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Chan-Hyun Sohn

Kangwon National University, Korea

Yokohama National University, Japan

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Center for Economic and Social Studies in Asia, Department of Economics

Yokohama National University

The Nature of FDI Competition in East Asia: Crowding-out or Crowding-in?*

Chan-Hyun Sohn
Kangwon National University, Korea &
Yokohama National University, Japan

<Abstract>
This paper aims to empirically investigate the so-called *China effect*, namely, how China's increasing attraction of FDI affects the FDI inflows of neighboring ASEAN countries. Special attention will be given to whether China and ASEAN countries are *crowding-out* (competing) or *crowding-in* (helping) each other for global FDI inflows into East Asia.

Recognizing that all previous studies employed gravity models, which have no theoretical foundation to explain FDI inflows, this study instead utilizes a theory-based *Knowledge-Capital Model*. Using country-pair FDI data for China and six major ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam) with 31 FDI source countries during1985–2010, panel analyses of each country are carried out to identify the possible influence of the other countries' FDI performance.

The empirical results suggest that China's rise does not pose a threat to neighboring ASEAN countries, but that it induces a strong synergetic effect on the FDI inflows into neighboring ASEAN countries. Thus in attracting global FDI, China and the ASEAN countries are not foes, but friends.

JEL Code: F13, F21, O53
Key Words: Knowledge-Capital Model, China Effect, Country-Pair Analysis, FTA, BIT

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*Comments and suggestions are welcome. To cite this work, please contact the author.

**(Correspondence) Professor, Department of International Trade and Business, College of Business Administration, Kangwon National University, Chuncheon 200-701, Korea
E-mail: chsohn@kangwon.ac.kr
Guest Professor, Faculty of Economics, International Graduate School of Social Science, Yokohama National University, 79-3 Tokiwadai, Hodogaya-ku, Yokohama 240-8501, Japan
E-mail: chsohn@ynu.ac.jp

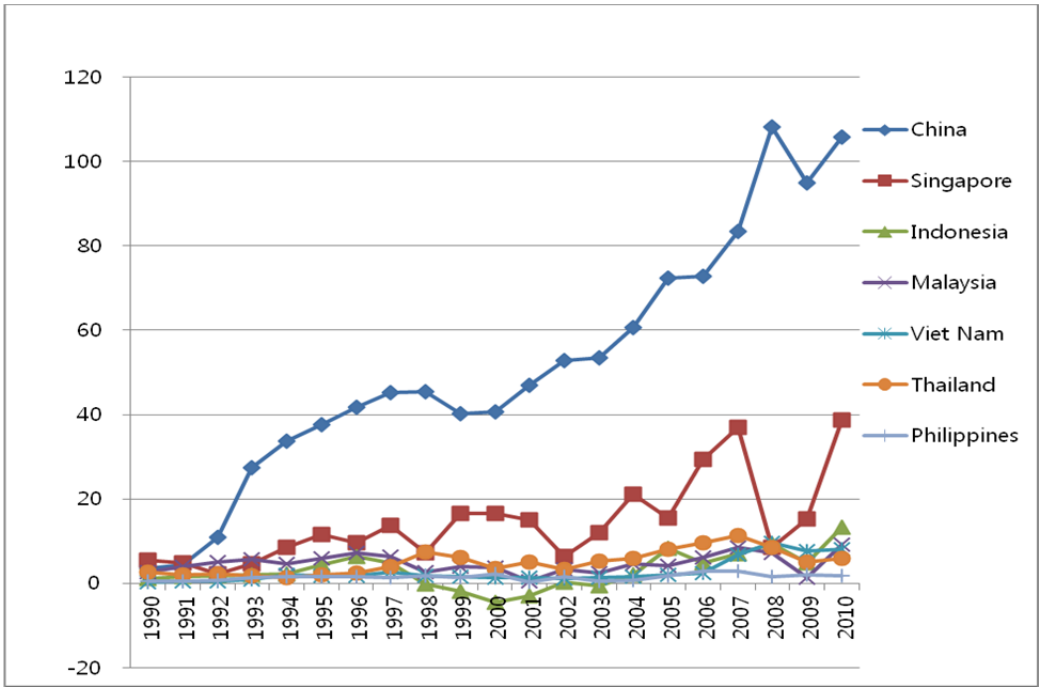
I. INTRODUCTION

The importance of foreign direct investment (FDI) on a nation's economic growth has been widely recognized in recent studies, and statistics on FDI and economic growth have been found to be significant. The critical role of FDI on a nation's economic growth has led to the development of various FDI-attracting policies in many developing countries. Malaysia in 1988–1998, Vietnam in the 1990s, and particularly China after 2000 are examples in which FDI made an important contribution to economic growth.

