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Open-Ended Impact of AFTA on FDI inflows: Evidence from Macro-level data of Indonesia, Malaysia, Thailand and Firm-level data of Indonesia

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This study attempts to observe the ASEAN economic integration progress based on the impact of ASEAN Free Trade Area (AFTA) on FDI inflows of both multi-country (Indonesia, Malaysia and Thailand) with macroeconomy-level data and single country (Indonesia) with micro firm-level data. Macroeconomy level data uses macroeconomy data set with time-dummy variable of 'before and after' the comprehensive implementation of AFTA as the representation of AFTA. Micro firm-level data utilizes Indonesia's manufacturing survey of 25,696 firms under the International Standard of Industrial Classification digit 5 (ISIC-5) with the ASEAN's Common Effective Preferential Tariff (CEPT) of 19,425 tariff rates data as the representation of AFTA. The form of the macro-level data is longitudinal and the form of the micro-level data is cross-sectional. From the multi-country analysis this study finds that AFTA is not effective in attracting FDI inflows while from the single-country analysis it finds the opposite. These findings prove that the impact of AFTA on FDI inflows in ASEAN is open-ended and varies within member states.

1. Introduction

The World Trade Organization (WTO) considers Regional Trade Agreement (RTA), under the open-regionalism principle, as a complement to the multilateral trade liberalization frameworks. Pascal Lamy, Director of WTO has stated, "Regional Agreements are like the 'pepper' in the multilateral 'curry'."[2] He mentioned that RTA is important as more than 50 percent of world trade value came from it.

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[2] WTO DG Speeches in Bangalore, India, 17 January 2007. Pascal Lamy explains, "Pepper adds taste and can improve a sauce but pepper alone is not tasty, and good pepper in a poor sauce, will

One of the famous RTAs in the world is ASEAN Free Trade Area (AFTA) which was established by the Association of Southeast Asian Nations (ASEAN) in 1992 but took in-effect in 1999.

Yet, ASEAN signed her first Preferential Trade Arrangement (PTA) in 1977. It took more than 20 years from 1977 to 1999 for ASEAN to transform her RTA from PTA to FTA. Comparing this to the European Union's (EU) economic integration process, ASEAN's process is a bit slower. The EU completed FTA in less than 8 years from 1951 to 1957.

Despite its slow in progress in achieving economic integration, ASEAN still shares its grand vision of a regional economic integration, the ASEAN Economic Community (AEC) by this year 2015. Actually, ASEAN has three pillars: the ASEAN Economic Community, the ASEAN Security Community (ASC) and the ASEAN Socio-Cultural Community (ASCC). This study will focus only on the economic pillar of the ASEAN Economic Community.

The AEC covers wide and various economic cooperation areas such as infrastructure (Trans-ASEAN Transportation Networks, Regional Telecommunication Networks), energy and food security (Trans-ASEAN Energy Networks and Food Security Reserves), and investment cooperation (ASEAN Investment Area/AIA). Though areas such as local infrastructure capacity, logistic cost and domestic government reform are also very important, these are left to each member's discretion on domestic reform tasks. In terms of financial integration, AEC focuses on capital account liberalization, financial services liberalization, capital market development and exchange rate cooperation. The AEC of 2015 is basically a starting point to move forward from AFTA to the the next level of regional integration of (1) ASEAN Single Market, with trade in service liberalization (Mode 3: Commercial Presence), free movement of people (Mode 4: Presence of natural person) and free capital movement and (2) ASEAN financial integration, with single monetary union and single currency.

According to the basic theory, trade and investment integration in the region is a necessary condition for building a solid regional economic

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not do the trick! Use the wrong recipe and it will be a disastrous dinner". Details in http://www.wto.org/english/news_e/sppl_e/sppl53_e.htm

community (Balassa, 1961). Therefore any Economic Community (EC) including the AEC requires comprehensive trade and investment integration. This integration is the most important factor to support free flows of capital and people (Plummer and Cheong, 2008). Given this, one of the important purposes of the AEC is to enhance trade (intra-regional trade) and investment (Foreign Direct Investment/FDI) integration in Southeast Asia.

For intra-regional trade purposes, ASEAN implements Common Effective Preferential Tariff (CEPT) at 0 percent among her member states in 2015 in order to attract FDI inflows. Furthermore in order to attract FDI inflows, ASEAN implemented specific agreements such as the ASEAN Industrial Project (AIP), ASEAN Industrial Complementary (AIC), ASEAN Industrial Joint Ventures (AIJV), ASEAN Industrial Cooperation (AICO) and the most important agreement among them is the ASEAN Investment Area (AIA) that had been established in 1998 and came into force the year after.

2. Objective

Given this background, this study attempts to assess the ASEAN's trade and investment integration progress by observing the impact of ASEAN regional trade (AFTA) to FDI inflows at two levels: a multicountry analysis covering Indonesia, Malaysia and Thailand and a single country analysis of Indonesia.

3. Research Question

This study attempts to respond the basic research question:

Does AFTA stimulate FDI inflows in Southeast Asia? The analyses cover both levels: multicountry analysis of Indonesia, Malaysia and Thailand with macroeconomy of panel data and single country analysis of Indonesia with microeconomy of cross-section firm-level data.

4. General Hypothesis

ASEAN Free Trade Area (AFTA) attracts Foreign Direct Investment (FDI) inflows in ASEAN. The Null hypothesis is AFTA affects FDI inflows in positive and significant relation.

5. Theoretical Framework: Related Literature Review

AFTA is expected to increase ASEAN's intra-regional trade and the relation between intra-regional trade and FDI inflows. Such findings have been found in some previous studies, including a research by J.H. Dunning (1990). Dunning argues that the acceleration of U.S. FDI inflows in Europe in the late 1950s was caused by the establishment of FTA in European Union.

Other studies shared similar results. For instance was on Baltagi, Egger, and Pfaffermayr in 2005. Their spatial econometric method with panel data analysis of EU member states in period of 1989-2001 using GMM (Generalized Method of Moments) found that an increased intra-regional trade in Europe as a proxy to FTA and Custom Union (CU) has significantly increased FDI inflows in Europe.

