

Does AFTA really lead to Economic Growth? Evidence from ASEAN-5

James Paul

Faculty of Economics and Administration, University of Malaya, 50603 Kuala Lumpur, Malaysia.

Abstract- This paper seeks to revisit the contentious causality relationship between Asean Free Trade Area (AFTA) and economic growth in the pioneering Association of Southeast Asian Nations (ASEAN-5) using data from 1970 till 2013. The purpose of this report is to investigate the impact of trade openness and their combined interaction on economic growth in selected countries before and after AFTA implemented. Foreign Direct Investment (FDI) is the key element for economic growth, hence this analysis divided into two major section (i) FDI and (ii) other parameter that contribute to economic growth such as import, export and deregulation of tariff rate. Base on the time series analysis the Granger Causality test show mixed result among ASEAN-5. The result show AFTA has restructured the AESN-5 into export oriented due to liberalization their economies and bring down their tariffs and commit to various types of liberalization programs. The finding show the main advantage of AFTA is increased intra-regional trade and investment and improved resource allocation within the region. These benefits can be captured as tariffs and other trade barriers are reduced and markets are integrated.

Index Terms- Foreign direct investment, GDP, trade, tariff deregulation, ASEAN

JEL CLASSIFICATION: F14, F15, F21, F63

I. INTRODUCTION

Asean Free Trade Area (AFTA) is major strategy formulated by ASEAN countries in 1992 to generate the economic growth. GDP growth is the prime measurement of economic growth. Most previous works show that openness to trade and foreign investment has a positive impact on GDP growth (Kreuger, 1980; Bhagwati, 1978). Indeed, Rasiah (2010) argued with evidence that export-oriented industrialization was a key driver of economic growth in the ASEAN market economies. Economic growth in the ASEAN-5 may also benefit from further integration in AFTA, hence governments have aggressively promoted inflows of foreign direct investment (FDI) to stimulate economic growth (UNCTAD, 2014). The FDI inflow to the host country will be an important source of scarce capital, technology transfer, demonstration effect and competition (Caves, 1974; Rasiah, 1995). Some governments have preferred the targeting of national firms to stimulate economic growth on the grounds that FDI could crowd out, rob scarce human capital and other resources from national firms, and at the same time cause balance of payment problems through imports and repatriation of profits (Amsden, 1991). Despite such arguments, even before the

disintegration of the Soviet Union in 1991 even the former communist nations of China (1978), Vietnam (1986), Cambodia (1992) and Laos (1992) had already begun promoting FDI (Rasiah and Schmidt, 2009).

While the positive arguments on FDI have convincingly outweighed those of the critics (Rasiah, 1995; Dunning, 2005), the empirical support has remained contested. On the one hand, South Korea and Taiwan, two of the dynamic economies that became developed in one generation drove rapid growth largely through national firms (though, these firms benefited strongly from technology licensing and subcontract linkages with multinationals (Amsden, 1989; Chang, 1995; Wade, 1990). On the other hand, the industrialization thrusts of Singapore and Malaysia have largely been propelled by FDI (Rasiah, 2005, 1995; Rodan, 1990; Rasiah and Schmidt, 2009). The pioneering members of the Association of Southeast Asian nations (ASEAN), i.e. Indonesia, Malaysia, the Philippines, Singapore and Thailand are no different.

An assessment of the determinants of FDI inflows among the ASEAN-5 economies is also useful because all five countries have undergone liberalization over the decades through AFTA. Indeed, the major watershed in this process is the establishment of the ASEAN Free Trade Area in 1992. While the pioneering ASEAN-5 members were behind its original formation, the transition economies of Cambodia, Laos, Myanmar and Vietnam became members subsequently. We confine the analysis in this paper to the pioneering members only because of their longer experience with liberalization and FDI inflows than the transition economies. Therefore, this paper seeks to analyze the determinants of net FDI inflows in the five pioneering ASEAN members using time series and panel data analysis. The rest of the paper is organized as follows. Section 2 reviews past work on FDI inflows into the ASEAN economies. Section 3 presents the methodology and data used in the paper. Section 4 analyzes the results while Section 5 presents the conclusions.

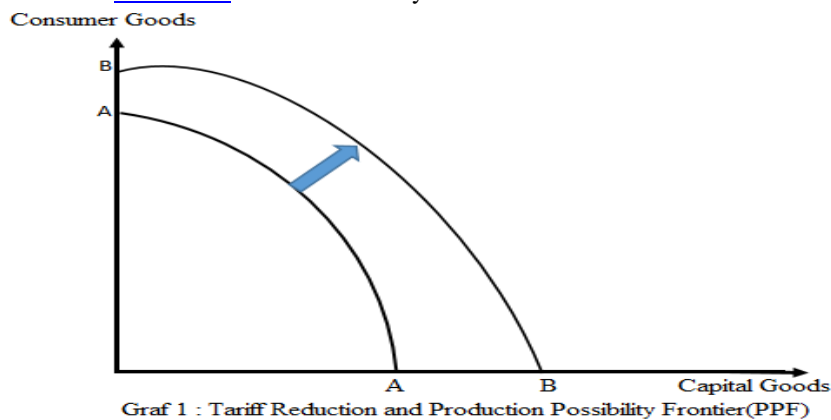
II. THEORETICAL FRAMEWORK

All the ASEAN-5 countries had reduced tariff rates to a maximum of 5% by 2008. Thus, it is important to examine if the fall in CEPT and MFN tariff rates has a bearing impact on GDP growth, FDI and trade. A common development from the AFTA process is economic of scale that has resulted from the AFTA process. The two-way link between FDI and economic growth stems from the fact that higher FDI inflows stimulate economic growth in the host country. Consequentially, higher economic growth in the host countries attracts more FDI. The empirical evidence on the relationship between FDI and economic growth,

