003. Source: Own calculations based on data from WITS and ASEAN Secretariat.

Table 4 OLS regressions using aggregate trade flows

	With preferential tariffs	Without preferential tariffs
Ldistance	-0.811	-0.804
	(0.259)***	(0.259)***
Common language	0.292	0.289
	(0.189)	(0.189)
Colony	0.485	0.485
	(0.542)	(0.542)
LTariffs	-5.263	-5.186
	(1.205)***	(1.201)***
Constant	10.671	10.600
	(3.021)***	(3.021)***
Observations	1770	1770
R-squared	0.8834	0.8834
Adjusted R-squared	0.8181	0.8180

Notes: Time fixed effects and time varying reporter and partner fixed effects are included in the regressions. Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 OLS regressions using disaggregated data

Difference between preferential and MFN tariffs (in % points) in parenthesis	Limportsvalue	Limportsvalue
Ldistance	-0.211	-0.214
	(0.041)***	(0.041)***
Common language	0.188	0.188
	(0.055)***	(0.055)***
Difference1 (0-5)	-0.059	-0.057
	(0.026)**	(0.026)**
Difference2 (5-10)	-0.034	-0.031
	(0.036)	(0.036)
difference3 (10-15)	0.018	0.018
	(0.047)	(0.047)
difference4 (15-20)	0.045	0.049
	(0.057)	(0.056)
difference5 (20-25)	0.092	0.094
	(0.070)	(0.070)
difference6 (25-30)	0.194	0.197
	(0.081)**	(0.081)**
difference7 (30-35)	0.392	0.392
	(0.119)***	(0.119)***
difference8 (35-40)	0.339	0.337
	(0.181)*	(0.181)*
difference9 (40-45)	1.080	1.085
	(0.333)***	(0.333)***
difference10 (45-50)	0.968	0.934
	(0.277)***	(0.277)***
difference11 (50-60)	0.700	0.695
	(0.352)**	(0.351)**
difference12 (60-70)	-0.310	-0.300
	(1.119)	(1.119)
difference13 (70-80)	4.020	4.044
	(2.259)*	(2.258)*
difference14 (80-90)	-11.106	-11.067
	(4.455)**	(4.451)**
difference15 (90-	-5.155	-5.176
	(2.329)**	(2.327)**
Substantial transformation		-0.932
		(0.112)***
Observations	42268	42268
R-squared	0.11	0.11

Time fixed effects; sectoral dummies and time varying sector-specific reporter and partner fixed effects are included in the regressions. Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 Incidence of Non-tariff measures on products with high preferential margins (2003)

high margin products	**HS6 code**	**preference margin (in %)**	**share of intra-A4 trade**	**NTM incidence***
Compound alcoholic preparations	330210	**87.5 IDN** (0 SGP, MYS) (1 PHL) (5 THA)	10.96 (2.06)**	
women's/girls' silk blouses	620610	**60.0 THA** (0 SGP; 13.75 IDN; 15 MYS)	5.58 (5.48)	Thailand – import license
Vehicles specially designed for travelling on snow, golf cars & similar vehicles	870310	**70.0 IDN** (23.36 MYS)	1.7 (0.0)	Indonesia – 6100 , 8100 Malaysia – 6170
Vehicles w/ spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity exceeding 1,500 cc but not exceeding 3 000 cm3	870323	**100.6 MYS** 65.0 THA 36.67 IDN 25.0 PHL	10.74 (10.7)	Indonesia – 6100 , 8100 Malaysia – 6100 Philippines – 6100 Thailand – 6170
Vehicles w/ spark-ignition internal combustion reciprocating piston engine, Of a cylinder capacity exceeding 3,000 cc	870324	**148.85 MYS** 57.5 THA 40.0 IDN	0.7 (0.6)	Indonesia – 6100 , 8100 Malaysia – 6100 Philippines – 6100 Thailand – 6170
Vehicles w/ compression-ignition internal combustion piston engine (Diesel /semidiesel), Of a cylinder capacity exceeding 1,500 cc but not exceeding 2 500 cm3	870332	**36.67 IDN** 25.0 PHL	1.4 (1.4)	Indonesia – 6100 , 8100 Malaysia – 6100 Philippines – 6100 Thailand – 6170
Vehicles w/ compression-ignition internal combustion piston engine (Diesel /semidiesel), Of a cylinder capacity exceeding 2,500 cc	870333	**148.33 MYS** 40.0 IDN 25 PHL	0.9 (0.9)	Indonesia – 6100 , 8100 Malaysia – 6100 Philippines – 6100 Thailand – 6170
Components, parts, accessories for assembly of motor vehicles	870390	**100.6 MYS** 75.0 IDN	10.3 (9.6)	Indonesia – 6100 , 8100 Malaysia – 6100 Philippines – 6100 Thailand – 6170
Bodies (incldg cabs), for the vehicles of hdg. 8703	870710	**75.0 THA** 25.0 MYS	45.69 (45.69)	Malaysia – 6170
Bodies (incldg. cabs), for the vehicles of hdg. 8701 to 8705, excl. 8703	870790	**75.0 THA**	7.3 (6.0)	
Motorcycles w/ reciprocating internal combustion piston engine	870020	**67.0 THA** 36.45 MYS 25.0 IDN 25.0 PHL	7.3 (7.3)	