Donnenfeld (2003) found that if new countries join regional trading blocs then they will receive more FDI inflows than intra trade shares (proposition one), reducing the trade costs from regional trading block renders more inter-block FDI than inter-block trade (proposition two) and the more similar the economic size, the more incentive for FDI inflows.

R. MacDermott (2006) found that intra trade integration as a proxy to FTA stimulates the Total FDI inflows. He formulated the relationship between regional trade agreements in North America including NAFTA, and total FDI inflows using fixed-effects panel data of gravity model on 55 OECD countries in period 1982–1997. Theequation is: FDIt = *f* (HostGDPt , ParentGDPt ,NAFTAt , DIST, Z).

Plummer and Cheong (2008) found that manufacturing sector is the most preferred sector for FDI investors in Southeast Asia. Their model uses fixed effects of panel regression with a gravity approach and finds

GDP and population size to be the most significant variables which affecting FDI inflows in Southeast Asia.

I. Daitoh and A. Kawamura (2009) found that the impact level of regional economic integration of FTA on FDI inflows depends on how protective the region towards its non-member states. The higher the gap between MFN and CEPT tariff rate, the more attractive the region for non-member states' investors.

However, Kindleberger (1966) found that the impact of discriminative trade agreement (FTA) could generate negative impact on FDI (out flows). This is possible to happen if multinational companies remove their FDI from host country if she implemented great discriminative investment policy gap between local and international firms. Now how about AFTA? Can it effectively attract FDI inflows for Southeast Asia?

6. Methodology

As ASEAN member states have different economic level and trade liberalization stages, before responding to the question above, in order to avoid bias selection of countries, this study selected the observed countries based on the following criteria:

First: Among all ten ASEAN member states, in terms of trade liberalization in AFTA, the ASEAN-6 (Indonesia, Malaysia, Thailand, Philippines, Singapore and Brunei) is more advance than the ASEAN-4 (Cambodia, Laos, Myanmar and Vietnam). This is because number of products on the Inclusion Lists (IL) in the ASEAN-6 is larger than that in the ASEAN-4 countries. ASEAN-6's time-line and deadline for trade liberalization are also earlier than those for the ASEAN-4 countries[3].

Second: This study excludes outlier (advanced economy) member states. This step is needed to secure homogenous economic level in the

[3] Further, AFTA implements the CEPT (Common Effective Preferential Tariff), the internal tariff for member states with maximum 5 percent to the ASEAN-6 (ASEAN's original members which consist of Indonesia, Malaysia, Thailand, Philippines, Singapore and Brunei) by 2002 and 0 percent by 2010 and 5percent to the ASEAN-4 (ASEAN's newer members which consist of Cambodia, Laos, Myanmar and Vietnam) by 2010 and 0 percent by 2015. Therefore in 2015 all of the ASEAN members (ten countries) will have 0 percent of CEPT rate. This will enhance trade and long-run investment relation (FDI/Foreign Direct Investment) in Southeast Asia.

observed countries. The outliers are those with high-income level (developed members) which main economic sectors are in non-manufacturing sectors.

Third: Tariff discrimination is compared between members and non-member states. This study compares AFTA's Common Effective Preferential Tariff (CEPT), which represents ASEAN's member states' internal tariffs to the Most Favored Nations Tariff (MFNT),[4] which represents applied external tariffs from member states to non-member states.[5] Tariff discrimination is a necessary factor because this study assumes that the more protective a member country to its manufacturing industry - usually characterized by imposing relatively high tariff rates against non-members - the higher incentive for non-member states to change their economic strategy from trade to investment. FDI inflows is expected to increase.

This study assumes that profit has influenced FDI inflows. Therefore FDI inflow is used as a dependent variable. Based on the formulation above, reduced-form model is constructed as follows:

$$\begin{aligned}\log(FDI_{it}) &= \alpha + \beta 1.\log(Cons_{it}) + \beta 2.\log(GDP_{it}) + \beta 3.\log(Pop_{it}) + \beta 4.\log(DOO_{it}) \\ &= +\beta 5.\log(Intra_{it}) + \beta 6.\log(RW_{it}) + \beta 7.(Empl_{it}) + \beta 8\ .\log(Edus_{it}) + \beta 9.(FDIP_{it}) \\ &= +\beta 10.\log(Electc_{it}) + \beta 11.\log(GNPCap_{it}) + \beta 12.\log(ER_{it}) + \beta 13.\log(GR_{it}) \\ &= +\beta 14.AFTA_{it} + \varepsilon_{it}\end{aligned}$$

This study adopts a time series analysis of 21 years (1988-2008) for three observed countries of Indonesia, Malaysia & Thailand. Due to the limited data availability of FDI inflow values, this study uses total value of FDI inflows of both ASEAN members and non-members.

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[4] MFN is non-discriminative preferential trading via multilateral agreements in GATT (predecessor of the WTO).

[5] I observe this fact by looking at commodity levels, taking for example tableware and kitchenware. Indonesia, Malaysia and Thailand impose 30% import tariffs on imported products from non-members while Singapore and Brunei impose 0% and the Philippines impose 5% tariffs. CEPT is about the same according to AFTA, around 0%-5%. On average, MFN tariffs in Indonesia, Malaysia and Thailand are higher than those in Singapore, Brunei and the Philippines. Considering that trade discrimination needs relatively high external tariffs, this study looks at Indonesia, Malaysia and Thailand to verify the assumption that trade discrimination stimulates investment creation in Southeast Asia.

Dependent Variable

Definition of Foreign Direct Investment is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows total net, that is, net FDI in the reporting economy from foreign sources less net FDI by the reporting economy to the rest of the world. Data are in current U.S. dollars (Net Balance of Payment, in current US$, GDF Data of the World Bank).