however, provides very contradictory results. Karimi and Yusop (2009) found co-integration between FDI and economic growth in Singapore and Thailand, both at the individual country level, and in a panel of five ASEAN countries. The results confirm that FDI and economic growth share a long run relationship in the ASEAN countries, which indicates that there is possibility of a causal relationship occurring between FDI and economic growth. Moreover, the existence of no co-integration between the two variables in Indonesia, Malaysia and the Philippines does not mean the absence of a causal relationship or any relationship in the short run. Among countries whose economic growth and FDI inflows do not move together in the long run (i.e. co-integration), they may affect each other in the short run. Investment in new technology increases potential output for all goods and services because new technology is inevitably more efficient than old technology. Allocating scarce funds to capital goods, such as machinery, is referred to as real investment. If an economy

chooses to produce more capital goods than consumer goods, at point A production possibility frontier (PPF) in the following diagram, then it will grow by more than if it allocated more resources to consumer goods, at point B, below.

To achieve long run growth the economy must use more of its capital resources to produce capital rather than consumer goods. As a result, standards of living are reduced in the short run, as resources are diverted away from private consumption. However, the increased investment in capital goods enables more output of consumer goods to be produced in the long run. The reduction of tariff rate for ASEAN-5 would shift the PPF point A to point B. This means that standards of living can increase in the future by more than they would have if the economy had not made such as short-term sacrifice. Hence economies face a choice between high levels of consumption in the short run and the long run.



Base on the production possibility frontier which subject to tariff reduction. This increases the FDI, import, export and GDP growth. Base on this basic fundamental economic growth can derive the null hypothesis that economic growth is a function to tariff reduction over the time period. Additionally, an assumption can be made that economic growth has a positive relationship with FDI. Table 1 indicates a slight drop in the share of FDI in Gross Fixed Capital Formation (GFCF) in 2005 due to

competition from other countries. The average growth rates of FDI in ASEAN-5 suffered a negative growth from 2001 to 2004 before showing positive growth again in the year 2005. The Asian Financial Crisis and fierce competition from China and India during the period after AFTA implementation had caused a decrease in FDI inflows.

Table 1: FDI/GFCF, ASEAN-5, 1970-2013 (%)

[1] Year	[2] 1970	[3] 1971	[4] 1972	[5] 1973	[6] 1974	[7] 1975	[8] 1976	[9] 1977	[10] 1978	[11] 1979	[12] 1980	
	70	9	7	5	9	8	8	5	90	95	00	05
											10	13
[12] ASEAN-5	[13] 2.4	[14] 6	[15] 5	[16] 4	[17] 12.04	[18] 12.19	[19] 21.46	[20] 19.23	[21] 16.64	[22] 20.79		
	1	.	.	.								
		1	8	3								
		9	8	7								

Source: Author's compilation from UNCTAD and IFS, various years.

Table 2 shows that the ASEAN-5 managed to enjoy positive growth in FDI inflows, GFCF and GDP from 1970 to 1997 due to cheap labor and low production costs. After 1997, FDI inflows and GDP have experienced slower growth rates. While the Asian

financial crisis started the slow down the persistence of slow growth can also be attributed to the exhaustion of labour reserves in Malaysia and Thailand, and the emergence of Cambodia, Myanmar, Laos and Vietnam (CMLV).

Table 2: FDI, GFCF and GDP, Mean Growth Rates, ASEAN-5, 1970- 2013(%)

[23] Five year periods	[24] FDI	[25] GFCF	[26] GDP
[27] 1971-1975	[28] 25.97	[29] 10.13	[30] 19.36
[31] 1976-1980	[32] 17.42	[33] 8.62	[34] 14.04
[35] 1981-1985	[36] -8.39	[37] 5.95	[38] 0.98
[39] 1986-1990	[40] 33.95	[41] 7.30	[42] 11.33
[43] 1991-1995	[44] 14.15	[45] 6.46	[46] 10.61
[47] 1996-2000	[48] -0.88	[49] 6.19	[50] -5.63
[51] 2001-2005	[52] 10.97	[53] 11.53	[54] 9.04
[55] 2006-2010	[56] 30.29	[57] 33.23	[58] 25.72
[59] 2011-2013	[60] 18.57	[61] 22.01	[62] 14.90
[63] Ten Year			
[64] 1971-1980	[65] 20.37	[66] 12.46	[67] 18.81
[68] 1981-1990	[69] 13.20	[70] 14.31	[71] 4.87
[72] 1991-2000	[73] 7.11	[74] 13.50	[75] 3.32
[76] 2001-2013	[77] 23.67	[78] 16.81	[79] 5.73

Source: Authors' compilation from UNCTAD, World Bank and IFS, various years.

While FDI inflows into the ASEAN-5 have fallen following the Asian financial economic crisis and structural change, it is important to analyze the endogenous effect of FDI on economic growth. Does increased liberalization bring about endogenous growth effects among the ASEAN-5?

Net FDI to the ASEAN-5 increased rapidly before AFTA implementation over the period 1961 to 1990. These economies benefited from the effective of China, the CLMV economies and India to FDI until the 1990s. Data in the period 1961-1990 show that among the ASEAN countries, the largest private FDI inflows went to Singapore, (42.7%) followed by Malaysia (27.6%),

Thailand (13.7%), Indonesia (10.5%) and the Philippines (5.5 %) (Table 3). Except for Indonesia, which faced a political fallout in 1998-2001, net FDI inflows remained positive in the remaining ASEAN-5 over the period 1990-2013. These figures rose even more sharply since the 1990s with Singapore, Thailand and Malaysia recording the highest net inflows with the sharpest growth in 2013. The volume of FDI inflows in ASEAN in the 1980s was 4.3 times that of the 1970s. Among the individual countries, the growth has been the fastest in Thailand (7.9 times), followed by Singapore, Philippines, Malaysia, and Indonesia (2.0 times).

