

Does AFTA Create or Divert Trade?

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INTRODUCTION

The ultimate aim of economic integration in Southeast Asia is the formation of an ASEAN (Association of South East Asian Nations) Economic Community (AEC) by 2015. The AEC is envisaged as a single market and production base where goods, services, investments and skilled labor are free to flow. Deeper economic integration through an economic community is a long term process and trade liberalization through the agreement to establish the ASEAN Free Trade Area (AFTA) is a step towards its realization.

AFTA was formed in January 1992 at the Fourth ASEAN Summit meeting when Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand (referred to as the ASEAN-6) signed the Singapore Declaration and Framework Agreement on Enhancing Economic Cooperation. The other ASEAN member countries later joined: Viet Nam in 1995, Laos and Myanmar in 1997, and Cambodia in 1999.¹

The agreement involves the elimination of intra-regional tariffs and non-tariff barriers in the region. Its objectives are to expand trade among the more than 500 million people comprising the region, increase ASEAN's competitiveness by integrating the economies into a single production base and eventually, with economies of scale realized, attract more foreign direct investments into the region. For the ASEAN-6 members, the deadline for the comprehensive tariff reduction program was initially set for 2008 but this was moved forward to 2002. The CLMV countries were given longer time frames in which to complete the program: Viet Nam in 2006, Laos and Myanmar in 2008 and Cambodia in 2010. As AFTA has only been completed by the ASEAN-6, it is necessary that we focus on these countries.²

This paper examines changes in trade patterns of the ASEAN-6 before, after and during AFTA's implementation. It evaluates the extent the Agreement has achieved its goal of expanding trade in the region. To the extent that trade increased, the paper identifies commodity groups that were significantly affected by the initiative and shows whether AFTA has resulted in trade diversion or trade creation.

¹ referred to as the ASEAN-CLMV countries.

² From here on, discussion on ASEAN and AFTA will only mean the participation of the ASEAN-6.

There are a number of difficulties in evaluating the effects of AFTA. As there are a number of other things happening at the same time as its implementation, it is by no means easy to isolate its effects. For instance, the Asian financial crisis of 1997/98 may have influenced trade flows during the AFTA implementation. Although the agreement came into effect in January 1992, not all tariffs between the original six ASEAN members were removed on that date. Indeed, for most commodities, there was a schedule over a 10 to 15 year period during which tariffs would be phased out. Trade liberalization both under the World Trade Organization and unilaterally by some countries are being undertaken at the same time as AFTA's implementation, and could have undoubtedly affected trade patterns.

This paper is organized as follows. Section 2 reviews the recent literature evaluating the effects of regional trade agreements (RTAs). Section 3 provides a general background of the AFTA agreement and its current status while Section 4 describes the general trends in ASEAN trade in the last two decades and examines the changes in trade patterns introduced by AFTA. Section 5 presents the shift-and-share analysis and results to identify the effects of AFTA and section 6 concludes.

RECENT STUDIES ON THE EFFECTS OF RTAs

Prior to the 1950s, economists often assumed that a customs union would be welfare improving, since tariffs would fall and tariffs are, in general, considered welfare reducing. Any country involved in a regional trade agreement expects a welfare gain. Viner (1950) however, showed that a customs union will not necessarily improve welfare, since the tariff reductions occur only between partner countries within the union. Whether or not the increase in trade caused by the formation of a customs union would be welfare improving depends on the source of the increased trade. Viner proposed a way to assess the welfare effect of an RTA by developing the notions of trade creation and trade diversion. Trade creation occurs when the lowering of tariffs allows partner country imports to replace high-cost domestic production; this is welfare improving. Trade diversion, on the other hand, occurs when the removal of tariffs displaces trade with a low-cost third country for trade with a high-cost partner country. Welfare therefore depends on the extent of trade creation relative to trade diversion. Meade (1955) extended Viner's approach by including demand elasticities that shape post custom union trade flows in addition to cost structures. Balassa (1967) proposed a computable method of measuring trade creation and trade diversion and Aitken (1973) formulated a gravity model including RTA dummy variables to estimate Balassa's measures.

Economists disagree on what is likely to happen in practice. Some believe that regional trade agreements are likely to be positive developments. While others think that they lead to trade diversion as international mechanisms to discipline it are too weak. Empirical analysis has also had difficulty reaching consensus regarding the effects of RTAs. In particular, past studies have been unable to convincingly disentangle effects of regional trade agreements from other effects occurring simultaneously. The recent literature on examining RTA trade impact shows that different studies come out with different trade effects for the same RTAs. This is due to the use of different estimation methods, different databases and time periods to measure these trade effects.

In the analysis of regional trade agreements, there are two empirical methods commonly used. One is simulation with a gravity model which is generally applied ex-post. This approach is used to search for effects of RTAs after they have been implemented. In contrast, the second technique, counterfactual simulation with partial or general equilibrium trade models is a way to analyze the implications of proposed RTAs.

The basic gravity model of trade shows that trade between two countries should increase with their size (based on GDP, population, and land area) and decrease with transaction costs (based on distance and cultural similarities). To estimate the effects of RTAs, the basic gravity model is extended by adding a pair of dummy variables. The first dummy variable takes a value of one when both countries are members of the same trading bloc. Its coefficient is interpreted as the added volume of trade between two nations in the RTA relative to their trade with countries outside the bloc. Therefore, a positive coefficient indicates trade creation. The second dummy variable takes a value of one if only one of the countries is a current member of the bloc. The coefficient on this dummy variable is taken as the extent of abnormal trade between nations in the trading bloc and a country outside the bloc relative to a random pair of countries. A negative coefficient would suggest trade diversion. The gravity model method has the advantage of including several variables that are affecting trade flows.

