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Reassessing the Impact of the ASEAN-India Free Trade Agreement

(Penilaian Semula Kesan Perjanjian Perdagangan Bebas ASEAN-India)

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ABSTRACT

The ratification of the ASEAN-India Free Trade Agreement (AIFTA) in 2009 signals a potential for increased trade flows between ASEAN and India. Previous studies have focussed mainly on the welfare impact of the agreement and its impact on overall trade, especially trade in agricultural products. The first objective of this study seeks to compare the impact of the AIFTA on the exports of manufactured goods from ASEAN to India and vice versa. The second is to ascertain the relative importance of the scheduled tariff liberalization in the AIFTA compared with other contributory factors in the export of manufactured goods between ASEAN and India. The study uses an augmented gravity model as this type of model allows for the control of other trade related variables and to quantify any changes in a country's trade due to the agreement. The main findings in this study indicate that ASEAN gains more from the scheduled tariff liberalization in this agreement compared to India. However, the impact of tariff liberalization on the exports of manufactured goods from ASEAN and India with each other is relatively smaller compared to other contributory factors, especially trade costs. The AIFTA will have to strengthen specific trade facilitation measures in the agreement in order to increase exports of manufactured goods from ASEAN to India and vice versa.

Keywords: ASEAN-India FTA; gravity model; tariffs; ASEAN-5; India, exports; manufactured goods

ABSTRAK

Pemeteraian Perjanjian Perdagangan Bebas ASEAN-India (AIFTA) pada tahun 2009 memberi isyarat bahawa aliran perdagangan antara ASEAN dan India mempunyai potensi untuk dipertingkatkan. Kajian yang lepas menumpu kepada kesan kebajikan perjanjian tersebut serta kesan terhadap perdagangan secara keseluruhan, khususnya dalam barang pertanian. Tujuan pertama kajian ini ialah untuk membanding kesan AIFTA terhadap eksport barang perkilangan dari ASEAN ke India dan dari India ke ASEAN. Tujuan kedua ialah untuk menentu kepentingan relatif antara liberalisasi tarif yang dijadualkan dalam AIFTA dengan faktor lain yang menyumbang kepada eksport barang perkilangan antara ASEAN dan India dan sebaliknya. Kajian ini menggunakan model graviti sebab model tersebut membenarkan pembolehubah lain sebagai pembolehubah kawalan untuk mengukur salah satu perubahan dalam perdagangan negara sebagai hasil persetujuan tersebut. Penemuan utama kajian ini menunjukkan bahawa ASEAN mendapat faedah yang lebih berbanding dengan India daripada liberalisasi tarif dalam persetujuan ini. Namun, kesan liberalisasi tarif terhadap eksport perkilangan antara ASEAN dan India adalah lebih kecil secara relative berbanding dengan faktor lain, khususnya kos perdagangan. Justeru itu, AIFTA perlu memperkukuhkan tindakan yang khusus untuk fasilitasi perdagangan dalam persetujuan ini untuk meningkatkan eksport perkilangan dari ASEAN ke India dan sebaliknya.

Kata kunci: ASEAN-India (AIFTA); model graviti; tarif; ASEAN-5; India; eksport; barang perkilangan

INTRODUCTION

Since the institutionalization of the Association of Southeast Asian Nations (ASEAN) in 1967, the region has initiated numerous economic cooperation initiatives, including the ASEAN Free Trade Area (AFTA). Intra-ASEAN trade has also progressively increased from approximately 19% in 1993 to 25% in 2010 (Thangavelu and Aekapol 2009; ASEAN Secretariat 2012). The growth in intra-regional trade is largely fostered by regional production networks that have emerged as a result of the region's relative openness to foreign direct investment (FDI), especially in the older ASEAN-5 member countries. Hence, to a large extent, the region's growing intra-regional trade is led by the private sector's search for profit maximization through production fragmentation and locating each stage of production at where its cost of production is the lowest.

Despite the growth in intra-regional trade, ASEAN's trade is still dominated by trade partners that are from outside the region. For example, the EU, Japan, and USA contributed a total of 49% and 29% respectively, to

ASEAN's total trade in 1998 and 2010. The increasing importance of China is seen in the escalation of her share in ASEAN's total trade from a mere 3.5% in 1998 to 11.3% in 2010. This is also associated with China's integration with the regional production networks in ASEAN due to the shift in MNC production to China in search of lower labour cost of production for labour-intensive products in the late 1990s and 2000s.

The importance of trade partners from outside the region and the need to forge economic alliances, especially with the large countries, has motivated ASEAN to sign several extra-regional trade agreements, such as with China, Japan, Australia-New Zealand, Korea and India (Medalla and Mantaring 2009). It is hoped that the region will serve as a "hub" for these ASEAN+1 agreements. Of all the extra-ASEAN partners, India has the smallest share of ASEAN's total trade, comprising 2.7% in 2010. Nevertheless, India's share has grown from a mere 1.2% in 1998 to 3.4%[1] in 2013 with the enforcement of the ASEAN-India FTA (AIFTA). Since it is the first multilateral FTA that India has negotiated to date, it is not surprising that numerous scholars have examined the AIFTA and its impact, particularly on the Indian economy. However, these studies have not focussed on the impact on exports of manufactured goods nor has there been a critical look at the role of tariff liberalization compared with other variables in the export of these goods between ASEAN and India. In view of this, the first objective of this paper is to compare the impact of the AIFTA on ASEAN's exports of manufactured goods to India and India's exports of manufactured goods to ASEAN. The paper focuses on the manufacturing sector as it reflects ASEAN's comparative advantage compared to India. It is also expected that ASEAN will gain more from the scheduled tariff reduction as India's tariffs are relatively higher than ASEAN's in this sector. The second objective is to compare the role of tariff liberalization to other variables in the export of manufactured goods between ASEAN and India.