Figure 1 shows the FDI inflows of six major ASEAN countries and China for the period of 1990–2010. FDI inflows in China increased rapidly since Deng Xiaoping's reforms and opening-up policies at the beginning of the 1990s. With its 2002 accession into the WTO, China has become even more attractive to FDI inflows. In contrast, most ASEAN countries except Singapore registered drops in their FDI inflows after the Asian financial crisis in 1997.

<Figure 1> FDI flows to China and ASEAN countries

Unit: billion U.S. dollars

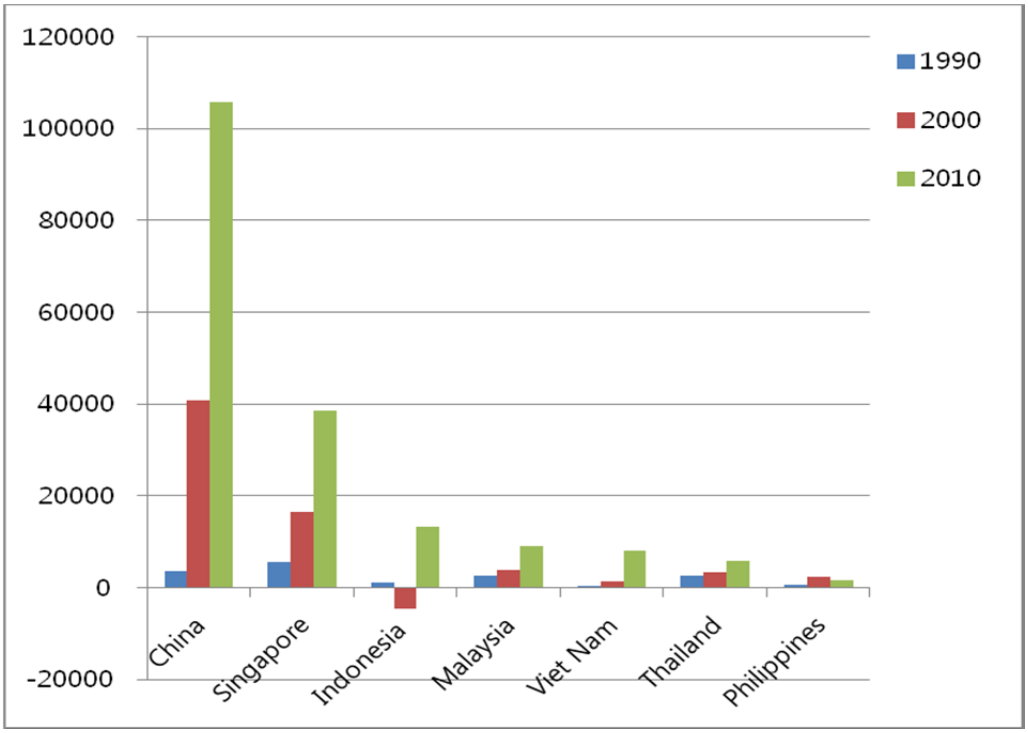


Source: http://unctadstat.unctad.org/

Figure 2 shows FDI inflows into China as compared to six other ASEAN countries in 1990, 2000, and 2010. It illustrates why China's neighboring countries feel threatened by China's growth. The figures show that while FDI inflows into Southeast Asian countries were in decline (Indonesia even registered net outflows), FDI inflows into China surged. Was there any causal relationship between these contrasting trends?

<Figure 2> FDI flows to China and ASEAN countries: 1990, 2000, 2010

Unit: million U.S. dollars



Source: http://unctadstat.unctad.org/

China has particularly accelerated its economic growth since it joined the WTO in 2002. The strong drive to attract FDI into China has been fruitful, and has expedited the growth of the economy. This rise of China, particularly in the area of FDI, has received a mixed response from its neighboring ASEAN countries. One point of view is that China may monopolize all FDI inflows to East Asia, thereby *crowding-out* its neighboring ASEAN countries from receiving FDI. The opposing view is that China's rise may lead to close business synchronization and interdependence between China and the ASEAN, thereby facilitating a concurrent *crowding-in* of FDIs into neighboring ASEAN countries. This is the question of the so-called *China effect*.