Table 3: Net FDI Inflows, ASEAN-5, 1961-2013 (\$Million)

[80] Year	[81] Indonesi	[82] Malay	[83] Philippines	[84] Singapore	[85] Thaila	[86] ASEAN-5
[87] 1961-80	[88] 2,163	[89] 4,453	[90] 452	[91] 3,728	[92] 1,186	[93] 11,982
[94] 1981	[95] 133	[96] 1,265	[97] 172	[98] 1,675	[99] 288	[100]3,533
[101]1982	[102]225	[103]1,397	[104]16	[105]1,298	[106]189	[107]3,125
[108]1983	[109]292	[110]1,261	[111]105	[112]1,085	[113]348	[114]3,091
[115]1984	[116]222	[117]797	[118]9	[119]1,210	[120]400	[121]2,638
[122]1985	[123]310	[124]695	[125]12	[126]809	[127]162	[128]1,988
[129]1986	[130]258	[131]489	[132]127	[133]1,533	[134]261	[135]2,668
[136]1987	[137]385	[138]423	[139]307	[140]2,696	[141]182	[142]3,993
[143]1988	[144]576	[145]719	[146]936	[147]2,710	[148]1,082	[149]6,023
[150]1989	[151]682	[152]1,846	[153]563	[154]3,963	[155]1,727	[156]8,781
[157]1990	[158]961	[159]2,958	[160]530	[161]4,489	[162]2,236	[163]11,177
[164]1991	[165]1,482	[166]3,998	[167]544	[168]4,887	[169]2,013	[170]12,924
[171]1992	[172]1,777	[173]5,183	[174]228	[175]2,204	[176]2,113	[177]11,505
[178]1993	[179]2,004	[180]5,005	[181]1,238	[182]4,686	[183]1,804	[184]14,737
[185]1994	[186]2,109	[187]4,341	[188]1,591	[189]8,550	[190]1,366	[191]17,957
[192]1995	[193]4,346	[194]4,178	[195]1,478	[196]11,535	[197]2,067	[198]23,601

[199]1996	[200]6,194	[201]5,078	[202]1,517	[203]9,682	[204]2,335	[205]24,806
[206]1997	[207]4,677	[208]5,136	[209]1,222	[210]13,752	[211]3,894	[212]28,681
[213]1998	[214]-240	[215]2,163	[216]2,287	[217]7,313	[218]7,314	[219]18,837
[220]1999	[221]-1,865	[222]3,895	[223]1,247	[224]16,577	[225]6,102	[226]25,956
[227]2000	[228]-4,550	[229]3,787	[230]2,240	[231]16,484	[232]3,365	[233]21,326
[234]2001	[235]-2,977	[236]553	[237]195	[238]15,086	[239]5,067	[240]17,924
[241]2002	[242]145	[243]3,203	[244]1,542	[245]6,401	[246]3,341	[247]14,632
[248]2003	[249]-596	[250]2,473	[251]491	[252]11,941	[253]5,232	[254]19,541
[255]2004	[256]1,896	[257]4,624	[258]688	[259]21,026	[260]5,860	[261]34,094
[262]2005	[263]8,336	[264]3,924	[265]1,664	[266]18,090	[267]8,055	[268]40,069
[269]2006	[270]4,914	[271]7,690	[272]2,707	[273]36,923	[274]9,454	[275]61,688
[276]2007	[277]6,928	[278]9,071	[279]2,918	[280]47,733	[281]11,326	[282]77,976
[283]2008	[284]9,318	[285]7,572	[286]1,340	[287]12,200	[288]8,538	[289]38,968
[290]2009	[291]4,877	[292]114	[293]2,064	[294]23,821	[295]4,853	[296]35,729
[297]2010	[298]15,529	[299]10,885	[300]1,070	[301]55,075	[302]9,103	[303]91,662
[304]2011	[305]20,564	[306]15,119	[307]2,007	[308]48,001	[309]2,468	[310]88,159
[311]2012	[312]21,200	[313]9,733	[314]3,215	[315]56,659	[316]12,894	[317]103,701
[318]2013	[319]23,281	[320]11,582	[321]3,737	[322]64,793	[323]14,305	[324]117,698

Source: International Monetary Fund, International Financial Statistics Yearbook 1991 (Washington, D.C., 1991), World Bank (2013).

Although net FDI inflows to Indonesia recorded an absolute contraction in 1998-2001, it is obvious that FDI inflows to the ASEAN-5 over the period 1961-2013 has been impressive. Besides, all five countries show strong conviction to attract FDI (ASEAN, 2015). Hence, using these countries as a laboratory to examine causality relationships between FDI and GDP growth will be useful.

III. TRADE AND ECONOMIC GROWTH

The literature on economic integration has evolved since the 1950s along with the European integration (Kettunen 2004). The basic proposition of integration theories stems from the classical customs union theory (Viner 1950). He suggested that regional trade agreements increase trade between the member countries due to the removal of the trade barriers. Hence RTAs enable the companies operating on a regional basis in line with the scope of the agreement to participate in regional exports and imports with decreased customs procedures and tariffs (ibid). One of the main contributions to the classical economic integration theory is from Balassa (1961). He divided economic integration into stages that represent the deepening of integration from preferential trade area until political union. The first step is, as mentioned, preferential trade area that provides lower barriers on trade within selected groups of items among the participating countries. In the case of ASEAN, this was the ASEAN Preferential Tariffs Arrangements in 1977 (Kettunen 2004). The next stage is a free trade area (FTA), where there are no internal tariffs or quotas, although each country is able to retain its own barriers to trade with non-members. AFTA, which was established in 1992, represents this kind of free trade area in ASEAN. The third stage is a customs union that in addition to FTA, harmonises trade policies toward the rest of the world by applying e.g. common external tariffs. In the customs union, the

