Article

Impacts of Foreign Capital Inflows on Economic Growth in 6 ASEAN Countries: A Panel Data Analysis

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Abstract

This paper examines the impact of different categories of foreign capital net inflows (FDI, Portfolio investment, and other investment) as well as domestic savings on economic growth in 6 ASEAN countries, namely Indonesia, Malaysia, Philippines, Singapore, and Thailand, and Lao PDR. Regression analyses based on Panel Fixed-Effects estimation, show that foreign capital inflows at aggregate level is negatively correlated with real GDP per capita growth rate. At disaggregate level, only FDI has significantly positive impact on real GDP per capita growth rate in the two periods while portfolio investment is not found to have any significant impact on growth in the studied periods. Short-term capital flows such as other investment is found to have negative impact on growth rate of real GDP per capita in the two sample periods, and its impact becomes statistically significant in the recent period, indicating the increase in its volatile nature. The results suggest that domestic savings should be effectively mobilized and channeled into productive investments. Besides, in the context of increasing global competition for FDI, developing countries should formulate policies to improve local skills and their human capital as to enhance the countries' absorptive capacity to reap benefit from FDI as well as to improve the quality of FDI that a country can attract.

I. Introduction

One of the key macroeconomic policies for most of developing and emerging and economies

is to achieve sustainable economic growth. Theoretically, savings and investment are the two key intermediate macro variables playing an important role in economic growth. Therefore, there have been enormous studies on the relationship between savings, investment, and economic growth. Dated back to the (Harrod, 1939) and (Domar, 1946) growth model argued that saving is the main driving force for economic growth. Many economists have advocated its positive roles in the growth process irrespective of its origin whether it is mobilized domestically or coming from overseas.

During the 1990s, developing countries with higher self-financing ratios, which were financed by domestic savings without reliance on external borrowing, grew faster than those with the low self-financing ratio(Aizenman, Pinto, & Radziwill, 2007). However, the development process of many developing and under-developed countries is constrained by insufficient domestic resources. Therefore, foreign savings are encouraged via unrestricted capital flows in forms of direct investment, portfolio investment, and loans, to meet up the two conventional gaps: investment-savings gap and export-import gap.

Since the 1980s, international capital movement, flows of capital from developed countries to emerging and developing countries, in particular, have sharply increased and the impact of foreign shocks on emerging economies have become greater. Thus, numerous studies have been conducted to investigate the effects of capital account liberalization on economic growth. The bulk literature on the effects of foreign capital flows on economic growth have shown two opposing views. One is the positive view that foreign capital inflows bridges domestic resource gap, and promote investment and economic growth in developing countries. The opposite view is that foreign capital inflows do not significantly contribute to economic growth, and rather highly leads to financial instability. During the 1990s, the ASEAN region has been the largest recipient of FDI, as well as short-term capital inflows, relative to gross domestic product (GDP). In addition, as pointed out by (Montiel & Reihart, 1999) that the Asian financial crisis in 1997 was attributed to the increase in short-term capital flows or “hot money” owing to the policy response to the surge in capital inflows.

The Asian financial crisis revealed that capital flows are volatile due primarily to short-term debt inflows, indicated by the sudden stop of short-term capital inflows (portfolio investment and other investment), followed by the massive outflow of the capital. Besides, the empirical evidence pointed out the volatility of capital flows that in recent years, capital flows influence pro-cyclically on the economy of emerging countries (OHTA, 2015), (Ocampo & Palma, 2008). Before the crisis hit, economic development which was fueled by short-term capital flows or “Hot Money”, was highly vulnerable to the crisis as pointed out by (Mishra, Mody, & Murshid, 2001) that more intense private capital flows were associated with the more intense crisis.

This is evidenced by the fact that these ASEAN countries experienced during the 1990s, especially Thailand in which the 1997 crisis triggered and the country was severely hit, that the so-call “bubble economy” was fueled by the voluminous inflow of short-term loans, as illustrated in figure 2.1 in appendix, which peaked at 9.8 percent of GDP in 1995, and then turned out to stop, followed by massive outflow of short-term capital. The net inflow marked -15.4 percent of GDP in 1998, resulting in the economic meltdown.

During the 1990s, especially before the Asian financial crisis hit, the ASEAN countries

experienced high economic performance. The high economic growth of these countries was closely associated with the international capital movement. In particular, these countries have substantially relied on foreign capital inflows, especially foreign direct investment (FDI), with the average net inflow of 2.5 percent of GDP per annum. FDI was a key financing source for investment as well as short-term capital inflows such as portfolio investment and other investment of the countries during the period. The allocation of FDI among sectors varies among countries. Malaysia and Thailand put more emphasis on manufacturing, while FDI inflows to the services sector are the highest in Singapore, Indonesia, and the Philippines. Moreover, FDI inflow in Lao PDR, especially in the recent period since the 2000, has concentrated on capital intensive sector: mining and electricity generation, which has driven economic growth but not generated employment in the country. Among the countries, Singapore is the top FDI recipient country which accounts for more than half of total FDI to the whole region (52 percent), followed by Thailand ranks the second with a 13 percent share, Indonesia with 11 percent, and Malaysia with 10 percent.

On the contrary, increase in domestic investment through mobilization of domestic resources is perceived to be the stable and sustainable growth engine. The presence of substantial foreign capital flows may displace domestic saving/investment, resulting in high level of external reliance for economic development that may confront the countries with external shocks. Large short-term inflows lead to an investment boom in the equity and real estate markets and increase the fragility of the financial system. As can be seen during the crisis hit, the sudden stop of capital inflows and massive capital flight led the economic growth to plunge and income per capita fell.

Past studies on the impact of foreign capital inflows in ASEAN have focused mainly on FDI, whereas study on the impact of short-term capital flows into this region is limited. Most of the studies emphasize on inflows of foreign capital, however, in terms of net inflows (inflows minus outflows to reflect the net amount of capitals retaining in the countries) emphasis is limited. Therefore, the objective of this study is to investigate the differential impact of foreign capital net inflows on economic growth in 5 ASEAN countries, namely, Indonesia, Malaysia, Philippines, Singapore, and Thailand. The time span of this study is 26 years from 1990 to 2015. This due to foreign capital flows into these countries have marked significant increase since the 1990 onward. This study further emphasizes on the recent 16 years from the year 2000 to 2015 that the second surge of capital flows began in the early 2000s. Moreover, capital flows in the recent period are more volatile in their nature compared with the flows of capital during the 1990s. On the one hand, in the recent studied period, the Lao PDR is also included in the analysis. This due to this country has also heavily relied on foreign capital inflows for economic development since the year the 2000s onward.[1)]

This paper has four remaining sections. Section II is general of literature impacts of foreign capital inflows on economic growth. Section III describes data and methodology. Section IV explains the results of statistical analysis on the growth rate of real GDP per capita, and the last section concludes this paper and gives policy recommendation.

II. Literature Review

While most of the empirical studies on growth impact of foreign capital flow emphasized on the effect of FDI, the study on effects of short-term capital flows on growth is limited. An empirical study found that foreign capital flows have a positive correlation with economic growth (GHEERAERT & MANSOUR, 2005), whereas other argued that capital inflows contribute to growth only if the banking sector has reached a certain level of development (Bailliu, 2000). Additionally, it is argued that more intense capital flows are associated with more intense or frequent crises (Mishra, Mody, & Murshid, 2001).

Capital account/ financial account liberalization have been undertaken substantially in most of Asian countries since 1990s, and in the recent 10 years, the liberalization have been so much different from the past decades in terms of size of capital movement and volatility. Therefore, the time span of this study starts from the 1990 to 2015, according to the availability of data.

In addition, empirical studies conducted in the past may not fully reflect the recent or current situation and impact of capital flows on economic growth in the recent years. Most of past studies emphasized on countries outside ASEAN region and the period of studies are outdate, such as study by (GHEERAERT & MANSOUR, 2005) based on data of 183 countries during 1975-2001 period. In addition, some studies that focused on ASEAN countries were also out of date, for instance, study by (Almasaied, Baharumshah, & Rashid, 2008) using data of 5 ASEAN countries from 1986 to 2002, which may not reflect the recent and current situation, especially the recent situation in the 6 ASEAN countries including Lao PDR. More importantly, studies in literature used data on the inflows of foreign capital, neglecting the effect of the outflows of capitals. Therefore, this study focuses on the impact of net inflows (inflows minus outflows) of capitals to reflect the net amount of capitals retaining in the countries.

Table 1: Studies on impacts of foreign capital on economic growth

Authors	Studied Country/Country Group (Time Period)	Methods	Findings
(Ahmad & Hamdani, 2003)	32 developing countries (1996-1992)	Fixed effects & Random Effects estimation	The contribution of FDI to economic growth is less than that of domestic private investment which is more consistent and reliable. The inconsistent of FDI is explained by the difference in sector-wise composition of FDI across countries.
(Asghar, Nasreen, & Rehman, 2011)	14 selected Asian Countries (1983-2008)	Panel Cointegration (Fully-Modified OLS: FMOLS)	The positive relationship between economic growth and FDI inflows. However, only in the case of Malaysia that bi-directional causality between FDI and economic growth exists, whereas FDI-led growth is found only in the case of Singapore, Thailand, Japan, and Nepal.
(Suliman & Elian, 2014)	Jordan (1980-2009).	Cointegration, Vector Error Correction Model (VECM)	developed financial markets are an essential precondition for the positive impact of FDI on economic growth, reflecting host countries' ability to exploit FDI more efficiently
(Okafor, Ezeaku, & Eje, 2015)	Nigeria (1987-2012)	OLS & Granger Causality test	FDI and portfolio investment have the significantly positive effect on economic growth. FDI contributes to the improvement of labor and increase in capital, and also transfer new technology to host country. It is also found that the effect of portfolio investment on the growth is higher than that of FDI in this country, this due to it enhances liquidity in the capital market resulting in broader and deeper market, and enable small firms accessing to the capital market to meet their financial needs.
(Inekwe, 2013).	Nigeria (1990-2010)	Co-integration model and Vector Error Correction Model (VECM)	FDI in the servicing sector has a positive relationship with economic growth for the period studied. However, FDI in the manufacturing sector has a negative relationship with long - run growth in this economy. In addition, FDI in the manufacturing sector has positive relationship with employment, while FDI in the service sector has a negative significant relationship with employment rate

(Almasaied, Baharumshah, & Rashid, 2008)	5 ASEAN countries (1986–2002)	Auto Regressive Distributed Lag (ARDL)	Export is proved to be the main engine for growth. FDI has a positive impact on growth but less than that of domestic investment. In addition, human capital and financial intermediation are significant factors contributing to economic growth.
(Blomstrom, Lipsey, & Zejan, 1994)	101 Developing countries (1980–1985)	3 Stage Least Squared (3SLS)	Inflows of FDI has a positive impact on domestic investment, especially in long run. Thus as the investment is the growth engine, the positive effect of FDI on domestic investment implies that it contributes to economic growth. However, in some countries, FDI is found to crowd in domestic investment.
(Bayar, 2014)	Emerging Asian Economies (1982–2012)	Co-integration test and VECM	In long run, gross domestic savings, domestic investment, and FDI positively affect economic growth. In fact, economic growth also feeds back domestic saving and investment.
(Borensztein, Gregorio, & Lee, 1995)	69 developing Countries (1970–1989)	Seemingly Unrelated Regression Technique (SUR)	FDI is an important factor contributing to economic growth, and its impact on growth is higher than that of domestic investment. However, the contribution of FDI to economic growth only when the host country has a sufficient absorptive capability of the advanced technologies available in the country.
(El-Wassal, 2012)	16 Arab countries (1970–2008)	Dynamic Panel (Generalized Method of Moments: GMM)	The limited or negligible impact of FDI on economic growth. To reap growth benefit of FDI, it is important to improve preconditions of the host country such as human capital, financial development, trade openness as well as physical infrastructure.
(Gursoy, Sekreter, & Kalyoncu, 2013)	Azerbaijan, Kyrgyz Republic, Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan (1997–2010)	Granger Causality test	Unidirectional causality running from FDI to GDP for the case of Azerbaijan while there is bidirectional causality between the two variables for the case of Turkmenistan.
(Kotrajaras, 2010)	15 East Asian countries (1990–2009)	Panel Fixed-Effects estimation	FDI does not necessarily enhance economic growth. It has the positive impact on the economic growth only in the countries having the appropriate economic conditions such as human capital, trade openness.

