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The Impact of Trade and Exchange Rate Stability on Foreign Direct Investment: Case Study in ASEAN and Myanmar.

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Abstract

This paper is to find out the impact of trade and exchange rate stability on foreign direct investment in ASEAN eight countries as well as trade openness and other determinants of economic variables impact on the FDI inflow to Myanmar economy as the case study covered by 1990-2014. This study divides two types of data analysis; ASEAN 8 countries FDI inflow by using panel data analysis estimated with Random Effect Model and checking with Hausman-Taylor test. Myanmar FDI inflow by using the time series data analysis estimated with OLS. When analyzing the model's soundness, two explained variables employed in each estimation and showed that FDI in percentages of GDP could explain more than FDI net inflow value for ASEAN case but reverse results for Myanmar case. The trade openness ratio is directly related to FDI inflow, and it can prove the nation's free trade policy effect on foreign direct investment inflow for ASEAN countries as one essential part but do not prove in Myanmar FDI inflow analysis. Exchange rate volatility impact on FDI inflow can show significantly for Myanmar, not for ASEAN FDI inflow. Hausman-Taylor test shows Random Effect Model is appropriate for this study.

Key Words: FDI, Trade openness, Exchange rate volatility, Export, GDP

I. Introduction

In the past, developing countries' flows were more focused on export-oriented industries and emerging the FDI as the most important sources of external resources inflows in developing countries. Likewise, FDI becomes a momentous part of capital development in the country as well as can contribute to growth more than proportionally to domestic investment in the host country. Since a long time, international trade and foreign direct investment (FDI) are leading factors of the driving forces for economic growth. The more ASEAN become the fastest growing economy in the world, the stronger the integration between ASEAN member countries and continue to out-perform the rest of the global economy. At first, ASEAN countries didn't interest to open their market for allowing the FDI to protect the strengthening of the local economy. After debt crisis, following the ways of Newly Industrial Economies (NIEs), ASEAN countries changed their economic policy invited FDI with momentum.

Myanmar is the 40th largest country in the world and second largest in South-East Asia. Nowadays, the government of Myanmar has initiated a broad range of reforms to open its economy to foreign trade and invest Myanmar has rich natural resources base, young labor force and strategic geographic location between two economics giants India and China and stands to benefit from greater global and regional economic integration including ASEAN. Sufficient Infrastructure development is an essential prerequisite to carry the industrial and agricultural growth and the highest priority work to attract FDI in Myanmar. Myanmar government, need to make adequate preparations for attracting FDI irrespective of the realization of an investment boom in the country.

As Myanmar is a labor abundant country, cheap labor cost is one essential point in attracting FDI in export-oriented labor intensive sectors. Facilitating labor intensive manufacturing and supporting service activities would further raise trade, investment and income-earning opportunities as well attracting the foreign investment are critical to transforming Myanmar's economy to be developed. Likewise, the country' success in getting the benefits from foreign direct investment will generate the development of the infrastructure and institutions and presented by trade and investment liberalization. As geographically, Myanmar located an excellent position to contact to regional and global factor markets as well as product markets. Exchange rate and price stability(inflation) are the crucial determinants to invest in Myanmar. High inflation rate prevents to enter the FDI with momentum to Myanmar. The government adopted a new foreign exchange management law and opened the banking sector to foreign participation and develop the country's capital market to do the preparation for financial sector as a roadmap to foster financial development After adopted, it has significantly liberalized the ability of both locals and foreigners to deal with foreign currency in Myanmar. As foreign exchange is absorbed and spent in the economy, the real exchange rate could appreciate, reducing the competitiveness of Myanmar's trade-exposed firms and sectors.

Current trade situation in Myanmar, although the government's support for value-added activities, exports continue to be heavily concentrated in raw materials natural gas, gems and other minerals and the larger amount of investment inflows has gone to these areas. Trade facilitation challenges allow being broader investment climate weaknesses, especially those affecting SMEs and entrepreneurs, and difficulties in access to finance to support

export-oriented activities, capacity challenges in trade promotion institutions. Like adopted since last two years, Myanmar can use export-oriented driven growth strategy export-oriented and she has a significant probability to promote economic development based on FDI.

This paper intends to analyze the impact of trade openness, exchange rate stability and other determinants of economic variables on FDI inflow focusing in ASEAN eight countries exclude Singapore, Brunei, and Timor-Leste by using the panel data analysis of Random Effect Model estimation and Hausman test for checking whether REM is appropriate or not. Moreover, it intends to find out the appropriate ways and methods for FDI promotion in Myanmar by using OLS estimation of the time series data analysis. The theme of research statement is how trade and key economic variables can impact on FDI inflow to ASEAN countries and Myanmar. This paper intends to find out the impact of trade and exchange rate stability attractiveness of foreign direct investment in ASEAN countries as well as trade openness and other determinants of economic variables impact on the FDI inflow to Myanmar economy as the case study covered by the period of 1990-2014.This study following made up of five sections; explores some previous literature perspective, the theoretical foundation of FDI, illustrates research methodology and empirical model, shows data description and sources of data and finally, explains result discussion, policy implication, and conclusion of the study.