The objective of this paper is simple and straightforward: to examine whether China's rapid economic growth comes at the expense of its ASEAN neighbors in terms of attracting FDI. Put differently, this paper empirically tests the relationship between the FDI inflows of ASEAN countries with that of China to identify whether *crowding-out* or *crowding-in* is taking place.

This paper is organized as follows: Section II reviews the literature on the so-called China effect. Section III explains the theoretical foundation of FDI determination, the Knowledge-Capital Model. Section IV explains the empirical models and data used herein. Section V shows the empirical results. Section VI concludes the paper.

II. LITERATURE REVIEW

The so-called *China Effect* has become a fascinating subject, particularly since the strong critical comment made in 2002 by the Lee Hsien Loong, the Deputy Prime Minister of Singapore, who stated that Southeast Asian countries had reached the point where competition with China had become extremely difficult, and that FDI to China deprived other Southeast Asian countries of investment flows (China Online, November 14, 2002). As such, the question of whether global FDIs are diverted to China from neighboring ASEAN countries has become one of great concern.

Investigation of the China effect was first elaborated in Chantasasawat et al. (2004 and 2008) and Fung (2008). These papers divided the China effect into three possibilities: diversion, creation, or a neutral effect. The diversion effect was defined as where the growth of China's inward FDI resulted in a simultaneous decrease of the neighboring ASEAN countries' FDI inflows, which we call *crowding-out*. The creation effect appears when ASEAN countries' FDI inflows concurrently increase with China's FDI inflows; we call this *crowding-in*. The neutral effect exists when the ASEAN countries' FDIs are not affected in any systematic way by FDI inflows into China.

Chantasasawat et al. (2004, 2008) provided empirical results that the China effect encourages FDI flows into the East Asian countries; the only negative correlation found was for China's FDI and the share of FDI inflows into the East Asia region. A similar simulation was conducted for China and two other regions: Latin America and Eastern Europe. The results show that the potential China effect has no vital relation in these cases. Together, these studies suggest that a country's FDI attractiveness is strongly influenced by the FDI inflows in the region to which it belongs. These results are further confirmed in Fung et al. (2008), who considered a possible global supply chain consisting of China and Central and Eastern European countries. All of these analyses utilized a *gravity model* for the crowd-out or crowd-in of FDIs.

Considered an attractive pioneering study, the method of Fung's empirical analysis was used by many studies that followed. The panel analyses by Zhou and Lall (2005) and Wang et al. (2007) indicated that inward FDI into China has had a partly positive influence on other East Asian countries, excluding Indonesia, Malaysia, and Taiwan. Mercereau (2005) concluded that China's FDI inflows have no significant effect on neighboring East Asian countries; however, it diverted the FDI inflows of Singapore and Myanmar.

As such, the *gravity estimation* of Fung became widely pervasive in econometric testing of the China effect. Eichengreen and Tong (2007) found an opposite result from Fung: China had a negative influence for European countries' inward FDI. Cravino et al. (2007) filled the gap between the role of China's development in the FDI environment with that in Latin American and Caribbean countries and found no significant effect, supporting the regional characteristic of FDI: that a country's FDI inflows are affected by the region to which it

belongs, and not by other regions. Resmini and Siedschleg (2008), however, showed an inter-regional effect of China's rise on European countries' FDI performance.

Most previous studies of the China effect utilize a country-specific dataset and conduct ordinary least squares (OLS) with fixed effects to estimate the China effect. Chantasasawat et al. (2004) used data for eight Asian economies—Hong Kong, Taiwan, the Republic of Korea, Singapore, Malaysia, the Philippines, Indonesia, and Thailand—from 1985 to 2001. They added China's inward FDI as an indicator for the China effect, while the annual data for the other eight countries are pooled and treated in a panel. They found that China's FDI receipts and other Asian countries' receipts are positively correlated. They also found that the China effect is not the most important determinant of the inward direct investment of these economies: policy and institutional factors such as openness, corporate tax rates, and corruption are more important.