(Soumia & Abderrezzak, 2013)	Algeria, Morocco, and Tunisia (1980–2010)	Dynamic Panel (Generalized Method of Moments: GMM)	foreign direct investment affects positively the growth rate in the long run and improves the economic situation under particular economic and financial conditions, such as the adoption of an export promotion trade regime, restoring international competitiveness and diversification of exports
(Tiwari & Mutascu, 2011)	23 Asian countries (1968–2002)	Fixed effects & Random Effects estimation	FDI inflows and export positively affect economic growth, whereas human capital is the factor behind the FDI and export-led growth in Asian countries.
(Xu & Wang, 2007)	China (1980–1999)	OLS estimation	Economic growth and domestic investment are positively affected by FDI inflows. FDI enhance investment efficiency, hence stimulate economic growth.
(Saqib, Masnoon, & Rafique, 2013)	Pakistan (1981–2010)	OLS estimation	Negative impact of FDI on economic growth, whereas domestic investment contributed to economic growth of the country
(Katerina, Papanastasiou, & Vamvakidis, 2004)	17 Transition Economies (1995–1998)	Bayesian Analysis	FDI is not funded to have any significant impact on economic growth. The insignificant impact of FDI was due mainly to data limitation.
(Yalta, 2011)	China (1982–2008)	maximum entropy bootstrap based approach	FDI has no impact on economic growth, especially at the aggregate level. This due to specific characteristics of areas where FDI firms locate, for instance, more developed coastal regions gain more from FDI whereas the provinces in western and central regions did not gain benefit from FDI.
(Mohamed, Singh, & Liew, 2013)	Malaysia (1970–2008)	Vector Error Correction Model (VECM)	Bi-directional causality between economic growth and domestic investment, while there is no causality between FDI inflow and economic growth. In short-run, FDI crowds out domestic investment.
(Sooreea-Bheemul & Sooreea, 2013)	28 developing and emerging countries (1980–1998)	Granger Causality test	Bi-directional causality between FDI and economic growth, while there was unidirectional causality from economic growth to domestic investment. FDI leads to increase in domestic investment through spillover effects and linkage effect.
(Turkcan, Duman, & Yetkiner, 2008)	23 OECD countries (1975–2004)	Generalized Method of Moments: GMM	Bi-directional causality between FDI and economic growth. Additionally, increase in export contributes to the increase in FDI and economic growth.

(OHTA, 2015)	21 OECD and Emerging Economies (1975–2013)	OLS estimation	Small economies with capital and financial liberalization are observed to have been more affected by foreign capital inflows on domestic savings, investment and economic growth that substantial reliance on foreign capital could increase economic instability.
(Gudaro, Chhapra, & Sheikh, 2012)	Pakistan (1981–2010)	OLS estimation	Positive impact of FDI on economic growth
(Chakraborty & Nunnenkamp, 2006)	India 1987–2004	Granger Causality test	Differences effects of FDI on Economic growth. In manufacturing sector and service sector, FDI enhance growth, however, in the primary sector, it does not have any significant impact on output growth.
(Bayar, 2014)	Turkey (1980–2012)	Co–integration test and VECM	Long run relationship among FDI, domestic investment, and economic growth: In short run and long run, FDI has negative impact on economic growth, while domestic investment has positive impact both in short run and long run
(BAHARUMSHAH & THANOON, 2006)	8 Asian countries (1982–2001): Malaysia, the Philippines, Singapore, Thailand, Korea, China, Myanmar, and Fiji.	Dynamic Generalized Least Squares (DGLS)	By applying DGLS estimation technique, the results revealed that domestic savings significantly contribute to long–term economic growth. On one hand, it was also found that FDI leads growth both in the short and long run. In addition, the influence of FDI on growth is much higher than that of domestic savings. On a contrary, short–term capital inflow has the adverse effect on economic growth both in long–run and short–run.
(Pradhan, 2009)	5 ASEAN Countries: Indonesia, Malaysia, Philippines, Singapore and Thailand (1970–2007).	Panel Cointegration and Granger Causality test	Based on co–integration and causality test, both at the individual level and panel level. The results show that, at the panel level, foreign direct investment and economic growth are co–integrated, indicating the presence of long–run equilibrium relationship between them. However, at the individual country level, this is true only for Thailand and Singapore. Moreover, the Granger causality test also found that there are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia.

(Aizenman, Jintarak, & Park, 2011)	Latin America & Caribbean, East Asia & Pacific, Europe & Central Asia, Middle East & North Africa, South Asia, Sub-Saharan Africa, and High-Income country group (1990-2010)	Fixed-Effects Estimation	Lagged FDI is positively associated with economic growth, both in pre-crisis and post-crisis periods, and the effect is even more robust during the entire studied period that includes the crisis period. In contrast, the impact of lagged short-term capital flow is nil in pre-crisis periods, whereas negative and large during the crisis period. The impacts of capital flows may differ between crisis and non-crisis periods.
(GHEERAERT & MANSOUR, 2005)	183 countries classified in 3 country groups: developed, developing, and Transition Countries (1975-2001)	fixed effect LSDV, and SUR	Capital flows are unevenly distributed across countries. In developed countries, the inward private capital flows are higher than in the less developed countries. The empirical investigation of the relationship between capital flows and economic growth shows the positive relationship, and the relationship is robust to various measures of capital flows.
(Bailliu, 2000)	40 developing countries (1975-1995)	GMM estimation technique	A synthetic indicator of capital inflows in those countries was used to examine the relationship between these inflows and economic growth. The results revealed that capital inflows contribute to growth only if the banking sector has reached a certain level of development.

III. Data and Methodology

Data

Real GDP per capita growth rate is the dependent variable in this study. When comparing one country to another, using GDP per capita is more useful and more reliable measure than GDP, since it shows the relative performance of the countries in an individual perspective. In addition, GDP per capita is considered as an appropriate proxy for the level of economic development subject to population, therefore, it normalizes economic development by the country size. The real GDP per capita is referred to GDP per capita based on local currency at 2010 constant price or inflation-adjusted GDP per capita.

The first explanatory variable is the starting level of GDP per capita, denoted by INITIAL_GDP in the model. It is the per capita GDP of the year started. The unit of this variable is constant 2010 dollars, thus it is adjusted for inflation. By including this variable in the statistical model, the size of the economy is controlled. The theory of conditional convergence implied that richer economies tend to grow slower than poorer economies, thus the expected sign of its coefficient is negative. The idea of convergence in economics (also sometimes known as the catch-up effect) is the hypothesis that poorer economy's income per capita tend to grow at faster rate than that of richer economy. As a result, economy should eventually converge in terms of per capita income. Developing countries have higher potential to grow at a faster rate than developed countries due to diminishing returns (especially, returns to capital) are not as strong as in capital-rich (developed) countries. Moreover, poorer countries can replicate the institutions, technologies, and production methods of developed countries.

Foreign capital net inflows, both net inflow of total capital and the disaggregated capital net inflows, consisting of three major classifications of capital net inflows (in accordance with the categorization of the IMF BOP data), such as FDI, portfolio investment, and other investment, are the main explanatory variables in this study. The net capital flow variables are calculated as inflows minus outflows, which account for the exact amount of the capital available for investment in the country. Change in capital net inflows is the matter of change in the inflows of capital (Inflows are the value of Inward investment made by the non-residents investors in the reporting economy) and/or the change in the outflows of capital (Outflows are the value of outward investment made by the residents of the reporting economy to external economies).

Among the foreign capital flows, FDI is likely to be an engine of growth. This is due to FDI may enhance capital formation and employment augmentation, promote manufacturing exports, bring special resources such as capital, managerial skills, knowledge flows and others, and results in technology and spillover effects. In addition, these ASEAN countries have substantially relied on FDI for economic development, especially during the Pre-Asian crisis years. Therefore, it is expected to have a positive sign of its coefficient.

The other types of foreign capital are short-term capital: portfolio investment and other investment. Other investment includes loans, the financial transaction in currency and deposit, and trade credit and advances. Both equity portfolio investment and other investment

are volatile in their nature since they are easily reversible and sensitive to fluctuations in expected risk-adjusted in international yield differentials. Therefore, the coefficients of this variable are expected to have negative signs.

Gross domestic savings rate as the percentage of GDP is an explanatory variable of economic growth. Domestic savings is perceived to have a positive correlation with economic growth especially through the savings-investment link, hence it a main driving force of economic growth.

Gross capital formation or gross domestic investment, measured as the percentage of GDP, is an explanatory variable of economic growth. The data consists of investment by residents and non-residents. Due to the lack of data on investment by residents, gross capital formation is used in the analysis as a proxy of domestic investment. Although gross capital formation consists of investment by foreign and local investors, it reflect (to some extent) the influence of domestic investment invested by residents or local investors, and in the regression the variable and FDI are in separate run to avoid multicollinearity and double counted FDI problems. With more reliance on domestic investment, which is domestically-financed investment, it would be the promising way to attain sustainable economic growth, thus the coefficient of domestic investment is expected to have a positive sign.

Domestic credit to the private sector by banks, which is a proxy of financial development as the share of GDP, is the financial support provided to the private sector as an engine of economic growth. Enacting policies that develop one country's the financial sector would be expected to expand economic growth. On the other hand, increase in domestic bank's credit to private sector enhances domestic investment level and income generation, hence, accelerates economic growth and increase in income and savings level. However, due to the fact, these 6 ASEAN countries have been mobilizing imported capital to finance investment through capital flows directly, therefore the coefficient of domestic credit to the private sector is expected to have mixed sign.

Trade, which is the sum of export and import value as the percentage of GDP. Trade openness which is commonly-used in international economics, is an explanatory variable. However, since trade is the sum of export and import, and as appears in GDP components in expenditure account, if the import is greater than export, the county's GDP decreases, and vice versa. Therefore, the expected sign of trade openness's coefficient is mixed. The increase in trade can result in magnified gains owing to large knowledge spillovers, the greater level of competition, product variety and technology transfer. Higher exports increase real output while higher imports mitigate production cost. Therefore, a high degree of trade openness is a growth enhancing policy tool. According to the comparative advantage theory, international trade leads to a more efficient use of a country's resources through the imports of goods and services that otherwise are too costly to produce domestically. In addition, as trade increase, especially the expansion of the export stimulates productivities by creating scale economies and increases foreign exchange earnings which provide greater access to the international markets(Krugman, 1997), (Esfahani, 1991). However, trade is highly dependent on the global economic situations, that is, international trade and world economy are inseparable. For instance, demand shocks drive consumption or investment booms in one country, the impacts may spill over into its trading partners through the in-

crease in demand for imports, which in turn boosts other economies.

The Asian and Global financial crises are also incorporated in the growth regression as the dummy variables that capture the effects of the crises. Evidence from past studies shows that crises reduce investment incentives, lower demand for the product, and increase uncertainty in the matter of the returns on capital as well as on the risk premium. Additionally, companies are faced with less favorable conditions for financing investment owing to more stringent standards regarding the limited supply of credit in coupled with the rising costs of borrowing （Pindydick, 1991), and (Pindyck & Solimano, 1993). Therefore, the coefficients of the two crises dummy variables are expected to have negative signs.

Methodology

Before the 1990s, capital flows to these ASEAN countries were not significant until the early 1990s. Since the 1990, flows of foreign capital into these countries has increased remarkably, especially in 1997, and since then the inflows marked a sharp decline. However, since the early 2000s, the second surge in capital flows began and ended abruptly during the global financial crisis years (2008 and 2009). On the other hand, capital flows in the latter period, since 2000 onward, have shown more volatile nature compared with the 1990s period. Therefore, this paper analyzes the impact of foreign capital net inflows and other observed factors on real GDP per capita growth rate for two periods: 1990 to 2015, and 2000 to 2015 periods.