II. Previous Literature Perspective

Many analysis including empirical and descriptive analysis to find out the impacts of FDI in modern economics point of views as well have been put forward by the researchers to explain foreign direct investment. Linda& Charles (1995) analyzed about the foreign direct investment, exchange rate variability and demand uncertainty confirm by using the quarterly US bilateral foreign direct investment flows. Real exchange rates variability influences the location of production facilities with risk averse investors and fixed productive factors, parent companies. Due to existing non-negative correlation between export demand and exchange rate shocks, the multinational corporations optimally locate some productive capacity abroad, and as exchange rate volatility rises, the capacity share abroad increases and becomes more correlated with export demand shocks. The theoretical result showed that is a real impact of short-term exchange rate variability on foreign direct investment.

Sourafel Holger& Auro (2008) explained productive spillovers from foreign direct investment using firm-level panel data for U.K. manufacturing industries and found out the spillovers effects of export-oriented vs. domestic-market-oriented FDI and allow for differing effects, depending on domestic firms' export activities. Yousaf, Zakir & Nisar (2008) analyzed Pakistan's economic evaluation emphasize on foreign direct investment. As Foreign Direct Investment (FDI) is one of the major external sources of funding to meet obligations of resources gap and goal achievement played a vital role in the economic growth of Pakistan. It contributed significantly to the human resources development, capital formation, and organizational and managerial skills of the people in the country. This study

applied the Unit Roots test to check the stationarity of the data series and Cointegration technique Error Correction Model used to analyze the long run relationship among the variables. In the short-run and the long-run, the import model result showed that FDI positively impacts on real demand for imports. Export model result exhibited that FDI is negatively related to real exports in the short-run estimated by Vector Error Correction Model (VECM) and positive relationships in the long-run estimated by ordinary least square method (OLS).

Normaz, Peter& Maurice (2009) examined the effect of ASEAN economic integration on foreign direct investment by highlighting AFTA's roles in promoting ASEAN countries' attractiveness for FDI and to enhance FDI flows into the region. The empirical model is the gravity model based on cross section and panel data analysis. This study showed that the two main effects of REI; on intra and extra-regional FDI flows. The major finding of this study is ASEAN 5 less than investing in the new ASEAN members. The first estimation compares the cross section versus panel approach and core variables including the basic gravity variables, trade openness, common border, common language and the log for GDP per capita for both source and host countries. In fixed effects model for the bilateral FDI from ASEAN to the individual host country. The second stage estimates the effect of extra-regional-FDI is based on five sources regional group namely ASEAN-5, East Asia, Europe, North America and Australia-New Zealand.

Bishwanath & Etsuro (1999) analyzed Asia’s foreign Direct Investment trends with a focus on FDI flows from Japan related to FDI flows changing industrial structure and trade

flows and it tried to identify key determinants of FDl flows to Asian countries. Japan has been the largest source of FDl flows to Asia countries, mainly focus on four Asian countries, India, Thailand, Korea, and Malaysia. Although Japan has created a large trade surplus with these countries, Japanese FDI supported the cost reduction and export promotion in the host countries. Fixed and random effect model used as the estimation of equations explaining FDI flows and the Lagrange multiplier and Hausman test applied in this analysis. To capture this aspect in the econometric model, it has a dummy variable has been included among the explanatory variables.

Sayeeda & Jose (2015) examine the foreign direct investment outflows in Asian Developing Countries mainly finds out the extent and determinants of Foreign Direct Investment outflows from these countries selected by home country-specific macroeconomic variables and identifies the key determinants by doing correlation and regression analysis. output results show that foreign direct investment outflows related to high levels of gross domestic product and domestic savings, large foreign reserves, export orientation, etc. in the source countries. Bushrayasmin, Amrah & Muhammad (2003) analyzed the volume and determinants of Foreign Direct Investment (FDI) in developing countries of the world, particularly in 15 developing countries sample. FDI flow to developing countries is a different path and its volume was modest at the beginning of 1980s but has tended to rise in subsequent years. The empirical model based on panel data applied to three approaches, common intercept model, random effects and fixed effects model. When the model to identify, the factors affecting FDI in developing countries related to different levels of income,

Stephen, Rodney& Calin (1997) an analysis of foreign direct investment in Latin America specializing on the case of the Guyanese economy. As the model specification, four of the five independent variables; imports, exports, gross domestic product (GDP), and commercial vehicles are specified in a per capita format and analyzing countries include Latin America countries. The results find that gross domestic product, imports, exports, infrastructure, and political risk are significant influences on the decision of multinational corporations to invest abroad relating to the current economic environment in Guyana and propose specific policy initiatives to stimulate foreign capital inflows to Guyana.

Pami &Aneesa (1998) analyzed mainly focus on the relationship between foreign direct investment and economic activity in India in the post-liberalization period. He mentioned foreign direct investment is measured both by the amount approved as well as the actual flows and economic activity is measured by the index of industrial production. As related testing, Granger causality tests and innovation accounting analysis used in this study suggesting with FDI flows respond to the level of industrial production and FDI can have a positive effect on the economy as well as argued that output in an economy influences FDI flows. The direction of the relationship between FDI and output in the post-liberalization period in the framework of a vector autoregressive model using Granger causality tests, impulse responses, and variance decompositions.