Winters and Soloaga (1999), World Bank (2000), Cernat (2001), Gilbert, Scollay and Bora (2001), Dee and Gali (2003), Wha-Lee and Park (2005), Coulibaly (2004; 2005), Elliot and Ikemoto (2003), Gosh and Yamarik (2004), and Carrère (2006) used gravity models to analyze the effects of AFTA. Winters and Soloaga (1999) applied the gravity model to annual non-fuel imports data from 1980 to 1996. Their estimates showed that on average, ASEAN's propensity to import from bloc members was significantly lower in 1995-96 than in 1986-88. On the other hand, ASEAN's overall propensity to import was higher in 1995-96 than in 1986-88. Likewise, the World Bank's (2000) estimates for ASEAN show that there is substantial increase in the coefficients for extra-bloc trade, accompanied by a fall in that on intra-bloc trade. Cernat (2001) finds that

South-South RTAs are less trade diverting than theoretically predicted. The variable for trade creation was well above unity indicating that AFTA countries were trading more than four times by 1996 and 1998. At the same time, imports of AFTA countries from third countries were also more than four times by 1994 and more than double the level of trade between two otherwise comparable non-AFTA countries in 1998. Gilbert, Scollay and Bora (2001) show positive and significant openness coefficients of AFTA within the bloc and outside it. Moreover, they conclude that ASEAN has been successful in promoting manufactures trade both among its members and non-members. Meanwhile the bias for agricultural trade in the bloc declined after 1992. Wha-Lee and Park (2005), Elliot and Ikemoto (2003), Gosh and Yamarik (2004) and Carrère (2006) find that the majority of RTAs, AFTA included, were net trade creating and contributed to an increase in trade between members and non-members, as trade among members increased to an even greater extent. On the other hand, Dee and Gali (2003) find that recent and some past RTAs are not as benign as some contemporary empirical assessments have suggested. A careful consideration of the analytical issues— including controlling comprehensively for other observable and unobservable factors, and testing explicitly for whether the trade and investment effects are significantly different after RTA formation than before— accounts for the less favourable findings in their study. It is also possible for RTAs to have adverse effects on investment flows and could create investment diversion. Coulibaly's (2004; 2005) results show that AFTA has been net export diverting and intra-bloc export creating. Except for Brunei Darussalam, AFTA members appear to have experienced a decrease in their extra-regional export after the creation of the RTA. This negative result on AFTA members is a direct consequence of the net export diversion of the RTA. The existing literature provides evidence that effects of integration through AFTA has been both net trade creating and net trade diverting. These conflicting results depend heavily on the specific models used and are sensitive to the specific characteristics of regional integration.

A downside to using the gravity equations approach is that dummy variables used to distinguish effects of RTAs are blunt instruments that have difficulty distinguishing the effects of RTAs from other effects. It cannot control for all of the factors determining trade flows. It also does not indicate the extent of trade creation relative to trade diversion. The approach examines trade flows at a very aggregate level and does not contain details about tariff rates and product supplies and demands that are needed to establish whether changes in trade flows are really beneficial or damaging.

An alternative way to execute this is to construct a computable general equilibrium (CGE) model of the economies under study, and then simulate the effects of the policy changes associated with the RTA. The microeconomic

structure of this model enables it to predict changes in production in each sector and changes in factor prices and real incomes. Its major weakness however, is that it is not usually fitted to data as carefully, nor are they subject to the same statistical testing as econometric models. The cost of the microeconomic detail is a complexity that makes rigorous econometric estimation impossible (World Bank, 2000). In addition, a flaw of CGE models is that their results are very sensitive to the assumptions, parameters, and data used, and have to be interpreted accordingly.

Simulations using CGE models on AFTA's trade impact find substantial potential gains from trade liberalization. Adams and Park (1995) used a linked CGE system to quantify the macroeconomic effects of external shock, domestic policy, and regional-grouping and market-opening efforts through tariff reduction policies among ASEAN countries. Their empirical results indicate that ASEAN would be better off from AFTA, and the volume of trade within ASEAN would rise substantially. De Rosa (1995) finds in his simulations of the model that AFTA does create trade. AFTA is estimated to expand total trade within ASEAN by as much as US\$2.9 billion, or 19 per cent. The simulation results also reveal that the ASEAN countries' expansion of production and exports in various economic sectors under the AFTA plan follows those expected under MFN liberalization. On agricultural production under AFTA, this is found to rise slightly in Indonesia, Malaysia, the Philippines, and Thailand. In Singapore, however, agricultural production declines under AFTA because more manufactured goods are sourced from the city-state within ASEAN that were previously imported chiefly from the major industrial countries. Finally, Adams and Horridge (2000) prove the trade-enhancing effects in each AFTA member country of tariff reductions. All AFTA member countries are projected to experience large increases in trade volumes, with the greatest increases occurring in countries with the highest initial levels of protection on imports from other AFTA countries.

THE AFTA AGREEMENT: BACKGROUND AND CURRENT STATUS

The ASEAN Free Trade Area (AFTA) was established in 1992 with a goal of achieving a free trade area by 2002 among the ASEAN-6 member countries, and to progressively include Vietnam by 2006, Laos and Myanmar by 2008, and Cambodia by 2010.³ It is a target that tariffs be completely abolished among members for free flow of products within the region.

³ The difference in time frames reflects difference in their accession dates, with the same time period provided for their tariff reductions. The original timeframe for the ASEAN-6 was scheduled for 2008 but this was accelerated to 2002 for most items.

The main implementing instrument of AFTA is the Common Effective Preferential Tariff (CEPT) scheme which requires that tariffs levied on goods traded within the ASEAN region that meet a 40 per cent ASEAN content requirement be reduced to 0-5 per cent. The CEPT Scheme encompassed manufactured and semi-manufactured products, including capital goods and processed agricultural products. The liberalization process was carried out at different speeds depending on the product group: fast track and a normal track scheme.