Due to the economic growth of these studied countries and the flows of foreign capital are different in terms of size and volatility, especially before and after the Asian financial crisis. On the other hand, due to the data limitation for the case of Lao PDR, in the 1990s in particular, the country is excluded from the analysis for the 1990-2015 period. Besides, since the year 2000 onward, the country has substantially relied on foreign capital inflows, especially FDI, and loans to meet investment requirement of the country. During the recent five years, the country has also received the inflow of portfolio investment, stemming from the year 2010 when the Lao Stock Market was inaugurated.

Analyses based on multiple regression, utilizing panel and cross-section data of the selected ASEAN countries, are conducted. In the regression analyses, fixed effect of each explanatory variable is examined. In Panel analysis, the term fixed effects estimator is used to refer to an estimator for the coefficients in the regression model. If we assume fixed effects, we impose time-independent effects for each entity (country in this study) that are possibly correlated with the regressors. The fixed effect assumption is that the individual specific effect is correlated with the independent variables. By using the fixed effects method, it is possible to control for all possible characteristics of the Individual country in the study, thereby eliminating potentially large sources of bias even without measuring them, so long as those characteristics do not change over time. In a fixed effects model, the intercept varies across countries. For the 2000-2015 period, the country dummy variable for Lao PDR is included in the regressions to capture the influence of this country specific effect on real GDP per Capita growth rate (as shown in equation 2).

Some explanatory variables are highly correlated. As shown in table 3 in the appendix, domestic credit to the private sector is highly correlated with total foreign capital inflow,

domestic savings rate, and trade openness, with correlation degree of 0.609, 0.787, and 0.670, respectively. Therefore, to avoid multicollinearity problem, the highly correlated variables are in the separate run.

Due to data limitation, education attainment as a proxy for human capital is not included in this empirical analysis. The models for the two studied periods are specified as follows:

1). GDP per Capita Growth model for the 1990-2015 period (One-way Fixed Effects):

$$GDP\_Gr_{it} = \alpha_i + \beta_1 Initial\_GDP_i + \beta_2 DS_{it} + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it} + \beta_6 \mathrm{CR}_{it} + \beta_7 \mathrm{Crisis}_{97} + \beta_8 \mathrm{Crisis}_{08} + \mu_{it} \quad (1)$$

2). GDP per Capita Growth model for the 2000-2015 period (Two-way Fixed Effects):

$$GDP\_Gr_{it} = \alpha_i + \beta_1 Initial\_GDP_i + \beta_2 DS_{it} + \beta_3 Domestic\_INV_{it} + \beta_4 FC_{it} + \beta_5 TR_{it} + \beta_6 CR_{it} + \beta_7 D_{LAO} + \beta_8 Crisis_{08} + \mu_{it} \quad (2)$$

Where: i (i=1…..N) denotes the country, and t (t=1……T) denotes time (year), and α *is* time-invariant country specific effects

GDP_Gr: real GDP per capita growth rate as dependent variable.

Initial_GDP: real GDP per capita in the starting year, referred to the year 1990 for the 1990-2015 period, and the year 2000 for the 2000-2015 period

DS: gross domestic savings rate

Domestic_INV: gross domestic investment rate

FC: the vector of foreign capital net inflows which consists of total foreign capital inflows (TFC), foreign direct investment (FDI), Portfolio investment (Portfolio), and Other investment (OTHER)

TR: trade (Export + Import)

CR: domestic credit to private sector by banks

D_{LAO}: dummy variable for Lao PDR (it takes the value 1 if the country is Lao PDR, and 0 otherwise)

$Crisis_{97}$: dummy variable that captures the existence of Asian Financial Crisis (it takes the value 1 if the years are 1997 and 1998, and 0 otherwise)

$Crisis_{08}$: dummy variable that captures the existence of Global Financial Crisis (it takes the value 1 if the years are 2008 and 2009, and 0 otherwise). μ is the error term

IV. Results and Discussion

Table 2 shows the regression results from balanced panel data of 5 ASEAN countries for the two studied periods: 1990-2015 (column 1 through column 6) and 2000-2015 (column 7 through column 12), and table 2.1 show regression results of 6 ASEAN countries including Lao PDR during the 2000-2015 period. Real GDP per capita growth rate is regressed by foreign capital inflows, domestic savings, domestic investment, financial development, trade openness, and initial level of GDP per capita. The nature of each variable in the regressions and the results are to be presented as follows:

Table 2: Real GDP per Capita Growth Regression results of 5 ASEAN countries

Explanatory variables	1990-2015					
	1	2	3	4	5	6
Initial GDP	−0.0001*** (0.00006) (−1.9421)	−0.000007 (0.00006) (−0.1184)	−0.00003 (0.00006) (−0.5053)	−0.00007 (0.00006) (−1.0950)	−0.00005 (0.00007) (−0.7665)	−0.00001 (0.00005) (−0.2182)
Domestic Savings	0.1856 ** (0.0757) (2.4528)	−	−	−	−	−
Gross Domestic investment	−	0.2381*** (0.0449) (5.3077)	−	−	−	−
Total Capital flows	−	−	0.1205*** (0.0440) (2.4719)	−	−	−
FDI	−	−	−	0.2617*** (0.0960) (2.7620)	−	−
Portfolio Investment	−	−	−	−	0.0014 (0.0583) (0.0232)	−
Other Investment	−	−	−	−	−	0.1018** (0.0442) (2.3024)
Trade	−	0.0078 (0.0116) (0.6712)	−	−	−	−
Credit to private sector	−	−	−	−0.0217 (0.0197) (−1.1019)	−0.0221 (0.0203) (−1.0873)	−0.0224 (0.0199) (−1.1233)
Crisis 1997	−7.7189*** (1.0107) (−7.6372)	−7.5567*** (0.9220) (−8.9595)	−7.2843*** (0.9926) (−7.3383)	−6.8572*** (1.1607) (−5.9078)	−6.6609*** (1.1938) (−5.5796)	−6.2801*** (1.1799) (−5.3225)
Crisis 2008	−3.9827*** (0.9974) (−3.9933)	−3.3439*** (0.9255) (−3.6130)	−3.5910*** (−1.0028) (−3.5810)	−3.3451*** (1.0567) (−3.1658)	−4.2113*** (1.0399) (−4.0497)	−4.1901*** (1.0164) (−4.1223)
Constant term	−0.5715 (2.4482) (−2.3334)	−3.4623 (2.5789) (−1.3425)	5.0858*** (0.7236) (7.0289)	6.0316*** (1.4384) (4.1933)	6.5390*** (1.4752) (4.4328)	6.1794*** (1.4468) (4.2710)
R^2 Observations	0.3930 130	0.4906 130	0.4401 130	0.4059 130	0.3691 130	0.3958 130

*Note: 1). Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

2). Countries included: Indonesia, Malaysia, Philippines, Thailand, and Singapore.

2000-2015					
7	8	9	10	11	12
−0.00007 (0.00009) (−0.7144)	0.00001 (0.00009) (0.1283)	−0.00002 (0.00009) (−0.2852)	0.00007 (0.00008) (0.4053)	0.0001 (0.00009) (1.6252)	0.0001 (0.00009) (1.5307)
0.1632 * (0.0906) (1.8018)	−	−	−	−	−
−	−0.0020 (0.0858) (−0.0236)	−	−	−	−
−	−	−0.1481** (0.0742) (−1.9950)	−	−	−
−	−	−	0.3174*** (0.0938) (3.3835)	−	−
−	−	−	−	−0.0242 (0.0559) (−0.4329)	−
−	−	−	−	−	0.0076 (0.0494) (0.1536)
−	0.0076 (0.0139) (0.5499)	−	−	−	−
−	−	−	−0.1243*** (0.0280) (−4.4464)	−0.1298*** (0.0315) (−4.1208)	−0.1262*** (0.0302) (−4.1742)
−	−	−	−	−	−
−3.8904*** (0.8198) (−4.7455)	−3.8132*** (0.8438) (−4.5190)	−0.0114*** (0.8207) (−4.8877)	−3.8172*** (0.7678) (−4.9717)	−4.6633*** (0.7811) (−5.9699)	−4.6755*** (0.7855) (−5.9526)
−0.6045 (2.7613) (−0.2189)	2.5777 (3.5639) (0.7233)	3.2522*** (1.1773) (2.7623)	11.8591*** (1.9955) (5.9429)	11.949*** (2.1823) (5.4754)	11.7668*** (2.1518) (5.4683)
0.2634 80	0.2336 80	0.2706 80	0.4678 80	0.3836 80	0.3822 80

Table 2.1: Real GDP per Capita Growth Regression results of 6 countries (2000-2015)

Explanatory variables	**2000-2015 period** (Indonesia, Malaysia, Philippines, Thailand, Singapore, Laos)					
	1	2	3	4	5	6
Initial GDP	−0.00003 (0.00002) (−1.3691)	−0.00001 (0.00004) (−0.3088)	−0.00003 (0.00002) (−1.1143)	−0.00004 * (0.00002) (−1.8337)	0.0001 (0.00008) (1.6049)	−0.000005 (0.00001) (0.3102)
Domestic Savings	0.0493 (0.0330) (1.4954)	−	−	−	−	−
Gross Domestic investment	−	0.0704 (0.0512) (1.3734)	−	−	−	−
Total Capital flows	−	−	−0.0646 (0.0563) (−1.1474)	−	−	−
FDI	−	−	−	0.2961*** (0.0818) (3.5786)	−	−
Portfolio Investment	−	−	−	−	−0.0196 (0.0537) (−0.3649)	−
Other Investment	−	−	−	−	−	−0.0213 (0.0468) (−0.4560)
Trade	−	0.0007 (0.0061) (0.1145)	−	−	−	−
Credit to private sector	−	−	−	−0.0087 (0.0071) (−1.2272)	−0.1235*** (0.0295) (−4.1874)	−0.0102 (0.0076) (−1.3450)
Crisis 2008	−3.2125*** (0.7032) (−4.5683)	−3.1657*** (0.0707) (−4.4790)	−3.1974*** (0.7068) (−4.5235)	−2.6098*** (0.6837) (−3.8171)	−4.6260*** (0.7574) (−6.1079)	−3.1811*** (0.7096) (−4.4829)
Dummy variable: Laos	2.6134*** (0.7501) (3.4839)	1.9497*** (0.6579) (2.9636)	2.7373*** (0.8857) (3.0905)	0.5663 (0.7453) (0.7598)	−	1.7199 ** (0.7591) (2.2656)
Constant term	2.6664*** (0.8980) (2.9694)	2.1683 (1.4501) (1.4953)	3.7933*** (0.3511) (10.8054)	4.4222*** (0.5316) (8.3190)	11.4666*** (1.9802) (6.7906)	4.5025*** (0.7591) (2.2656)
R^2 Observations	0.2707 96	0.2683 96	0.2635 96	0.3578 96	0.4208 86	0.2681 96

*Note: 1). Figures in Parenthesis are standard errors (upper), t-statistic (lower). * denotes significance level at 10%, ** at 5%, and *** at 1%.*

2). Portfolio investment data is not available for Laos from 2000 to 2009, therefore, number of observations in column5 is less than those in other columns

Total foreign capital net inflows

As indicated in column 3 of table 2, at the aggregate level, the net inflow of total foreign capital is positively correlated with the growth rate of real GDP per capita during the 1990-2015 period. The coefficient is significant at 1 percent level. However, during the 2000-2015 period, as shown in column 9 of the table, it turned out to be negatively correlated with growth rate of real GDP per capita, but its negative impact is not significant (as indicated in column 3 of table 2.1) when including Laos in the regression of the recent period. This indicates that foreign capital inflows in the recent period is more volatile in its nature compared with the 1990s.

FDI

After controlling for other determinants of growth, the findings shown in column 4 and column 10 in table 2, and column 4 of table 2.1 (of 6 countries) for the two sample periods, indicate that FDI is highly-correlated with real GDP per capita growth which is significant at 1 percent level. The results are in line with studies in literature and compatible with the fact that these countries, particularly during the 1990s, are the major FDI recipient countries. Despite its positive impact on economic growth, as suggested by Borensztein et al. (1995), and (Kotrajaras, 2010) found that FDI contributes to economic growth of host country only when the country has a sufficient absorptive capability of the advanced technologies, implying that country is benefited from FDI only when it has a minimum threshold stock of human capital. This is consistent with the case of Singapore and Malaysia, especially during the 1990s before the crisis.