Eichengreen et al. (2005) estimated a gravity equation using bilateral FDI inflows between 29 source countries and 63 recipient countries during 1998–2003. They used OLS and country-pair fixed effects and found a complementary relationship between FDI in China and that in other Asian countries, but a substituting relationship with the FDI of OECD countries. They also found that China's rapid growth and attractiveness as an FDI destination encouraged FDI inflows into other Asian countries that might belong to a common supply chain.

Zhou and Lall (2005) utilized panel data analysis for the period 1986–2001 using fixed-effect estimation and found no competition between China and its neighbors for FDI in all activities. In contrast, the complementary relationship between China and its neighboring countries in the regional production network was projected to grow.

Mercereau(2005) used FDI inward data for 14 Asian countries for1984–2002 and found that China did not seem to have diverted FDI inflows from countries in Asia, with the exceptions of Singapore and Myanmar only. He used country-specific data using OLS with fixed country effects to estimate the impact of China's emergence on FDI inflows to Asian countries. Further, he divided the impact into two parts: the average diversion across Asian countries and the diversion for each Asian country. He also pointed out that the fundamentals of a country, such as a balanced government budget, an appreciating real exchange rate, and a low inflation rate seem to be associated with increased FDI inflows.

In sum, the previous studies found evidence for both crowding-out and crowding-in by the China effect. Most of the models employed use a gravity equation, and most studies used a country-specific dataset except Eichengreen et al. (2005) which used a country-pair dataset. Analytical methods used were mostly OLS with some fixed effects.

III. THE MODEL

As reviewed in the above section, most previous studies on the China effect employed a gravity equation for the determination of FDI. Namely, the volume of FDI is dependent on the well-known gravity variables, which include the products of GDPs, the distance between countries, common languages, and geographic characteristics. The use of the gravity equation for the FDI, however, has a serious theoretical shortcoming: thusfar, we have no theoretical foundation for using the gravity equation to explain the FDI flows. The gravity equation fits the FDI data well, as it does trade volume data. While the gravity model could be theoretically derived from trade models—both intra-industry and inter-industry trade—as explained in Sohn (2005), there is no theoretical explanation for using the gravity model for FDI flows. This paper, therefore, introduces the *Knowledge-Capital Model* for FDI flows across countries. This model is supposed to fit particularly well in a country pair.

The previous empirical and theoretical papers on the determinants and motives of FDI flows can be divided into the three categories: (1) horizontal motivation, (2) vertical motivation, and (3) knowledge-capital motivation (Carr et al. 2001, 2003; Blonigen et al. 2003). If there is any certain FDI flow data set for distinguishing the vertical and horizontal FDI, the knowledge-capital model could be separated into vertical and horizontal types of FDI.

The estimation using the knowledge-capital model (CMM model) was originally developed and applied by Carr, Markusen, and Maskus (2001). Instead of considering FDI as a macro phenomenon, they focused on the activity of multinational enterprises (MNEs). FDI is closely related to emerging MNE activities, and current theoretical developments have incorporated multinational firms that produce in various countries into trade models, such as firm heterogeneity, fragmentation and overseas outsourcing, and production networking across national borders. Both horizontal and vertical production activities and their corresponding FDI arise from the MNE's optimization process for producing goods (Carr et al., 2001). The horizontal type of MNE activity was introduced by Markusen (1984); Helpman (1984) showed the vertical type of MNE activity.

Markusen (1984) introduced the horizontal model, which he described as a multinational firm's location choice for the same activities in multiple regions. The horizontal activity comes from the interaction between the trade cost and economies of scale that eventually generate FDI flows across countries. According to this model, the horizontal FDI could be predicted from the skill differences of production locations, which represent the knowledge level of countries. (Markusen and Venables, 2000).

Helpman (1984) introduced the vertical model, which he described as the activities of a firm's location choice in different countries based on the motivation to exploit the factor cost advantages. The model predicts that FDI should flow into unskilled countries from skilled countries. Therefore, the FDI will diminish where countries have comparable skill levels because there are no cost advantages (Blonigen et al., 2003).

The CMM model provides the theoretical predictions of the horizontal and vertical activities of FDIs: horizontal activities arise among countries that are relatively similar in size and endowments, while vertical activities arise from the skill differences between countries. These are the characteristics of the model developed by Carr et al. (2001).