The paper is organised as follows; after the introduction, section 2 reviews the literature on the AIFTA while salient features of ASEAN-India trade and the AIFTA are highlighted in section 3. The model, data and estimation methods are explained in section 4 while the results are explained in section 5. The conclusion in section 6 summarizes key findings of this paper and some suggestions to further enhance ASEAN-Indian trade in manufactured goods.

LITERATURE REVIEW

The literature on the ASEAN-India FTA (AIFTA) can be categorized into three main groups. In the first group, the literature examined the prospects and possible coverage of an agreement before the agreement was signed in 2009, based on the characteristics of ASEAN-India trade and economic ties (see, for example, Sen et al. (2004), Ariff and Lim (2004)). Lee et al. (2007), however, used time series analysis to test for the possible impact of a prospective FTA. They found that liberalization in the prospective FTA would have a substantial effect in the goods and services markets as these markets were already relatively integrated based on existing economic ties of both economies.

The second group used analytical narratives to examine the impact of the agreement on India, after the agreement was signed. Pal and Dasgupta (2008)'s analysis concluded that India would not benefit from the agreement in the short run as the two partners of the agreement are not natural trading partners. But, they agreed that the agreement made strategic sense in the long-run, especially since India aspires to be a hub for services exports. Likewise, Francis (2009) and Harihal (2010) also concluded that the agreement would increase ASEAN's access to the Indian market for semi-processed and processed agricultural goods, to the detriment of India's agricultural sector due to the competitive strength of ASEAN producers in this sector.

The third group used different quantitative techniques to investigate the impact of the agreement after it was signed. Based on trade specialization and trade intensity indicators, Ohlan (2012) found that India is less competitive than ASEAN and by implication; the agreement may not benefit India, unless the country enhances its competitiveness. The SMART and gravity models were used by Veeramani and Saini (2010), Ahmed (2010), and Mondal et al. (2012) to measure the trade and welfare impact of the FTA. Specifically, the findings of Veeramani and Saini support the negative trade impact of the agreement on India's plantation commodities, although a net welfare gain is obtained as the gain in consumer surplus outweighed the loss in tariff revenue. But in the case of dairy trade, Mondal et al.; (2012) found that India, being the largest milk producer in the world, would be able to increase its exports with tariff liberalization in the Philippines, Myanmar and Vietnam, based on simulations with the SMART model. ASEAN, on the other hand, would not be able to gain much in terms of its dairy exports to India, as India has kept most of the dairy product tariff lines in its exclusion list. Ahmed (2010) used both the Global Trade Analysis Project (GTAP) and SMART models to examine the welfare and trade impact of the agreement. His main findings indicate welfare gains for both India and ASEAN, although the terms of trade for India will deteriorate. However, the increase in ASEAN's exports of processed food items, agricultural products and fisheries to India may have an adverse impact on the trade balance and revenue of India. Sikdar and Nag (2011) also used a GTAP model to analyse the impact on India and ASEAN based on the final scheduled tariff liberalization in the agreement. Their simulation results indicate that India's exports to ASEAN and ASEAN's exports to India will

increase with tariff liberalization. However, there will be a welfare loss for India due to allocative inefficiency and negative terms of trade. ASEAN, on the other hand, will have a welfare gain due to improvements in their terms of trade.

Based on the above literature review, it can be seen that previous studies have focussed mainly on the welfare impact of the agreement as well as its impact on trade in agricultural products or overall trade. But, ASEAN's existing comparative advantage in trade lies in manufactured goods as opposed to India's strength in services (Ariff and Lim 2004; Sen et al. 2004). There is also a concern in the literature from India that the scheduled liberalization will only increase ASEAN's exports of manufactured goods to India but not vice versa. Moreover, how important is the scheduled tariff liberalization in the agreement for ASEAN and India's exports of manufactured goods compared to other factors that can also influence this trade? The World Bank's data from the *Doing Business* project indicates that the cost of importing[2], is relatively higher in India compared with the ASEAN-5 and the impact of bringing down tariffs to zero can be easily negated if the movement of goods between countries face bottlenecks in terms of both hard and soft infrastructure.

In view of the above, the first objective of this study seeks to examine and compare the impact of the AIFTA on the exports of manufactured goods from ASEAN to India and India's exports of manufactured goods to ASEAN. The second objective is to ascertain the relative importance of the scheduled tariff liberalization compared with other contributory factors in the export of manufactured goods between ASEAN and India. Based on these objectives, the study uses an augmented gravity model as this type of model allows for the control for other trade related variables and to quantify any changes in a country's trade due to the FTA (Plummer et al. 2010).

SALIENT FEATURES OF ASEAN-INDIA TRADE AND THE ASEAN-INDIA FREE TRADE AGREEMENT (AIFTA)

SALIENT FEATURES OF ASEAN-INDIA TRADE

Based on the availability of data and the relative importance of the different economies in ASEAN's trade with India, the paper will focus on the ASEAN-5 economies, namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Trade between these economies and India have an upward trend as shown in Figure 1, although the share of ASEAN's trade with India to ASEAN's total trade is relatively small.