Besides, although it is found that FDI could have significantly positive impact on economic growth, an empirical study conducted by (Rand & Tarp, 2002) has argued a different view. Their study results revealed that FDI inflows are very volatile. In the study, they assessed the relationship between FDI and output, the general relationship between the two variables was not found, and indicating there is no connection between domestic investment and FDI. Indeed, they showed that FDI is much volatile than foreign aid flows. As such, they argued that stabilizing FDI is important to modify business cycle fluctuations.

Additional to the Fixed-effects estimation, this study also investigate the causal links between FDI net inflow and real GDP per capita growth rate of the ASEAN-5 countries during the 1990-2015 period, and ASEAN-6 countries which includes Lao PDR for the 2000-2015 period. Table 8 in appendix shows that Granger Causality Test[2] results fail to reject the null hypothesis of no causality running from FDI net inflow to real GDP per capita growth and that of no causality running from real GDP per capita growth to FDI net inflow for both in the 1990-2015 period and 2000-2015 period. The results imply that there are no causality links between FDI net inflow and real GDP per capita growth rate in the two studied periods[3]. Although empirical results from panel fixed-effects estimation show that net inflow of FDI is positively correlated with real GDP per capita growth rate in the two studied periods, and panel cointegration test results in table 7 show that the two variable are cointegrated, real GDP per capita is not automatically caused by FDI. On the contrary, the incurrence of FDI inflow might be caused by investment climate in host country, for instances, trade policies, human capital, wage rate, infrastructure, tax and non-tax

incentives offered, and etc. On the other hand, while many studies in literature found that there are causality links between FDI and economic growth, it is not found any causal link between the two variables in this study. One additional reason behind this is that it might be due to the nature of the data used that is net inflow of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) which reflects the real amount of capital remaining in the country. Change in net FDI inflow is the matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, it does not significantly accelerate GDP growth, implying no causal link between FDI net inflow and growth rate of GDP as well as GDP per capita.

Additionally, in terms of inflow, (Asghar, Nasreen, & Rehman, 2011), however, found that only in the case of Malaysia that bi-directional causality between FDI and economic growth exists, whereas FDI-led growth is found only in the case of Singapore, Thailand. Moreover, evidence from panel cointegration and causality test of SAEAN-5 countries, namely, Indonesia, Malaysia, Philippines, Singapore and Thailand during 1970-2007 period, both at the individual level and panel level, show that at the panel level, foreign direct investment and economic growth are cointegrated, indicating the presence of long-run equilibrium relationship between them. However, at the individual country level, this is true only for Thailand and Singapore. On the one hand, the Granger causality test also found that there are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia. In addition, an empirical study revealed that in Malaysia during the 1970-2008 period, economic growth and domestic investment granger cause each other, whereas there is no causality between FDI inflow and economic growth, and FDI crowds out domestic investment in the short-run (Mohamed, Singh, & Liew, 2013).

Portfolio Investment

As shown in column 5 and column 11 in table 2, and column 5 of table 2.1, portfolio investment is not observed to have any significant impact on growth rate of real GDP per capita in the two studied periods. This might be due to the fact that this type of short-term capital flow is relatively volatile compared to FDI, and the increase in flowing out equity portfolio investment especially since the 1997 financial crisis. In addition, as mentioned earlier, the main cause of the crisis was attributed to the short-term capital flows, when the crisis triggered, there was the sudden stop of the capital inflows, followed by massive capital flight, and led the economic growth to plunge.

In fact, in the recent period, even though it is insignificant, portfolio investment turned out to be negatively correlated with real GDP per capita growth rate, as shown in column 11 in table 2, and column 5 of table 2.1. This indicates that portfolio investment become more volatile in its nature in the recent period.

Other Investment

Regression results shown in column 6 of table 2 indicate that other investment is

statistically-positive correlated with real GDP per capita growth rate during 1990-2015 periods, whereas in the recent period (2000-2015) as indicated in column 12 of the table, it is not found to have any significant impact on real GDP per capita growth. This might be due to the fact that economic growth of these countries, especially in the recent period, is substantially influenced by long-term capital such as FDI.

It should be noted that the significantly positive effect of other investment on growth rate of real GDP per capita in the 1990-2015 period, might be influenced by the substantial increase in short-term capital inflow, other investment, in particular, spurring the highly fragile growth in the 1990s, that is the macroeconomic growth being adversely impacted by the crises caused mainly by short-term capital flows.

Also, it might be due to the fact that these countries severely hit by the Asian financial crisis, which was mainly caused by the sharp increase in short-term capital inflows, have imposed capital controls especially the flows of short-term capital, in coupled with the increasing outward flows of capital from these countries, especially Thailand and Malaysia. Therefore, total foreign capital net inflow does not have any significant impact on real GDP per capita growth rate in the recent period.

However, in spite of the insignificant coefficient of other investment during the 2000-2015 period, result shown in column 6 of table 2.1 indicates that other investment has negative effect on the growth rate. This indicates the increase in volatility in relation to short-term capital flows. The pro-cyclical nature of short-term capital flow is illustrated by the large influx of short-term capital causes the economy to grow at the high rate then accompanied by the sudden stop of the flow due to the debt is recalled by the creditors, as a result, the massive capital, private debt, in particular, is flown out of the debtor's country, and adversely affects the economic growth(Seth & Ragab, 2012), (McCauley, 2008). On the one hand, the negative impact of other investment might be substantially affected by the influence of Lao PDR since the country has relied heavily on external borrowing.

Domestic Savings

As shown in column 1 and 7 of table 2, domestic savings rate is found to have the significant positive relationship with real GDP per capita growth rate for the case of 5 ASEAN countries during the 1990-2015 and 2000-2015 periods. The result shown in column 1 of the table 2.1 that Lao PDR is included, the impact of domestic savings on real GDP per capita growth rate becomes insignificant. This might be due to the influence of Lao PDR where domestic savings is relatively low and the growth is attributed to foreign capital such as FDI. In addition, it could be due to the fact that economic growth of this ASEAN countries has substantially influenced by foreign capital, especially FDI. On the contrary, it might be due to the domestically mobilized savings in these countries have not been directed towards investment to spur economic growth. As illustrated in figure 3.1 and 3.2 in the appendix, after the Asian financial crisis hit, investment in these countries sharply dropped and appeared to be stagnant thereafter, especially countries with the excess of savings over investment such as Singapore, Malaysia, and Thailand.

Domestic Investment

As indicated in column 2 of table 2, domestic investment in the 1990-2015 period is highly positive correlated with real GDP per capita growth which is significant at 1 percent level. This finding is in line with (Almasaied, Baharumshah,& Rashid, 2008). However, during the recent period between the year 2000 and 2015, domestic investment becomes insignificant and tend to have negative impact on the growth. This might be due to the fact that investment in these countries, especially Singapore, Malaysia, and Thailand has declined, and as it is one of GDP components in expenditure account, the decline in investment lowers the GDP. Additionally, Singapore and Malaysia are the two countries where the increasing outward investments have been observed in the recent period. On the other hand, regression results of 6 countries in the recent period as indicated in column 2 of table 2.1, domestic investment tends to have positive impact on the growth rate, but the coefficient is insignificant. This might also due to economic growth in these countries is highly associated with foreign investment, especially Lao PDR.

Financial development

As a proxy of financial development variable, domestic credit to the private sector by banks is found to have the negative impact on economic growth, especially during the 2000-2015 period, as indicated in column 10, 11, and 12 of table 2, and column 5 of table 2.1. This could be due to domestic banks' credits are not channeled into growth-oriented sectors. In fact, there are disparities in domestic banks' credit to private sector among these countries. Throughout the 1990-2015 period, countries with fairly high level of financial development are Malaysia, Thailand, and Singapore, with banks' credit to private sector accounting for 115.3 percent, 108.14 percent and 98.87 percent of their GDP, respectively; while those of Indonesia and Philippines are 34.78 percent and 33.41 percent of GDP, respectively, whereas Laos is lagged far behind (only 17.73 percent of GDP during 2000-2015 period). Additionally, those highly developed financial sector countries such as Singapore, Malaysia, and Thailand, despites the increasing trend in banks' credit to private sector as illustrated in figure 5.2 in appendix, figure 3.2 shows the domestic investment stagnation in the countries, and even decline in recent few years, implying domestic savings are not allocated to investment to boost economic growth.

Moreover, among the 6 ASEAN countries, during the 2000 and 2015 period, Indonesia and Lao PDR are the countries which domestic investment, as the share of GDP, exceeds the level of domestic credit to the private sector by banks, implying heavily reliance on foreign borrowing.

Trade

Trade openness which is the sum of import and export is not observed to have any significant impact on real GDP per capita growth rate for the studied periods. This could be due to the nature of data as shown in GDP component on expenditure account. The increase in trade is the increase in export and/or import. Therefore the increase in trade to GDP ratio that attributed to the increase in import will lead to decline in net export or even trade deficit, which will result in the decrease in GDP in absolute value. In terms of net

export(which is export minus import) as a GDP component, only Singapore and Malaysia have the surplus on trade balance throughout the 1990-2015 period, however, since the 2008 crisis these two countries as well as Thailand during the political turmoil years, have marked the decline trade balance due to the decline in export. The global financial crisis led to the decrease in demand for imported goods in international markets, affecting the decline in export from ASEAN countries.

On the other hand, the large-populated country like Indonesia, external trade is relatively small in terms of share of GDP, and domestic trade of this country might be more important as it has the large domestic market. On the contrary, the lower income countries such as the Philippines, and especially Lao PDR, have chronic trade deficit throughout the studied periods.

Besides, The ASEAN-5 countries such as Indonesia, Malaysia, the Philippines, Thailand, and Singapore, are quite more open to trade and involved in production chains, for which China is the processing hub or final destination. These countries have the fairly large export of commodities, either raw or processed (such as refined petroleum in Singapore and petrochemicals in Thailand). Therefore, China's slowdown and rebalancing may have a large impact on the countries' export to decline.

Initial GDP

As indicated in column 1of table 2, and column 4 of table 2.1, the initial level of real GDP per capita is negatively correlated with its growth rate. The significant results of the initial GDP variable are consistent with evidence from (Barro & Sala, 1991) and (Mankiw, Romer, & Weil, 1992) for the convergence of income levels among countries which indicated that rich country grows slower than the poor country. The results found in table 2 are compatible with the fact that during the recent 16 years, the low-income country like Lao PDR grows faster than those higher-income countries such as Singapore, Malaysia, as well as Thailand, Indonesia, and the Philippines.

The influence of Crises

As clearly indicated in table 2 and 2.1 that both Asian financial crisis and global financial crisis have significantly negative impacts on economic growth, especially the 1997 Asian crisis which has the greater impact than the 2008 crisis. This could be due to the difference in terms of the size of capital flows between the before and after the year 2000. Figure 2.1 and 2.2 in appendix show that net inflows of foreign capitals, especially short-term capital like other investment, are much lower in the years after the Asian financial crisis. And in the latter period, the ASEAN countries have not so much affected by the crisis, due to the capital controls and management as well as macroeconomic stability in the past decades.

In sum, the empirical results of this study show that among the types of foreign capital net inflows, only FDI is found to have significantly positive impact on economic growth of the 6 ASEAN countries, both during 1990-2015 and 2000-2015 periods, whereas portfolio investment is not found to have any significant impact on growth of real GDP per capita, in fact, short-term capital flows turned out to be more volatile in their nature. The results are in line with (Pagliari & Hannan, 2007) that of the three categories of capital flows, portfolio

investment and other investment are more volatile compared to FDI, especially during the global financial crisis. The case of Lao as a small economy, where foreign capital flows have put much effects on the domestic market and economy, through volatile short-term capital investment, especially largely dependent on public and publicly-guaranteed loans[4]. The country's large-chronic current account deficit which mainly due to trade deficit causing low foreign reserves, is financed by official grants and loans from abroad. Furthermore, the inflow of FDI into this country, though contributes to the high growth rate of its GDP, it skews to the excavation of natural resources, whereas more than three third of the country's population are engaging in subsistent agriculture.