The knowledge-capital model can be simply explained through the combination of motives of the horizontal and vertical models. According to Carr et al., the knowledge-capital model includes three important assumptions. First, knowledge-generating activities and knowledge-based activities can be located in different regions of production. Second, in the framework of production, these knowledge-capital activities are related with skilled-labor intensity. Third, knowledge-capital activities can be utilized by multiple types of production at the same time.

In Carr et al. (2001), horizontal FDI arises from trade cost and market size incentives. If knowledge-generating and knowledge-based activities can be simultaneously utilized, these activities could supply extra production facilities with lower cost. This means that knowledge-capital activities can produce the same commodities in various locations in order to avoid trade costs. Generally, when the trade cost increases, exporters in the home country will face a high marginal cost. In this case, there will be growing incentives to produce and sell directly in a host country. If MNEs produce in a host country and sell there at the same time, they have trade cost advantages because they can avoid import tariffs and transportation costs. As a result, the horizontal FDI will be greater when the home and host countries are relatively similar in size and have relatively similar factor endowments under a high trade cost.

On the other hand, vertical FDI increases because of trade costs and relative factor prices. According to the CMM model, vertical FDI is generated when knowledge-capital activities are located in different countries and provide production facilities at zero or low cost (Carr et al., 2001). In this case, vertical FDI has incentives for skilled-labor-intensive countries with low trade costs. When the countries of similar size have relatively different endowments, there will also be incentives to operate in skilled-labor-scarce countries. In effect, vertical FDI will be generated when the home country is small and skilled-labor-intensive. In conclusion, the knowledge-capital model provides the following estimation equation:

$$\begin{aligned}\text{Real Sales} = {} & \alpha + \beta_1 * (\text{GDP sum}) + \beta_2 * (\text{GDP difference squared}) \\ & + \beta_3 * (\text{Skill difference}) + \beta_4 * \begin{pmatrix}[\text{GDP difference}] * \\ [\text{Skill defference}]\end{pmatrix} \\ & + \beta_5 * (\text{Investment cost host}) + \beta_6 * (\text{Trade cost host}) \\ & + \beta_7 * \begin{pmatrix}[\text{Trade cost host}] * \\ [\text{Skill difference squared}]\end{pmatrix} + \beta_8 * (\text{Trade cost parent}) \\ & + \beta_9 * \text{Distance}\end{aligned}$$

Each variable indicates the determinants of each type of investment. For example, relatively similar market size relates to horizontal FDI, while relatively different labor endowments (the

difference between skilled labor and unskilled labor) and trade costs relate to vertical FDI. The results of OLS, weighted least squares, fixed effects, and Tobit analysis are used to estimate the knowledge-capital model.

By the result of regressing Eq.(1), Carr et al. found that trade cost is unimportant to the home country, but is important to the host country. This means that vertical investment diminishes according to the home country's trade cost. As a result, if the trade cost decreases investment flows, then trade and investment complement each other. In contrast, if the trade cost increases investment, then trade and investment are substitutes for each other.

Moreover, the result suggests that the sales of affiliates are significantly related with bilateral economic activities. The regression is comprised of the GDP difference, squared GDP differences, differences in skilled-labor endowments, and the relationship between endowment and size differences. According to the result of Carr et al., investment from the home country to the host country increases by the sum of market size, skilled-labor abundance in the home country, and the relationship between endowment and size differences. These findings are consistent with the earlier work of Brainard (1997) and Ekholm (1997).

The findings of Carr et al. show that the increase of the skill endowment of the home country encourages the affiliate's sales when the parent is small. Moreover, an increase in the skill endowment in the home country brings a decrease in the GDP difference. Thus, authors have suggested that these results can support the appropriateness of the knowledge-capital model. However, arguments arise because of the incorrect specification of the skill difference. Since the knowledge-capital model is derived from a combination of horizontal and vertical FDI motivation, the skill difference can have either a positive or a negative effect on FDI (Blonigen et al., 2003). Therefore, the knowledge-capital model would have an incorrect specification in the regression equation. Blonigen et al. (2003) therefore suggested a revised knowledge-capital model as follows:

$$
\begin{aligned}
\mathrm{RSALES_{ij}} \;&=\; \mathrm{RSALES_{jt}} \\
&= \alpha + \beta_1\left(\mathrm{GDP_i} + \mathrm{GDP_j}\right) + \beta_2(\mathrm{GDP_i} - \mathrm{GDP_j})^2 \\
&\quad + \beta_3\left[\mathrm{SK_i} - \mathrm{SK_j}\right] + \beta_4\left[\mathrm{SK_i} - \mathrm{SK_j}\right] * \left[\mathrm{GDP_i} - \mathrm{GDP_j}\right] \\
&\quad + \beta_5(\text{Investment cost host}) + \beta_6(\text{Trade cost host}) \\
&\quad + \beta_7(\text{Trade cost host}) * (\text{Squared skill difference}) \\
&\quad + \beta_8(\text{Trade cost parent}) + \beta_9(\text{Distance})
\end{aligned}
$$