Independent Variables

Complete independent variables and each of their hypotheses of multicountry level are described as follows:

1. Value of Consumption (CONS). Consumption represents total output (good and service) at final price that consumed by the consumers at certain period. This variable is value of nominal consumption.

2. Value of Gross Domestic Product (GDP). This value of nominal GDP represents economic size. GDP is the most appropriate variable to express economic size of a country as this covers value added, return on input and expenditure of final output (Blanchard, 2006).

3. Number of Population (POP). This is a proxy to demand capacity. Economists use number of population as an indicator that reflects demand capacity.

4. Degree of Openness (DOO). In macroeconomics theory there are three definitions for degree of openness: openness in factor of production, in financial markets and in good markets. This study adopts the latest variable of openness (good). The formula is described as the percentage of total trade to GDP or TGDP. The formula is TGDP = $\frac{X_{it} + M_{it}}{GDP_{it}}$ where X_{it} is value of export of country i at time t; M_{it} value of import of country i at time t; GDP_{it} is

Gross Domestic Product of country i at time t). This index could be higher than 1 (one). The higher the index the more openness the economy of the country.

5. Intra-regional Trade (INTRA). This variable is treated as dependent variable when testing the impact of AFTA to trade creation (intra-regional trade) of ASEAN. This study also uses INTRA as independent variable when testing the relationship between trade creation and investment creation (FDI inflows). The intra trade is intra ASEAN trade is formulated as follows:

$$in_{it} = \frac{X(r,r)_{it} + M(r,r)_{it}}{X(r,w)_{it} + M(r,w)_{it}}$$

; $X_{(r,r)it}$ is value of export (country based) from region to region

; $M_{(r,r)it}$ is value of import (country based) from region to region

; $X_{(r,w)it}$ is value of export from region to world

; $M_{(r,w)it}$ is value of import of region from the world

6. Real Wage (RW). This is an approach to productivity of labor. This is represented by the ratio of GDP per employment. This number is obtained by dividing the value of GDP to the number of employment. Thus this number is divided by CPI (Consumer Price Index) in order to get the productivity value.

7. Number of Employed Worker (EMPL). This represents the availability of productive production input of labor (L). This study uses number of employed worker as a proxy to employed labor force. This number represents productive production input.

8. Government Expenditure on Education (EDU). This variable is a proxy for human resource's quality. In order to deal with this data availability problem, this study chose to use 'government expenditure on education' as a proxy and this data also describes government role in human resource development.

9. FDI Profit (FDIPROFIT). This data is formulated by the World Bank in the form of value of Profit Remittance of FDI (in US$). The data is collected from the *Global Development Finance*. The World Bank defines this as *"payments of direct investment income (debit side) which consist of income on equity (dividends, branch profits, and reinvested earnings) and income on the intercompany debt (interest)"*. This study adopts this data as a proxy for the profit advantage of the observed countries.

10. Electricity Consumption (ELECONS). This variable represents the availability of sound infrastructure. Supply of electricity is essential for the industrialization process. Electricity capacity is considered as the most appropriate variable to represent sound infrastructure. This study adopts electricity consumption in Yearly KWh (kilowatt hour per capita).

11. GNP per Capita (GNPCap). This variable is a proxy for purchasing power of country as well as describes its level of economy. It uses nominal GNP value divided by Total Population, both at over time.

12. Exchange Rate (ER). This variable is taken from the average exchange rate (domestic currency per US$). Given that this study uses exchange rate as local home currency per local host currency therefore the increasing ER generates disincentive for the investors to invest FDI inflows in host country.

13. Percentage of Economic Growth (GR). This variable represents the 'economic performance'. According to the theory economic growth is a positive indicator for the investors to invest in long-run investment or FDI inflows (Salvatore, 2004).

14. Dummy AFTA. In theory FTA is designed to generate trade creation within the region. AFTA represents progressive institutional development of ASEAN economic integration with its 'inter-governmental' mechanism to increase intra-regional trading in Southeast Asia. For this purposes AFTA became a legal-binding for signatories (Nesadurai, 2003). AFTA (ASEAN Free Trade Area) has been officially discussed in 1992 and signed the year after. AFTA

Dummy[6] represents regional trade cooperation among ASEAN members. Malaysia adopted AFTA CEPT by reducing its tariff in 1992 but Philippines did it in 1997 while the initiator of AFTA (Thailand) and CEPT designer (Indonesia) did it in 1998. This dummy uses year of 1999 as an anchor therefore years starting in 1999 is 1 (one) and years before 1999 is 0 (zero).

At country level, this study adopted Indonesia as a case study with high disaggregated data at industrial level. It took year of 2008 as an observation because this year is 'before the global financial crisis' (GFC) so as to avoid the effect of global crisis in the model. This data is taken from the 'Manufacturing Survey in Indonesia'. This survey covers firm-level data with detail of 25 questions to 25,696 firms with International Standard of Industrial Classification digit 5 (ISIC-5) classifications. The impact of AFTA is observed using proxy of ASEAN Common Effective Preferential Tariff (CEPT) of 19,425 tariff rates. This study made harmonization of CEPT with ISIC-5. All of the variables are grouped into 316 industrial classifications.

At this level, this study uses share of foreign as a proxy to represent FDI inflows. Share of foreign capital to total capital (Shf) is defined as the proportion of capital owned by foreign to the total industry's capital. Data of the industry is adopted from *Statistik Industri 2008* of survey of manufacturing or industrial sector at firm level.

[6] AFTA dummy is originally based on the first signature's year of AFTA which is 1 January 1993. Regarding the lag-effect this research use 1994 as the first year of dummy in which treated as 1 (one). However there was a revision done by the member states in September 1994 then this research also tried to use 1995 as the first year of dummy. Yet both time-dummy (1994 & 1995) were not satisfying the model. Considering Asian economic crises, this research attempted to test year of 1998 as time-dummy approach for the AFTA's establishment effect. Yet this dummy was still not satisfying the research. As known that two out of three observed countries in this Analysis (Indonesia & Thailand) fulfilled their commitment for the CEPT of ASEAN in 1998. Having 1 year dummy lag this article uses 1999 as the first year of AFTA's implementation and treated as 1 (one). Observation years before 1999 got 0 (zero) time-dummy while years after got 1 (one) time-dummy.