In contrast, short-term capital inflow such as other investment or short-term loans indicates the increase in its volatile nature. Reliance on foreign capital inflows, especially short-term capital which is evidenced by the years before 1997 crisis, confronts the countries with financial crisis leading to economy shrinking. However, in the later period, despites the increase in international financial integration, the impact of global financial crisis triggering in 2008, is less than that of the 1997 crisis due to capital controls.

On the other hand, domestic savings and domestic investment are found to have positively correlated with real GDP per capital growth rate during the 1990-2015 period while the effects of both domestic savings and investment become insignificant in the recent period. In addition, despites the increase in domestic banks' credit to private sector, it is observed to have negative effect on growth rate of real GDP per capita in the two studied period, and the effect on growth is even significantly negative in the recent period between the year 2000 and 2015, indicating that domestic savings are not directed towards investment in growth enhance sectors. This might be due to the fact that investment in the countries relied heavily on foreign capital flows, as well as there is the increasing capital outflows from advanced ASEAN countries.

It should be noted that to financial sector's activities, including bank lending may not always correspond with domestic investment, since several countries are mobilizing imported capital through capital inflows directly. In addition, there are disparities in domestic banks' credit to private sector between among these countries. Those highly developed financial sector countries such as Singapore, Malaysia, and Thailand, despites the increasing trend in banks' credit to private sector, the domestic investment has stagnated in the countries, and even decline in recent few years, implying domestic savings are not allocated to investment to boost economic growth. Moreover, among the 6 ASEAN countries, during the 2000 and 2015 period, Indonesia and Lao PDR are the countries which domestic investment, as the share of GDP, exceeds the level of domestic credit to the private sector by banks, implying heavily reliance on foreign borrowing as well as FDI.

Finally, trade, though it appears to have a positive effect on real GDP per capita growth, the coefficient is insignificant in the two sample period due to the fact that the increase in trade is associated with the increase in import rather than the export, thus there exist negative net export, for instance the cases of Lao PDR, Philippines, and Thailand, and also could be due to the decline in export of the trade surplus countries such as Singapore and Malaysia.

Concluding Remarks

This empirical study examines the impacts of net foreign capital net inflows on real GDP per capita growth based on Panel data analysis for 5 ASEAN countries (Indonesia, Malaysia, Philippines, Thailand, and Singapore) over the past 26 years from 1990 to 2015, and 6 countries (Indonesia, Malaysia, Philippines, Thailand, Singapore, and Lao PDR) during the recent 16 years between the year 2000 and 2015. Most of studies in literature examined impacts of foreign capital inflows on economic growth, the effects of capital outflows were neglected. This study is different from the past studies that net inflows (inflows minus out flows) of foreign capitals data is used to examine its impact on real GDP per capita growth rate, reflecting the impact of real amount of capitals retained in the countries.

Regression analyses based on Panel Fixed-Effects estimation, show that among the categories of foreign capital net inflows, only FDI is found to have significantly positive impact on economic growth the 6 ASEAN countries, both during 1990-2015 and 2000-2015 periods, whereas portfolio investment is not found to have any significant impact on growth of real GDP per capita. However, even though FDI has a significantly positive correlation with the growth rate of real GDP per capita, and appears to be more stable compared to the short-term capital due to its sunk cost nature, it is also found in a past study that FDI is also volatile and its volatility is much higher than foreign aid flows. In addition, Granger Causality Test results show that there are no causality links between FDI and real GDP per capita growth rate in the two studied periods. Although empirical results from panel fixed-effects estimation show that FDI is positively correlated with real GDP per capita growth rate in the two studied periods, real GDP per capita is not automatically caused by FDI net inflow, and vice versa. In addition, it might be due to the nature of the data used in this study, that is, net inflow data which is relatively smaller than inflow data and in the recent period, there has been large outflow of FDI from Singapore and Malaysia. On the contrary, the incurrence of FDI inflow might be caused by investment climate in host country, for instances, trade policies, human capital, wage rate, infrastructure, tax and non-tax incentives offered, and etc. On the one hand, the fluctuation of net capital flows, especially FDI, could be due to the ASEAN policy that enhances free flow of investment as well as freer flows of capital.

In contrast, short-term capital inflow such as other investment or short-term loans indicates the increase in its volatile nature. Reliance on foreign capital inflows, especially short-term capital which is evidenced by the years before 1997 crisis, confronts the countries with financial crisis leading to economy shrinking, however, in the later period, despites the increase in international financial integration, the impact of global financial crisis triggering in 2008, is less than that of the 1997 crisis due to capital controls.

On the other hand, domestic savings and domestic investment are found to have positively correlated with real GDP per capital growth rate during the 1990-2015 period while the impacts of both domestic savings and investment become insignificant in the recent period. In addition, despites the increase in domestic banks' credit to private sector, it is observed to have negative impact on growth rate of real GDP per capita in the two studied periods;

and the effect on growth is even significantly negative in the recent period between the year 2000 and 2015, indicating domestic savings are not directed towards investment in growth enhance sectors.

For the case of Lao as a small economy, where foreign capital flows have put much effects on the domestic market and economy, through volatile short-term capital investment, especially largely dependent on public and publicly-guaranteed loans in couple with low financial and institutional development. The country's large-chronic current account deficit which mainly due to trade deficit causing low foreign reserves, is financed by official grants and loans from abroad.

These stylized facts point to the importance of domestic savings to be effectively mobilized and allocated to productive investment in prioritized areas and sectors in order to attain sustainable economic growth.

Besides, in the context of increasing global competition for FDI, developing countries should formulate policies to improve local skills and their human capital as to enhance the countries' absorptive capacity to reap benefit from FDI as well as to improve the quality of FDI that a country can attract.

Lastly, for developing country, especially Lao PDR, capital control measures should be imposed on the outward flow in order to mitigate capital flight, and at least, to retain capital for domestic investment for a certain period of time.

Notes

1) Lao PDR is excluded from the 1990-2015 studied period is due mainly to the unavailability of the country's data on domestic savings and domestic credit to private sector between 1990 and 1999.

2) Granger Causality test is to test for Causation (also known as cause and effect) that an observed event or action appears to have caused a second event or action. Whereas correlation which indicates the extent to which an action or occurrence that has a direct link to another, meaning that the tendency of two variables to tend to move together. Sometimes correlation can be used to find causality, but not always. Correlation by itself does not imply causation. There may be other factor that is responsible for the fluctuations in both variables.
Before testing for causality, it is required to test for panel unit root, and panel co-integration. The results of the three tests are shown in the appendix.

3) FDI and economic growth may have some correlation, but granger causality may not be found in some cases.

4) According to data from ADB/Key Indicators for Asia and the Pacific 2016, the country's external indebtedness is 120 percent of GDP per year during the 2000 and 2014, which is the highest among ASEAN countries.

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APPENDIX

Figire1.1: GDP per capita (Left axis, $US 2010 price), and growth rate (right axis, %), 1990-2015

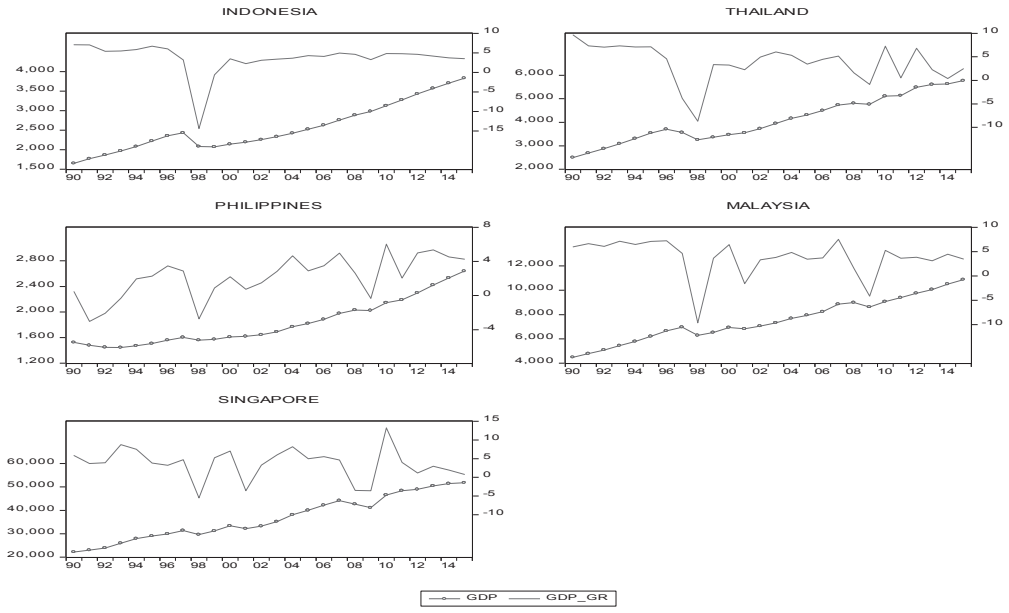
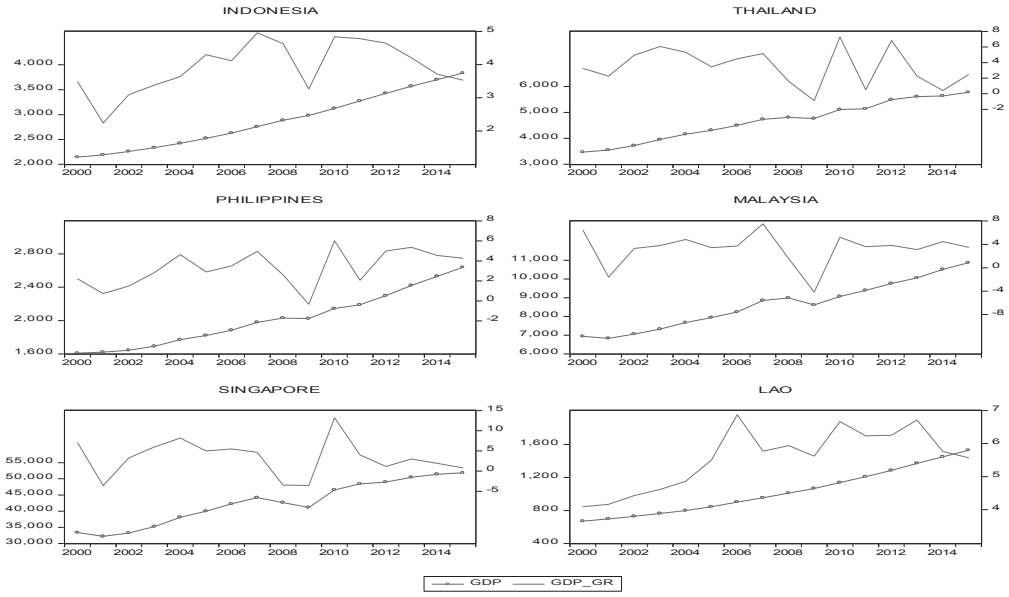
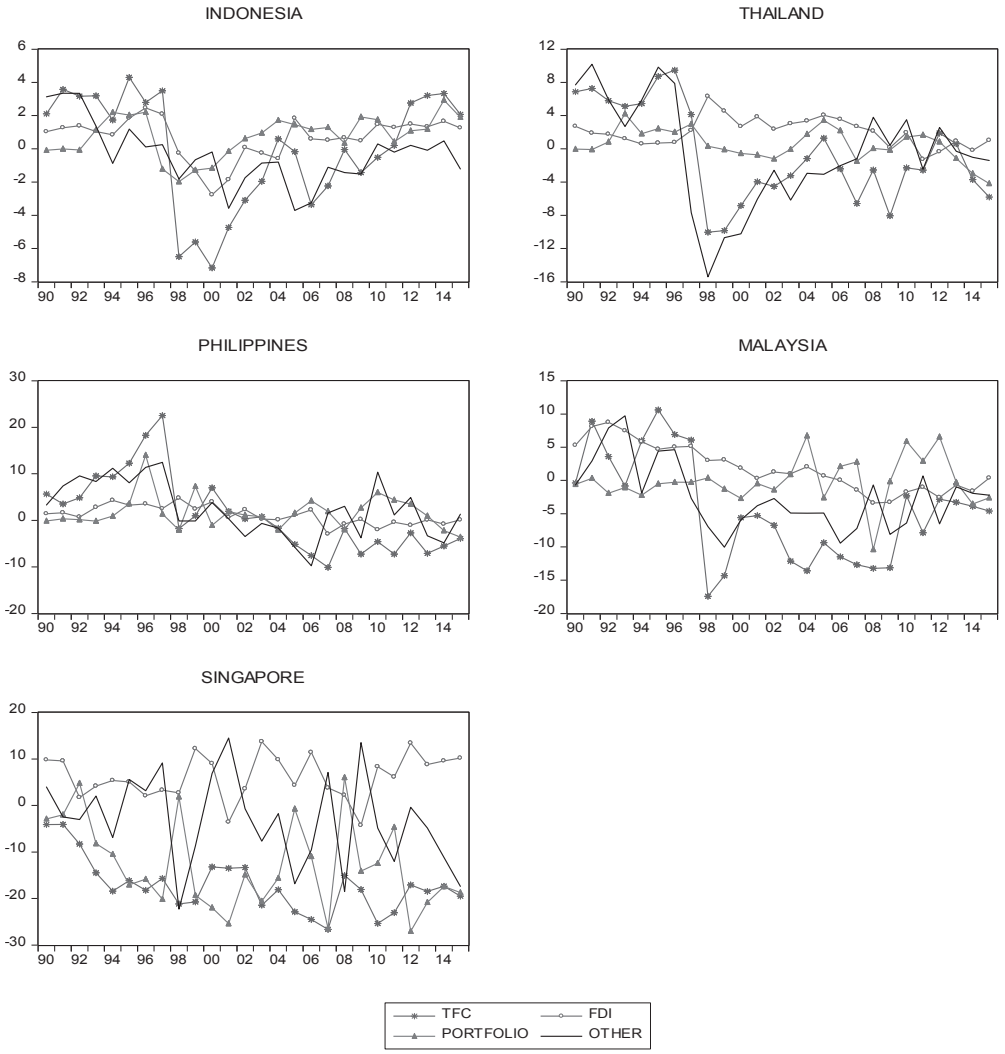