The CEPT package has undergone several changes since its passage on 28 January 1992. On December 1995, the Protocol to Amend the Agreement on the CEPT Scheme for AFTA phased in unprocessed agricultural products where it had been excluded in the 1992 CEPT Agreement. The protocol also accelerated the time frame for AFTA from 15 to 10 years moving the deadline to 2003 instead of 2008. Subsequently, the ASEAN leaders in the Statement of Bold Measures in 1998 mandated the ASEAN-6 to expedite the realization of AFTA from 2003 to 2002. Under the CEPT, four lists are used as key instruments to determine the pace and scope of liberalization: the Inclusion List (IL), the Temporary Exclusion List (TEL), the Sensitive List (SL) and the General Exceptions List (GEL).

The IL consists of product items subject to tariff reductions immediately to be brought down to the range of 0-5 per cent by 2002 for the ASEAN-6. Of the total CEPT tariff lines, 43,675 tariff lines or 98.26 per cent of total tariff lines are in the Inclusion List. In the accelerated schedule, it is required that 85 per cent of the items in the IL must be reduced to 0-5 per cent by 2000, 90 per cent by 2001 and 100 per cent in 2002 with some flexibility. Indeed, by 2002 around 47 per cent (or 20,527 tariff lines) of these already had zero duties. By 2005, 3.8 per cent or 1,659 items of the products in the CEPT Inclusion List of the ASEAN-6 still had tariffs above 5 per cent. In August 2006, products in the Inclusion List which continue to have tariffs above 5 per cent are only those which have been transferred from the TEL, SL and GEL in the previous year.

Products under the TEL are protected temporarily by a delay in tariff reductions. They account for 0.55 per cent of total CEPT tariff lines (or 245 tariff lines). The items in the TEL are to be transferred to the IL and then tariffs on these products will ultimately be lowered to a maximum of 5 per cent. There are three categories of products in the TEL including manufactured products and processed agricultural products; unprocessed agricultural products; and unprocessed agricultural products covered by State Trading Enterprises (STEs) notified to the World Trade Organization. At the start of the tariff reduction program in 1993, temporary exclusion was granted to machinery and electrical appliances in Brunei; chemicals in Indonesia, vehicles in Malaysia and Thailand; and textiles in the Philippines. Manufactured and processed agricultural products were gradually transferred to the inclusion list in five equal installments annually

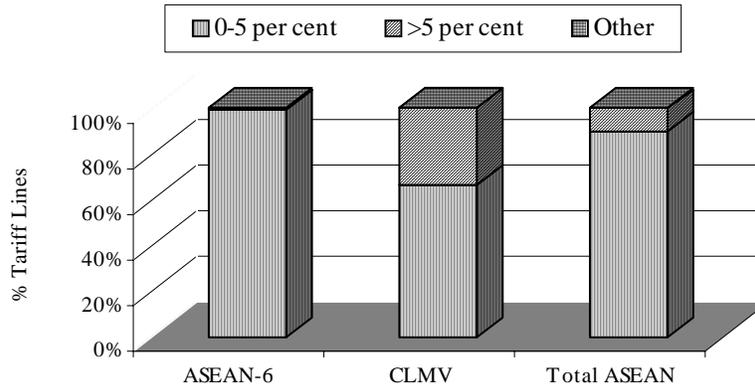
from 1 January 1996 to 1 January 2000 in accordance with the 1995 Protocol. The implementation of the CEPT Scheme was significantly boosted in January 2005 with the full transfer of Malaysia's completely built up (CBUs) and completely knocked down (CKDs) automotive units into the Inclusion List resulting in the ASEAN-6 having no more products under the TEL (Cuyvers, *et. al.*, 2005; ASEAN Secretariat, 2006).

The Sensitive List (SL) included 150 tariff lines (or 0.34 per cent) of unprocessed (raw) agricultural products considered sensitive by ASEAN member countries. Products in this list were phased into the CEPT scheme between 2001 and 2003 and are expected to have a 0-5 per cent tariff rate by 2010 (2013 for Vietnam, 2015 for Laos and Myanmar, and 2017 for Cambodia). All member countries have included a number of products in this category and only a small number of unprocessed agricultural products are actually excluded from the CEPT. However, rice remains excluded from the CEPT Scheme.

Finally, under the General Exceptions List (GEL), products that a country considers necessary for the protection of national security, public morals, the protection of human, animal or plant life and health, and protection of articles of artistic, historic, or archaeological value are permanently excluded from the CEPT. The GEL covers 377 tariff lines representing 0.85 per cent of all tariff lines in ASEAN.

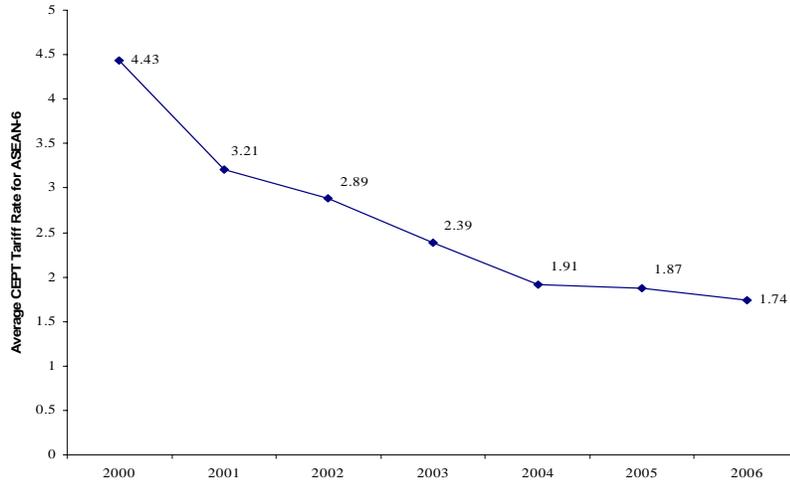
Most of Southeast Asia is now close to full realization of free trade. The first six country-signatories to AFTA have 99.77 per cent of their products in the CEPT Inclusion List with tariffs in the range of 0-5 per cent tariffs. Indeed, tariffs on 65.09 per cent of the products in the IL have been eliminated. The CLMV countries are not far behind the original signatories as 90.96 per cent of the products they trade in the region have been moved into the IL and tariffs on 76.86 per cent of these items have been reduced to the 0-5 per cent tariff band (Fig. 1). In addition, the average tariff in the ASEAN-6 under the CEPT Scheme has continued to decline. The average tariff in the ASEAN-6 in 2006 was 1.74 per cent, down from 12.76 per cent in 1993 when tariff cuts began (Fig. 2).