Table 1: Variables, Hypothesis & Sources of Data for Model of AFTA (dummy) and FDI Inflows of Indonesia, Malaysia and Thailand

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	EXPECTED SIGN	SOURCE OF DATA
FDI Inflows (ADB Statistic & The World Bank – GDF)	1. Value of Consumption (CONS)	+	1. ADB Statistic
	2. Value of GDP(GDP)	+	2. ADB Statistic
	3. Number of Population(POP)	+	3. ADB Statistic
	4. Degree of Openness (DOO)	+	4. Own calculation using WTO Statistic
	5. Intra-Regional Trade (Intra)	+	5. Referring to Verico, K, 2008
	6. Real Income (RW)	+	6. Own calculation using ADB Statistic
	7. Number of Employed (Empl)	+	7. ADB Statistic
	8. Value of Expenditure in Education (Edus))	+	8. The World Bank (World Development Indicator / WDI)
	9. Value of FDI Profit (FDIP)	+	9. The World Bank (Global Development Finance: Profit Remittance on FDI in US$)
	10. Value of Electricity Consumption (Electc)	+	10. The WB (WDI)
	11. GNP per Capita (US$)	+	11. ADB Statistic
	12. Exchange Rate(ER)		12. ADB Statistic & IMF (Country Economic Outlook)
	13. Percentage of Economic Growth (GR)	-	13. ADB Statistic
	14. Dummy AFTA	+	14. Year of Took -in Effect (1999)

Source: Own analysis based on various sources

$$\log(Shf_{it0}) = \alpha + \beta_1.\log(VA_{it0}) + \beta_2.\log(VAW_{it0}) + \beta_3.\log(AVS_{it0}) + \beta_4.\log(NF_{it0})$$
$$= +\beta_5.\log(Shg_{it0})\beta_6.\log(CR4_{it0}) + \beta_7.\log(ipero_{it0}) + \beta_8.\log(MFN_{it0})$$
$$= +\beta_9.\log(CEPT_{it0}) + \varepsilon_{it0}$$

This model uses static equation model to be solved with cross-section regression.

$$Shf_{it0} = \frac{Fcap_{it0}}{\sum cap_{it0}}.100\%$$

Where i represents space dimension of industry, t0 represents time dimension for cross-section data, Fcap is capital owned by foreign and ∑cap is total capital of the industry-i at time-t0.

1. Value Added (VA). This is a proxy of size of industry in term of value (in Rupiah). The hypothesis is the higher the VA the higher incentive for the investor to invest in that industry as value added represents profit function.

2. Value Added per worker (VAW). This is a proxy of productivity of labor by industry (in value of Rupiah per worker). The hypothesis is the higher the VAW the higher incentive for the investor to invest in that industry as value added per worker represents productivity and finally drives profit.

   $$Vaw_{it} = \frac{va_{it}}{w_{it}}$$

   Where w is total number workers in industry-i at time-t and va is value added of the industry-i at time-t.

3. Average Size (AVS). This variable represents labor size per industry. It is defined as the ratio of total number of workers to total number of firms in the the industry-i at time-t.. The hypothesis is the higher AVS the higher incentive for the investor to invest in that industry as this variable indicates size of available labor supply.

$Avs_{it} = \frac{w_{it}}{\sum F_{it}}$ Where l is total number of worker and F is total number of firm in the industry-i at time-t.

4. Number of Firm (NF). This variable represents size of industry in term of number of involved firms. The hypothesis is the higher the number of firms the higher incentive to invest given the free entry and exit in the industry.

5. Share of government (Shg). This is the percentage of capital owned by the government both of local and central governments to total capital as a proxy for government ownership of the industry. The hypothesis is the higher share of government the higher incentive for investor to invest given its economic span control image over that sector.

$$Shg_{it} = \frac{Gcap_{it}}{\sum cap_{it}}.100\%$$

Where Gcap is capital owned by government and ∑cap is total capital of the industry-i at time-t.

6. Concentration Ratio (CR4). This is a proxy of firm's control. The hypothesis is the higher CR4 the lower the incentive to invest given its high barriers to entry and exit in that industry.

$$CR4_{it} = \frac{\sum va_{4\,fit}}{\sum va_{it}}.100\%$$

Where va_{4fit} is value added of big four firms of industry-i at time-t while va_{it} is value added of industry-i at time-t.

7. Input per Output (ipero). This is a variable of total intermediate input to total output share. The hypothesis is the higher input per output share the higher incentive to invest as this represents the free choice of using capital.

8. Most Favoured Nation (MFN).This is a proxy of protection under the WTO's framework. The hypothesis is the higher MFN the higher incentive to invest if the investor of FDI is domestic market orientated firm yet if the lower incentive to invest then investor of FDI is export market orientated firm.

9. Common Effective Preferential Tariff (CEPT). This is a proxy of trade discrimination under the ASEAN's regional framework. The higher CEPT the higher incentive to invest if the investor of FDI is non-regional market orientated firm yet if the lower CEPT the higher incentive to invest then investor of FDI is regional market orientated firm.

Complete independent variables and each of their hypotheses of single country level are described as follows:

7. Analysis

This study runs two models under the assumption that AFTA has direct impact to FDI inflows[7]. The first model of multicountry level proposes the hypothesis zero (H0) that AFTA has a negative impact towards FDI inflows while its hypothesis one (H1): AFTA has a positive impact on FDI inflows. The second model of single country level proposes the hypothesis zero (H0) that CEPT tariff rate as a proxy of AFTA has a negative impact towards Share of Foreign Capital to Total Capital (Shf) as a proxy of FDI inflows while its hypothesis one (H1): CEPT as a proxy of AFTA has a positive impact on Shf as a proxy of FDI inflows. Complete results of full-form and reduced-form models of panel data regression for multicountry analysis of Indonesia, Malaysia and Thailand are presented below:

[7] This study finds that the model is healthy or BLUE (Best Linier Unbiased Estimator). The model does not have autocorrelation problem as its Breusch-Godfrey Serial Correlation LM Test probability is 0.17 (H0: No Autocorrelation) is accepted. Its Durbin-Watson indicator is almost 2 (1.8) confirming this 'No Autocorrelation' condition. This model runs under the White Heteroskedasticity test which solves the heteroskedasticity problem. All the variables are significant (t-stat) with good R^2 which indicates no multicollinearity problem. In addition the selected variables here are basically similar to those in classic Gravity Model.