In response to this criticism, Carr et al. (2003) reevaluated the knowledge-capital model. They insisted that the alternate-term *absolute difference* is not reasonable to use in the theory. However, they estimated the model again and found identical results (Carr et al., 2003).

IV. DATA AND THE EMPIRICAL MODEL

As shown in the equations, the knowledge capital model determines the real sale or real production of an overseas plant, subsidy, or affiliate. Thus, it explains the *production volume* of an overseas branch of a multinational enterprise. After critical debate, it has been widely recognized that the model is a unique and appropriate formulation for distinguishing between the horizontal and vertical *overseas activities* of multinational firms.

Thus, if we accept the assumption that the FDI volume remains proportional to the volume of the overseas production of a multilateral firm, the knowledge-capital model can be used to effectively determine FDI volumes across countries.

The Data

In terms of how China's FDI inflows affect the FDI inflows of neighboring ASEAN countries, one of the distinguishing features of this paper might be that all data are arranged by *country-pairs* and that all empirics are based on *country-pair analyses*. In its empirical investigation, this paper deals with six ASEAN countries and China as FDI recipients and 38 FDI-sourcing countries. The FDI recipients, usually called the *host countries*, include Indonesia, Malaysia, the Philippines, Singapore, Thailand, Vietnam, and China. Four other ASEAN countries are not included because of a lack of data. The FDI sourcing countries, called the *home countries*, include 31 OECD member countries, six ASEAN countries, and China. The period studied is 26 years, from 1985 to 2010. Thus, the number of observations in this study is theoretically [7 host countries] × [38 home countries] × [26 years].

FDI Data: The bilateral flow of FDI (FDI_{ij}^{t}) from country *i* (*i*=1,2,..,38) to country *j* (*j*=1,2,..,7) is collected from OECD investment data set for the period 1985–2010.

Other Data: Other variable data including FDI_{ij}^{t} are explained in detail in Table A1.

The Empirical Models

(1) The *Basic Knowledge-Capital* model:

$$\begin{aligned} Ln(\mathrm{FDI}_{\mathrm{ij}}^{\mathrm{t}}) = {} & \alpha_0 + \beta_1 \mathrm{GDPSUM}_{\mathrm{ij}}^{\mathrm{t}} + \beta_2 \mathrm{GDP\ differece\ square}_{\mathrm{ij}}^{\mathrm{t}} + \beta_3 \mathrm{Skill\ difference}_{\mathrm{ij}}^{\mathrm{t}} \\ & + \beta_4(\mathrm{GDP\ difference} * \mathrm{Skill\ difference}) + \beta_5(\mathrm{Investment\ cost})_{\mathrm{j}}^{\mathrm{t}} \\ & + \beta_6(\mathrm{Trade\ cost})_{\mathrm{j}}^{\mathrm{t}} + \beta_7 \ln(\mathrm{Distance})_{\mathrm{ij}} + \mu_i + \mu_j + \mu^t + \varepsilon_{\mathrm{ij}}^{\mathrm{t}} \qquad \text{------- (1)} \end{aligned}$$

where *j* represents the host countries, which are Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

GDPSUM denotes the market size expansion. This variable indicates the joint market size of the home and host countries. It is captured by the sum of the GDPs in the home and host countries. Its coefficient is expected to show a positive sign.

GDP Difference Square denotes the GDP difference between the home and host countries at year *t*, which represents the proxy of economic size of the country-pair. This variable is important because it captures the horizontal motivation of FDI. According to the knowledge-capital model, if countries have similar endowments, then the GDP difference will show a negative sign because of the relationship between the skill difference and the GDP difference. Furthermore, when home countries' GDPs are constant, the market size difference will be determined by the GDP of the host countries. Hence, if the host country's GDP is larger, then, investment from the home country will increase because of the increase of the home country's GDP. In this case, the horizontal FDI will increase, and thereby, the coefficient is expected to be negative. In contrast, the horizontal FDI will decrease when the home country's GDP is larger than the host country's GDP. Thus, the sign of the coefficient is expected to be negative.