Fig. 1. AFTA's achievement: percentage of tariff lines by tariff bands, 2006



Source: <http://www.aseansec.org/>

Fig. 2. Average tariff rate for the ASEAN-6 under the CEPT, 2000-2006



Source: <http://www.aseansec.org/>

TRENDS IN ASEAN-6 TRADE

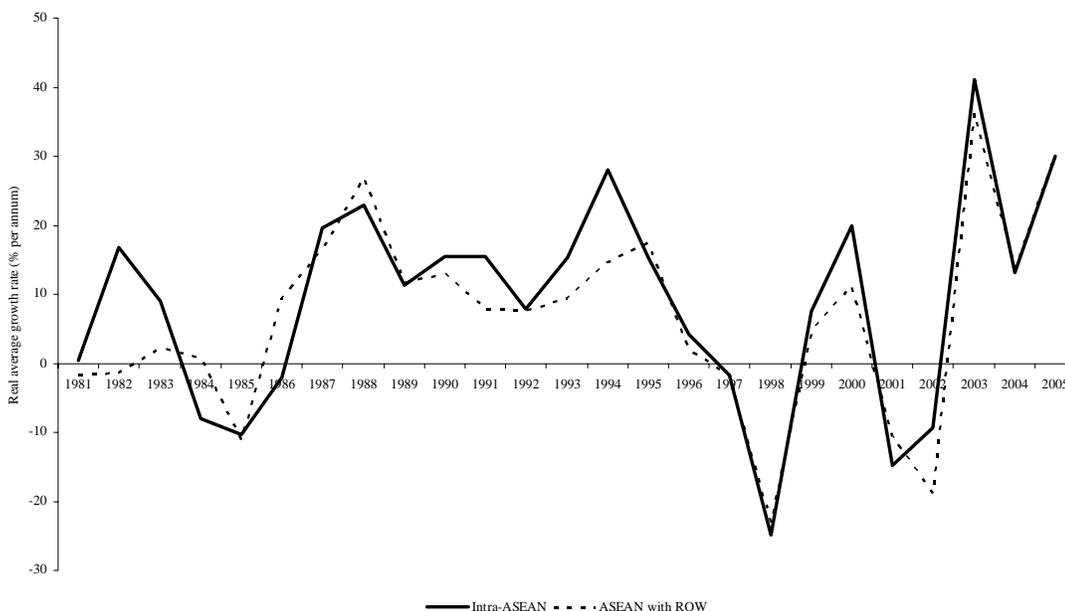
Intra-ASEAN trade grew by an annual average rate of 8.9 per cent in real terms between 1980 and 2005. In particular, the period 1987 to 1996 witnessed the strongest intra-ASEAN trade growth at 15.5 per cent per annum on average, before the financial crisis in 1997 temporarily derailed the upward trend.⁴ Since then, growth in intra-ASEAN trade has moderated to an average of 6.8 per cent in the period 1997-2005, despite experiencing a negative growth in 2001-2002 as a consequence of the global economic slowdown. Interestingly, the real average annual growth rates in intra-ASEAN trade during the pre-AFTA years (1980 to 1991) at 4.3 per cent and during the years of implementation (1992 to 2002) at 8.2 per cent demonstrate AFTA's positive impact on intra-ASEAN trade. Indeed, three years beyond its implementation, intra-ASEAN trade continued to register high positive growth rates between 2003 and 2005 (Fig. 3).

In terms of ASEAN's trade relationship with the rest of the world (ROW), we can see a similar pattern. ASEAN's trade with the rest of the world grew by an average rate of 6.7 per cent per annum in real terms between 1980 and 2005. Prior to AFTA being implemented (1980-1991), growth of ASEAN trade with the rest of the world was steady at this pace only to take a dip when AFTA was introduced and implemented (1992-2002) to an average annual growth of 1.1 per cent. This positive growth was achieved despite a slump between 1997 and 1998. In the period between 1980 and 2002 (pre- and AFTA years), the strongest growth in ASEAN trade with the rest of the world was an average real annual growth rate of 12.4 per cent posted between 1986 and 1996.

Intra-ASEAN exports as a share of total ASEAN exports increased from an average of 18.2 per cent in the years preceding AFTA to 22.2 per cent in 2002 when tariff reduction targets have been achieved and to 23.5 per cent in 2005. Consequently, the share of ASEAN's exports to the rest of the world declined proportionately (Table 1). The same upward trend is evident in the percentage share of ASEAN's imports in the region's total imports, from 14.1 per cent in 1980 to 22.3 per cent in 2005. On the other hand, ASEAN's imports from the rest of the world accounting for 83.2 per cent of its total imports in 1980 declined to 76.5 per cent in 2005 (Table 2). Despite the declining share of trade accounted for by the rest of the world, ASEAN's largest markets remain outside its region.

⁴ Intra-ASEAN trade is defined as imports plus exports of ASEAN-6 with ASEAN-6.