Table 2: Variables, Hypothesis & Sources of Data for Model of CEPT (Proxy to AFTA) and Share of Foreign Capital (Proxy to FDI Inflows) of Indonesia

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	EXPECTED SIGN	SOURCE OF DATA
Share of foreign capital to total capital (Shf) as a proxy to FDI inflows (source of data: Survey of Manufacturing in Indonesia, *Survey Industri Pengolahan Indonesia tahun 2008*)	1. Value Added (VA) of industry, in Rupiah	+	Survey of Manufacturing in Indonesia of 2008, *Survey Industri Pengolahan Indonesia tahun 2008*
	2. Value of Value Added per Worker (VAW), in Rupiah per Worker	+	
	3. Average Size (AVS), in unit number of worker per number of firm	+	
	4. Number of Firm (NF), in unit	+	
	5. Share of Government (Shg) in percentage	+	
	6. Concentration Ratio 4 (CR4) in percentage	-	
	7. Input per Output (ipero) in percentage-	+	
	8. MFN rate in percentage tariff rate	+/-	ASEAN Secretariat Statistic data (MFN & CEPT)
	9. CEPT rate in percentage tariff rate	+/-	

Source: Own analysis based on various sources

Table 3: FDI Inflows factors from Various Estimators and time-dummy of AFTA:Reduced Form Model with Simple OLS Regression

DEPENDENT VARIABLE: Total FDI Inflows	**MODEL 1 (COMPLETE LOG-LOG)**	**MODEL 2 (COMPLETE LIN-LIN)**	**MODEL 3 (REDUCED FORM LIN-LIN, RE)**	**MODEL 4 (REDUCED FORM LIN-LIN, FE)**
	0.52	**0.74**		
R-SQUARED	**2.71**	**9.14**	**0.49**	**0.52**
F-STATISTIC	**0.0081**	**0.0000**	**65.44**	**12.07**
PROB>F			**0.0000**	**0.0000**
Constant	-253.2	-20,862**	-2,399**	-4,707***
t-stat/z-stat (re)	-0.74	-2.34	-2.02	-2.81
Probability	0.46	0.02	0.044	0.007
Consumption	-0.78	1.65e-07**		
t-stat	-0.15	2.14	-	-
Probability	0.88	0.04		
GDP	19.73	-9.70e-08*	3.67e-08***	3.41e-08***
t-stat/z-stat (re)	0.88	-1.87	6.66	6.12
Probability	0.38	0.068	0.000	0.000
Population	-44.55**	95.5		
t-stat	-2.04	0.68	-	
Probability	0.05	0.5		
Degree of Openness	3.81	8,417***	6,814***	8,719***
t-stat/z-stat (re)	1.32	3.17	5.55	5.44
Probability	0.2	0.003	0.000	0.000
Intra-Regional Trade	0.015	-19.46	-	-
t-stat	0.01	-0.00		
Probability	0.99	0.99		
Real Income	4.17	2.43		
t-stat	0.66	1.70	-	-
Probability	0.52	0.095		
Number of Employed Worker	6.1	0.12	-	-
t-stat	0.67	0.41		
Probability	0.5	0.69		
Government Spending on Education	0.22	-7.54e-10**	-	-
t-stat	1.46	-2.19		
Probability	0.15	0.033		

DEPENDENT VARIABLE: Total FDI Inflows	**MODEL 1 (COMPLETE LOG-LOG)**	**MODEL 2 (COMPLETE LIN-LIN)**	**MODEL 3 (REDUCED FORM LIN-LIN, RE)**	**MODEL 4 (REDUCED FORM LIN-LIN, FE)**
R-SQUARED	**0.52**	**0.74**		
F-STATISTIC	**2.71**	**9.14**	**0.49**	**0.52**
PROB>F	**0.0081**	**0.0000**	**65.44**	**12.07**
			0.0000	**0.0000**
FDI Profit	-0.76	2.93e-07		
t-stat	-1.18	1.29	-	-
Probability	0.25	0.203		
Electricity Consumption	2.71	0.04	-	-
t-stat	0.97	0.02		
Probability	0.34	0.99		
GNP per Capita	-20.71	-3.79	-2.6***	-2.4***
t-stat/z-stat (re)	-0.83	-1.49	-6.27	-5.66
Probability	0.41	0.14	0.000	0.000
Exchange Rate	2.97	-1.09**	-0.72***	-0.44***
t-stat/z-stat (re)	0.70	-2.65	-5.89	-2.83
Probability	0.49	0.011	0.000	0.007
Economic Growth	0.65*	-40.75	-	-
t-stat	1.68	-0.39		
Probability	0.1	0.7		
AFTA	-0.1	-1,846	-1,838**	-3,015***
t-stat	-0.07	-1.23	-2.42	-3.54
Probability	0.95	0.23	0.016	0.001

Source: Own calculation, STATA

Hausman test for linier-linier model of reduced form of fixed or random effect (RE) below indicates that fixed effect estimator is the more appropriate as Probability>chi2 is 0.02 less than 0.05 or significant to use Fixed Effect (FE). Furthermore as the number of time (t) of this study is more than the number of space (i) then normally FE is more valid than RE.

