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# FDI and Income Inequality in ASEAN-5 Countries: A Quantile Regression Approach

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**ABSTRACT**

The purpose of this paper is to analyse the impact of FDI inflows on income distribution in ASEAN-5 countries (Indonesia, Malaysia, Philippines, Singapore, and Thailand). Specifically, it investigates whether the inflows of FDI is associated with a greater income inequality within these countries. The empirical results, based on quantile regression analysis and data over 1970-2011 period, reveal that FDI inflows have an inequality-reducing effects in Malaysia, the Philippines and Thailand. However, the findings for Singapore and Indonesia suggest that FDI perpetuates inequality.

Keywords: FDI, Income Inequality, Quantile, ASEAN.

***ABSTRAK***

*Tujuan kajian ini adalah untuk menganalisis impak kemasukan pelaburan langsung asing (PLA) ke atas pengagihan pendapatan di kalangan negara-negara ASEAN-5 (Indonesia, Malaysia, Filipina, Singapura, dan Thailand). Secara khusus, kajian ini menyiasat sama ada aliran masuk PLA berkaitan dengan ketidakseimbangan pendapatan yang lebih besar di negara-negara ini. Berdasarkan kepada analisis regresi kuantil dengan menggunapakai data merangkumi tempoh 1970-2011, keputusan menunjukkan bahawa aliran masuk PLA mempunyai kesan pengurangan ketidakseimbangan di Malaysia, Filipina dan Thailand. Walau bagaimanapun, hasil kajian bagi Singapura dan Indonesia pula menunjukkan bahawa PLA memangkinkan ketidakseimbangan.*

*Kata Kunci: PLA, Ketidakseimbangan Pendapatan, Kuantil, ASEAN.*

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## INTRODUCTION

Globalization is taking place around the world. Although there is no specific definition on globalization, scholars agreed that it can be defined as the integration in term of people, capital, ideas, technology and services. Since early 70s, most countries had liberalized their markets by allowing movements of factors of production such as capital and labour across borders. While in the mid 90s, free trade area has became prominent agenda among many countries especially the developing countries. This had resulted in improved trading activities between countries.

One of the important features of recent globalisation is the remarkable growth of the East Asian countries. East Asian countries are known for their outward orientation policies. In addition to trade promotion policies which was first initiated in the 1970s, many countries in the region have made

their rules and regulations surrounding FDI less restrictive in an effort to attract more foreign investment. In the first half of the 90s, nine leading East Asian economies had attracted together more than US$ 200 billion in FDI flows (Hsiao and Hsiao, 2006).[1] Policy reform towards greater openness has significantly contributed to the growth performance of these countries. In 1950, the average real GDP per capita of the East Asian countries was far below the world average as well as below the average of Latin-American economies, but it surpassed the world average by 1978, Latin America's by 1983. In the mid-1980s, they began to grow faster relative to other regions, becoming the most dynamic region in the world (Hsiao and Hsiao, 2006).

FDI has been an important ingredient for development strategy for many East Asian countries. The motivation for increased efforts to attract more FDI stems from the expectation of an overall positive impact of FDI resulting from productivity gains, transfers of new technology, the introduction of new processes, management techniques, and know-how in the local market, employees' training and international production networks.Moreover, FDI is viewed as an important source of funds for capital-scarce countries. The role of FDI inflows in the development process has been widely investigated especially with respect to their impact on output growth (see for example, Alfaro et al., 2004, Azman-Saini et al., 2010, among many others). However, there is limited evidence on the impact of FDI on other aspect of the economy such as income distribution.

There are two competing arguments on the impact of FDI on income inequality. On the one hand, FDI helps to reduce income inequality when capitals are invested in sector that utilizes abundant low-income unskilled labour (Deardorff and Stern, 1994). On the other hand, inward FDI may worsen income distribution because of wage spillovers as multinational corporations (MNCs) normally pay higher wages than their local counterparts (Chase-Dunn, 1985). As they need more workers to work with new technology, they will use their advantage on excess capital to provide higher wages in order to attract more skilled as well as unskilled worker to work with them. It is also possible that MNCs presence would reduce the market share of local firms. As the profit is declining, local firms are forced to reduce its cost by reducing the wage level and number of workers they could hire to remain in market.