Fig. 3 ASEAN trade: intra-ASEAN and trade with the rest of the world, 1980-2005 (real annual growth, %)



Source: United Nations Commodity Trade Statistics Database

Table 1. ASEAN-6 exports, 1980-2005 (US\$ billion, percentage shares)

Year	Total ASEAN-6 exports (US\$b)	Intra-ASEAN-6 exports (US\$b)	ASEAN-6 exports to the ROW (US\$b)	% share of intra-ASEAN-6 exports in total ASEAN exports	% share of exports to the ROW in total ASEAN exports
1980	70.8	11.9	58.9	16.8	83.2
1985	71.7	13.2	58.5	18.4	81.6
1990	140.9	26.2	114.7	18.6	81.4
1995	310.4	71.5	238.9	23.0	77.0
2000	404.0	87.2	316.8	21.6	78.4
2001	365.6	76.2	289.4	20.8	79.2
2002	313.4	69.7	243.7	22.2	77.8
2003	444.8	104.2	340.6	23.4	76.6
2004	524.0	124.2	399.8	23.7	76.3
2005	606.4	142.5	463.9	23.5	76.5

Source: United Nations Commodity Trade Statistics Database

Table 2. ASEAN-6 imports, 1980-2005 (US\$ billion, percentage shares)

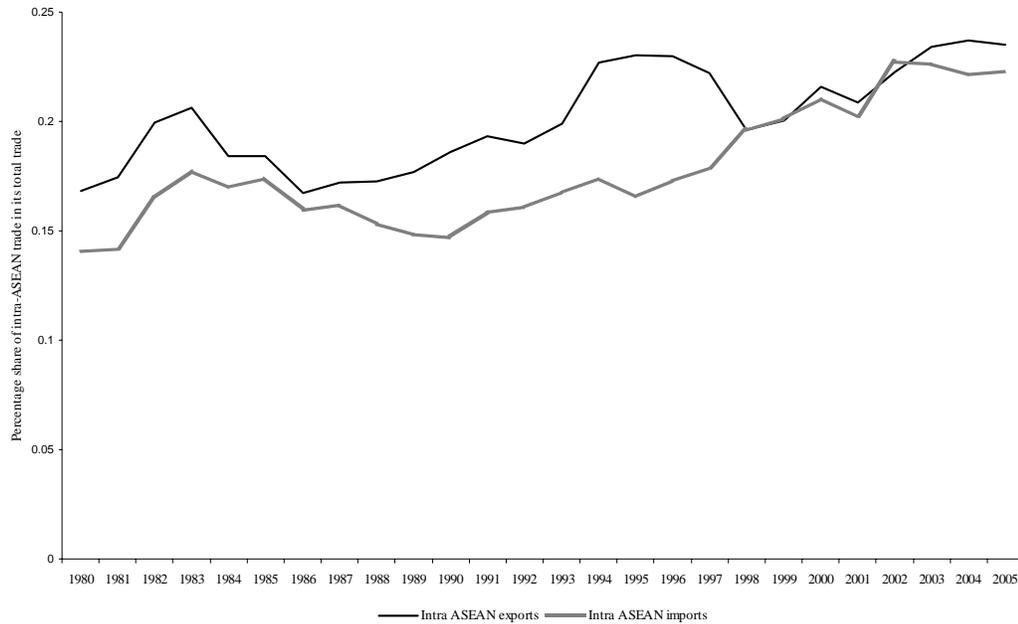
Year	Total ASEAN-6 imports (US\$b)	Intra-ASEAN-6 imports (US\$b)	ASEAN-6 imports from the ROW (US\$b)	% share of intra-ASEAN-6 imports in total ASEAN imports	% share of imports from the ROW in total ASEAN imports
1980	63.9	9.0	54.9	14.1	85.9
1985	64.3	11.2	53.1	17.4	82.6
1990	157.5	23.2	134.3	14.7	85.3
1995	338.8	56.2	282.6	16.6	83.4
2000	342.6	72.2	270.4	21.1	78.9
2001	312.4	63.3	249.1	20.3	79.7
2002	262.8	59.7	203.1	22.7	77.3
2003	368.6	83.4	285.2	22.6	77.4
2004	458.0	101.4	356.6	22.1	77.9
2005	537.6	120.0	417.6	22.3	77.7

Source: United Nations Commodity Trade Statistics Database

Unlike intra-ASEAN exports, intra-ASEAN imports as a share of the total has been declining in the pre-AFTA years and did not recover from its 1985 level until 1999 when it reached 20.2 per cent. Thus, the Asian economic crisis of 1997/98 may have worked to support AFTA rather than derail it by creating a stronger desire to source imports from within the region. During the time of the financial crisis, perceived problems of credibility and confidence in the region by the industrialized world, comprising most of ASEAN's principal export markets, forced the ASEAN countries to turn inwards and to focus on their local markets (Fig 4).

Overall, the aggregate data convey a reasonably clear picture: intra-ASEAN shares and growth rates for both exports and imports increased significantly, thus, indicating that trade ties among the ASEAN partners intensified in the 1990s and beyond, after the implementation of AFTA. There exists increased dependency on regional trade as reflected in these trends.

Fig. 4 Percentage share of intra-ASEAN exports and imports in total ASEAN trade with the world



Source: United Nations Commodity Trade Statistics Database

TRENDS IN ASEAN-6 COMMODITY TRADE

It is also possible to disaggregate the data and examine the behavior of intra-ASEAN trade by commodity categories. At the SITC one-digit level, there are ten categories. These data demonstrate notable trends, particularly for two commodity groups namely mineral fuels, lubricants and related materials (SITC 3) and machinery and transport equipment (SITC 7). Table 3 highlights these trends.

Mineral fuels, lubricants and related materials initially started as a significant commodity group in intra-ASEAN trade, accounting for approximately 40 per cent of ASEAN's trade with the region in 1980 but progressively declined to around 17 per cent in 2005. It experienced a big dip at 9 per cent in 1995. In contrast, machinery and transport equipment showed the opposite trend of gaining importance as a commodity category as early as 1995 when it accounted for more than half of ASEAN's trade with the region from about 14 per cent share in 1980. This commodity has maintained its share through to 2005. One reason for this trend is the increasing pace of industrial restructuring in ASEAN countries, which led to the growing share of heavy equipment trade. It also became a national policy that ASEAN countries promoted their respective national car programs which may have accounted for this trend. Moreover, under the tariff reduction

program of the CEPT, heavy machinery and transport were gradually transferred from the Temporary Exclusion List to the Inclusion List which meant that heavy equipment trade became more liberalized. The increasing reliance of the manufacturing sector on intra-regional production networks where parts, components and other intermediate goods are produced across the ASEAN region and brought together in one location for final assembly has contributed to this trade pattern. Similar observations were made by Austria (2004) and Elliot and Ikemoto (2003).