Yu-Chen & Santanu (2011) found out labor cost & foreign direct investment emphasizing on evidence from India and mentioned the effect of labor cost on foreign direct investment and it examines the amount of the foreign owned firms paying higher wages than

their domestic counter- parts in India. This study tried to measure the effect of wages on FDI and the state of technology in Cobb-Douglas production function. Anastasia & Panagiotis (2014) analyzed foreign direct investment and growth of EU, EMU and transition economies conducting a panel data analysis. FDI inflows have a positive effect on economic growth although neglect to find out a robust causality relationship between FDI and economic growth. In this research, applying a two -Stage Least Square (2SLS) dummy variable estimators model with the use of Instrumental Variables (IV) to use the results of the empirical analysis hat strengthen the potentially positive implications of FDI.

Chong &Mi (2012) showed how trade, foreign direct investment affects the international flow of labor in OECD Countries. Increasing bilateral investment enhances the movement of people into the investing country and total foreign direct investment into a country not related to the outflow of labor. The researchers showed by comparing the cost and the benefit as well deciding to migrate whenever the benefit is larger than the cost. Nguyen N & Jonathan H (2002) analyzed the effects of the bilateral trade on foreign direct investment (FDI) in Vietnam. An empirical model of the determinants of FDI in reduced form using data and BTA should lead to 30 per cent more FDI into Vietnam and an eventual doubling of the flow. In this model, estimating the determinants of FDI on exchange rate undervaluation, a variable that measures domestic savings as a proportion of GDP, and a measure of the budget deficit as a percentage of GDP.

III. Theoretical foundation of FDI

Several theories have been put forward by the researchers to explain foreign direct investment. But no single theory fits the different types of direct investment or the investment made by a multinational corporation or country in any region. The applicability of the approach differs with the type and origin of investment, and there are also FDI theories that relate FDI to international trade. MacDougall and Kemp both stated that when there was free movement of capital from an investing country to a host country, the marginal productivity of capital tended to be equalized between the two nations. Hirsch (1976) point out that in the absence of transportation and marketing costs, an optimum sized plant will be less costly to operate in countries enjoying a comparative advantage. “Investment Development Cycle or Path” (IDP) theory that proposes a link between a country’s level of economic development measured in GDP per capita and its international investment positions.

The relationship between trade and FDI are also varied with the motives and determinants of FDI. In the previous studies, the determinants of FDI fall into three categories. First, focus on the core factors influencing the decision to invest in a country or industry. Second is more macro-oriented seek to establish a functional relationship between FDI and possible determinants. Finally, why FDI is preferred to other forms of investment based on different decisions of resource allocations. When analyzing the main determinants of FDI, country-specific characteristics are widely accepted, especially the factors related to the host country market. It is believed that characteristics of host markets are major driving factors of FDI flows (UNCTAD, 1998). The greater the host market size, the more attractive a market

is, and the larger the volume of FDI. Many studies support a positive relationship between host country market size and FDI. The GDP of a host economy is the most widely employed variable for market size in previous empirical studies of FDI. Several previous studies (Loree and Guisinger, 1995; Cheng and Kwan, 2000; Asiedu, 2002) point out the essential impact of available physical infrastructure in the host country on FDI decision making.

FDI based on two types. Multinational corporations replicate their production processes in foreign facilities located near large customer bases categorized as the horizontal foreign direct investment(FDI). The outcome of the theory of comparative advantage that we developed is called as the vertical foreign direct investment (FDI). Vertical FDI is one of the fastest-growing types of FDI, and is behind the large increase in FDI inflows to developing countries and is flow between developed countries dominated horizontal FDI. Vertical FDI requires a substantial fixed cost investment in a foreign affiliate in a country with the appropriate characteristics (Krugman, Obstfeld, Melitz 2012).

Theoretically, market openness consists of openness to FDI, openness to trade, and regional integration. The more open a country is to international investment, the more likely a country is a destination for FDI (Chakrabarti,2001). The literature of international economics argued that trade and economic growth are positively related and market openness accelerates economic growth and boosts international trade (Hassan,2005). The impacts of trade openness in host countries on inward FDI are extensively discussed in previous empirical studies, and remain a controversial question (Tolentino, 2010). International business theory claims that FDI is attracted to the host countries that are easily fit into the global production patterns and trade patterns (Vernon, 1966). Some studies (Kravis and

Lipsey,1982, Culem,1988, Edwards, 1990, Pantelidis and Kyrkilis, 2005) also provide strong support to the positive relationship between trade openness and FDI. Referring the openness in international trade, there are mainly two kinds of indicators or proxies commonly discussed in empirical studies. One of the commonly utilized proxies is the ratio of exports plus imports to GDP. Trade protection or tariff level is another indicator in empirical studies of FDI determinants. As the mentioned of economics online, it is argued that trade openness brings many economic benefits, including increased technology transfer, transfer of skills, increased labor and total factor productivity and economic growth and development. Trade openness is calculated using the following equation:

$$\frac{Export + Import\ of\ goods\ and\ services}{GDP}$$

From theoretical perspectives, exchange rate volatility seen as a crucial factor that exerts the effects on FDI and it is usually regarded as an indicator of business risk, so several academic studies have highlighted the relationships between FDI flows, and the volatility of exchange rates (Tolentino, 2010). As for macroeconomics perspective, market-seeking FDI is unattractive to countries with unpredictable and volatile inflation rates. This is because the high levels of inflation add uncertainly to the investments, such as making price-setting difficult and increasing the difficulties in anticipating the profit, causing problems to the long-term cooperation due to the high rates of inflation. Thereby, high inflation discourages export-oriented FDI.