The objective of this paper is to analyse the impact of FDI inflows on income inequality in ASEAN-5 countries for the1970-2011 period. This study is different from other studies as it employs different approach than that was previously used in this area. Specifically, this study utilises quantile regression to capture the FDI effect on each point of income quantile.One advantage of the approach is that it provides a pragmatic approach in understanding the differential impacts of covariates along the distribution of an outcome.

## LITERATURE REVIEW

Globalization is a process of international integration where it allows for interaction among the countries. Mahler et al. (1999) investigate the relationship between international integration and domestic market inequality in developed market. Two major international integrations observed are foreign direct investment and trade. By using Luxembourg Income Studies (LIS) database to represent income inequality, they find that both trade and FDI are not significant in explaining income inequalities. They conclude that globalization is not an important factor in explaining distribution of income in developed countries.

Mah (2003) evaluates the impact of globalization on income distribution in Korea for the 1975-1995 period. The findings show that both trade openness and FDI are found to be insignificant in affecting Gini coefficient. Accordingly, globalization reduce income distribution do not occur in Korea. Celik and Basdas (2010) look at the effect of globalization on income inequality for both developed and developing countries. The results show that the increase in FDI inflows improves income inequality in both developed and developing countries but opposite effect are found in miracles countries (i.e. East Asian countries). Moreover, they find a negative relationship between outward FDI and GINI coefficient.

Changkyu (2006) investigate the relationship between FDI (both inward and outward) and income inequality within countries[2]. Using GINI coefficient as an indicator for income inequality, the results reveal that both inward and outward FDI have potential impact in increasing the income inequality. However, the effect is greater for outward FDI compared to inward FDI. Moreover, the

[1]These are China, Hong Kong, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand.
[2] These are Asia, Latin America and Caribbean countries

author finds that rich countries and fast growing economies tend to have even income distribution. Some other studies look at the impact of trade openness on income inequality. Elena and Marco (2009) argue that the interaction between trade and adoption of technology may cause an increase in income differentials in developing countries. By using data for 65 developing countries and global inequality dataset (UTIP-UNEDO database) the findings shows that both export and import activities worsens income distribution only when the trading partner is with high income countries. However this result is hold for middle income countries. They also found that total aggregate trade flows are not significantly related to income inequality between the developing countries.

Another important aspect of this area of studies is the impact of FDI on regional inequality. Lessman (2013) argue that countries which receive FDI will have more capital stock and this will increase marginal product of labor as well as output and consumption. However, this is valid only when FDI involves transfer of capital. Using data set based on 55 countries which the regional inequalities is classified by income (low, middle and high income) for 1980-2009 period, the results show that the level of development has important effect on the FDI-inequality nexus.

## MODEL

To test the impact of FDI on income inequality, we use a model which is broadly similar to others (Celik and Basdas 2010; and Becker et al 2005). The basic model can be expressed as follows:

$$\mathbf{Y_t = \beta_{0t} + \beta_{1t}FDI_t + \beta_{2t}TO_t + \beta_{3t}LE_t + e_t} \quad \mathbf{(1)}$$

where Y is GDP per capita, FDI is total foreign direct investment inflow to GDP ratio; TO is trade openness which is obtained by summing up total export and import to GDP and LE refer to life expectancy which serves as a proxy for human capital.

## METHODOLOGY

This study employs quantile regressions, which were first proposed by Koenker and Basset (1978), to analyze the distributional effect of FDI. This estimation approach provides a pragmatic approach in understanding the differential impacts of covariates along the distribution of an outcome. In other words, it can capture different impact of independent variables on each quantile level of income. The quantile regression model for income per capita can be written as:

$$\mathbf{LogY_i = xi\ \beta_\theta + u_{\theta i}\ where\ Quant_\theta(logY|x_i) = x_i\beta_\theta} \quad \mathbf{(3)}$$

Where x is a vector of exogenous variables (FDI, TO, LE) and $\beta_o$ is vector parameter. $Quant_\theta(logY|x_i)$ denotes the θth conditional quantile for LogY given these exogenous variables. The value of it is in between 0<θ<1 where it is defined as a solution to the problem:

$$\underset{\beta \in R^k}{Min}\left\{\left\{\sum_{i:logY_i \geq x_i\beta} \theta |LogY_i - x_i\beta_\theta| + \sum_{i:logY_i \geq x_i\beta}(1-\theta)\,|LogY_i - x_i\beta_\theta|\right\}\right. \quad \mathbf{(4)}$$