Figure 1.2: GDP per capita (Left axis, $US 2010 price), and growth rate (right axis, %), 2000-2015



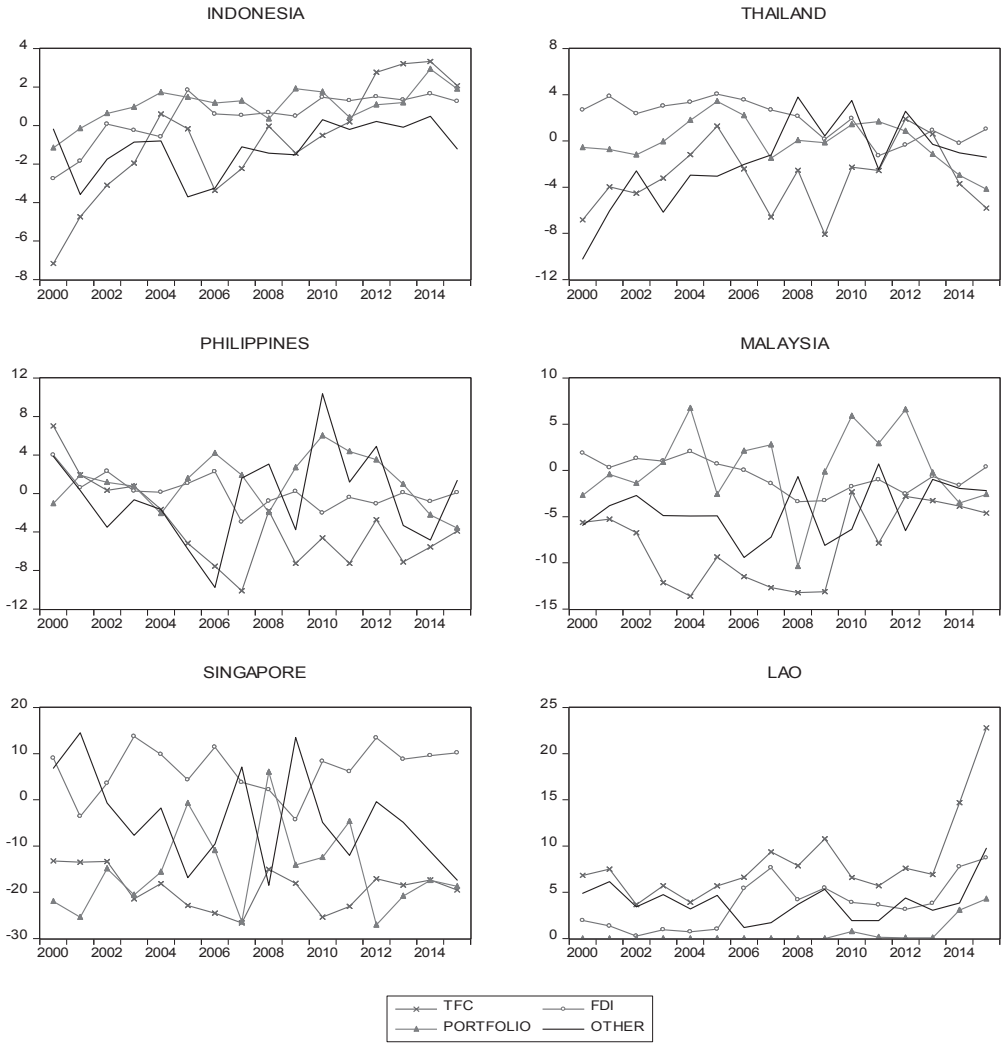
Source: WB / World Development Indicators 2016

Figure 2.1: Average Foreign capital net inflows (1990-2015), % of GDP



Source: Author's calculation based on data from IMF / IFS and WB / World Development Indicators 2016

Figure 2.2: Average Foreign capital net inflows (2000-2015), % of GDP



Source: Author's calculation based on data from IMF / IFS and WB / World Development Indicators 2016

Figure 3.1: Gross Domestic Savings and Gross Domestic Investment (1990-2015), % of GDP

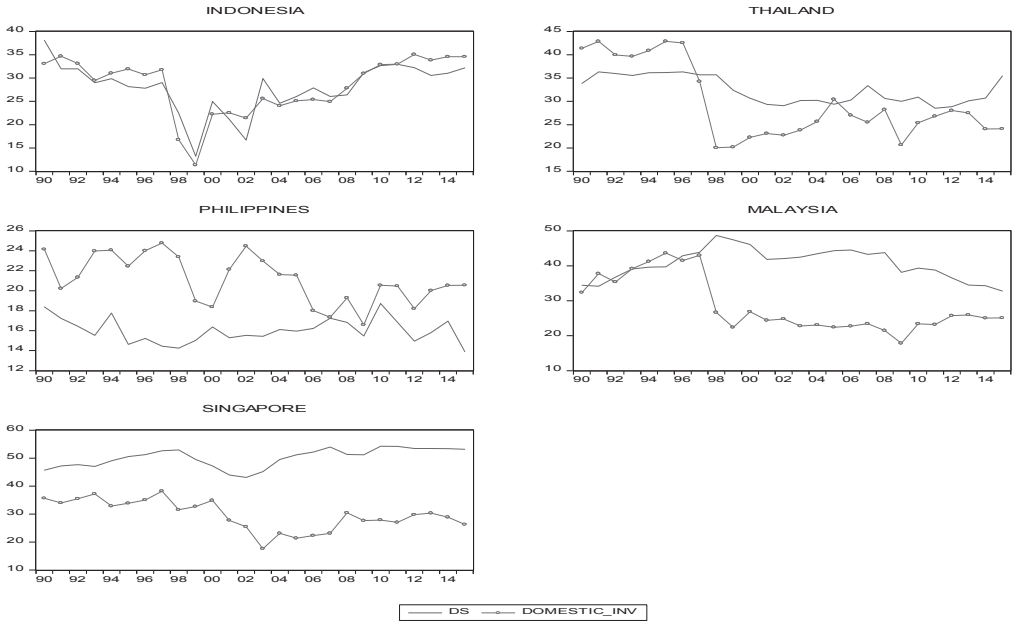
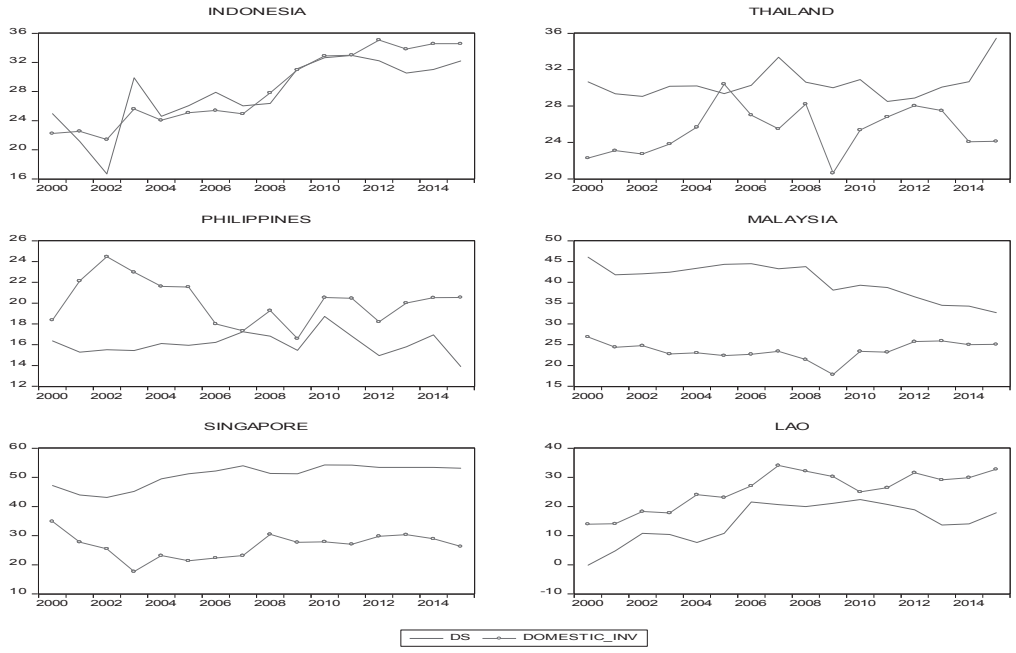


Figure 3.2: Gross Domestic Savings and Gross Domestic Investment (2000-2015), % of GDP



Source: WB / World Development Indicators 2016

Figure 4.1: Trade, % of GDP (1990-2015)