Most studies of the determinants of FDI have focused on the pull factors or features of the host countries that attract or deter FDI inflows, but the foreign investment is not

attracted to less developed countries, except cheap labor and raw materials abundant countries and the relative labor costs also significantly influence FDI. One nation's persuading and receiving FDI will depend on the development of these host country's infrastructure and institutions by doing fundamental reform effort.

IV. Research Methodology and Empirical Model

Research methodology emphasizes on Bushrayasmin, Amrah & Muhammad (2003) view and other previous empirical literature about FDI and emphasizing with reliable macroeconomics theories and econometric model by focusing on two parts. One is Random Effect estimation of panel data analysis of the trade openness ratio and other priority economic variables impact of FDI in ASEAN countries including Myanmar and excludes Singapore, Brunei and Timo Leste and the period covered by 1990 to 2014. As empirical When analyzing trade openness ratio and other variables impact on FDI, it is dividing two parts; one is based on FDI net inflow values and another estimation based on FDI net inflow percent of GDP during these periods. In the estimation model of core variables including the trade openness ratio, exchange rate volatility, electricity production capacity, labor force participation, and price index during analyzing period.

$$\mathbf{fdi}_{it} = \alpha_i + \beta_1 \mathbf{to}_{it} + \beta_2 \mathbf{ervol}_{it} + \beta_3 \mathbf{ln\ pindex}_{it} + \beta_4 \mathbf{lpr}_{it} + \beta_5 \mathbf{ln\ erc}_{it} + \varepsilon_{it} \quad \text{..... (1)}$$

$$\mathbf{fpgdp}_{it} = \alpha_i + \beta_1 \mathbf{to}_{it} + \beta_2 \mathbf{ervol}_{it} + \beta_3 \mathbf{ln\ pindex}_{it} + \beta_4 \mathbf{lpr}_{it} + \beta_5 \mathbf{ln\ erc}_{it} + \varepsilon_{it} \text{ ..... (2)}$$

In equation (1), where the explained variable $\mathbf{fdi}_{it}$ means that the value of FDI net inflows of ASEAN eight member countries and $fpgdp_{it}$ is the percentage of FDI in GDP of

each country i during a certain period t, $\mathbf{to_{it}}$ means trade openness ratio**,** $\mathbf{ervol_{it}}$ is exchange rate volatility, $\mathbf{erc_{it}}$ is electricity production capacity inside the country, lpr_{it} is labor force participation rate, and $\mathbf{pindex_{it}}$ is price index during this period. ε_{it} is error term and α_i , β_1 , β_2**,** β_3 **,** β_4, β_5, β_6 **a**re coefficients.

Another one part of OLS estimation based on time series data analysis of trade openness, exchange rate and other influences economic variables impact on FDI in Myanmar during 1990-2014.

$$\mathbf{fdi_{Mt} = \alpha_i + \beta_1 to_t + \beta_2 ervol_t + \beta_3 ln\ pindex_t + \beta_4 lpr_t + \beta_5 erc_t + \varepsilon_{it}} \quad \text{.....(3)}$$

$$\mathbf{fpgdp_{Mt} = \alpha_i + \beta_1 to_t + \beta_2 ervol_t + \beta_3 ln\ pindex_t + \beta_4 lpr_t + \beta_5 erc_t + \varepsilon_{it}} \quad \text{.....(4)}$$

In the estimation model, $\mathbf{FDI_{Mt}}$, FDI net inflows of Myanmar, and $\mathbf{FPGDP_{Mt}}$ **is FDI percentage of GDP as** dependent variables of this time series analysis and core variables include Myanmar's trade openness ratio, exchange rate in terms of US dollar, electricity production capacity, labor force participation, and price index during analyzing period.

With reliable empirical methodology for ASEAN FDI inflows, Random Effect Mode is appropriate though many researchers mostly use two methods for estimating unobserved effects panel data models. Even though these methods are somewhat harder to describe and implement, several econometric packages support them. The fixed effects estimator uses a transformation to remove the unobserved effect a_i before estimation. The random effects estimator is attractive when the unobserved effect is uncorrelated with all the explanatory variables. (Wooldridge, 2013, p- 466). One advantage of random effect (RE) is that all explanatory variables are constant over time because the unobserved effect is uncorrelated

with all explanatory variables as in theory (Wooldridge, 2013, p- 466). In many applications, the primary reason for using panel data is to allow the unobserved effect to correlate with the explanatory variables.