Equation (4) can be written in its simplest form as follows:

$$\underset{\beta \in R^k}{Min}\sum_i \rho(logY_i - x_i\beta_i) \quad \mathbf{(5)}$$

Note that $\rho_\theta(\varepsilon)$ is defined as check function where $\rho_\theta(\varepsilon)=\theta\varepsilon$ if $\varepsilon \geq 0$ or $\rho_\theta(\varepsilon)= (\theta-1)\varepsilon$ if $\varepsilon<0$. However since the data are conditionally heteroskedastic, therefore a bootstrap method is used to estimate standard errors. Within this framework, the impact of FDI on income inequality is evaluated by comparing the coefficient on FDI at the left tail (i.e. 20$^{th}$ quantile) and right tails (i.e. 80$^{th}$ quantiles) of the income distribution.

## DATA DESCRIPTION

This study focuses on the ASEAN-5 countries, namely Indonesia, Malaysia, Philippines, Singapore, and Thailand for the 1970-2011 period except for Indonesia which covers 1980-2011 period and

Thailand for the 1978-2011 period. The choice of these countries is due to the fact that they receive a sizable portion of the global FDI inflows (World Bank, 2014) and FDI has been an important part of their development strategy during the past few decades. The dependent variable is real GDP per capita (Constant USD) and is obtained from the Penn World Table (PWT). The independent variables consist of FDI inflows (i.e. expressed as s ratio to GDP), trade openness (i.e. export plus import/GDP) and life expectancy (i.e. a proxy for human capital). Life expectancy measure the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. The data for independent variables were retrieved from the World Development Indicator database of the World Bank. All the data were transformed into logarithmic form prior to the analysis.

## EMPIRICAL RESULTS

The first step of the analysis, we describe the distribution of the variables used in this study. Table 1 present the descriptive statistics. The mean value for GDP per capita ranges from $921 (Philippines) to $17,254 (Singapore). The skewness index suggests that the distributions of GDP per capita in Indonesia, Malaysia and the Philippines are substantially skewed to the right.[3] In the case of Singapore and Thailand there is some evidence of skewed distribution. These findings suggest that the distributions of income per capita in all countries are positively skewed. Therefore, the assumption of normal distribution in the error term in OLS is not guaranteed. This implies that OLS estimation may produce misleading conclusions. In this situation, quantile regression is particularly useful as it does not require assumption of normal distribution. In addition, it serves as a perfect alternative when there is a need to focus on the impact of FDI on income at both lower and higher levels.

The next step of the analysis is to estimate Equation (2) using quantile regression methodology at 9 quantiles, namely the $10^{th}$, $20^{th}$, $30^{th}$, ……, and $90^{th}$. This allows us to evaluate the impact of FDI at different points of income distribution. The results are presented in Table 2. For comparison purposes, we also provide the OLS results. Focusing on the impact of FDI, the OLS estimates shows that there is a significant positive relationship between FDI and income per capita except for Thailand which is insignificant. The results of quantile regression also show significant positive relationships except for the Philippines and Thailand. Figure 1 (a)-(e) show the variations of FDI effect on income distribution for all countries. The figures also show the 90% confidence interval, depicted by the shaded areas.