The ASEAN-5 have benefited from foreign direct investment (FDI) inflows in the second half of the 1980s and early 1990s to become different nodes of production for the goods produced in the region. Consequently, the share of exports of manufactured goods in the total exports of the ASEAN-5 economies comprised 78% in 2000, followed by an equally high share of imports of manufactured goods, amounting to 78% also for the same year (UN Comtrade undated). The shares of exports and imports of manufactured goods have fallen progressively over time with the decline in competitiveness of the region and increasing competition from other countries in the region. It is therefore not surprising that manufactured exports and imports also hold a significant share in the ASEAN-5's total exports and imports to India, although this also exhibit a downward trend, as shown in Figure 2, with some upturn in the share of manufactured goods imported in total imports from India from 2011 to 2013.

The relative importance of manufactured exports to each ASEAN-5's total exports with India is shown in Figures 3. Resource-rich countries such as Malaysia and Indonesia understandably have a lower share as they also export palm oil to India, given that these two countries

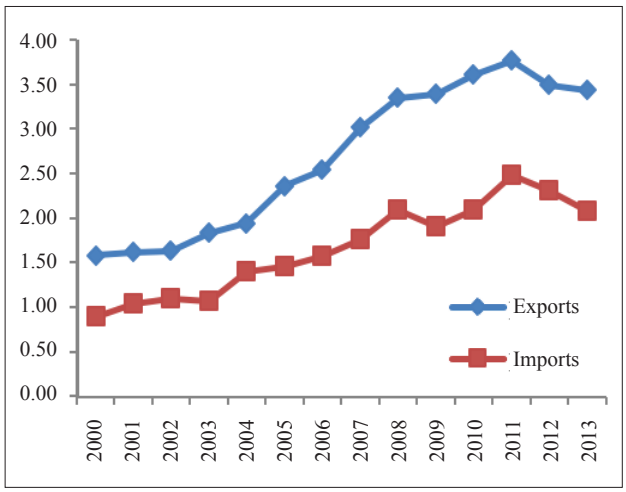

FIGURE 1. Share of ASEAN-5 Exports and Imports with India to Total Trade
Source: UN Comtrade undated

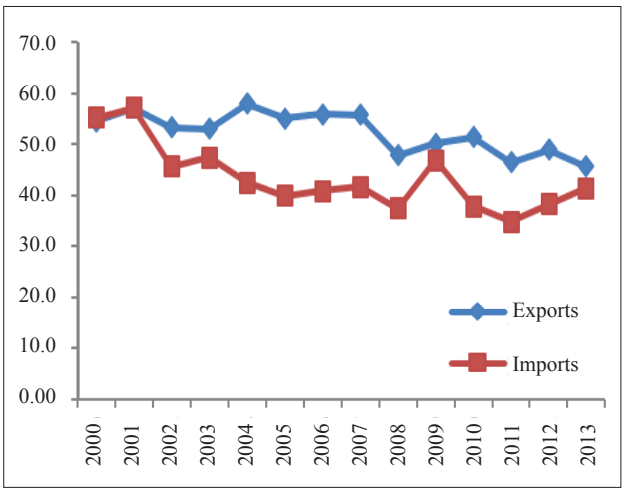

FIGURE 2. Share of Exports and Imports of Manufactured Goods in Total Exports and Imports of the ASEAN-5 with India
Source: UN Comtrade undated

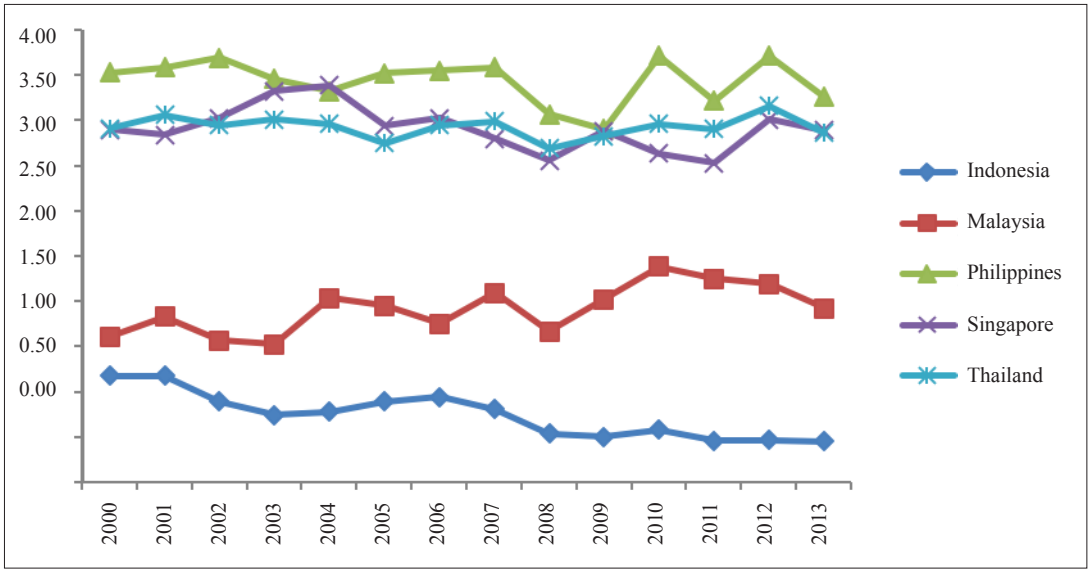

FIGURE 3. Share of Manufactured Exports as a Percentage of Total Exports to India
Source: UN Comtrade database

are the largest producer and exporter of palm oil in the world. In contrast, manufactured exports constitute a large share of Philippines, Thailand and Singapore's respective exports to India as they export considerably less primary commodities to India (Figure 3).