certificates of origin at internal borders no more are needed. ASEAN Customs Union is not realised yet, and for example Plummer (2006) notes that ASEAN Customs Union is needed to ASEAN Economic Community (AEC) to succeed. The fourth stage is a common market, in addition to FTA and customs union, there production factors such as service, labor and capital, can flow freely among member 23 nations. The fifth state is an economic union where such as the economic policy, market regulation, macroeconomic and monetary policies are harmonized. Economic Integration also brings one common currency to the member states. In EU, this happened when European Monetary Union was created and common currency, euro, was introduced in 2002. In the ASEAN case, AEC represents this stage of economic integration. AEC was declared as a part of ASEAN Vision 2020 in the Bali Concord II in 2003 "to create a stable, prosperous and highly competitive ASEAN economic region in which there is a free flow of goods, services, investment and a freer flow of capital, equitable economic development and reduced poverty and socio-economic disparities in year 2020" (ASEAN secretariat 2003, Declaration of Bali Concord II). The sixth stage in Balassa's theory is political union which means the unification of policies and political institutions in addition to above-mentioned stages. The traditional economic integration theory by Balassa (1961) is also criticised for being too limited because it is claimed to derive only from one case, European integration, and it raises the question whether the theory is applicable to other regions as well (Lindberg 2007). In the case of ASEAN, even though the integration started with preferential trade agreement and then was followed by free trade area (AFTA in 1992), the next step: customs union is unlike to happen. Mainly because it is a process that involves setting up common external tariffs to non-members, and this is not a very likely scenario in ASEAN, as there are a highly disparate set of trade regimes among ASEAN members (ibid). Even though the goal of AFTA is to encourage the trade within the ASEAN

region, the extra-ASEAN trade is not discouraged with trade regimes. Even though AEC is declared as a part of ASEAN Vision 2020, many scholars find this too ambitious (Hew 2003, Plummer 2006, Lindberg 2007). Mainly because ASEAN countries are in different stages of development and there is a gap in the economic development of ASEAN-6 (Malaysia, Singapore, Indonesia, the Philippines, Thailand and Brunei) and newer but less developed countries such as Cambodia, Laos, Myanmar and 24 Vietnam. Hew (2003) argues that the more realistic choice for ASEAN would be a "FTA-plus" arrangement that covers a free trade area and some elements of a common market, such as the free movement of capital and labor.

In this section we review past research examining causality issues between GDP and FDI in general but ASEAN in particular. In so doing, we also review the robustness of the data used, models deployed and length of the empirical series.

The intensity of FDI in an economy is normally measured by the ratio of FDI inflows over the Gross Fixed Capital Formation (GFCF). FDI inflows are considered to be a major stimulant of economic growth, and hence, it will be useful to examine if the AFTA process has stimulated greater FDI inflows into the ASEAN-5. Borensztein et al. (1998) examined the relationship between FDI and economic growth in 69 developing countries over the period spanning from 1970 to 1989. They found that FDI has a positive impact on economic growth, but that the nexus is partly dependent on the availability of human capital in the host country. Li and Liu (2005) found similar results from a sample of 84 countries over the period 1970-1999. Obwona (2001), as well as Bengoa and Sanchez-Robles (2003) suggested that, for FDI to have a positive impact on economic growth, the host country must have macroeconomic and political stability, policy credibility, and an increase in the openness of their economy. Coe (1997) found a positive association between FDI and economic growth, but suggested that the host country should have attained a sufficient level of development to help it to reap the benefits of higher productivity.

Alfaro (2003) found that FDI inflows into three different sectors of the economy (primary, manufacturing and services) exert different effects on economic growth. He found that FDI inflows into the manufacturing sector give a positive effect on economic growth. A one percent increase in FDI in the manufacturing sector leads to a 1.7% increase in manufacturing GDP growth. From purely the standpoint of capital scarcity, the importance of FDI should be higher in the developing countries rather than the developed countries because of their inability to generate internal savings to finance development (Brecher and Bhagwati, 1981). There is evidence to suggest that FDI is one of the most effective ways by which developing economies can integrate with the rest of the world as it provides not only capital, but also technology and management know-how necessary for restructuring the firms in the host countries (Rasiah, 1995; Pradhan, 2006). Also, FDI usually helps to achieve developmental goals by solving the savings-investment gap (Vadlamannati et al., 2009). Indeed, empirical data from Rasiah (2010) shows that Southeast Asia's economic growth has been strongly driven by FDI. Wang (2009) found in his assessment of the nexus between FDI and economic growth in a sample of 12 Asian countries over the period 1987-1997 that FDI in the manufacturing sector had a significant positive impact on

economic growth. Similarly, Choong and Lam (2010) found that the trade liberalization and human capital, stimulate the FDI inflow, however, a unidirectional causality was also observed running from real GDP of both Malaysia and China, openness and human capital to FDI inflow. Contrary to Choong and Lam, Lee (2010) measure the role of FDI outflow on economic performance as well as the impact of GDP per capita on outflow FDI of Japan. Using bivariate and multivariate cointegration causality, he find a long run unidirectional causality running from outflow FDI to GDP per capita, however, a neutral causality was observed among GDP per capita and outflow FDI in the short run.