We compare the estimated coefficient on FDI at the $20^{th}$ and $80^{th}$ quantiles to establish any link between FDI and income inequality. In the case of Indonesia and Singapore the positive coefficient on FDI is smaller at the $20^{th}$ quantile compared to the one at $80^{th}$ quantiles. This implies that the positive impact of FDI is stronger at higher income distribution which suggests that FDI inflows in Indonesia and Singapore contribute to income inequality. In the case of Malaysia, the coefficient on FDI at both left and right tails of the income distribution are positive and statistically significant. However, the magnitude of the effect is greater at the left tail of the distribution. This finding seems to be consistent with the view that much of the foreign capitals are invested in sector that utilizes low-income unskilled labour. This is expected to help in reducing income gap in the economy. In regard to the effect of FDI inflows on income in the Philippines and Thailand, the empirical evidence suggests that this effect is positive and significance at the left tail of the income distribution. Higher FDI is associated with higher income in low-income sector. This is in line with the view that MNCs in these countries invested more of their capital in sector with low value-added. However, the coefficients at the $80^{th}$ quantile are statistically insignificance which suggests no link between FDI and income at the right tail of the income distribution. This suggests that MNCs presence does not really help sectors that utilise high income high-skilled labours. Generally, the estimation results for Malaysia, the Philippines and Thailand indicate that FDI inflows are associated with reducing income inequality. However, the results for Singapore and Indonesia suggest that the opposite effects of increasing income inequality hold true. As a robustness check, we also compare the results for the $10^{th}$ versus $90^{th}$ quantiles. Interestingly, our previous conclusions for all countries remain unchanged. These findings suggest that different countries with different FDI policies and economic conditions tend to have different benefits and costs from FDI inflows.

[3] A symmetrical distribution has a skewness of zero. As a rule of thumb, if the skewness is greater than 1.0 (or less than -1.0) the skewness is substantial and the distribution is far from symmetrical.

## CONCLUSIONS

In this paper, we analyse the impact of FDI on income inequality in ASEAN-S countries, namely Indonesia, Malaysia, Philippines, Singapore, and Thailand. The main contribution of this paper is that it uses different approach to test the hypothesis. Specifically, it uses quantile regression which allows us to quantify FDI effect across different levels of income. Using data from 1970-2012 period the findings reveal that there are inequality-reducing effect in the case of Malaysia, the Philippines and Thailand. This implies that FDI activities in these countries have benefited low income low-skilled workers. However, the findings for Singapore and Indonesia suggest that FDI worsen inequality. This is consistent with the view that FDI in these countries focuses more on sectors which utilises high-skilled workers. Overall, the findings suggest that different countries with different economic environments tend to derive different benefits and costs from MNCs presence.

## REFERENCES

Alfaro, L., Chanda, A. Kalemli-Ozcan, S.and Sayek, S. (2004). FDI and Economic Growth; The Role of Local Financial Markets. *Journal of International Economics*, 64, 113-134.

Anderson, E. (2005). Openness and Inequality in Developing Countries: A Review of Theory and Recent Evidence. *World Development*, 33(7), 1045-1063.

Azman-Saini, W.N.W., Baharumshah, A.Z. and Law, S.H. (2010). Foreign direct investment, economic freedom and economic growth: International evidence. *Economic Modelling*, 27(5), 1079-1089.

Blomstrom, M. and Kokko, A. (1998). Multinational Corporations and Spillovers. *Journal of Economic Surveys*, 12, 247–277.

Becker, G. S, Philipson, T. J. and Soares, R. R (2005). The Quantity and Quality of Life and the evolution of World Inequality. *The American Economic Review*, 95(1), 277-291.

Celik, S. and Baldes, U. (2010). How Does Globalization Affect Income Inequality? A Panel Data Analysis. *International Advance for Economic Research*, 16, 358–370.

Changkyu Choi (2006). Does Foreign Direct Investment Affect Domestic Income Inequality? *Applied Economics Letters.* 13(12), 811-814.

Elene, M. and Marco, V. (2009). Trade and Income Inequality in Developing Countries. *World Development*, 37(2), 287-302.

Hsiao, F. and Hsiao, M. (2006). FDI, Exports, and GDP in East and Southeast Asia - Panel data versus time-series causality analyses. *Journal of Asian Economic*, 17**,** 1082-1106.

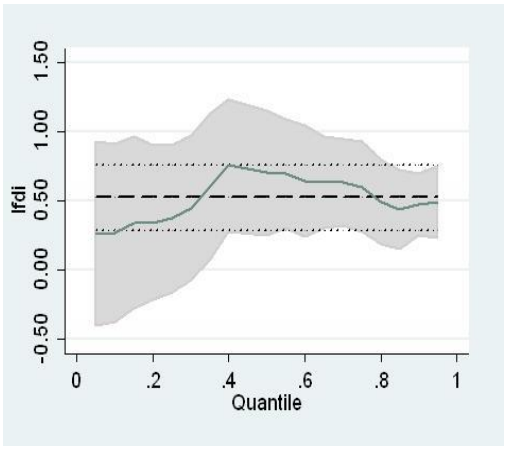
Lessmann, C. (2013). Foreign Direct Investment and Regional Inequality: A Panel Data Analysis. *China Economic Review*, 24, 129–149

Mah, J. S. (2003). A Note on Globalization and Income Distribution - The Case of Korea, 1975–1995. Journal of Asian Economics 14, 157–164.