Hausman-Taylor test is appropriate for supporting for proving this empirical methodology. Hausman (1978) first proposed such a test, and some econometrics packages routinely compute the Hausman test under the full set of random effect assumptions. The idea is that one uses the random effects estimates unless the Hausman test rejects. (Wooldridge,2013, p-478). I use Hausman test to exam whether the specification of REM is correct or not.

V. Data Description and Sources of Data

Empirical model divided by two forms. Using the panel data analysis of Random Effect Model estimation and time series analysis of OLS estimation covered by 1990 to 2014 totaling 25 years. One is Investigating the effect on ASEAN countries' FDI net inflows (exclude Singapore, Brunei and Timor Leste). Another one analysis only focus on Myanmar's FDI inflows during 1990-2014. As the data sources, the related international organization data gathering from the International Monetary Fund (IMF) issued data of International Financial Statistics (IFS), Direction of Trade Statistics (DOTs), IMF World Economic Outlook Database (2016). Key Indicators for Asia and the Pacific 2008 and 2016, The Global Economy.com.

Table (5.1)

Data Description (ASEAN FDI Inflow Model) (Panel Data Analysis)

Variables	N	Unit	Mean	Max	Mini	Std.Dev.
FDI inflow(fdi)	200	US$ mils	1986	14733	-4702	2941
FDI inflow (percentage of GDP) (fpgdp)	200	percent	3.02	12.08	-2.54	2.83
Export (Percentage of GDP) (xpergdp)	200	percent	40	138	3	29
Trade Openness ratio(to)	200	percent	0.82	2.53	0.06	0.52
Exchange rate volatility(ervol)	200	Std Dev	0.002	0.081	0	0.007
Log Price index(pindex)	200	index	4.1	5.5	0.5	0.9
Labor force participation rate(lpr)	200	US $ bils	72.82	82.5	59.1	7
Electric capacity production(erc)	200	US $ bils	12.34	54.77	0.05	12.19

Sources: IMF(DOTs), International Financial Statistics (IFS), Key Indicators for Asia and Pacific (2008) and 2016, theGlobalEconomy.com, World Economic Outlook Data Base (2017, April).

Table (5.2)

Data Description (Myanmar FDI Inflow Model) (Time series data analysis)

Variables	N	Unit	Mean	Max	Mini	Std.Dev.
FDI inflow(fdi)	25	US $mils	660	2539	105	733
FDI inflow (percent of GDP) (fpgdp)	25	percent	2.14	4.85	0.82	1.02
Export Percentage of GDP(xpergdp)	25	percent	15	27	5	6
Trade Openness ratio(to)	25	percent	0.28	0.44	0.13	0.07
Exchange rate volatility(ervol)	25	Std Dev	0.0065	0.081	0.00002	0.016
Log Price index(pindex)	25	index	3.1	4.8	0.5	1.4
Labor force participation rate(lpr)	25	bils	77.16	78.6	75.6	1.07
Electric capacity production(erc)	25	bils	1.87	4.29	1.1	1.06

Sources: IMF(DOTs), International Financial Statistics (IFS), Key Indicators for Asia and Pacific (2008) and 2016, theGlobalEconomy.com, World Economic Outlook Data Base (2017, April).

All data shown by US $ term with current prices due to reliable data ability. FDI data gathered from the Key indicators for Asia and Pacific (2008 and 2016) as net foreign direct investment inflows described with US $ million value. Trade data collected from mainly source of Direction of Trade Statistics (DOTs) described with US $. Exchange rate volatility is US $ per national currency rate calculated from the monthly exchange rate data of the IMF International Financial Statistics (IFS) by computing the standard deviation for each year. Labor force participation rate(lpr), Electric capacity production(erc) shown by US$ billions and Price index(pindex) are collected from theGlobalEconomy.com and GDP used from The World Economic Outlook Database (April, 2017).

VI. Results Discussion, Policy implication and Conclusion

6.1 Regression Results discussion

When analyzing the empirical model, it is based on two dependent variables, FDI net inflow values and FDI percent of GDP using panel data analysis of Random Effect estimation for ASEAN FDI model and OLS estimation for Myanmar FDI model by using time series data analysis. The results show including with trade openness ratio and other variables for both two dependent variables. Furthermore, export in percentage of GDP variable as an additional variable to estimate the model's specification to be visibly for both these two explained variables. For ASEAN model REM estimation of Panel data analysis and Hausman-Taylor test result shows that χ^2 is not significant and reject Fixed Effect Model and

it means Random Effect Model is appropriate for this analysis. There is slight difference between the outcomes of trade openness ratio and export ratio of GDP variables estimated separately.