Meanwhile, Choe (2003) found bi-directional causality between FDI and growth for a sample of 80 countries over the period 1971-1995, but suggested that the effect is more apparent from economic growth to FDI. Chowdhury and Marvrotas (2005) examined the causal association between FDI and growth from Chile, Malaysia and Thailand. They find unidirectional causality from economic growth to FDI in Chile and a two-way causation between the two in Malaysia and Thailand. While Wong *et al.*, (2009) examines the causal linkages between inward FDI and trade services in Malaysia and Singapore using bi-variate and tri-variate VAR framework. A bi-directional causality was observed between inward FDI and trade services, at the same time between FDI and services imports in tri-variate framework. For Malaysia, a uni-directional causality was observed running from inward FDI to services imports, which is not strong as compared to Singapore.

However, Zhang (2007) tested the FDI economic nexus using countries in East Asia and Latin America, but found that FDI caused GDP growth in some countries while it was the other way around in some countries. Furthermore, Carkovic and Levine (2002) analyzed the relationship between FDI and economic growth in a sample of 72 countries and found that FDI does not exert any independent influence on economic growth in either developed or developing countries. Also, Duasa (2007) found no causal relationship between FDI and economic growth in Malaysia, but suggested that FDI does contribute to stability of growth. These findings show that the nexus between FDI and economic growth is far from straightforward (Vu and Noy, 2009). It differs from country to country and even within countries over different time periods.

Most published works examine the relationship, either between the GDP and exports, GDP and FDI, or exports and FDI. Despite their interrelationships (Bhagwati and Srinivasan 1975; Krueger, 1980) relatively few published empirical work deal with causal relations between the three variables simultaneously among a group of countries, while even fewer works have used panel data VAR causality analysis techniques. Several papers on individual country studies have examined the Granger causality direction of GDP, FDI and trade. For example, Liu, Burrridge and Sinclair (2002) found bidirectional causality between each pair of real GDP, real exports and real FDI for China using seasonally adjusted quarterly data from 1981 to 1997. Kohpaiboon (2003) found that, in export promotion (EP) regime, there is unidirectional causality from FDI to GDP for Thailand using annual data from 1970 to 1999. Alici and Ucal (2003) found only unidirectional causality from exports to output for Turkey using seasonally unadjusted quarterly data from

1987.1 to 2002.4. The empirical literature is summarized by Lewer and Van den Berg (2003), in which the results are remarkably consistent, not only in terms of a positive association between the openness of economies and higher economic growth but also about the magnitude of the effect.

Dritsaki (2004) found bidirectional causality between real GDP and real exports, unidirectional causality running from FDI to real exports, and FDI to real GDP for Greece, using annual International Monetary Fund (IMF) data from 1960 to 2002. In addition, Ahmad, et al., (2004) found unidirectional causality from exports to GDP and FDI to GDP for Pakistan using annual data from 1972 to 2001. Cuadros, Orts, and Alguacil (2004) found unidirectional causality running from real FDI and real exports to real GDP in Mexico and Argentina, and unidirectional causality running from real GDP to real exports for Brazil using seasonally adjusted quarterly data for the three countries between the late 1970s to 2000. Chowdhury and Mavrotas (2006) found unidirectional causality running from GDP to FDI for Chile and bidirectional causality running between GDP and FDI for Malaysia and Thailand using data from 1969 to 2000.

Makki and Somwaru (2004) found a positive impact of exports and FDI on GDP using data from 66 developing countries averaged over a ten year period of 1971-1980, 1981-1990 and 1991-2000 by introducing an instrumental variable. Wang, Liu, and Wei (2004) used panel data analysis on 79 countries from 1970-1998 and found that FDI was relatively more beneficial to high-income countries, while international trade was more important to low-income countries. In a similar study panel data study, Okada and Samreth (2014) tested how corruption determines the effect of FDI on economic growth using data for 130 countries from 1995 through 2008, and found that FDI alone could not stimulate growth unless the interaction term between FDI and corruption is regarded. However, they did not address the stationarity of the variables to avoid spurious conclusions and did not apply the panel data causality analysis. Also, as Basu, Chakraborty, and Reagle (2003) had pointed out, the above two works only looked at one-way determinants of FDI through regression analyses, rather than at two-way causal linkages between GDP, exports, and FDI, and hence, are not strictly robust.

Nair-Reichert and Weinhold (2000) found that the Holtz-Eakin causality tests show FDI, and not exports, causes GDP using data from 24 developing countries between 1971 and 1995 and applying mixed fixed and random (MFR) effects models. Hansen and Rand (2006), using data for 31 countries from 1970-2000 and the neoclassical growth model, found a strong bidirectional causality relationship between FDI ratio (FDI/GDP) and GDP. However, they did not take into account exports. Moreover, this paper covered too many countries with different stages of development, and thus, the results may have been affected by the problem of missing variables and endogeneity. Hsiao and Hsiao (2006) examined the Granger causality relationship between GDP, exports, and FDI among eight rapidly developing East and Southeast Asian economies (four newly industrialized economies, three ASEAN economies, and China) using panel data from 1986 to 2004. They did not find systematic causal relationships among the three variables of GDP, exports and FDI at the individual country level.

Meanwhile, the panel data causality test results of Hsiao and Hsiao (2006) revealed that FDI has unidirectional effects on GDP directly and indirectly through exports, and there also existed bidirectional causality between exports and GDP among the ASEAN countries. In doing so, he found panel data analysis to be superior to time series analysis. Using this method Cho (2005) and Hsiao (2006), applied the panel data causality analysis on nine countries and found only a strong unidirectional causality running from FDI to exports among the three variables. In Cho's model, however, GDP growth is examined using the Malmquist productivity index. However, statistical data released by the IMF in 2009 indicated that the entire group of the pioneer ASEAN members enjoyed significant GDP growth rates (see Table 2.1). In light of a lack of consensus from past evidence, it will be interesting to analyze again the relationship between economic growth, AFTA-based tariff deregulation and FDI inflows in the ASEAN-5 where there is a long enough data series to deploy the Vector Error Correction Model (VECM) model proposed by Engle and Granger (1987).