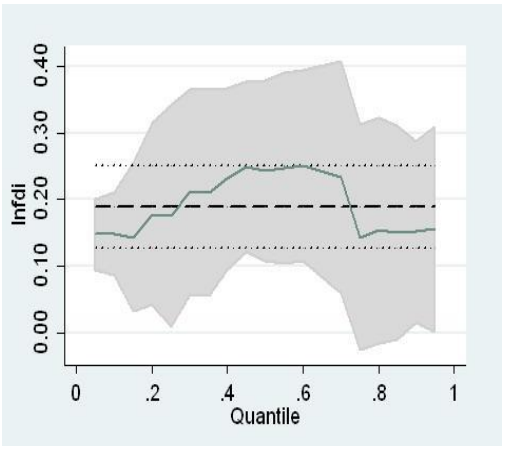
Tsai, P.-L (1995). Foreign Direct Investment and Income Inequality: Further Evidence. *World Development*, 23(3), 469-483.

Wu, J.Y. and Hsu, C.C. (2012). Foreign Direct Investment and Income Inequality: Does the Relationship Vary With Absorptive Capacity? *Economic Modelling*, 29(6), 2183-2189

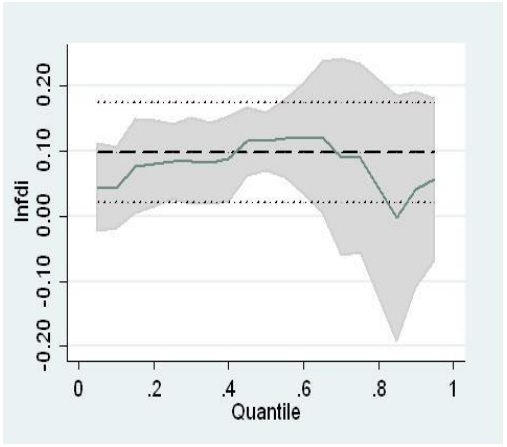
World Bank (2001), WDR 1999-2000: Entering the 21st Century, retrieved from http://web.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTWDRS/0,,contentMDK:20227703~pagePK:478093~piPK:477627~theSitePK:477624,00.html. Accessed on 26 June 2014.



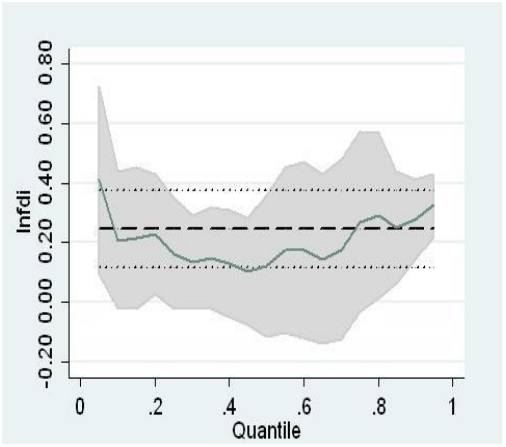

(a) Indonesia



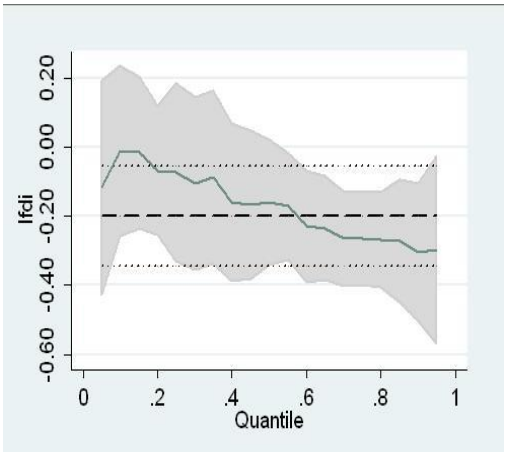

(b) Malaysia




(c) Phillipines




(d) Singapore




(e) Thailand

FIGURE 1: FDI Effects at Different Levels of Income

TABLE 1: Descriptive Statistics

| Variable | Obs | Mean | Median | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| a) Indonesia | | | | | | |
| GDPC | 32 | 1158.04 | 815.09 | 853.69 | 1.67 | 4.81 |