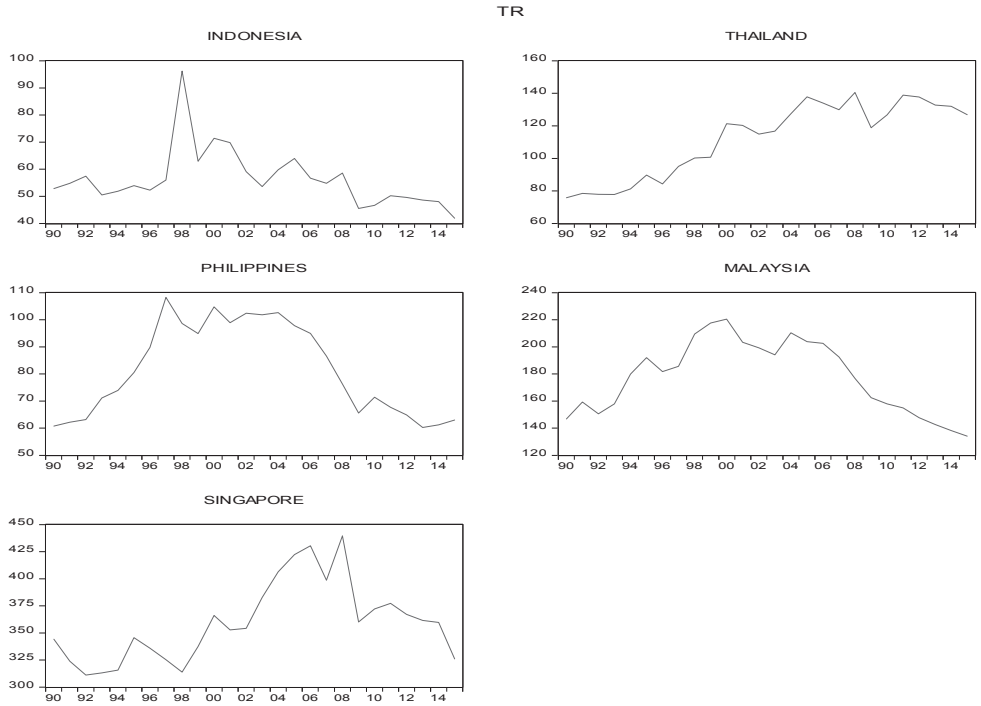
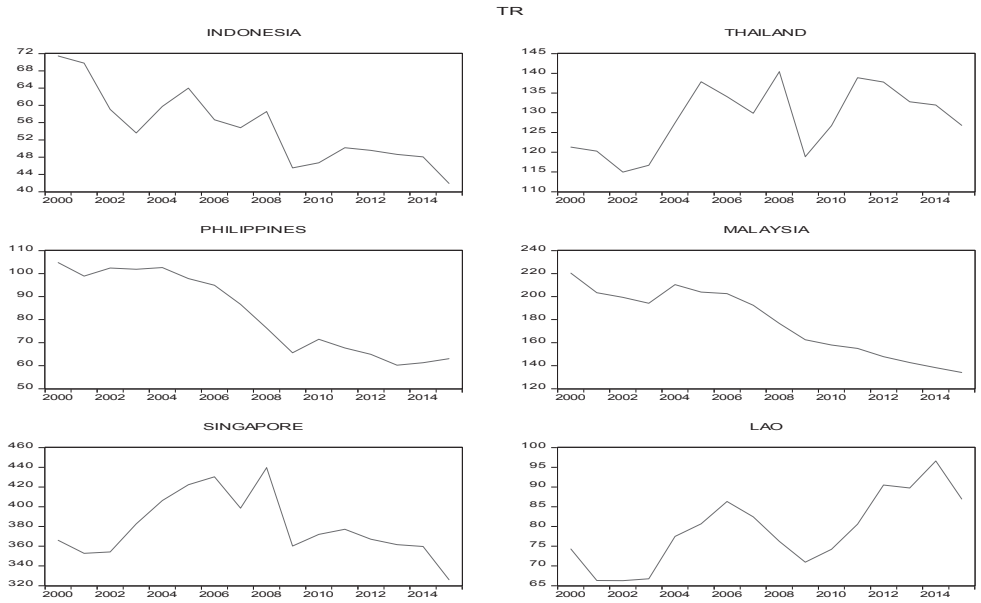


Figure 4.2: Trade openness, % of GDP (2000-2015)



Source: WB / World Development Indicators 2016

Figure 5.1 Domestic credit to private sector by banks, % of GDP (1990-2015)

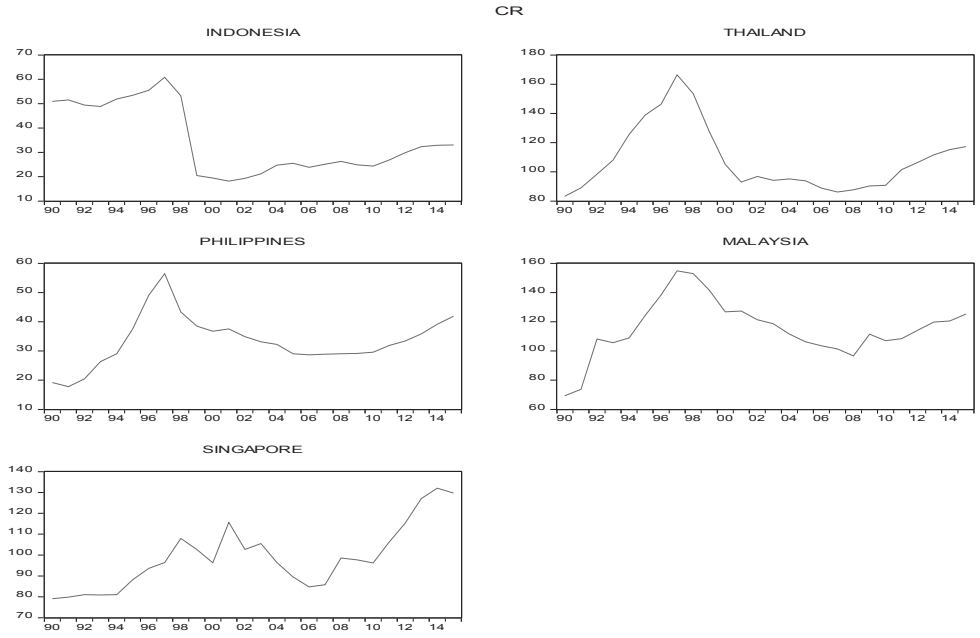
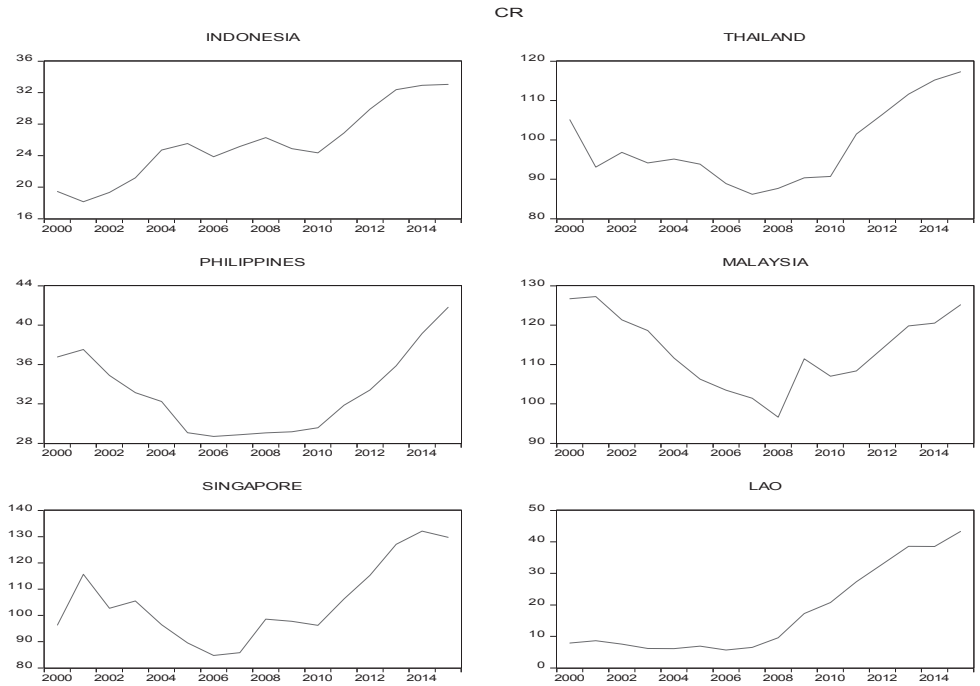


Figure 5.2 Domestic credit to private sector by banks, % of GDP (2000-2015)



Source: WB / World Development Indicators 2016

Table 3: Correlation Matrix

	TFC	*FDI*	*PORTFOLIO*	*OTHER*	*DOMESTIC_INV*	*DS*	*TR*	*CR*	*INITIAL_GDP*	*GDP*
TFC	1									
FDI	−0.172701792	1								
PORTFOLIO	0.601004127	−0.494842018	1							
OTHER	0.479504937	−0.210227625	−0.059600768	1						
DOMESTIC_INV	0.18808435	0.29996703	−0.10121868	0.092231231	1					
DS	−0.77688581	0.31645872	−0.567906654	−0.434909263	0.316066692	1				
TR	−0.800301838	0.491671326	−0.72363317	−0.334151684	0.07916662	0.824785421	1			
CR	−0.609318516	0.146575869	−0.405585805	−0.395891681	0.077823703	0.787633077	0.670315427	1		
INITIAL_GDP	−0.79245702	0.513434426	−0.801199056	−0.272762515	0.136632975	0.788260338	0.96045945	0.551437173	1	
GDP	−0.785141528	0.539257076	−0.78381616	−0.320545472	0.160771097	0.790301565	0.936293899	0.554066808	0.982755881	1

Table 4: Descriptive Statistics

	GDP	GDP_GR	TFC	FDI	PORTFOLIO	OTHER	DS	DOMESTIC_INV	TR	CR
Mean	10549.25	3.384894	−4.262232	2.398897	−2.008573	−0.790250	33.40260	27.45689	157.5095	78.09794
Median	3893.726	3.812859	−3.245342	1.732881	−0.063345	−0.828777	32.69489	25.48741	119.5725	88.55671
Maximum	51855.08	13.21649	22.53054	13.73763	14.03442	14.48848	54.28837	43.64010	439.6567	166.5041
Minimum	1444.546	−14.35101	−26.62493	−4.271337	−27.03793	−22.26450	13.20180	11.36740	41.93771	17.75938
Std. Dev.	13933.95	3.735936	9.307673	3.513095	7.327793	6.581871	12.12288	6.941385	111.8360	40.00173
Skewness	1.728412	−1.578611	−0.216099	1.065048	−1.729111	−0.315559	−0.014187	0.563331	1.065607	−0.009015
Kurtosis	4.592900	7.637586	2.926434	4.216544	5.675816	3.713196	1.975494	2.610229	2.822959	1.779073
Jarque-Bera	78.47108	170.4910	1.041118	32.59365	103.5628	4.912687	5.689760	7.698639	24.77266	8.076178
Probability	0.000000	0.000000	0.594188	0.000000	0.000000	0.085748	0.058141	0.021294	0.000004	0.017631
Sum	1371402.	440.0362	−554.0901	311.8566	−261.1144	−102.7325	4342.338	3569.396	20476.23	10152.73
Sum Sq. Dev.	2.50E+10	1800.481	11175.63	1592.097	6926.855	5588.412	18958.38	6215.585	1613440.	206417.9
Observations	130	130	130	130	130	130	130	130	130	130

Table 5: Measurement of Variables

Variables	Proxy used (Period covered: 1989-2015)	Source of data
DS	Gross domestic savings (% of GDP). Gross domestic savings are calculated as GDP less final consumption expenditure (total consumption)	WB/WDIs 2016
GDP_GR	Annual percentage growth rate of GDP per capita based on constant local currency, 2010 price.	WB/WDIs 2016
Domestic_INV	Gross capital formation (formerly gross domestic investment), Gross capital formation or Gross Domestic Investment (% of GDP). It consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.	WB/WDIs 2016
FC: 1). TFC 2). FDI 3). PORTFOLIO 4). OTHER	FC: Vector of foreign capital net inflows (net incurrence of Liabilities minus net Acquisition of financial assets): 1). Total foreign capital net inflow is the sum of net inflows of FDI, Portfolio investment, and Other investment 2). Foreign direct investment, net inflows, % of GDP. Foreign direct investment is the 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. 3). Portfolio investment, net inflow, % of GDP. Portfolio equity includes net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors. 4). OTHER: Other Investment, net inflow, % of GDP (Other investment includes loans, financial transactions in currency and deposits, and trade credit and advances)	Author's calculation based on data from IMF/IFS_ Balance of Payments and International Investment Position presentation (net current account), and WB/WDIs 2016 (for GDP)
Initial_ GDP	GDP per capita (based on constant 2010 price $US) in starting year refers to 1990 for the 1990–2015 period, and to the year 2000 for the 2000–2015 period	WB/WDIs 2016
CR	Domestic credit to private sector by banks, % of GDP	WB/WDIs 2016. For the Lao PDR, data from 2011 onward is based on data from Bank of the Lao PDR's annual report
Trade: TR	Trade is the sum of exports and imports of goods and services measured as percent of GDP	WB/WDIs 2016

Crisis 97 and Crisis 08	The dummy variables capturing the influence of Asian Financial crisis and the 2008 global financial crisis	
D_{LAO}	The country dummy variable that captures the influence of Lao PDR's country specific or unobserved factors	
Studied periods: 1). From 1990 to 2015 (5 countries are included: Indonesia, Malaysia, Thailand, Philippines, and Singapore) 2). From 2000 to 2015 (6 countries are included: Indonesia, Malaysia, Thailand, Philippines, Singapore, and Lao PDR) ***Note:*** *For Lao PRD, before 2000, Domestic Savings rate and domestic investment rate data are not available, and before 2010, portfolio investment data of the country is not available.*		

Testing for Causal links between FDI net inflow and economic growth

Since FDI-Growth nexus has received much attention over the past decades, several studies investigating causal relationship between FDI and economic growth found the existence of causal links between the two variables. Evidence from empirical study conducted by (Sooreea-Bheemul & Sooreea, 2013) found that there exist bidirectional causality between FDI and GDP growth while (Gursoy, Sekreter, & Kalyoncu, 2013) found that bidirectional causality between the two variables exists for the case of Turkmenistan, whereas there is unidirectional causality running from FDI to GDP for the case of Azerbaijan. For the case of ASEAN-5 countries, namely Indonesia, Malaysia, Philippines, Singapore and Thailand, (Pradhan, 2009) found that during 1970-2007 period, at the panel level, foreign direct investment and economic growth are co-integrated, indicating the presence of long-run equilibrium relationship between them. However, at the individual country level, this is true only for the case of Thailand and Singapore. Moreover, the Granger causality test also found that there are bidirectional causality FDI and economic growth both at the panel level as well as individual country level except Malaysia.