Table 3. Percentage distribution of intra-ASEAN trade, by one-digit SITC commodity group, 1980-2005

Commodity (SITC)	1980	1985	1990	1995	2000	2001	2002	2003	2004	2005
0 Food & live animals	12.1	9.6	7.4	4.7	3.3	4.1	3.6	4.1	3.6	3.2
1 Beverages & tobacco	0.4	0.4	0.5	0.4	0.7	0.9	0.9	0.7	0.7	0.6
2 Crude materials, inedible except fuels	14.9	6.1	5.3	3.4	1.9	2.0	1.7	1.9	2.1	2.0
3 Mineral fuels, lubricants, & related materials	38.1	39.6	22.5	9.0	9.8	9.7	10.7	10.5	12.0	16.6
4 Animal & vegetable oils, fats & waxes	4.5	5.1	1.6	1.2	0.5	0.6	0.9	0.8	1.0	0.8
5 Chemicals & related products	3.6	5.5	6.7	5.8	6.8	7.2	6.8	8.1	9.2	8.5
6 Manufactured goods	8.2	7.9	11.8	10.0	7.8	8.0	7.4	7.5	8.1	8.3
7 Machinery & transport equipment	14.2	19.2	33.7	51.8	61.3	59.1	56.6	57.5	55.3	52.3
8 Miscellaneous manufactured articles	2.5	3.6	9.1	11.4	7.0	7.1	7.1	7.8	6.9	6.5
9 Commodities & transactions, nec	1.5	3.0	1.4	2.4	0.9	1.3	4.3	1.1	1.1	1.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: United Nations Commodity Trade Statistics Database

As can be seen, there are distinct differences in the behavior of other commodity categories in intra-ASEAN trade. Food and live animals (SITC 0), crude materials excluding fuels (SITC 2), and animal and vegetable oils and fats (SITC 4) had declining shares from 1980 to 2005. On the other hand, beverages and tobacco (SITC 1), manufactured goods (SITC 6) and goods not classified by kind (SITC 9) had somewhat steady shares while chemicals (SITC 5) and miscellaneous manufactured goods (SITC 8) had moderately increasing shares of intra-ASEAN trade during the same period. To a large extent, trade in manufactures among ASEAN countries became increasingly important during this period.

Table 4 shows growth trends in imports in particular, to ascertain whether there are commodity categories in which the level of imports from the rest of the world fell as intra-ASEAN imports increased. To the extent that declines in import from third countries were associated with increasing imports from ASEAN countries, there would be a strong presumption of trade diversion. At the one-digit SITC level, there are four out of ten commodity categories in which imports of ASEAN countries from the rest of the world fell while rising within ASEAN during the period of AFTA implementation. Imports of beverages & tobacco (SITC 1), chemicals & related products (SITC 5), manufactured goods (SITC 6) and miscellaneous manufactured articles (SITC 8) grew at the expense of ASEAN's imports from the rest of the world. For total trade and some of the commodity categories, there was too much growth in trade in the global economy during this period that imports from both sources grew. However, for other commodity groups, imports declined from both sources. Hence, on the basis of this, one certainly cannot infer a strong evidence of trade diversion.

Table 4. Average real annual growth in ASEAN's imports from ASEAN and the rest of the world by one-digit SITC commodity group, 1992-2002 (per cent)

Commodity Group	Growth in intra-ASEAN imports	Growth in ASEAN imports from ROW
TOTAL	3.9	0.1
SITC-0 Food & live animals	-0.4	-0.3
SITC-1 Beverages & tobacco	14.8	-2.8
SITC-2 Crude materials, inedible, except fuels	-2.1	-4.2
SITC-3 Mineral fuels, lubricants & related materials	-0.1	4.0
SITC-4 Animal & vegetable oils, fats & waxes	-2.9	-1.2
SITC-5 Chemicals & related products	5.8	-1.5
SITC-6 Manufactured goods	0.6	-4.7
SITC-7 Machinery & transport equipment	7.9	1.3
SITC-8 Miscellaneous manufactured articles	0.6	-0.3
SITC-9 Commodities & transactions, nec	44.9	34.4

Source: United Nations Commodity Trade Statistics Database

IS AFTA TRADE CREATING OR TRADE DIVERTING?

Trade creation occurs when higher trade is generated among member countries as a result of their membership to a free trade area. The freeing up of trade barriers, tariffs in particular, lead countries to import commodities from lower-cost member countries away from high-cost domestic industry. In this way, economies in a free trade area produce more output by concentrating on commodities where their comparative advantage lies. Trade creation therefore, increases specialization in member countries, and economies of scale improve their productive efficiency (Viner, 1950; Clausing, 2001; Manzano and Mortel, 2003).

Trade diversion in contrast, occurs when member countries replace their imports from low-cost, more efficient non-member countries with imports from

high-cost less efficient (partner) member countries. This is made possible by the discriminatory protection in place, as imports from non-members continue to face high tariff barriers effectively becoming more costly than tariff-free imports from less-efficient member countries.

Since we cannot confirm the existence of trade diversion by simply comparing growth trends in intra-ASEAN imports vis-à-vis ASEAN imports from the rest of the world, we use the shift-and-share analysis to test the net impact of AFTA and determine trade diversion effects. The shift-and-share analysis examines the changes in values and patterns between commodity groups and among AFTA countries and the rest of the world (ROW). This method compares the extent of trade that member countries have with each other and with the rest of the world before and after the establishment of AFTA.