	Coefficients (b) fixed	(B) random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
gdp	3.41e-08	3.67e-08	-2.58e-09	2.03e-09
doo	8719.472	6814.836	1904.636	1159.939
er	-.4429988	-.729427	.2864282	.10937
gnpcap	-2.405133	-2.609193	.2040599	.1648827
afta	-3015.381	-1838.062	-1177.319	480.1363

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 7.48
Prob>chi2 = 0.0237
(V_b-V_B is not positive definite)

From fixed effect estimator, the reduced form model obtains the most significant independent variables on GDP, Degree of Openness, GNP per Capita, Exchange Rate (ER) and AFTA.

GDP as the proxy of economic size has positive and significant relation at level of significance 1% to FDI inflows. This explains that the higher economic size of GDP the more attractive a country for the investors of FDI. An increase in GDP size of 1 unit will increase FDI inflows at 3.41e-08 unit. An increase in GDP means an increase in demand for products, this includes imports. In regards to the absence of tariff factories that create 'trade deflection effect' in Southeast Asia, non-members prefer to export in order to meet ASEAN's excess demand rather than to invest. This means that increases in domestic demand does not necessarily increase incentives for non-members to invest. The disincentive in investment creation is caused by 'trade deflection' in Southeast Asia.

Degree of Openness as a proxy of the attachment of a country to outside world has positive and significant relation to FDI inflows at 1% level of significance. This explains that the more open a country to the world economy the more attractive it for the investor of FDI. An increase in Degree of Openness 1% will increase 8,719% of FDI inflows.

GNP per Capita as an indicator for level of economy of a country has negative and significant relation to FDI inflows at 1% level of significance. This explains that the higher GNP per capita the less incentive for investor of FDI to invest. This phenomenon is related to the higher GNP per capita the more expensive input of production that indirectly indicates that investor of FDI inflows always attempt to find the less expensive production input including labor cost.

Exchange Rate shows the impact of depreciation to FDI inflows. An increase in exchange rate (depreciation of local currency) will decrease FDI inflows' growth at 1 percent level of significance. This proves the hypothesis that depreciation of local currency sends a negative signal for FDI inflows. During the 1998 Southeast and East Asia economic crises, the local currencies of the observed countries were significantly depreciated. The negative relation between ER and FDI shows that depreciation or devaluation of a national currency tends to lessen the incentive to invest in the observe countries.

This model finds that AFTA has negative and significant effect to FDI inflows at level of significance of 1 percent. It shows that AFTA has decreased FDI inflows level around -3,015 monetary units. Trade creation and trade diversion (leading to FDI creation) is based on trade and investment relations among member states and also between member and non-member states. Discriminative tariff rates after the implementation of AFTA between a member and non-member state makes the product price from non-member state - though produces X most efficiently - become higher than the product price offered by an efficient member state yet still priced lower than that of a less efficient member state. If trade creation is higher than trade diversion in regards to tariff revenue losses by all member states, then AFTA can be considered ineffective.

If the impact of AFTA on FDI inflows is negative, how about the impact of AFTA on intra-regional trade? Previous independent research shows that AFTA gives positive impact on FDI inflows (Verico, 2010)[8]. Empirical data also shows that after AFTA took in effect in 1999,

[8] Kiki Verico, Does Intratrade affect Investment Creation in Southeast Asia? Case Study of FTA's Effect on FDI Flows in Indonesia, Malaysia and Thailand, The 44th Annual ASPAC International Conference, Portland State University, Oregon, USA, 18-20 June 2010

ASEAN intra trade share increased significantly from 12 percent in 1990 to more than two-folds (200%) at around 24.5 percent in 2009[9].

Table 4: Share of Foreign Capital to Total Capital as a proxy of FDI inflows with selected independent variables including CEPT as a proxy of AFTA Static Model with Cross Section Regression

DEPENDENT VARIABLE: Share of Foreign capital to total capital (Shf)	**MODEL 1 (ALL OBSERVED VARIABLES)**	**MODEL 2 (SELECTED VARIABLES)**
R-squared	0.068	0.084
F-statistic	2.99	6.11
Constant	7.28	7.92**
t-stat	1.63	2.51
Probability	0.1	0.013
VA	-0.07	
t-stat	-0.68	-
Probability	0.49	
VAW	0.02*	
t-stat	1.85	-
Probability	0.06	
AVS	0.016 (linier)	2.4*** (log)
t-stat	1.33	3.65
Probability	0.18	0.000
NF	0.008*	0.018***
t-stat	1.65	3.89
Probability	0.1	0.000
Shg	-0.37***	-0.45***
t-stat	-3.03	-3.65
Probability	0.003	0.000
CR4	3.91	
t-stat	0.98	-
Probability	0.327	
ipero	10.1**	10.3**
t-stat	2.03	2.24
Probability	0.04	0.026
MFN	0.35**	0.3**
t-stat	2.41	2.2
Probability	0.02	0.028
CEPT	-0.33*	-0.3*
t-stat	-1.86	-1.7
Probability	0.06	0.09

Source: Own calculation, STATA

[9] *ASEAN:http://www.aseansec.org/stat/Table18.pdf*

Cross-section regression shows that MFN is more significant (probability** 0.028) than CEPT (probability* 0.09) in affecting shf (share of foreign capital to total capital). Meanwhile, Pairwise Granger Causality Test (PGCT) shows the opposite that CEPT is more significant (probability 0.0028) than MFN (probability* 0.09) in affecting shf.

Table 5: Share Pairwise Granger Causality Test (PGCT) between MFN, CEPT and Share of Foreign Capital to Total Capital

Pairwise Granger Causality Tests			
Date: 01/20/14 Time: 15:34			
Sample: 1 316			
Lags: 1			
Null Hypothesis:	**Obs**	**F-Statistic**	**Probability**
MFN does not Granger Cause SHF	315	2.9	0.09
SHF does not Granger Cause MFN		0.29	0.59
CEPT does not Granger Cause SHF	315	9.1	0.0028
SHF does not Granger Cause CEPT		0.7	0.4
CEPT does not Granger Cause MFN	315	4.3	0.039
MFN does not Granger Cause CEPT		2.4	0.12

Source: Author's calculation with e-views

Both the cross-section regression test and PGCT show that MFN and CEPT has significantly affected shf. This indicates that both are robust to be independent variables that affect shf, a proxy to FDI inflows. These findings conclude that both tariff rates (MFN and CEPT) have significantly affected investment creation (FDI inflows) in Indonesia.