* Source: ASEAN Secretariat database of Non-Tariff Measures

* *Share of intra-ASEAN10 trade in parenthesis

Note: NTM codes: 6100 – non-automatic licensing (quantity control measure); 6170 – non-automatic licensing (discretionary import license); 8100 – Technical regulations.

Table 7.a **Import content of selected sectors in East Asia, 2001**

	Sectors								
country	textiles	clothing	leather	chem	motor vehicles	transp equipt.	elect. mach.	mach & equipt	other mfg,
Indonesia	27.42	6.56	8.44	29.33	25.12	40.09	23.09	56.88	9.37
	7.78	*15.52*	*5.51*	*4.52*	*6.01*	*3.25*	*6.83*	*2.52*	*2.05*
Malaysia	38.04	39.24	73.23	27.36	35.95	29.53	44.08	34.10	39.92
	10.02	*9.37*	*4.70*	*4.93*	*7.25*	*5.62*	*2.83*	*7.99*	*6.13*
Philippines	37.80	40.71	26.72	38.67	44.94	23.72	70.23	56.62	18.67
	13.02	*14.30*	*8.46*	*13.23*	*17.14*	*7.28*	*45.02*	*31.26*	*4.14*
Singapore	51.15	44.35	34.56	42.19	41.75	36.17	83.19	58.24	46.29
	6.57	*5.71*	*6.28*	*3.07*	*4.68*	*7.37*	*1.42*	*2.51*	*0.00*
Thailand	23.26	12.95	26.08	22.72	38.07	63.94	57.22	48.86	27.60
	6.64	*10.50*	*5.05*	*2.33*	*8.53*	*5.67*	*5.23*	*3.85*	*0.00*
ASEAN	35.53	28.76	33.81	32.05	37.16	38.69	55.56	50.94	28.37
	8.81	*11.08*	*6.00*	*5.62*	*8.72*	*5.84*	*12.27*	*9.63*	*2.46*
rest of ASEAN	23.26	12.95	26.08	22.72	38.07	63.94	57.22	48.86	27.60
	5.37	*6.13*	*4.29*	*2.89*	*5.05*	*5.45*	*3.75*	*2.44*	*3.31*

Table 7. b **Value-added of selected sectors in East Asia, 2001**

	sectors								
country	textiles	clothing	leather	chem	motor vehicle	transp equip	electr mach	mach. & eqpt	other mfg
Indonesia	31.2	25.0	46.2	26.4	39.0	28.3	30.1	23.7	31.3
	14.6	*2.8*	*9.3*	*10.0*	*14.7*	*12.5*	*12.0*	*12.2*	*2.8*
Malaysia	20.2	27.0	10.1	32.0	34.1	36.0	33.0	22.8	24.0
	11.3	*13.0*	*10.3*	*11.6*	*18.8*	*12.5*	*14.1*	*12.2*	*10.2*
Philippines	17.5	28.7	25.6	27.8	3.7	31.1	9.8	17.7	41.4
	5.4	*4.8*	*2.9*	*4.1*	*15.3*	*23.3*	*5.9*	*135.8*	*3.9*
Singapore	21.0	29.0	32.5	33.6	24.5	32.0	10.3	23.7	23.6
	18.0	*14.4*	*11.2*	*12.2*	*9.1*	*13.1*	*9.7*	*10.2*	*8.9*
Thailand	30.2	27.4	34.4	22.7	26.0	14.1	20.5	20.7	31.0
	17.7	*22.6*	*9.8*	*10.8*	*100.7*	*8.6*	*21.6*	*20.2*	*5.6*
ASEAN	24.0	27.4	29.8	28.5	25.5	28.3	20.8	21.7	30.3
	13.4	*11.5*	*8.7*	*9.7*	*31.7*	*14.0*	*12.7*	*38.1*	*6.3*
rest of ASEAN	36.3	25.0	30.7	25.8	40.6	24.0	36.7	29.4	34.7
	16.4	*20.9*	*11.9*	*7.1*	*51.1*	*6.6*	*10.7*	*8.3*	*5.0*

Source: Manchin and Balaoing, 2006

Notes: Direct import content and value-added are computed as shares of the value of imported intermediate inputs, and value-added (labor, capital, natural resources, land) over the total value of output per sector. Indirect import content and value-added (reported here in italics) are the sum of the import content and the sum of value-added shares contained in the local intermediate inputs used in output production.