Table 1 compares the share of India's manufactured exports to ASEAN as a percentage of total India's manufactured exports to the world with the share of ASEAN's manufactured import from India as a percentage of ASEAN's total manufactured imports. In value terms, India's manufactured exports to ASEAN increased progressively from USD1.3 billion in 2000 to USD13 billion in 2013 and its share in terms of total India's total manufactured exports increased from 5.0% in 2000 to 7.6% in 2013. Similarly, ASEAN's manufactured imports from India increased steadily from USD1.9 billion to USD9.3 billion over the same period. The share of ASEAN's manufactured imports from India as a share of total ASEAN manufactured imports to the world increased from 0.7% to 1.4% for the same period. Overall, India

TABLE 1. India's Exports to ASEAN Compared to ASEAN's Exports to India

	India's Manufactured Export to ASEAN / Total Indian Manufactured Exports (%)	Total Manufacturing Export to ASEAN (USD, Billions)	Total Manufactured Exports to world (USD, Billions)	ASEAN's Manufactured Import from India / Total ASEAN Manufactured Import (%)	ASEAN's Manufactured Import from India(USD, Billions)	Total ASEAN's Manufactured Import from World (USD, Billions)
2000	5.0	1.3	26.0	0.71	1.9	272.8
2001	5.9	1.6	27.0	0.85	2.1	244.5
2002	5.5	1.6	30.1	0.78	2.0	257.3
2003	5.7	2.1	36.5	0.79	2.2	284.6
2004	6.0	2.8	46.6	0.99	3.5	350.8
2005	6.4	3.8	58.6	1.64	6.4	390.6
2006	6.2	4.3	69.1	1.04	4.5	432.1
2007	5.8	4.6	79.3	1.21	5.7	475.5
2008	7.1	6.9	98.0	1.38	7.4	537.1
2009	8.4	8.4	100.3	1.49	6.5	437.9
2010	7.2	8.3	115.4	1.26	7.2	567.9
2011	8.2	12.5	151.7	1.49	9.3	627.3
2012	7.7	12.2	157.4	1.40	9.6	682.0
2013	7.6	13.0	172.0	1.38	9.3	673.6

Source: UN Comtrade undated

TABLE 2. Parts and Components (PNC) Trade in Information, Communication and Technology (ICT) Products between ASEAN and India, 2000-2013

ICT products	ASEAN PNC exports to India/ Total ASEAN manufactured exports to India (%)	India PNC exports to ASEAN/India Manufactured exports to ASEAN (%)
2000	24.5	8.5
2001	25.6	14.7
2002	24.1	4.5
2003	25.3	4.4
2004	26.4	5.1
2005	22.5	1.8
2006	24.4	2.9
2007	10.2	3.4
2008	14.2	3.2
2009	12.4	11.4
2010	14.0	4.5
2011	11.6	4.2
2012	9.7	2.7
2013	10.8	2.5
Average	18.3	5.28

Source: Computed from COMTRADE data

only contributes less than two per cent of ASEAN's total manufactured imports. This may imply that India has yet to participate significantly in ASEAN's production networks.

While ASEAN is well known for its parts and components trade in electronics, ASEAN's parts and components (PNC) exports to India as a share of total manufactured exports to India is small, averaging less than 19% for the period shown in Table 2. Similarly, the share of these goods to total India's manufactured exports to ASEAN is also quite small, averaging 5% for the period shown. This indicates that the production network trade in electronics for ASEAN pertains more to the ASEAN and North East Asia rather than with India. This is despite the fact that both ASEAN and India are signatories of the World Trade Organization (WTO)'s Information Technology Agreement (ITA), where the tariff for these goods were brought down to zero in 1997.

SALIENT FEATURES OF ASEAN-INDIA FREE TRADE AGREEMENT (AIFTA)

After six long years of negotiations, the ASEAN-India FTA (AIFTA) was finally inked in 2009. The ASEAN-India Comprehensive Economic Cooperation Agreement (CECA) currently consist of a Trade in Goods Agreement (AITIGA) that became effective in January 01, 2010. The significance of the agreement lies in the fact that it has created one of the world's largest trade blocs and it represents the most ambitious preferential trading arrangements that India has ratified thus far (Harilal 2010).

Tariff liberalization in AITIGA is divided into five groups of products, namely, Normal Track, Sensitive Track, Special Products, Highly Sensitive List and Exclusion List, as summarized in Table 3.