The shift-and-share analysis provides evidence or indication that AFTA is either trade creating or trade diverting. It has proven to be a useful descriptive tool for isolating trends in regional and commodity performance and for supplying data to policy-makers to interpret changes in the industrial structure of their economies. Most studies using shift-and-share methods are comparative static in that they only consider changes in the variable of interest, such as exports, between the base year and the terminal years of the time period under investigation (Krueger, 1999).

To carry out our analysis, base (prior to the establishment of AFTA) and final (completion of AFTA) years are first chosen to represent the hypothetical and actual trade patterns, respectively such as import shares among ASEAN member countries and ROW (non-member countries) prior to and on completion of AFTA. Using the average of 1985 and 1986 as a base, the difference between actual and hypothetical imports of member countries from ASEAN will be the shift. If there is an increase in the imports among ASEAN members at the expense of trade with the ROW (non-member countries), then there has been a positive shift indicating some evidence of trade diversion. On the other hand, if the shift is negative, then there is no evidence that intra-ASEAN imports increased at the expense of trade with ROW. Lastly, if the shift is equal to zero, then there is evidence that the formation of AFTA did not affect trade flow during the said year.

Table 5. Shifts in shares at the one-digit SITC commodity group, ASEAN's exports to ASEAN and rest of the world (in US\$ billion)

Commodity Group and Year	Total ASEAN imports	ASEAN actual exports to ASEAN	ASEAN exports if constant share of Total ASEAN imports	Change due to change in ASEAN share	Total imports of ROW	ASEAN actual exports to ROW	ASEAN exports to ROW at constant share	Change due to change in ROW share
TOTAL								
1988	102.9	17.9	19.6	-1.7	2514.5	85.9	77.9	8.0
1990	157.5	26.2	30.2	-4.0	3093.5	114.7	95.9	18.8
1995	338.8	71.5	65.1	6.4	4424.6	238.9	137.2	101.7
2000	342.6	87.2	65.8	21.4	5911.9	316.8	183.3	133.5
2002	262.8	69.7	50.5	19.2	5999.9	243.7	186.0	57.7
2005	537.6	142.5	103.2	39.3	9455.8	463.9	293.1	170.8
SITC-0 (Food & live animals)								
1988	6.4	1.6	1.7	-0.1	209.5	9.6	9.0	0.6
1990	7.7	1.9	2.1	-0.2	240.7	10.7	10.4	0.3
1995	14.1	3.3	3.8	-0.5	331	16.6	14.2	2.4
2000	13.1	3.0	3.5	-0.5	333.2	14.9	14.3	0.6
2002	11.5	2.2	3.1	-0.9	360.1	6.4	15.5	-9.1
2005	19.4	4.1	5.2	-1.1	494.4	19.6	21.3	-1.7
SITC-1 (Beverages & tobacco)								
1988	0.7	0.1	0.1	0.0	25.2	0.4	0.4	0.0
1990	1.3	0.2	0.3	-0.1	32.2	0.9	0.5	0.4
1995	2.3	0.4	0.5	-0.1	43.8	1.7	0.6	1.1
2000	1.9	0.7	0.4	0.3	51.6	1.1	0.7	0.4
2002	1.8	0.8	0.4	0.4	58.5	0.9	0.8	0.1
2005	2.5	1.0	0.5	0.5	78.8	1.4	1.1	0.3
SITC-2 (Crude materials, inedible, except fuels)								
1988	5.3	1.3	1.3	0.0	154.7	10.3	9.1	1.2
1990	6.6	1.3	1.6	-0.3	165.1	8.4	9.7	-1.3
1995	11.6	2.1	2.9	-0.8	208.6	13.2	12.3	0.9
2000	9.7	1.3	2.4	-1.1	202.7	9.9	12.0	-2.1
2002	6.0	0.9	1.5	-0.6	196.4	7.0	11.6	-4.6
2005	12.5	2.5	3.1	-0.6	335.7	17.9	19.8	-1.9
SITC-3 (Mineral fuels, lubricants & related materials)								
1988	10.7	3.4	3.7	-0.3	223.8	14.2	14.5	-0.3
1990	18.1	5.8	6.3	-0.5	337.5	22.8	21.9	0.9
1995	22.3	5.3	7.8	-2.5	332.7	20.1	21.6	-1.5
2000	37.9	7.7	13.2	-5.5	611.2	33.4	39.7	-6.3
2002	28.9	6.8	10.1	-3.3	567.1	28.3	36.9	-8.6
2005	89.6	19.5	31.2	-11.7	1288.9	55.6	83.8	-28.2