IV. METHODOLOGY AND DATA

To investigate the causal relationship between FDI and its determinants in the ASEAN-5, we consider the following multivariate model:

$$FDI_t = (GDP_t, EXP_t, IMP_t, tn-t) \tag{I}$$

Where *fdi*, *gdp*, *exp*, *imp* and *tn-t* refers to net foreign direct investment, growth, exports, import (variables are in real terms), and *tn-t* is the tariff rate. However, for the empirical examination, all variables are transformed into a log-linear form. The study deployed annual time series data for the ASEAN-5, namely, Malaysia, Indonesia, Thailand, Philippines, and Singapore over the period 1970 to 2013 (44-year observations). This study also use pair granger causality test to determine the direct relationship between economic growth (GDP) against the independent FDI, export, import and tariff which shown below equation.

$$GDP_{it} = f(FDI_{it}, EXP_{it}, IMP_{it}, TRF_{it}) \dots \dots \dots \tag{II}$$

Data was collected from the United Nations Conference on Trade and Development (UNCTAD), World Development Indicators, World Bank and ASEAN secretariat data base. Data on *fdi*, *gdp*, *exp*, *imp* are measured in constant 2005 US dollars using GDP deflators, while the data for *tn-t* from 1970- 1992 i.e. the period prior to the introduction of AFTA takes the value of zero as this is the period when AFTA was not formed, while data from 1993 to 2013 on mean tariff rates are compiled from the ASEAN secretariat data base

V. RESULTS AND DISCUSSION (FDI)

Prior to testing Granger causality, time series properties of the variables have to be examined to ascertain the order of integration. We conducted the stationarity test base on country-by-country case and followed by panel data test. This can let all the parameters to vary across countries, at the same time

maintaining the assumption of common structure (Hansen and Rand, 2006). There are several methods for unit root tests. For this study, we deployed the Augmented Dickey Fuller (ADF) unit root test (Dickey and Fuller, 1981) for the individual countries, and for the panel data (Levin, Lin and Chu, 2002; Maddala and Wu, 1999; Choi, 2001; Breitung, 2000; Hadri, 2000; Im, Pesaran and Shin, 2003).

relationship with economic growth in the five pioneering market economies of ASEAN. The econometric analysis of the impact of changes in tariff on GDP among the ASEAN-5 is carried out stepwise through the Augmented Dicker Fuller (ADF) test, Durbin-Watson (DW) test and eventually the Granger Causality test. The following hypotheses are analyzed in this section:-

$$GDP_{it} = f(FDI_{it}, EXP_{it}, IMP_{it}, TRF_{it})$$

H₀: Tariff deregulation does Granger cause GDP growth.

H₁: Tariff deregulation does not cause GDP growth.

VI. RESULTS AND DISCUSSION ECONOMIC GROWTH

The relationship between economic growth and tariff rates is analyzed over the periods before and after AFTA implemented using CEPT and MFN tariff rates. The direct relationship Granger Causality also applied to test whether the lowering of tariffs has had a positive impact on economic growth inflows into the five ASEAN market economies based on consequent period. We examine whether changes in tariffs shows a causal

This is carried out first by subjecting the GDP and tariff series of the ASEAN-5 to the ADF test for stability and DW test for autocorrelation. It is only after ensuring that both series are stable and not suffering from serial correlation we attempt to test for a causal relationship between changes in tariffs and FDI growth.

6.1 Results and Discussion (ASEAN-5)

Table 4 : Granger Causality Results (ASEAN-5)

[325] Variable	[326] Hypothesis	[327] Long Term (Tariff)	[328] Before AFTA (Short term tariff)	[329] After AFTA (Short Term Tariff)
[330] GDP	[331] H ₀	[332] 1.11 (0.29)	[333] 0.00 (0.97)	[334] 0.19 (0.66)
	[335] H ₁	[336] 0.00 (1.00)	[337] 0.00 (0.97)	[338] 0.01 (0.91)
[339] FDI	[340] H ₀	[341] 0.00 (1.00)	[342] 0.00 (0.93)	[343] 1.76 (0.20)
	[344] H ₁	[345] 0.84 (0.36)	[346] 6.2 (0.99)	[347] 0.09 (0.76)
[348] Export (Exp)	[349] H ₀	[350] 5.83**(0.02)	[351] 0.00 (0.97)	[352] 3.62* (0.07)
	[353] H ₁	[354] 4.4 (0.99)	[355] 0.00 (0.98)	[356] 3.02 (0.17)
[357] Import (Imp)	[358] H ₀	[359] 0.88 (0.35)	[360] 0.00 (0.98)	[361] 3.38 (0.08)
	[362] H ₁	[364] 0.00 (0.95)	[365] 0.00 (0.97)	[366] 0.00 (0.98)

Note: Significant at **5% and ***1%. Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

Base on Table 11, the result show that tariff acceleration has not cause the economic growth for ASEAN-5 at aggregate level. The export rate has been increased with significant at 5 percent level due to trade liberalization. Importantly, the economic argument on tariff deregulation, on the one hand, points to export expansion, on the other hand it points that imports will also increase (Krueger, 1980). Such flows of trade are supposedly based on comparative advantage. That is, the ASEAN-5 will export goods in which they enjoy comparative and import goods in which they enjoy comparative disadvantage. On this note,

there is no evidence of a significant impact of tariff deregulation on economic growth for ASEAN-5 at aggregate level.

6.2 Results and Discussion (Malaysia)

Malaysia achieved a considerable degree of openness, with low import duties on manufactured goods. However, despite the deregulation in tariffs, the CEPT had no impact on Malaysia's GDP, net FDI inflows and Import growth. Exports grew through from a deregulation in tariffs, which is largely a consequence of access to China and the other ASEAN economies.