From firm-level of industrial sector survey, the model shows that most significant variables which affect share of foreign capital as a proxy of

FDI inflows are: First, average number of worker per firm at industry-i and time-t in non-linier form with level of significance 1%.

This result indicates that the higher number of worker per firm the higher incentive to invest FDI inflows as the effect of increase in confidence towards labor supply.

Second, the higher number of firm the higher incentive to invest FDI. This shows that investor is more interested to invest FDI inflows in the sector that offers free-entry and exit rather than in sector with high-barriers to entry one. This variable has level of significance of 1%. Third, the higher share of government the lower incentive to invest FDI. It indicates that investor reluctances investing FDI inflows in a state owned industrial sector. This variable has 1% level of significance. Fourth, the higher proportion of input per output the higher incentive to invest FDI inflows. It indicates that investor is pleased to have a freedom to choose proportion of intermediate input to total output. It demands no restriction to import intermediate inputs from the host country. This variable has level of significance of 5%. This result is the opposite of obligation from host country to home country of FDI investor to use certain proportion of intermediate input from domestic market regardless its quality.

Both models show that CEPT as a proxy to AFTA with 5% level of significance has negative relation to share of foreign capital (shf), a proxy to FDI inflows. On the other hand, MFN as a representative of non-discriminative WTO has positive relation to the share of foreign capital at 5% level of significance. CEPT and MFN have similar level of significance in both models.

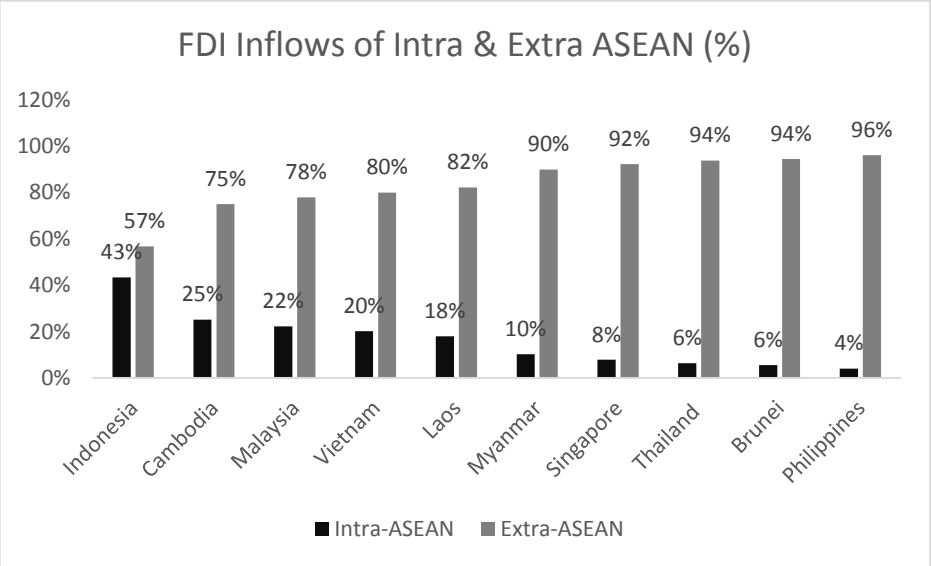
It indicates that the larger the gap between MFN and CEPT, simultaneously of the higher MFN and the lower CEPT, the more attractive a host country (Indonesia) for the FDI's investors.

This also shows that First, indirectly Indonesia is an interesting destination for the ASEAN's market oriented FDI investors. These findings proved that investor of FDI inflows in Southeast Asia is domestic market oriented with regional market preference. Second, as ASEAN is more effective in trade creation than trade diversion (Urata &

Okabe, 2007) then probability of FDI inflows coming from member state is higher than that from non-member state as the opposite when trade diversion is higher than trade creation.

Both of these findings are empirically verified in Indonesia. First, based on the ASEAN Secretariat data of Table 25, *ASEAN Statistics*, for instance in 2011, average intra-investment inflows of ten ASEAN members is 16.2% while for Indonesia is 43%. Indonesia is attractive in almost three times higher than the average intra-investment in ASEAN. Second, it indirectly indicates that trade creation effect in Indonesia is higher than trade diversion and confirmed that in the case of Indonesia AFTA gives positive impact on intra-regional trade and intra-regional investment. Figure on proportion of intra-investment (FDI inflows from members) and extra-investment (FDI inflows from non-members) can be seen below.

Figure 1: Proportion of Intra and Extra Investment in ASEAN 2011



Source: Table 25, ASEAN Statistics, the ASEAN Secretariat

If FTA stimulates trade creation higher than trade diversion then benefit and cost of regional economic integration will be paid by the member state. This is the opposite of the CU (Custom Union) with trade

diversion higher than trade creation. As for the benefit of AFTA, in the case of Indonesia, this study's model and graphic shows that Indonesia receives benefit from AFTA (the negative relation between CEPT and Share of Foreign Capital) that stimulates intra-investment (the highest proportion of intra-investment of FDI inflows within member states). As for the cost, there are voices that against the FTA and its other variances including the AFTA+1 such as the ASEAN China FTA (ACFTA)[10]. The cost has occurred as some less competitive domestic industry in Indonesia fails to compete with industries from China. Both benefit and cost of FTA happens to the member state has answered why a member state like Indonesia that receive most benefit from FTA (intra-investment) has strong domestic opposition to FTA. This explains Indonesia's paradox in responding the FTA, like two sides of the coin, one is pro and another is contra. This makes any process in making kind of agreements needs to consider potential domestic reluctance.

8. Conclusion & Recommendation

Macro-level data on multicountry analysis finds:

First, GDP positively affects FDI inflows. This indicates an increase in economic size of GDP attracts FDI inflows.