(con't) Source: United Nations Commodity Trade Statistics Database

Commodity Group and Year	Total ASEAN imports	ASEAN exports to ASEAN	ASEAN exports if constant share of Total ASEAN imports	Change due to change in ASEAN share	Total imports of ROW	ASEAN exports to ROW	ASEAN exports to ROW at constant share	Change due to change in ROW share
SITC-4 (Animal & vegetable oils, fats & waxes)								
1988	0.8	0.5	0.6	-0.1	10.3	3.1	2.7	0.4
1990	0.6	0.4	0.5	-0.1	11.6	3.0	3.0	0.0
1995	0.9	0.8	0.7	0.1	23.3	7.0	6.0	1.0
2000	0.6	0.5	0.5	0.0	19.1	5.4	4.9	0.5
2002	0.7	0.7	0.6	0.1	23.3	7.3	6.0	1.3
2005	1.2	1.2	1.0	0.2	35.0	11.5	9.1	2.4
SITC-5 (Chemicals & related products)								
1988	11.1	1.3	1.2	0.1	237.8	3.0	2.6	0.4
1990	15.6	1.8	1.7	0.1	280.8	3.4	3.1	0.3
1995	29.4	4.4	3.2	1.2	448.5	8.8	4.9	3.9
2000	28.6	5.6	3.1	2.5	570.3	15.3	6.3	9.0
2002	20.4	4.7	2.2	2.5	663.3	14.7	7.3	7.4
2005	45.0	12.3	4.9	7.4	1059.8	36.1	11.7	24.4
SITC-6 (Basic manufactures)								
1988	16.6	2.5	2.4	0.1	435.9	9.7	7.8	1.9
1990	25.3	3.4	3.7	-0.3	513.7	12.2	9.2	3.0
1995	49.0	7.9	7.2	0.7	730.2	24.4	13.1	11.3
2000	37.7	7.1	5.6	1.5	834.1	27.0	15.0	12.0
2002	24.7	5.5	3.6	1.9	843.9	18.0	15.2	2.8
2005	61.2	12.6	9.0	3.6	1288.6	37.8	23.2	14.6
SITC-7 (Machinery & transport equipment)								
1988	40.8	5.5	5.0	0.5	844.2	21.8	15.2	6.6
1990	66.6	8.6	8.2	0.4	1035.4	32.2	18.6	13.6
1995	172.4	36.5	21.2	15.3	1596.6	98.5	28.7	69.8
2000	184.5	54.3	22.7	31.6	2307.9	162.7	41.5	121.2
2002	138.4	39.3	17.0	22.3	2314.6	114.7	41.7	73.0
2005	263.5	77.5	32.4	45.1	3413.8	221.0	61.4	159.6
SITC-8 (Miscellaneous manufactured articles)								
1988	7.2	1.2	1.0	0.2	329.9	10.5	6.9	3.6
1990	12.1	2.3	1.7	0.6	424.8	18.2	8.9	9.3
1995	27.2	8.7	3.9	4.8	625	40.1	13.1	27.0
2000	25.8	6.0	3.7	2.3	807.3	44.4	17.0	27.4
2002	18.6	4.9	2.7	2.2	848.8	29.9	17.8	12.1
2005	35.5	9.6	5.1	4.5	1221	52.4	25.6	26.8
SITC-9 (Commodities & transactions, nec)								
1988	3.4	0.3	0.7	-0.4	44.1	3.4	3.7	-0.3
1990	3.6	0.5	0.7	-0.2	56.7	3.0	4.7	-1.7
1995	9.6	2.0	1.9	0.1	105.8	8.5	8.8	-0.3
2000	2.8	1.0	0.5	0.5	174.3	2.5	14.5	-12.0
2002	11.8	4.0	2.3	1.7	125.3	16.5	10.4	6.1
2005	7.2	2.2	1.4	0.8	239.9	10.6	19.9	-9.3

Table 5 presents results from shift-and-share analysis on imports into the ASEAN and into the rest of the world. Using the average of 1985-1986 as a base, the shares of ASEAN exports in the imports of the ASEAN and the rest of the world were calculated for all the commodity groups. The shares so calculated were then applied to ASEAN and rest of the world imports in 1988, 1990, 1995, 2000, 2002 and 2005 to estimate what ASEAN's exports would have been had its share of the two markets been unaltered. The difference between that number and the actual ASEAN exports to each market was then taken as the "shift" in ASEAN exports in the two markets. This was done for total trade and for one-digit SITC commodity groups.

Some interesting patterns emerge. Total ASEAN exports have gained shares in both the ASEAN and ROW markets through time. Starting from the late 1980s to the early 1990s, ASEAN exports appeared to lose share in the region but gained share in the rest of the world. By the latter half of the 1990s through to the first five years of the following decade, ASEAN exports have posted positive shares in both markets but the gains in shares are most pronounced in the rest of the world. This pattern is similar to the growth trend for total imports in Table 4 where the average real annual growth rates of trade with ASEAN and the rest of the world were both positive during the 1990s to the early 2002s. This confirms that AFTA had been trade creating rather than trade diverting. The gains in shares are most pronounced in machinery and transport equipment (SITC 7), as was earlier observed. If there was the slightest hint of trade diversion, this can be seen in commodities and transactions not elsewhere classified of SITC 9 where ASEAN exports gained shares in the region at the expense of trade with the rest of the world. In the other commodity categories, a rise or fall in ASEAN share in trade with the rest of the world was matched with a similar trend in the share in trade with the region.

It would appear that the general increase in ASEAN exports to both ASEAN partners and the rest of the world after the AFTA implementation suggests that ASEAN has improved its competitiveness and has therefore become more attractive as a source of imports for the world in general. The currency devaluation during the Asian crisis would have made ASEAN exports less expensive and should have further contributed to the increase in the competitiveness of their products with the rest of the world. At the same time, the crisis also forced ASEAN to turn inward and focus on their local markets.

The result of this study is consistent with previous research, which does not support trade diversion in AFTA. There are several reasons to believe this. First, the share of intra-ASEAN trade in total imports or total exports of ASEAN countries remains very small as can be seen in Tables 1 and 2. This indicates that major import sources for ASEAN member countries are outside the region (pre- and post-AFTA). Second, the absence of trade diversion may be due to ASEAN

countries having similar production and trade structures and would source most of their imports from the rest of the world.

CONCLUSION

Using recent trade data and the shift-and-share analysis, this paper has shown that the ASEAN Free Trade Agreement (AFTA) for the ASEAN-6 was trade creating rather than trade diverting. It was able to invigorate the trading environment in the region and intensify the economic linkages between economies in the region. The composition of trade evolved from the simple processed items of mineral fuels and the like to machinery and transport equipment, which involved more elaborate processes. Industrial restructuring such as this has strengthened the establishment of linkages in production between the ASEAN-6 member countries which is in keeping with AFTA's goal of turning the region into a single production base.

There was no evidence of trade diversion largely because ASEAN members' major trade partners remained outside the region after the AFTA. Hence, this suggests that trade liberalization on a multilateral basis would produce greater benefits to ASEAN economies. The efficiency and productivity of the region would be enhanced further under multilateral trade arrangements.

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