Given that India's tariffs are relatively higher than the tariffs of ASEAN economies, the liberalization of tariffs under AITIGA is expected to benefit ASEAN more than India (Francis 2009; Harilal 2010; CUTS-CITEE 2010). For example, based on the scheduled liberalization for India, the average reduction in non-agricultural products for Normal Track-1 and 2 amount to 1.8% and 2.5% respectively from 2007 to 2010 (Francis 2009). By 2013, all tariffs in NT-1 non-agricultural goods will be zero while it will drop by another 4.5% for NT-2. Automobiles have the largest tariff reduction, with its tariffs dropping from an average MFN tariff rate of 17% in 2007 to 9.1% in 2010 for products in NT-1 and will subsequently drop

TABLE 3. Proportion of Tariff Lines under Different Categories

Country	Categories of Products								
	EL	NT-1	NT-2	SP	ST	HSL-A	HSL-B	HSL-C	Total
India	10.7	63.9	10.3	0.3	14.8	Nil	Nil	Nil	100.0
Brunei	12.8	68.6	11.3	Nil	7.4	Nil	Nil	Nil	100.0
Cambodia	2.0	80.4	4.1	Nil	13.2	0.2	Nil	Nil	100.0
Indonesia	7.6	41.8	4.7	Nil	39.5	Nil	0.1	6.3	100.0
Lao PDR	2.8	69.5	8.6	Nil	19.2	Nil	Nil	Nil	100.0
Malaysia	9.9	59.2	14.6	Nil	15.1	Nil	0.3	0.9	100.0
Myanmar	14.1	64.4	7.5	Nil	14.0	Nil	Nil	Nil	100.0
Philippines	13.0	58.9	17.0	Nil	6.8	Nil	Nil	Nil	100.0
Vietnam	18.3	60.3	8.9	Nil	7.0	0.4	1.2	4.0	100.0
Thailand	12.2	67.0	8.9	Nil	11.7	0.2	Nil	Nil	100.0

Notes: EL: Exclusion List; NT-1; NT-2: Normal Track 1 and 2; SP: Special Products; HSL- A, B, C: Highly Sensitive Lists A, B, and C (see Appendix 1 for a description of the modalities). Singapore is excluded from the above because of its near zero tariff status.

Source: Harilal 2010

further to zero by 2013. In the case of NT-2 automobile products, tariffs are scheduled to be reduced from an average MFN rate of 10% to 7.5% from 2007 to 2010. Electrical and electronic equipment (E&E) have a more modest tariff reduction, falling from an average MFN rate of 6.1% to 4.4% from 2007 to 2010 for NT-1 products. The average tariff rate for E&E products in NT-2 are scheduled to fall from 9.2% to 6.7% for the same period.

However, trade in manufactured goods in the ASEAN economies is facilitated by the regional production networks of the multinationals (MNCs) operating in the region. It is unclear if India's scheduled tariff reduction will lead to significant increases in ASEAN's exports to India. This is because the region's trade in intermediate goods is dominated by trade between the affiliates of these MNCs. India's manufacturing sector is not yet a significant part of this region's production network as evidenced by the data shown in Table 2. It would appear that trade in manufactured goods between ASEAN and India, especially trade in intermediate goods, is dependent on whether the AITIGA will attract more foreign direct investment (FDI) into India. If the AITIGA serves to attract more efficiency-seeking FDI into India's manufacturing sector, then it may possibly integrate India's manufacturing sector into the MNCs' production network in ASEAN, thereby increasing intra-industry trade between India and the ASEAN economies.

MODEL, DATA AND ESTIMATION

AUGMENTED GRAVITY MODEL

In line with the objectives of the study, two models are used to examine and compare the impact of the AIFTA on the exports of manufactured goods from ASEAN and India to the partner country of this agreement. The first model examines the impact of AIFTA and other controlled variables from ASEAN's perspective while the second model examines the impact from India's experience. The basic gravity model of bilateral trade posits that trade is positively determined by the economic mass of the trading partner(s) but adversely affected by the distance between them (Tinbergen, 1962; Anderson, 1979). The general specification of an augmented gravity model consists of additional exploratory variables that explain distance attributes and other variable of interests that may affect bilateral trade. Following this structure, the augmented gravity model for this paper is specified as follows:

Model 1: The ASEAN Model

$$\ln X_{i,India,t} = \alpha + B_1 \ln GDP_{i,t} + \beta_2 \ln GDP_{India,t} + \beta_3 \ln \text{Distance}_{i,India,t} + \beta_4\, colony + \beta_5 Tariff_{India,t} + \beta_6 REER_{i,t} + \gamma_1 \ln FDI_{i,(t-1)} + \varepsilon_{i,India,t} \quad (1)$$

Model 2: The Indian Model

$$\ln X_{India,i,t} = \sigma + \theta_1 \ln GDP_{India,t} + \theta_2 \ln GDP_{i,t} + \theta_3 \ln \text{Distance}_{India,i,t} + \theta_4\, colony + \theta_5 Tariff_{i,t} + \theta_6 REER_{i,t} + \gamma_2 \ln FDI_{India,(t-1)} + \varepsilon_{India,i,t} \quad (2)$$

where subscripts i represents the individual ASEAN-5 country and their market destination, India in the year t. Therefore $X_{i,India,t}$ denotes the real exports of manufactured goods from the ith ASEAN country to India in year t. Model 2 explains the relationship from India's perspective. For example, in Model 2, $X_{India,i,t}$ represents the real exports of manufactured goods from India to the ith ASEAN country.

$GDP_{i,t}$, $GDP_{India,t}$ and $Distance_{i,India,t}$ are the basic elements of the gravity model. $GDP_{i,t}$, $GDP_{India,t}$ are real GDP of the exporter, i and India (the partner country). The variables represent the economic masses or market depth of the countries. Real GDP indicates the income strength or the production capacity of the exporter. Conversely, it also represents the consumption power of the trade partner. Therefore β_1 (or θ_1) and β_2 (or θ_2) > 0.