6.1.1 Discussion of the Random Effect results of ASEAN FDI net inflows (Panel data analysis)

Table (6.1) to (6.5) shows the Cross Section Random Effects results of ASEAN FDI model with related explanatory variables by analyzing panel data. Table (6.1) shows the empirical results of the effects of trade openness and other determinants of explanatory variables on the FDI net inflows of ASEAN 8 countries. The explained variable of FDI percentages of GDP can explain model compare than FDI net inflow values. These outcomes are appropriate to describe the model although all independent variables are not statistically significant. The trade openness ratio of ASEAN countries is directly related to FDI in percentage of GDP and it can prove the nation's free trade policy effect on foreign direct investment inflow. If trade sector improves and free trade policy adopted, FDI will enter more and the host country can absorb the advantages of FDI inflow like technology, management skill, employment and foreign expertise. If Exchange rate volatility increase, FDI inflow also increase but insignificant for both two-explained variable. Exchange rate volatility impact on FDI is not strong compare than other variables. Price stability is essential factor for FDI inflow in percentage of GDP in ASEAN countries. Eelectric capacity production is positive related to FDI net value but negatively effect on FDI inflow in percentage of GDP. Labor force participation rate is positive related to FDI but insignificant

in both two estimation. Practically, the host country has enough labor force as well it should be skilled labor to persuade the foreign investors.

Table (6.1) Random Effect Results (Trade Openness and Other variables)

	Dependent variables			
	FDI values (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variables	**REM**	**SE**	**REM**	**SE**
constant	-7394*	4319.00	-9.7	6.4
Trade Openness ratio(to)	53.00	627.00	1.5**	0.66
Exchange rate volatility(ervol)	41816.00	30341.00	30	31
Log Price index(pindex)	173*	104	0.43**	0.17
Labor force participation rate(lpr)	88.00	55.00	0.14	0.09
Electric capacity production(erc)	172***	23.00	-0.07***	0.02
F-statistics	16.4***		5.4***	
Adjusted R-square	0.28		0.1	
no: of observation	200		200	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. Standard Errors are white correction for heteroskedasticity method.

Table (6.2) Random Effect Results (Export percentage of GDP and Other variables)

	Dependent variables			
	FDI (fdi value)		FDI % of GD(fpgdp)	
Explanatory Variables	**REM**	**SE**	**REM**	**SE**
constant	-6328	4116	-8.5	5.9
Export percentage of GDP(xpergdp)	-5.70	9.30	0.02*	0.01
Exchange rate volatility(ervol)	42022.00	3082	27.9	32.4
Log Price index(pindex)	236***	88	0.53***	0.17
Labor force participation rate(lpr)	74.00	52	0.13	0.08
Electric capacity production(erc)	172***	23	-0.07***	0.02
F-statistics	17***		5.4***	
Adjusted R-square	0.29		0.1	
no: of observation	200		200	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. Standard Errors are white correction for heteroskedasticity method.

Table (6.2) shows the REM results of ASEAN FDI net inflows of dependent variables estimated based on the export percentage in GDP to prove the model's validity. Like Table (6.1), FDI percentage of GDP model can prove stronger than the influences variables impact on FDI. Particularly, export impact on FDI is directly related. If a host country's export ratio in GDP will improve, FDI inflow also increased. The favorable export market of host country can attract FDI to enter in this country. Exchange rate volatility is directly related but insignificant. It means that exchange rate effect on FDI is not so apparent. Practically, if exchange rate is stability inside the host country, the investors will not hesitate to invest in, and as well it is one supporting fact for FDI inflow to do in this country. Other explanatory variables are similar results like Table (6.1).

Table (6.3) Random Effect Results (Only other variables)

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variables	**REM**	**SE**	**REM**	**SE**
constant	-7154.00	4423	-6.6	6.37
Exchange rate volatility(ervol)	42065.00	30062	25.3	32
Log Price index(pindex)	185***	70	0.63***	0.22
Labor force participation rate(lpr)	85.00	56	0.1	0.09
Electric capacity production(erc)	172***	22	-0.06***	6.37
F-statistics	21***		5.5***	
Adjusted R-square	0.28		0.08	
no: of observation	200		200	

*, **,*** dominate statistically significant of 10%,5%,1% respectively. Standard Errors are white correction for heteroskedasticity method.

In Table (6.3), It can see Random Effect Results of only other variables without trade effects. Both two types of estimations are similar. Like the previous outcomes, log price index, electricity capacity production variables are significant and no difference between them.

Table (6.4) Random Effect Results (Without price index effect)

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variables	**REM**	**SE**	**REM**	**SE**
constant	-7397*	3873	-10.4*	5.8
Trade openness ratio(to)	437.00	505	2.13***	71
Exchange rate volatility(ervol)	45502.00	29205	35	29
Labor force participation rate(lpr)	93.3*	50	0.17**	0.08
Electric capacity production(erc)	173***	23	-0.06***	0.02
F-statistics	22***		6.8***	
Adjusted R-square	0.29		0.1	
no: of observation	200		200	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. Standard Errors are white correction for heteroskedasticity method.

Table (6.4) shows the Random Effect Results of the trade openness ratio and other including variables in model except for price index effect. Log value of price index shows significant in all estimation above and its impact on FDI inflow is obviously. To be sure more, checking again with only other variables without log price index variable in model. FDI inflows in percentage of GDP can prove the model's soundness than FDI net inflow value. Except for exchange rate volatility, all independent variables are significant, and the impact of trade openness on FDI flow in percentage of GDP is visible. If a host country has adopted free trade policy, this is one of the favorable incentives for foreign investors to make investment.