Skill Difference denotes the skill difference between the home and host countries. This variable indicates the vertical motivation of FDI. It represents the factor intensity difference between the home and host countries. According to the knowledge-capital model, a positive skill difference represents an inequality of skill endowments between the home and host countries. When the skill difference term lies in the positive range, an increase in the variable corresponds to a greater inequality in the relative skill endowments. Moreover, as mentioned earlier, the vertically motivated FDIs occur when MNE production is located in several countries but the headquarters are located in a country with cheap skilled labor. This phenomenon is well known as the *production fragmentation of MNEs* (Markusen and Maskus, 2002). A negative sign shows a convergence of skill intensity between the home and host countries. Therefore, its sign is expected to be positive.

*GDP difference∗Skill difference*denotes the interaction term for the relationship between the skill difference and the GDP difference. This variable influences the vertical motivation of FDI to some extent. However, the sign of the coefficient is expected to have a negative value because vertical FDI is encouraged when the home country is small and highly skilled. Affiliation production is highest when the home country is moderately small and has a large amount of skilled labor.

Investment Cost and Trade Cost

In this paper, all variables are kept exactly the same as in the original knowledge-capital model of Carr et al.; however, trade and investment cost variables have been introduced. Although these variables are very important in empirical estimation, not much attention has been given to the development of their measurement. In this paper, these two variables are introduced to reflect the cost of trade and FDI as realistically as possible. In fact, it is worth noting that they are one of the distinguishing features of this study.

Investment cost denotes the investment cost into the host country. A proxy of the variable is used from the financial risk of the host country. It combines the financial risk with several indices reported from the PRS Group's International Country Risk Guide. The financial risk

is a compound of several indices, including exchange stability, foreign debt as a percentage of GDP, current account as a percentage of exports of goods and services, foreign debt service as a percentage of exports of goods and services, and net international liquidity of import cover. Its value ranges from zero to 50; a higher score indicates greater financial risk. Furthermore, we combine this variable with the BIT (bilateral investment treaty) below. We expect its sign to be negative.

Investment Cost = [Investment cost measure] x $[BIT_{ij}^{t}]$

where BIT_{ij}^{t} = 1 if no BIT between countries *i* and *j* at time *t*

BIT_{ij}^{t} = 0, if BIT implemented between countries *i* and *j* at time *t*

Investment cost measure = Financial risk index

Trade Cost denotes the trade costs from the home country to the host country. This variable is designed to capture whether the host country's trade cost will affect investment inflows. This variable is a combination of the host country's free trade index and binary free trade agreement (FTA). FTA eliminates tariffs and other trade barriers between member countries. Therefore, when an FTA comes into force, the host country's tariffs and other trade barriers turn become zero, and the trade cost drops. We expect the sign of this variable to be negative because trade costs diminish the incentive to locate plants abroad for shipment back to the home market.

Trade Cost = [Tariff rate] x $[FTA_{ij}^{t}]$

where FTA_{ij}^{t} = 1 if no FTA between countries *i* and *j* at time *t*

FTA_{ij}^{t} = 0, if FTA implemented between countries *i* and *j* at time *t*

Tariff rate = applied simple mean, all products

Distance denotes the geographical distance between the home and host countries. This variable represents both investment and trade cost. Most previous studies achieved ambiguous results; therefore, we expect mixed signs throughout the country-pairs.

Finally, μ_i and μ_j indicate the home and host country-year fixed effects, respectively. While μ^t captures the year dummy, ε_{ij}^{t} represents the white error.