However, past studies on FDI-economic growth link emphasized on the links between the inflows of FDI and economic growth, hence, the matter of the outflow is neglected. Therefore, in this study, FDI net inflow data is utilized to investigate FDI-growth nexus. Net inflow of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) reflects the real amount of capital retaining in the country. Change in net FDI inflow is the matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the change in FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, does not significantly accelerate GDP as well as GDP per capita growth.

This study focuses on panel data to examine the direction of causality between FDI net inflow and real GDP per capita growth rate of selected ASEAN countries namely, Indonesia, Malaysia, Philippines, and Thailand during the 1990-2015 period, and the 2000-2015 period which Lao PDR is included. The reason for conducting the two studied periods is that the FDI flows into these countries has marked significant increase since the early 1990s. In addition, during the recent period, 2000-2015, not only the substantial increase in FDI

inflow is observed, but also the large outflow of FDI, especially for the case of Singapore and Malaysia, whereas Lao PDR has received massive FDI inflows since the 2000s onward. The empirical results are reported in three steps as follows:

1. Panel Unit Root Test

The first step of proceeding Granger Causality Test is to test for unit root that is the variables must be stationary to avoid possible spurious relationships among the variables. Panel unit root are tested by (Levin, Lin, Chu, & Shang, 2002), and Im, Pesaran and Shin W-Stat test (Im, Pesaran, & Shin, 2003) unit root tests. The unit root test results are shown in table 6 below:

Table 6: Panel Unit Root Test Results

Period	Variables		Levin, Lin & Chu		Im, Pesaran and Shin W-Stat	
			Level	First Difference	Level	First Difference
1990–2015	GDP per capita growth	Individual Intercepts	−6.76997***	−11.5770***	−5.65790***	−11.9638***
		Individual Intercepts and Trends	−6.79138***	−9.78856***	−5.29897***	−10.6537***
	FDI net inflow	Individual Intercepts	−1.40680*	−11.1707***	−1.62671*	−10.9854***
		Individual Intercepts and Trends	−1.59667*	−7.13078***	−2.06593**	−7.84530***
2000–2015	GDP per capita growth	Individual Intercepts	−5.94723***	−8.80670***	−4.84946***	−7.70031***
		Individual Intercepts and Trends	−6.92461***	−7.20891***	−3.80222***	−5.41111***
	FDI net inflow	Individual Intercepts	−2.90175***	−10.1213***	−1.99486**	−8.50374***
		Individual Intercepts and Trends	−3.63605***	−7.59063***	−2.28203***	−6.40221***

*Notes: ***denotes significance level at 1%, **5%, and *1% indicates rejection of null hypothesis of non-stationary.*
Lags for the test are automatically selected based on Schiwarz Information Criterion (SIC), the standard step-down procedure, maximum lags of 1 and 2 for the 1990-2015 and 2000-2015 period, respectively.

Results shown in the table 6 shows the set of statistics of the models of interest: individual intercepts and individual intercepts and trends with one lag. The results of the panel unit root statistics on FDI net inflow show during 1990-2015 period that, at level for the two models of interest, the null hypothesis that variables are non-stationary is rejected by the left tail of normal distribution, this study fails to reject the null hypothesis at 5% significance level; meaning that FDI net inflow during 1990-2015 period has unit root or non-stationary. However, for the 2000-2015 period, at level for both individual intercepts and individual intercepts and trends, the null hypothesis is rejected at 1% significance level, the data is stationary. For real GDP per capita growth in the two periods, at level for both individual intercepts and individual intercepts and trends, the null hypothesis is rejected at 1%

significance level, the data is stationary. At first differences, both GDP per capita and FDI net inflow for the two models of interest, are stationary. The null hypothesis is rejected at 1% level. This implies that real GDP per capita growth and FDI net inflow are integrated of order one.

2. Panel Cointegration Test

After testing for unit root or stationary, the next step is testing for panel cointegration. The test is based on (Pedroni, 1999) residual-based cointegration tests, which allows for cointegrating vectors of differencing magnitudes between individual as well as time fixed effects.

Table 7: Panel Cointegration Test Results

H_0: No cointegration vector between FDI net inflow and real GDP per capita growth				
Statistics	**1990-2015**		**2000-2015**	
	Individual Intercepts	Individual Intercepts and Trends	Individual Intercepts	Individual Intercepts and Trends
Panel V-Statistic	-1.1000621	-2.731148	-0.898732	-0.671092
Panel rho-Statistic	-4.939344***	-3.038281***	-3.705054***	-4.958028***
Panel PP-Statistic	-5.962743***	-6.299000***	-6.245519***	-15.79523***
Panel ADF-Statistic	-6.041250***	-6.635412***	-6.081588***	-11.52394***
Group rho-Statistic	-3.248190***	-1.875779**	-2.129239**	-3.660946***
Group PP-Statistic	-6.135021***	-6.830364***	-5.934259***	-15.43466***
Group ADF-Statistic	-6.180473***	-6.349683***	-5.444606***	-12.29022***
Decision	**Reject H_0**	**Reject H_0**	**Reject H_0**	**Reject H_0**

*Notes: ***denotes significance level at 1%, **5%, and *1% indicates rejection of null hypothesis of non-stationary.*
Lags for the test are automatically selected based on Schiwarz Information Criterion (SIC), the standard step-down procedure, maximum lags of 5 and 2 for the 1990-2015 and 2000-2015 period, respectively.

The first four statistics in the table 7 are panel cointegration statistics, and the last three are group mean panel cointegration statistics. Findings in the table show that the null hypothesis of No cointegration vector between FDI net inflow and real GDP per capita growth is rejected by Panel rho-Statistic, Panel PP-Statistic, and Panel ADF-Statistic, whereas Panel V-Statistic fails to reject the null hypothesis of no cointegration. According to (Osbat, F.C., & Schntz, 2005), Panel rho-Statistic and Panel PP-Statistic are more reliable tests of cointegration compared with other tests. Therefore, this study has enough statistical evidence to conclude that FDI net inflow and real GDP per capita growth are cointegrated, meaning that there is long run relationship among the two variables.

3. Panel Causality Test

Since FDI net inflow and real GDP per capita growth are coitegrated, the next step is to determine direction of relationship among the two variables by applying Granger Causality

test. Pair of regression for Granger Causality test are exhibited as below:

$GDP\_GR_{it} = b_1 FDI_{i(t-4)} + b_2 GDP\_GR_{i(t-4)} + c_i$

$FDI_{it} = a_1 FDI_{i(t-4)} + a_2 GDP\_GR_{i(t-4)} + f_i$

GDP per capita growth (GDP_GR_{it}) and FDI net inflow (FDI_{it}) are observed for country i =1,…, n and time t =1,…, T.

The terms c_i and f_i represent individual-specific unobserved heterogeneity in both *FDI* and *GDP_GR*. They are treated as "fixed effects", thereby allowing one to control for all unchanging characteristics of the individuals, which is a key factor in arguing for a causal interpretation of the coefficients.

If all the assumptions are met, b_1 can be interpreted as the causal effect of *FDI net inflow* on *GDP per capita growth*, and a_2 can be interpreted as the causal effect of *GDP per capita growth* on *FDI net inflow*. This model can be elaborated in various ways to include, for example, other predictor variables, different lags, and coefficients that change over time.

Table 8: Pairwise Granger Causality test results for FDI and real GDP per capita growth rate

Pairwise Granger Causality Test				
Lags: 4				
Sample Period:	Null Hypothesis:	Obs.	F–Statistic	Prob.
1990–2015	FDI does not Granger Cause GDP_GR GDP_GR does not Granger Cause FDI	110	0.83540 1.28378	0.5058 0.2814
2000–2015	FDI does not Granger Cause GDP_GR GDP_GR does not Granger Cause FDI	72	1.18247 0.36533	0.3272 0.8324

Based on the system equation model and the lag length selection criteria that lower the value of the criteria, better the model; and according to the LR, PFE, and AIC criterions, all show that the optimal lag length to be used are 4 lags.

The null hypothesis is rejected when the test value falls into the rejection region, that is, the p-value (Prob. Value in the table) is less than 0.05 or 5%. The Granger Causality Test results in the table fail to reject the null hypothesis of no causality running from FDI to real GDP per capita growth and that of no causality from real GDP per capita growth rate to FDI for both in the 1990-2015 period and 2000-2015 period. The null hypothesis that FDI does not Granger Cause GDP per capita growth (for the 2 periods) is not rejected that P-value is 0.5085 or 50.58% for 1990-2015 period and 0.3272 or 32.72% for 2000-2015 period, and the null hypothesis that GDP per capita growth does not granger cause FDI is not rejected due to P-value is 0.2814 or 28.14% for1990-2015 period and 0.8324 or 83.24% for 2000-2015 period.

Even though the two variables are correlated and cointegrated, it does not always imply the existence of causal links among the variables. The reason behind this is that it might be due to the nature of the data used that is net inflow of FDI (inflow minus outflow, thus net inflow amount is smaller than inflow amount used in many studies) which reflects the real amount of capital retaining in the country. Moreover, change in net FDI inflow is the

matter of changes in the FDI inflows (FDI inflows are the value of Inward direct investment made by the non-residents investors in the reporting economy) and/or the change in FDI outflows (FDI outflows are the value of outward direct investment made by the residents of the reporting economy to external economies). If the increase in FDI inflow is greater than the increase in FDI outflow, does not significantly accelerate GDP growth, implying no causal link between FDI net inflow and growth rate of GDP as well as GDP per capita.

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外資流入が ASEAN 6 カ国の経済成長に及ぼす影響 ―パネルデータに基づく分析―

本稿では資本流入の形態（FDI、証券投資、その他の投資）及び国内貯蓄が経済成長に及ぼす影響を、ASEAN6 カ国（インドネシア、マレーシア、フィリピン、シンガポール、タイ、ラオス）を事例に分析した。パネルデータに基づく固定効果を用いた回帰分析を行った結果、資本流入総額は一人当たり実質 GDP の成長率と負の相関があることが示された。また、個別の変数においては、対象の 2 期間とも実質 GDP 成長率に FDI のみが有意にプラスの影響を及ぼし、証券投資は標本期間の成長にさほど大きな影響を及ぼさないことが分かった。その他の投資など短期資本は、2 期間とも一人当たり実質 GDP の成長率に有意に負の影響を持っている。この結果は、資本流入に依存せず国内貯蓄が効果的に生産目的の投資に向けられることが重要であることを示している。また、FDI の国際競争が激化する中で、途上国は FDI に伴う波及効果を高め、FDI の受入国に対する発展に寄与するために、受入国での技術水準を高め、人的資本の向上をはかるための政策を策定すべきである。

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