Table (6.5) Random Effect Results (Only Trade Openness ratio and Exchange rate volatility variables

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variables	**REM**	**SE**	**REM**	**SE**
constant	544	637	2.28**	1.0
Trade Openness ratio(to)	1650***	586	0.82	0.72
Exchange rate Volatility(ervol)	41582	25329	34	24
F-statistics	4.3**		1.90	
Adjusted R-square	0.03		0.01	
no: of observation	200		200	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. Standard Errors are white correction for heteroskedasticity method.

This study focus on trade openness and exchange rate stability effect on FDI inflows in ASEAN countries. Some ASEAN countries like Malaysia, Thailand, and Indonesia are export-driven growth strategy through FDI inflow efficiently since long time. Later, Vietnam and the Philippines also improved FDI by promoting trade policy reform actively adopted practically. It can conclude that trade sector can support through FDI inflow inside the country. Table (6.5) shows the Random Effect results of FDI inflow only focus on trade openness ratio and exchange rate impact on FDI inflow in ASEAN countries. The outcomes are mostly insignificant except trade openness ratio in FDI inflow value and both two explanatory variables cannot describe both two explained variables.

6.1.2 Discussion of the OLS regression results of Myanmar FDI net inflows (Time Series data analysis)

Table (6.6) and (6.10) shows the OLS regression results of Myanmar FDI model with relevant explanatory variables by analyzing time series data.

Table (6.6) The OLS regression results of (Trade Openness and other variables)

	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variables	**OLS**	**SE**	**OLS**	**SE**
constant	4690.00	30527	85	100
Trade Openness ratio(to)	64.00	888	-0.23	2.9
Exchange rate volatility(ervol)	-7779**	3025	-13	10
Log Price index(pindex)	44.00	269	0.3	0.9
Labor force participation rate(lpr)	-71.00	406	-1.1	1.3
Electric capacity production(erc)	708***	109	1.3***	0.4
F-statistics	51***		6***	
Adjusted R-square	0.91		0.51	
no: of observation	25		25	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. SE are Standard Errors.

Table (6.6) shows the REM results of trade openness and other determinants of explanatory variables on the net inflow of FDI in Myanmar by using time series data. All explanatory variables need to demonstrate the soundness of model specification due to insignificant expect for exchange rate volatility and electric capacity production variables in Myanmar. Trade openness ratio shows indirectly related to FDI but insignificant. Unlike other ASEAN countries, Myanmar faced US and Europe countries' long time sanction of the trade embargo. If Myanmar adopted free trade policy and any sanction will not effect on Myanmar trade sector, Myanmar can build the foreign investors' belief investing in Myanmar. This fact seems highlights the trade openness of Myanmar economy as well chiefly impact

on FDI inflow. Likewise, due to a long-time Myanmar adopted multiple exchange rate system, exchange rate volatility is negatively related to FDI inflow value with five percent level significant but not for FDI in percentage of GDP. Furthermore, the labor force participation rate is indirectly related to FDI meaning that foreign investors want to apply the skilled labor and wages rather than labor force participation inside the host country although Myanmar is a labor abundant country. Price stability will be one essential point for doing business to be stable. If Myanmar can use enough electrical energy to operate business, the investors will be noted this fact as one favorable infrastructure facility to do business in Myanmar.

Table (6.7) The OLS regression results of Export percentage of GDP variables and others)

	Dependent variables			
	FDI (fdi value)		FDI %of GDP(fpgdp)	
Explanatory Variables	**OLS**	**SE**	**OLS**	**SE**
constant	7050	23359	94	71
Export percentage of GDP(xpergdp)	-5.30	14.30	-0.08*	0.04
Exchange rate volatility(ervol)	-7900**	3033	-15	9.2
Log Price index(pindex)	81.00	216	0.64	0.65
Labor force participation rate(lpr)	-102.00	312	-1.2	0.95
Electric capacity production(erc)	715***	86	1.3***	0.26
F-statistics	51***		8***	
Adjusted R-square	0.91		0.58	
no: of observation	25		25	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. SE are Standard Errors.

Table (6.7) shows another estimation type concerns with Myanmar FDI flow by checking with export in percentage of GDP. Myanmar Export in percentage of GDP can explain the model's fitness in estimating FDI in percentage of GDP significant with 10 percent level. Other explanatory variables are insignificant but electricity production capacity

is largely impact on FDI inflow in both two estimation. Like previous results, exchange rate volatility is indirectly effect on FDI value statistically significant with five percent level. This can conclude that if exchange rate stability in Myanmar, FDI flow will increase otherwise is not.

Table (6-8) The OLS regression results (Without trade openness ratio)

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variable	**OLS**	**SE**	**OLS**	**SE**
constant	6115.00	22713	80	75
Exchange Rate volatility(ervol)	-7779**	2949	-13	9.7
Log Price index(pindex)	57.00	200	0.26	0.66
Labor force participation rate(lpr)	(-90)	304	-1.04	0.99
Electric capacity production(erc)	712***	84	1.3***	0.28
F-statistics	67***		8***	
Adjusted R-square	0.92		0.54	
no: of observation	25		25	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. SE are Standard Errors.