| | | | | | | |
|---|---|---|---|---|---|---|
| FDI | | 13300.00 | 11300.00 | 5630.00 | 1.60 | 5.22 |
| TO | | 54.42 | 52.55 | 10.46 | 2.13 | 9.13 |
| LE | | 55.99 | 56.58 | 5.66 | -0.24 | 1.85 |
| b) Malaysia | | | | | | |
| GDPC | 43 | 3465.11 | 2626.08 | 2615.54 | 1.10 | 3.50 |
| FDI | | 3130.00 | 1670.00 | 3130.00 | 1.06 | 3.33 |
| TO | | 144.35 | 150.61 | 47.94 | 0.00 | 1.55 |
| LE | | 70.52 | 70.99 | 3.04 | -0.39 | 1.98 |
| c) Philippines | | | | | | |
| GDPC | 43 | 921.00 | 741.80 | 569.00 | 1.22 | 4.12 |
| FDI | | 888.00 | 556.00 | 866.00 | 0.84 | 2.68 |
| TO | | 67.43 | 62.18 | 22.02 | 0.52 | 1.80 |
| LE | | 64.87 | 65.40 | 2.49 | -0.21 | 1.62 |
| d) Singapore | | | | | | |
| GDPC | 43 | 17254.82 | 14412.55 | 14415.37 | 0.79 | 2.72 |
| FDI | | 11600.00 | 4690.00 | 15900.00 | 1.75 | 5.07 |
| TO | | 344.90 | 343.08 | 49.47 | -0.10 | 2.78 |
| LE | | 75.51 | 76.30 | 4.01 | -0.14 | 1.94 |
| e) Thailand | | | | | | |
| GDPC | 39 | 2016.35 | 1884.79 | 1388.95 | 0.87 | 3.00 |
| FDI | | 3370.00 | 2110.00 | 3370.00 | 0.76 | 2.30 |
| TO | | 89.90 | 81.37 | 38.12 | 0.27 | 1.58 |
| LE | | 69.39 | 70.53 | 3.56 | -0.76 | 2.44 |

Notes: GDPC is GDP per capita, FDI in millions of US dollars, TO is export plus import over GDP and LE is life expectancy