Although many have argued that geographical distance is increasingly irrelevant with increasing advancements in communications technology (Cairncross, 1997), distance in our model implies the risks dimensions in trade such as ignorance of foreign legal, administrative, customs and business practices. It also measures trade costs associated with time lags such as spoilage, logistics costs and fuel-oriented price shocks. Thus, *Distance* inversely affects exports, that is, β_3 (or θ_3) < 0. To control for cultural distances (disparities) between the trading nations, the model also includes a common coloniser indicator, *Colony*. A prior, the assumption is that countries with similar coloniser may share similar administrative and economic and institutional settings – all of which mitigates the uncertainties in forming trading partnerships. Therefore, it is expected that β_4 (or θ_4) > 0.

The important variable for this study is the tariff indicator (*Tariff*) where it examines the significance of India's trade liberalisation schedule under the AIFTA on ASEAN's exports to India. Trade theory postulates an inverse relationship between trade and tariff barriers, β_5 (or θ_5) < 0. The difference in coefficient values provides a relative comparison on the impact of the AIFTA on the exports of manufactured goods from ASEAN and India to each other. If $\beta_5 > \theta_5$, it therefore justifies the concern in the Indian literature that the scheduled liberalization has increased ASEAN's exports of manufactured goods to India to a greater extent compared to the converse case of India's exports of manufactured goods to ASEAN (but not vice versa – it is also negative but not significant).

The gravity model is further augmented with the exporter country's competitiveness indicator proxy by the real effective exchange rate (*REER*)[3]. Since the indicator is a weighted average of a country's currency relative to an index or basket of other major currencies adjusted for the effects of inflation, a decrease in REER means a

depreciation of domestic currency (an appreciation in competitiveness which may be attributed to increased productivity), thus, encouraging exports and discouraging imports β_7 (or θ_5) < 0.

The final variables represent for the investment-trade nexus in India and the ASEAN countries. To prevent the problem of endogeneity due to the possible dual causality between FDI and trade, we employ a common practice by imposing one period lag for both indicators (see Masahiro & Zhai 2009; Xuan & Xing 2008). Earlier section of the paper emphasised on the significance of FDI-driven exports of the ASEAN countries within the regional production networks. However, since India is not a part of the regional production network, we postulate $\gamma_1 < 0$ if inflows of FDI into ASEAN divert exports into India by focussing on intra-regional trade. On the other hand, the impact of FDI into India, γ_2, is ambiguous since it hinges on whether AITIGA will attract more efficiency seeking FDI into India's manufacturing sector that integrates into ASEAN's production networks.

The detailed construction and sources of the variables are available in Appendix 2.

ESTIMATION METHOD

This study uses a panel regression of the ASEAN-5 and India, over time (from 2000 to 2010). The Hausmann test is insignificant, suggesting that the errors are not correlated with the regressors while the Breusch-Pagan Lagrange Multiplier (LM) test indicates that there are no significant differences in variances across countries. Therefore, the Pooled-OLS estimator is most appropriate for this model[4]. The Levin-Lu-Chu (LLC)[5] test for panel unit root confirms that the variables are generally stationary (Appendix 3). The mean variance inflation factor (vif) test indicates non-severe multicollinearity problems in the models. To control for heteroskedasticity, the estimation is done using the heteroskedasticity-robust standard errors estimator.

EMPIRICAL RESULTS AND DISCUSSION

Table 4 shows the estimation results. The basic gravity variables, *GDP* and *Distance* exhibit the expected coefficient signs. An increase in 1 per cent of the GDP of ASEAN countries will result in a 1.5 per cent increase of ASEAN's exports to India. An increase in the India's GDP will induce an increase in ASEAN export as well - but with a smaller magnitude in terms of impact. Similarly in Model 2, the rise in both GDP indicators increases India's exports to ASEAN. This shows that mutual economic prosperity between the countries will increase bilateral manufactured exports. In addition, similar colonial

TABLE 4. Gravity Equation Estimates

Variables	ASEAN (Model 1)	Variables	India (Model 2)
	$\ln X_{i,India}$		$\ln X_{India,i}$
$\ln GDP_{i,t}$	1.509***	$\ln GDP_{i,t}$	1.062***
	(15.97)		(12.81)
$\ln GDP_{India,t}$	0.791***	$\ln GDP_{India,t}$	0.805***
	(4.92)		(3.75)
lnDistance	-2.954***	lnDistance	-0.264^
	(-16.84)		(-1.96)
colony	1.307***	colony	0.655***
	(18.95)		(7.28)
Tariff	-0.00288***	Tariff	-0.000810
	(-5.13)		(-0.64)
REER	-0.0103***	REER	-0.00555***
	(-10.38)		(-4.76)
$\ln FDI_{i,(t-1)}$	0.0276	$\ln FDI_{India,(t-1)}$	0.0147
	(0.99)		(0.23)
_cons	28.15***	_cons	7.293**
	(16.09)		(3.45)
N	56	N	59
1. Hausmann Test:	Prob > χ^2 = 0.0892		Prob > χ^2 = 0.6157
2. LM test	Prob > χ^2 = 0.1215		Prob > χ^2 = 0.1045
Model Selection	Pool OLS		Pool OLS
Mean VIF	2.78 < 10		3.09 < 10

** p<0.01 * p<0.05 ^p<0.10

history has a positive impact on exports as well. The impact of colonial history is stronger for ASEAN countries. This result suggests that ASEAN exporters placed more importance on cultural similarities compared to their Indian counterparts.