In Table (6.8), It can see OLS regression results of other variables without trade effects on Myanmar FDI inflow. Both two types of estimations are similar. Like the previous outcomes, log price index, labor force participation rate variables are insignificant. Although trade openness effect on FDI flow, the results are not different between them.

Table (6-9) The OLS regression results (Only Trade Openness and exchange rate volatility)

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variable	**OLS**	**SE**	**OLS**	**SE**
constant	-404	593	1	1
Trade Openness ratio(to)	3660*	2060	4.02	3
Exchange rate Volatility(ervol)	6577	9255	1	13
F-statistics	1.9		0.90	
Adjusted R-square	0.07		-0.01	
no: of observation	25		25	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. SE are Standard Errors.

Table (6-10) The OLS regression results (Only export and exchange rate volatility)

	Dependent variables			
	FDI (fdi)		FDI %of GDP(fpgdp)	
Explanatory Variable	**OLS**	**SE**	**OLS**	**SE**
constant	-436.00	366.00	2.03***	0.6
export (percentage of GDP) (xpergdp)	73***	24	0.006	0.04
Exchange rate Volatility(ervol)	4450.00	8301.00	0.99	14.01
F-statistics	5.2**		0.02	
Adjusted R-square	0.26		-0.09	
no: of observation	25		25	

*, **, *** dominate statistically significant of 10%,5%,1% respectively. SE are Standard Errors.

Table (6.9) and Table (6.10) the estimation results of the Random Effect for FDI inflow only focus on trade openness ratio and export ratio separately estimated together with exchange rate volatility on FDI inflow to be match the model. The outcomes are insignificant, and both two explanatory variables cannot explain two explained variables. The export ratio is better than to explain the model compare than trade openness ratio for Myanmar FDI

inflow and both two explanatory variables can explain for FDI inflow value only. There are no possible results for FDI including percentage of GDP in Myanmar.

6.2 Policy Implication and Conclusion

FDI is one favorable determinant of economic development for developing countries. Some ASEAN countries; especially Thailand, Malaysia and Indonesia and the Philippines could absorb FDI efficiently to promote their GDP. Likewise, Vietnam is also accelerating their economy adopting free trade policy accompanied by catch up FDI inflow. Currently, these ASEAN countries have already taken off their economic momentum applied by FDI inflow to their economies. Trade openness and exchange rate stability are the essential key points for promoting FDI inflow for ASEAN countries. However, the previous long time sanction of US and EU countries, Myanmar economy cannot promote trade sector, and it has weakness point for attracting foreign investment to enter Myanmar economy. It is critical to transforming Myanmar's economy to be development country. Myanmar is a labor abundant country like other ASEAN member countries and has a comparative advantage in lower labor cost in attracting FDI in export-oriented labor-intensive sectors although cannot apply efficiently yet. Myanmar needs to promote their infrastructure sector to operate business smoothly to attract FDI inflow. Current Myanmar has much political stability, and it is one key point for Myanmar trade sector and FDI inflow. Furthermore, Myanmar adopted managed floating exchange rate system practically.

Table (6.9), and (6.10) shows the OLS regression results of the model focus only on trade openness, export and exchange rate volatility impact on Myanmar FDI inflows without other influences variables. Trade effects and exchange rate volatility cannot explain the model to be validity in both types of estimations. F-statistics are insignificant as well adjusted R-squared are not soundness to explain model. This reflects Myanmar FDI improvement depends on other effects comparer than trade sector improvements and exchange rate.

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promote their infrastructure sector to operate business smoothly to attract FDI inflow. Current Myanmar has much political stability, and it is one key point for Myanmar trade sector and FDI inflow. Furthermore, Myanmar adopted managed floating exchange rate system practically.

This paper is to find out the impact of trade and exchange rate stability on foreign direct investment inflow in ASEAN countries and Myanmar economy as the case study covered by the period of 1990-2014. Focusing on ASEAN 8 countries FDI inflow excludes Singapore, Bruni, and Timor-Leste by using panel data analysis of Random Effect. When analyzing the model's soundness, two explained variables used in each estimation and shows that FDI in percentages of GDP can explain more than FDI net inflow value for ASEAN case but reverse results for Myanmar case. The trade openness ratio is directly related to FDI inflow, and it can prove the nation's free trade policy effect on foreign direct investment inflow for ASEAN countries as one essential part but do not prove in Myanmar FDI inflow analysis. Exchange rate volatility impact on FDI inflow can show significantly in Myanmar FDI inflow not related to ASEAN FDI inflow. If Exchange rate volatility increase, FDI inflow will decrease. If a host country's export sector will improve, FDI inflow also increased. Because of the favorable export market of host country can attract FDI to enter in the country. Other explanatory variables of price index, labor force participation rate and electric capacity production also positive related to FDI for ASEAN countries. As the time series analysis of Myanmar FDI inflow, foreign exchange rate stability is negatively related to FDI inflow due to Myanmar adopted multiple exchange rate system since a long time. As the conclusion, the analyzing model can prove the trade

openness effects on FDI inflow in ASEAN countries and exchange rate volatility is appropriate to explain the impact on Myanmar FDI inflow. Hausman-Taylor test show Random Effect Model is appropriate for this study.

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