Table 5: Granger Causality Results (Malaysia)

[367] Variable	[368] Hypothesis	[369] Long Term (Tariff)	[370] Before AFTA (Short term tariff)	[371] After AFTA (Short Term Tariff)
[372] GDP	[373] H ₀	[374] 1.26 (0.26)	[375] 2.50 (1.00)	[376] 0.66 (0.42)
	[377] H ₁	[378] 0.00 (0.95)	[379] 0.00 (0.98)	[380] 0.47 (0.49)
[381] FDI	[382] H ₀	[383] 0.00 (0.95)	[384] 0.03 (0.84)	[385] 0.13 (0.71)

	[386] H_1	[387]1.26 (0.26)	[388]0.00 (0.95)	[389]0.12 (0.72)
[390]Export (Exp)	[391] H_0	[392]3.57* (0.06)	[393]0.00 (0.95)	[394]0.31 (0.58)
	[395] H_1	[396]0.00 (0.95)	[397]1.3 (0.99)	[398]2.17 (0.15)
[399]Import (Imp)	[400] H_0	[401]0.00 (0.98)	[402]0.00 (0.93)	[403]1.70 (0.20)
	[404] H_1	[406]0.00 (0.98)	[407]5.6 (0.99)	[408]0.00 (0.97)

Note: Significant at **5% and ***1%. Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

6.3 Results and Discussion (Indonesia)

Tariff deregulation did not directly impact Indonesia's GDP growth as the results were not statistically significant. While it can be argued that the deregulation, especially since 1992, is important the evidence shows that GDP growth in Indonesia has

benefited more from other factors rather than tariffs. Nevertheless, tariff deregulation has had a direct impact on net FDI inflows into Indonesia over the 1979-2013 periods. The Indonesian economy began to benefit in the long run from tariff deregulation.

Table 6: Granger Causality Results (Indonesia)

[409]Variable	[410]Hypothesis	[411]Long Term (Tariff)	[412]Before AFTA (Short term tariff)	[413]After AFTA (Short Term Tariff)
[414]GDP	[415] H_0	[416]1.16 (0.28)	[417]3.60 (0.99)	[418]0.04 (0.82)
	[419] H_1	[420]0.00 (0.97)	[421]9.90 (0.99)	[422]0.25 (0.62)
[423]FDI	[424] H_0	[425]0.02 (0.86)	[426]0.01 (0.90)	[427]0.09 (0.76)
	[428] H_1	[429]4.46 ** (0.04)	[430]0.00 (0.99)	[431]5.30 (0.99)
[432]Export (Exp)	[433] H_0	[434]6.28*** (0.01)	[435]0.00 (0.98)	[436]11.9*** (0.00)
	[437] H_1	[438]0.01 (0.916)	[439]6.0 (0.99)	[440]1.60 (0.22)
[441]Import (Imp)	[442] H_0	[443]6.74*** (0.01)	[444]0.00 (0.98)	[445]1.47 (0.24)
	[446] H_1	[448]0.01 (0.89)	[449]0.00 (0.98)	0.14 (0.70)

Note: Significant at **5% and ***1% . Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

In a short the growth in export has encourage the CEPT tariff rate reduction which contributed significantly to growth in exports and imports since 1992. Hence, the AFTA deregulation process impacted strongly in the growth of exports and imports in Indonesia

The tariff rate reduction for Thailand was slow progress compare to other countries in ASEAN-5. There are evidence to show that growth of export and import is significant at 1 per cent level where export goods in which they enjoy comparative and import goods in which they enjoy comparative disadvantage. On this note, there is no evidence of a significant impact of tariff deregulation on economic growth for Thailand.

6.4 Results and Discussion (Thailand)

Table 7: Granger Causality Results (Thailand)

[450]Variable	[451]Hypothesis	[452]Long Term (Tariff)	[453]Before AFTA (Short term tariff)	[454]After AFTA (Short Term Tariff)
[455]GDP	[456] H_0	[457]0.06 (0.79)	[458]5.50 (0.99)	[459]0.14 (0.71)
	[460] H_1	[461]0.00 (0.98)	[462]0.00 (0.97)	[463]0.03 (0.85)
[464]FDI	[465] H_0	[466]0.02 (0.88)	[467]0.01 (0.89)	[468]1.60 (0.22)
	[469] H_1	[470]10.1*** (0.00)	[471]4.0 (0.99)	[472]0.00 (0.96)
[473]Export (Exp)	[474] H_0	[475]11.0*** (0.00)	[476]0.00 (0.97)	[477]5.11** (0.03)
	[478] H_1	[479]0.00 (0.96)	[480]7.1 (0.99)	[481]0.19 (0.66)
[482]Import	[483] H_0	[484]12.5***	[485]1.9 (0.99)	[486]0.97 (0.34)

(Imp)		(0.00)		
[487]	[488] H_1	[489]8.9 (0.99)	[490]4.7 (0.99)	[491]0.11 (0.74)

Note: Significant at **5% and ***1% . Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

6.5 Results and Discussion (Philippines)

The deregulation in tariffs in the Philippines has not impacted significantly on GDP, net FDI inflows and export in the Philippines. While one may argue that the irregular deregulation trends may not have helped, it must also be said that the lack of

statistical evidence also shows that there are more dynamic forces at work that impact on GDP, net FDI inflows and exports. Tariff deregulation shows a statistical significant relationship only in imports at 5 per cent level.