Reduction in tariffs will induce an increase in ASEAN's exports to India by less than 1 per cent. This is an indication that the AITIGA has the potential to strengthen trade in manufactured goods between ASEAN and India. On the other hand, the results from Model 2 suggests that tariff liberalisation under the AIFTA is insignificant for India. It is important to note that the period of tariff liberalization covered in this study only pertains to the first year of liberalization alone under the AITIGA and the results may change with a longer period of liberalization. Nevertheless, the different impact of tariff reduction obtained for ASEAN and India can be inferred from the extent of tariff liberalization from 2009 to 2010. In 2009, 49.9% of ASEAN's tariff lines were already at 5% and below and the number of tariff lines in this category increased merely to 55.3% in 2010. This indicates only a modest increase in tariff liberalization since the tariffs were already low in 2009. However, the number of tariff lines in India that fell to 5% increased from 11.4% to 41.8% from 2009 to 2010. This contributed to the significant impact of India's tariff reduction on ASEAN's exports to India even for just one year of liberalization.

More importantly, the overall result solidifies our hypothesis that there are other contributory factors that warrants further attention. Model 1 show that distance or trade cost is the most important factor affecting ASEAN manufactured exports to India. An increase in 1 per cent of trade cost reduces almost 3 per cent of manufactured exports to India. In comparison with Model 2, the impact of trade cost on India's export to ASEAN is smaller. This finding is important because it shifts the attention to a more pressing issue beyond the AITIGA tariff liberalisation commitments. Trade costs and non-tariff barriers could potentially be the main elements that determine the success of the AIFTA and not tariff liberalisation per se.

The FDI indicator is insignificant for ASEAN countries. This may due to the absence of production network linkages with India (refer Table 1). MNCs operating in ASEAN countries have yet to explore trade opportunities with India. Similar phenomenon can be explained in Model 2 where an increase in FDI inflows to India insignificantly affects India's exports of manufactured goods to ASEAN countries. It is possible that the results may change if additional data in terms of bilateral FDI flows are made available, but there is no published data on these bilateral flows at the point of this study. Finally, improvement in competitiveness is important for penetrating both markets as the REER shows expected signs in both models.

CONCLUSION

While ASEAN continues to enhance and facilitate its economic cooperation as it moves toward the attainment of an ASEAN Economic Community by 2015, the region has also cultivated economic cooperation with its key trading partners from outside the region, including India. AIFTA represents an important first step forward towards fostering closer economic ties between the member countries of this agreement.

The main findings of this paper show that while lowering tariff barriers will improve ASEAN's manufactured exports to India, its impact is relatively smaller than the impact of other variables in the model. Reducing trade costs in India is another important factor to address, if the ASEAN-5 seeks to improve its manufactured exports to India and vice versa. While both the Framework Agreement and the AITIGA contain provisions that addresses import costs such as different trade facilitation measures[6], including non-tariff barriers or non-tariff measures, these provisions lack specificity and hence they are difficult to monitor. Adopting, monitoring and setting targets for specific trade facilitation measures need to be considered to enhance ASEAN's exports to India (Wong and Pellan 2012). Similarly, while the recently launched Master Plan on ASEAN Connectivity (MPAC) will also help to reduce distance and trade costs, monitoring its implementation, especially in terms of the Mekong-India Economic Corridor, and the connectivity between Myanmar-Northeast India and Mainland India is of the utmost importance in order to benefit from the Plan.

Collecting better and more accurate data on trade costs between ASEAN and India will also facilitate researchers to refine their tests on the role of trade costs in facilitating trade between the partner countries of the AIFTA. Currently, there is not enough data to test this important role in a more rigorous fashion.

Similarly, it is also equally important to finalise the service and investment agreements to enhance trade in goods to tap on complementarities between ASEAN and India. However, more importantly, ASEAN's implementation of the ASEAN Framework Agreement of Services (AFAS) and investment initiatives within ASEAN must be monitored and implemented for the impending agreements on services and investment with India to be meaningful.

At the same time, the ASEAN-5 cannot afford to be complacent and need to improve the competitiveness of the exports through suitable domestic measures that can address their respective needs for structural transformation. Malaysia, for example, has been losing its competitiveness in manufacturing and needs to restructure its economy. Increased opportunities to export to India through the AIFTA only opens doors for ASEAN exporters but these doors of opportunities cannot be seized without improved competitiveness on the part of ASEAN producers.

ENDNOTES

1 Author's calculations based on UNComtrade data.

2 Cost measures the fees levied on a 20-foot container in U.S. dollars. All the fees associated with completing the procedures to export or import the goods are included. These include costs for documents, administrative fees for customs clearance and technical control; customs broker fees, terminal handling charges and inland transport. The cost measure does not include tariffs or trade taxes. Only official costs are recorded.

3 The REER is an indicator that measures the "relative price and cost". It aims to assess a country's price or cost competitiveness relative to its principal competitors in the international markets (European Commission, undated). The movements in real effective exchange rates provide an indication of a country's aggregate external price competitiveness and can be interpreted as changes in technology progress that leads to productivity improvement in goods commonly traded (Catão, 2007).

4 If the error terms represent trade policies across ASEAN countries, it may be the case that ASEAN countries are equally similar in terms of openness regime and structure (e.g. AFTA has been well established in ASEAN countries since the 1990s).

5 LLC method is suitable for strongly balanced dataset, which fits the representation of our dataset (STATA has verified that our dataset is strongly balanced). In addition, the regression model focuses on ASEAN as a single unit of analysis. Therefore, the assumption that all panels share a common autoregressive parameter is reasonable.