Second, Degree of Openness stimulates FDI inflows. The explanation is that the more open economy of a country, the more attractive a country for FDI's investors.

Third, GNP per Capita as a proxy of a country's economic level discourages FDI inflows. This perhaps indicates that increasing GNP per

[10] Several links on this issue: Indonesia Should Seriously Consider Delaying Free Trade with China, details in http://www.dailyindonesia.com/blog/2010/01/indonesia-should-seriously-consider-delaying-free-trade-with-china.php DOA: April 3rd 2014; Indonesian Chamber of Commerce Dissapointed with Failure to Renegotiate ACFTA, details in http://www.thejakartaglobe.com/archive/indonesian-chamber-of-commerce-disappointed-with-failure-to-renegotiate-acfta/ DOA: April 3rd 2014; Indonesian Workers Demonstrate on May Day (one of the crucial issues is negative impact on ACFTA), details in http://directaction.org.au/issue23/indonesian_workers_demonstrate_on_may_day DOA: April 3rd 2014; PPP (one of political parties in Indonesia in full name is Partai Persatuan Pembangunan) ask Government to Renegotiate ACFTA, details in http://www.antaranews.com/en/news/70352/ppp-asks-govt-to-renegotiate-acfta- DOA: April 3rd 2014

capita increases input cost such as labor cost that creates disincentive for FDI's investors.

Fourth, an increase in exchange rate (depreciation of local currency) will decrease FDI inflows growth. This proves the hypothesis that depreciation of local currency sends a negative signal for FDI inflows. The negative relation between ER and FDI shows that depreciation or devaluation of a national currency tends to lessen the incentive to invest FDI. This confirms that unstable macroeconomic conditions which cause enormous domestic currency depreciation will increase investor's distrust and ultimately decrease FDI inflows.

Fifth, this macro level data of multicountry analysis shows that AFTA has negative and significant relation to FDI inflows. This indicates that AFTA is not effective in stimulating FDI inflows.

Micro-level data on single country analysis finds:

First, number of worker per industry stimulates incentive for the investor to invest its FDI inflows as it increases investor's confidence given the sustainable labor supply.

Second, number of firm provides incentive to the FDI investors. This finding shows that investor is more interested to invest in the sector that has free-entry and exit rather than that in high-barriers to entry.

Third, share of government in an industry discourages investors to invest FDI inflow. This shows that investor reluctances to invest FDI inflows in a state-owned industrial sector.

Fourth, the higher proportion of input per output the higher incentive to invest FDI inflow. It indicates that investor is pleased to have a freedom to choose proportion of intermediate input to total output as the opposite to domestic obligation of using intermediate inputs from domestic market regardless their quality.

Fifth, this micro firm-level data of single country analysis finds that the lower CEPT, a proxy of AFTA, the higher share of foreign capital, a proxy of FDI inflows. This explains that AFTA is effective in attracting FDI inflows in particular at country level.

Inconclusive finding between macro-level and micro-level data:

Inconclusive finding between macro level of panel data of multicountry and micro firm-level of cross section data of single country indicates that the impact of AFTA is varied within member states of ASEAN.

It is a need to analyze the impact of FTA on FDI inflows at country level as its impact is different within member states. This study concludes that the impacts of AFTA with CEPT as its proxy to FDI inflows with share of foreign capital as its proxy are ambiguous therefore the impact of free trade area to long-term investment in Southeast Asia remains unique within members.

Policy Implication:

Based on the empirical and research finding that AFTA is more effective in generating 'trade creation' than 'trade diversion', in order to attract FDI inflows, enlargement of the ASEAN economic cooperation to non-member states of ASEAN under the 'ASEAN umbrella' such as the ASEAN Plus Framework is the best strategy to enhance trade and investment integration in ASEAN.

The expansions of trade agreements between the AFTA members and non-members has to be done under the ASEAN liberalization umbrella (AFTA). Taking into account: (1) the divergence of trade competitiveness level among ASEAN members and (2) soft regional integration decision making process then the ASEAN umbrella will take longer time than the direct individual bilateral agreement between member state and non-member state, yet at least, this ismore secure.

ASEAN has a comparative advantage that can attract FDI inflows from non-member states such as: (1) the number of population of about 567.4 million people with 80 percent whom are in productive age (under 40 years old). ASEAN is a big market (demand side) as well as a base for economies of scale (supply side); (2) Disparities between the economic performances of member states enlarges the opportunity to create effective production networks based in Southeast Asia.

ASEAN is quite attractive for non-members that it would be reasonable for ASEAN to leverage its bargaining position in order to expand its

regionalism wings to other non-members outside of East Asian countries, such as India. ASEAN continues to build common bilateral FTAs. The first example is the Framework Agreement on Comprehensive Economic Cooperation between ASEAN and China, signed 4 November 2002 in Phnom Penh. In addition, ASEAN enlarged her cooperation with other large countries such as India. AIFTA (ASEAN-India Free Trade Agreement) target has been formed within 10 years, from year 2002 to around 2012. Based on negotiation period of preparation, the China-ASEAN cooperation (2001-2010) started earlier than India-ASEAN. To balance the economic power of China in Southeast Asia, the United States of America formed the Enterprise for ASEAN Initiative (EAI), with the expectation to shift the role of APEC.

ASEAN Plus framework is the best option to enhance ASEAN's trade and investment integration towards the ASEAN Economic Community in 2015. ASEAN Plus is the ASEAN umbrella itself and this strategy fits with ASEAN's 'soft and open economic principle' which commonly known as the 'ASEAN Way'.

ASEAN Plus Frameworks is compatible with ASEAN's 'open and soft regionalism principle' therefore AFTA+ which enlarges ASEAN regional economic cooperation to non-members will complement the world trade relations. Lamy (2007) states that 'open regional integration principle' will complete the multilateral cooperation purposes. In other words, the ASEAN Plus framework is a 'building block' instead of 'stumbling block' for the WTO.

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