TABLE 2: Quantile Regression Results

| | $10^{th}$ | $20^{th}$ | $30^{th}$ | $40^{th}$ | $50^{th}$ | $60^{th}$ | $70^{th}$ | $80^{th}$ | $90^{th}$ | OLS |
|---|---|---|---|---|---|---|---|---|---|---|
| a) Indonesia | | | | | | | | | | |
| FDI | 0.265[b] | 0.342[b] | 0.450[b] | 0.756[a] | 0.701[a] | 0.642[a] | 0.632[a] | 0.492[a] | 0.476[a] | 0.099[b] |
| | (0.102) | (0.186) | (0.218) | (0.250) | (0.168) | (0.149) | (0.134) | (0.140) | (0.121) | (0.036) |
| TO | -0.796[a] | -0.786[b] | -0.769[b] | 0.141 | 0.042 | -0.228 | -0.270 | -0.336 | -0.214 | -0.189 |
| | (0.103) | (0.405) | (0.408) | (0.521) | (0.645) | (0.469) | (0.368) | (0.377) | (0.273) | (0.322) |
| LE | -6.020[a] | -5.678 | -4.998[a] | -3.520[a] | -3.688[a] | -3.768a | -3.733[a] | -3.960[a] | -3.846[a] | -4.310[a] |
| | (0.360) | (0.885) | (0.906) | (0.949) | (0.715) | (0.485) | (0.482) | (0.432) | (0.382) | (0.526) |
| b) Malaysia | | | | | | | | | | |
| FDI | 0.149[a] | 0.178[a] | 0.211[a] | 0.230[a] | 0.243[a] | 0.250[a] | 0.233[a] | 0.154[a] | 0.152[a] | 0.189[a] |
| | (0.031) | (0.030) | (0.062) | (0.063) | (0.067) | (0.046) | (0.076) | (0.052) | (0.034) | (0.030) |
| TO | -0.634 | -0.909 | -0.919 | -0.860 | -0.762 | -0.743 | -0.901 | -0.585 | -0.610 | -0.768 |
| | (0.182) | (0.250) | (0.160) | (0.137) | (0.164) | (0.160) | (0.168) | (0.206) | (0.161) | (0.152) |
| LE | 20.497 | 22.184[a] | 20.364[a] | 18.992[a] | 18.058[a] | 17.595[a] | 19.64[a] | 19.73[a] | 18.95[a] | 19.77[a] |
| | (1.837) | (2.381) | (2.411) | (2.406) | (2.101) | (1.745) | (2.239) | (1.556) | (1.344) | (1.335) |
| c) Philippines | | | | | | | | | | |
| FDI | 0.043[c] | 0.081[b] | 0.085[c] | 0.088[a] | 0.115[b] | 0.120[b] | 0.091[a] | 0.065 | 0.040 | 0.098[b] |
| | (0.024) | (0.031) | (0.044) | (0.029) | (0.047) | (0.059) | (0.031) | (0.076) | (0.046) | (0.038) |
| TO | -0.33[c] | -0.154 | -0.230 | -0.420[b] | -0.556[c] | -0.772[b] | -0.80[a] | -0.67[a] | -0.67[a] | -0.41[b] |
| | (0.190) | (0.134) | (0.206) | (0.182) | (0.277) | (0.341) | (0.263) | (0.223) | (0.187) | (0.213) |
| LE | 18.62[a] | 14.575[a] | 15.164[a] | 15.066[a] | 14.570[a] | 16.441[a] | 17.06[a] | 15.90[a] | 13.86[a] | 14.12[a] |
| | (3.014) | (1.948) | (3.830) | (2.780) | (3.502) | (3.019) | (2.539) | (2.673) | (1.462) | (2.208) |
| d) Singapore | | | | | | | | | | |
| FDI | 0.207[c] | 0.228[b] | 0.137[c] | 0.130[c] | 0.123[b] | 0.175[c] | 0.177[b] | 0.290[a] | 0.276[a] | 0.246[a] |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (0.109) | (0.111) | (0.078) | (0.070) | (0.052) | (0.096) | (0.070) | (0.092) | (0.085) | (0.063) |
| TO | -0.031 | 0.321 | 0.410c | 0.501 | 0.411c | 0.171 | 0.116 | -0.357 | -0.69c | -0.023 |
| | (0.407) | (0.190) | (0.228) | (0.255) | (0.210) | (0.410) | (0.466) | (0.371) | (0.361) | (0.278) |
| LE | 14.52[a] | 12.129[a] | 14.303[a] | 14.392[a] | 15.021[a] | 13.707[a] | 14.40[a] | 12.45[a] | 12.96[a] | 12.35[a] |
| | (3.991) | (3.342) | (2.525) | (2.180) | (1.786) | (2.585) | (1.980) | (2.681) | (2.774) | (2.158) |
| e) Thailand | | | | | | | | | | |
| FDI | 0.069[c] | 0.057[c] | 0.102[c] | 0.097 | 0.093 | 0.057 | 0.148[c] | 0.071 | 0.054 | 0.001 |
| | (0.038) | (0.031) | (0.058) | (0.078) | (0.073) | (0.088) | (0.085) | (0.075 | (0.096) | (0.084) |
| TO | 0.551[b] | 0.592[a] | 0.446 | 0.516 | 0.699 | 0.611 | 0.709 | 0.830 | 0.409 | 0.652 |
| | (0.162) | (0.135) | (0.231) | (0.300) | (0.265) | (0.334) | (0.193) | (0.380) | (0.660) | (0.250) |
| LE | 6.185[a] | 6.474[a] | 6.033[a] | 5.580[b] | 11.028[a] | 11.216[a] | 13.61[a] | 10.53[b] | 12.97[b] | 8.870[a] |
| | (0.637) | (2.164) | (1.751) | (2.502) | (3.105) | (3.259) | (2.965) | (3.920) | (5.189) | (2.002) |

Notes: [a, b, c] indicate statistical significance at the 1, 5 and 10 % level. Figures in parentheses are boostrapped standard errors.