6 Article 3 in the Framework Agreement for example, addresses NTBs, customs procedures, rules and regulations. Similarly, articles 8 and 14 in the AITIGA also address NTBs and customs procedures

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Appendix 1. Modalities for Tariff Liberalization under the AIFTA

Modalities	Description
1. Normal Track	Gradual reduction and subsequent elimination of custom tariffs on 4000 products that account for 80% of traded goods.
1.1 Normal Track 1 (January 01, 2010 to December 31, 2013	Tariffs will be eliminated on 3,2000 products under 7,788 tariff lines, These are mostly products with 7.5-10% duties and the average reduction rate will be 1.5-2% per year.
1.2 Normal Track 2 (January 01, 2010 to December 31, 2016)	Tariffs will be eliminated on 800 products under 1,252 tariff lines. These are mostly products with 7.5-10% duties and the average reduction rate will be 1-1.5% per year
2. Sensitive Track	Tariffs will be reduced on about 560 products that account for 10% of trade goods. Applied MFN tariff rates above 5% will be reduced to the level of 5%.
2.1 Structure 1 (January 01, 2010 to December 31, 2016)	Duties on items with MFN applied tariffs of more than 5% will be reduced to 5%. This can be maintained up to 50 tariff lines.
2.2 Structure 2 (January 01, 2010 to December 31, 2016)	For remaining products from tariff lines beyond 50, duties on products with MFN applied tariff rates higher than 5% will be reduced to 4.5% and then eventually to 4%.
2.3 Structure 3 (January 01, 2010 to December 31, 2019)	For products with 4% duty rates in the sensitive list (products to be identified), tariffs will be eliminated in a phased manner.
3. Special Products (January 01, 2010 to December 31, 2019)	Tariff reduction for products such as crude and refined palm oil, coffee, black tea and pepper phased over ten years for India.
4. Highly Sensitive List:	Reduction of tariffs for products in a phased manner for ASEAN countries.
4.1 Category 1	Reduction of applied MFN tariff rates to 50% of the base rate.
4.2 Category 2	Reduction of applied MFN tariff rates by 50% of the base rate.
4.3 Category 3	Reduction of applied MFN tariff rates by 25% of the base rate.
5. Exclusion List	List contains 489 items out of which 302 are from the agriculture sector, 81 from textiles, 52 items from machinery and auto, 17 from chemical and plastics.

Source: CUTS CITEE 2010

Appendix 2. Data Used in Models 1 and 2

Variable	Variable Construction	Data Source
X	• Value of bilateral manufacturing exports in US$ at constant (2005) price. Deflated by the export price index. • Manufacturing products are based on UNCTAD definition – (SITC 5 to 8, excluding 667 and 6)	UnComtrade, Prices are taken from the Economist Intelligence Unit (EIU) database
GDP	• Gross domestic product (GDP) at constant market prices, rebased to 2005 constant prices and translated into US$ using the LCU: $ exchange rate in 2005.	EIU database
Distance	• The great-circle or orthodromic distance is the shortest distance between any two points on the surface of a sphere measured along a path on the surface of the sphere (as opposed to going through the sphere's interior).	BACI dataset, http://www.cepii.fr/anglaisgraph/bdd/baci.htm
Colony	• 1 if the ASEAN country was under the British Colony (Malaysia and Singapore), 0 if otherwise.	
Tariff	• 2000 – 2009, Tariff rate, most favoured nation, simple mean, manufactured products (%). Simple mean most favoured nation tariff rate is the unweighted average of most favoured nation rates for all products subject to tariffs calculated for all traded goods. Data are classified using the Harmonized System of trade at the six- or eight-digit level. Tariff line data were matched to Standard International Trade Classification (SITC) revision 3 codes to define commodity groups. Manufactured products are classified using SITC revision 3. SITC (5-8 excluding division 68). • 2010-2011, simple average from AIFTA schedule of Tariff Commitments. The HS codes are matched with the SITC codes. Manufacturing products are defined as HS 11 to HS 97 excluding HS 71, 74 to 81. • Since the Philippines have a different schedule, we normalised the tariff rates and created a tariff index with 2007=100. This is to create a consistent cross country indicator. The trend shows that the index dropped after 2010.	World Bank, http://data.worldbank.org/indicator/TM.TAX.MANF.SM.FN.ZS ASEAN Secretariat,
REER	• Real effective exchange rate index (2005 = 100) • Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs. • CPI-based REER is used because it contains more information about real variables (trade flows and investment) than other REER indices (Randveer and Rell, 2002)	International Monetary Fund, International Financial Statistics.
FDI	• FDI as a share of GDP.	EIU database

Source: Authors

Appendix 3. LLC and IPS Test Results (Adjusted t)*

ln $X_{i,India}$	-2.8133 (0.0025)	ln $X_{India,i}$	-3.0553 (0.0011)
ln $GDP_{i,t}$	-1.8861 (0.0296)	ln $GDP_{i,t}$	-1.8861 (0.0296)
ln $GDP_{India,t}$	-6.2648 (0.0000)	ln $GDP_{India,t}$	-6.2648 (0.0000)
Tariff	-3.7701 (0.0001)	Tariff	-3.4153 0.0003
REER	-3.3520 0.0004	ln $FDI_{India,(t-1)}$	-3.6819 (0.0001)
ln $FDI_{i,(t-1)}$	-2.7878 (0.0027)		

*Time invariant variable (Distance) and dummy variable (colony) not included.
P-value in the parentheses