Table 8: Granger Causality Results (Philippines)

[492] Variable	[493] Hypothesis	[494] Long Term (Tariff)	[495] Before AFTA (Short term tariff)	[496] After AFTA (Short Term Tariff)
[497] GDP	[498] H_0	[499] 1.54 (0.22)	[500] 0.00 (0.98)	[501] 0.04 (0.82)
	[502] H_1	[503] 0.00 (0.96)	[504] 0.00 (0.99)	[505] 0.02 (0.87)
[506] FDI	[507] H_0	[508] 1.54 (0.22)	[509] 0.13 (0.71)	[510] 0.55 (0.46)
	[511] H_1	[512] 0.00 (0.96)	[513] 1.8 (0.99)	[514] 0.06 (0.80)
[515] Export (Exp)	[516] H_0	[517] 0.00 (0.95)	[518] 0.00 (0.92)	[519] 0.37 (0.54)
	[520] H_1	[521] 3.52* (0.06)	[522] 0.00 (0.98)	[523] 48.9 (2.0)
[524] Import (Imp)	[525] H_0	[526] 3.78** (0.05)	[527] 0.00 (0.98)	[528] 0.11 (0.74)
	[529] H_1	[531] 0.00 (0.92)	[532] 0.01 (0.90)	[533] 0.51 (0.48)

Note: Significant at **5% and ***1% . Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

6.6 Results and Discussion (Singapore)

Tariff deregulation shows a statistically significant impact on Singapore in the 1992-2013 periods. Since the country had already largely deregulated tariffs by 1992, this impact is likely to be a consequence of deregulation in the other countries. However, the remaining results were not significant to show a positive impact on the economy. For example, while Singapore has become a developed country in one generation with a per

capita income over five times that of Malaysia in 2014, Singapore involvement in the AFT process does not show that it is the biggest beneficiary of the process. Also, while Singapore has directly benefited from its role as an entrepreneurs centre in ASEAN, tariff deregulation has not shown a significant impact on FDI inflows, exports and imports. This could be a consequence of systematic deregulation carried out by the government by 1992.

Table 9: Granger Causality Results (Singapore)

[534] Variable	[535] Hypothesis	[536] Long Term (Tariff)	[537] Before AFTA (Short term tariff)	[538] After AFTA (Short Term Tariff)
[539] GDP	[540] H_0	[541] 4.98** (0.03)	[542] 2.02 (0.17)	[543] 15.7 (0.00***)
	[544] H_1	[545] 0.00 (0.93)	[546] 0.00 (0.97)	[547] 0.09 (0.76)
[548] FDI	[549] H_0	[550] 0.00 (0.92)	[551] 0.01 (0.91)	[552] 6.49 ** (0.02)
	[553] H_1	[554] 1.18 (0.28)	[555] 1.95 (0.17)	[556] 0.15 (0.69)
[557] Export (Exp)	[558] H_0	[559] .02 (0.87)	[560] 0.00 (0.94)	[561] 2.95 (0.10)
	[562] H_1	[563] 1.11 (0.29)	[564] 1.97 (0.17)	[565] 13.0*** (0.00)
[566] Import (Imp)	[567] H_0	[568] 1.08 (0.30)	[569] 1.96 (0.17)	[570] 3.09 (0.19)
	[571] H_1	[573] 0.01 (0.89)	[574] 0.00 (0.95)	[575] 10.7*** (0.00)

Note: Significant at **5% and ***1% . Figures in parenthesis are F- statistics. Test result based on lag L(2).

Source: Computed using data from IMF (2014) via E-Views application packages 9.0

Overall, the empirical results show that there is no evidence that AFTA played an important role in generating net FDI inflow growth in ASEAN-5. In the case of Singapore, we do find causality between foreign direct investment growth and tariff reduction. The one thing we have not examined here is the counterfactual, i.e. what will the scenario be if AFTA was not introduced. However, such an assessment is not within statistical methodologies. Nevertheless, it has to be acknowledged that the ASEAN-5 have largely enjoyed a general reduction in tariffs since 1970. That such a reduction is not reflected in net FDI inflows in the shorter periods for all the countries, and in Malaysia, the Philippines and Singapore is perhaps a consequence of other factors being more important in explaining these developments.

VII. CONCLUSION AND POLICY IMPLICATIONS

The findings show that the ASEAN-5 has benefited for both policy trade protection and tariff deregulation. In country like Singapore and Malaysia, standards of living have risen at exceptional levels for the last six decades due to implementation of AFTA strategies and increased participation in international trade but not in economic growth. These economies promoted exports through a combination of policies -- relatively free trade, convertible currencies, and macroeconomic stability through a set of innovative institutions -- such as export processing zones, duty exemption schemes, and incentive packages for foreign direct investment. ASEAN-5 fail to develop sustainable economic growth policy. The gains from a tariff are clearly visible but the costs are hidden, it will often appear that tariffs do not have a cost. By understanding this we can understand why so many government policies are enacted which harm the economy. Actually 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. However, we still cannot deny where AFTA-CEPT can bring positive as well as negative impacts to ASEAN. Positive impacts of AFTA are increasing intra-regional trade and investment, improve resource allocation within the region, achieve higher income per capita and economic welfare and greater economic resilience for regional economies, facilitates specialization, lower cost inputs, increase opportunities for business to expand market, enhance ASEAN as attractive investment location for regional and international investors, and promote and boost development of the services sector. On the other hand, AFTA also give disadvantage for some occasions or conditions. Negative impacts of AFTA on ASEAN members are increasing competition for domestic industries for certain products, and decline competitiveness of traditional export

industries. As an overall conclusion, the basic feature of the AFTA is the liberalization of trade in the region, done through the elimination of intra-regional tariff and non-tariff barriers. As well, AFTA also have their specific advantages and disadvantages. The implementation of this policy is important because the impact of AFTA will influence the future of ASEAN members.

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AUTHORS

First Author – James Paul, Faculty of Economics and Administration, University of Malaya, 50603 Kuala Lumpur, Malaysia.