(2) The *Basic China Effect* model:

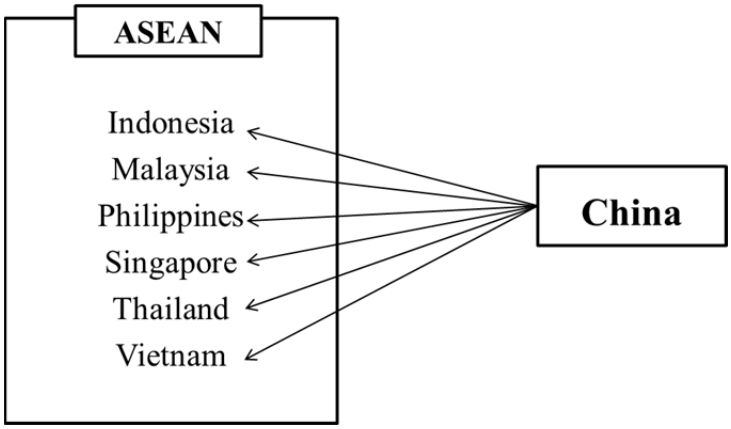
$$Ln(\mathrm{FDI}_{ij}^{t}) = \alpha_0 + \boldsymbol{\beta}_1 \mathbf{X}_{ij}^{t} + \beta_2 \mathrm{Skill\ difference}_{cj}^{t} + \beta_3 \mathrm{China}_{ic}^{t} + \mu_j + \mu^t + \varepsilon_{ij}^{t} \quad \text{------- (2)}$$

where $\boldsymbol{X}_{ij}^{t}$ stands for all the explanatory variables as in the basic model. $Skill\ difference_{cj}^{t}$ represents the skill difference between China and each ASEAN country. This paper adds this variable to capture whether the skill difference between China and ASEAN countries could affect investment inflows between them.

$China_{ic}^{t}$ denotes the FDI into China. This variable is added to capture the so-called *China effec*t on neighboring ASEAN countries. It will identify how China's FDI inflows affect neighboring ASEAN countries, whether positively or negatively. It could explain how and why some Asian countries have perceived China's rapid growth as a threat, whereas others have perceived this growth as beneficial to the Asian region (Mercereau, 2005). Thus, we expect $Skill\ difference_{cj}^{t}$ to be negative, but the coefficient for China may be ambiguous.

μ_j and μ^tcapture the host country-year fixed effect and the year dummy, respectively, whereas ε_{ij}^{t} represents the error term.

<Figure 1> China's Effect on ASEAN



(3) The *Country Effect on Neighbors* model:

$$Ln(\text{ASEANFDI}_{\text{ik}}^{\text{t}}) = \alpha_0 + \beta_1 Ln\text{FDI}_{\text{ij}}^{\text{t}} + \boldsymbol{\beta}_2 \mathbf{X}_{\text{ij}}^{\text{t}} + \beta_3 \text{China}_{\text{ic}}^{\text{t}} + \mu_{\text{j}}^{\text{t}} + \varepsilon_{\text{ij}}^{\text{t}} \quad \text{----------} \quad (3)$$

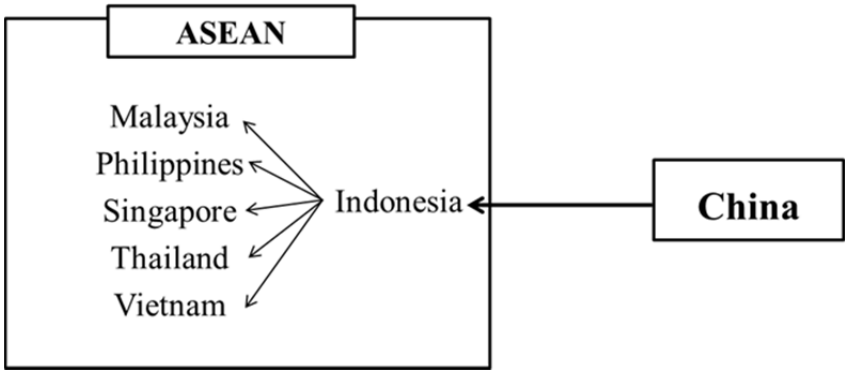
where $ASEANFDI_{ik}^{t}$ denotes FDI inflows to country *k* from country *i* at time *t*, where *k* represents the host countries (*k*= 1,2..,*j*,..,6 and $k \neq j$). This variable represents the sum of the five host countries' inward FDI, excluding that of the host country *j*.

This model is designed to capture the possible effect of the FDI inflows of one host country to the other host countries in the region. For example, this model estimates the effect of Indonesia's FDI inflow to neighboring ASEAN countries' FDI inflows. To be more specific, for the *Indonesia effect*, the dependent variable would be the inward stock of FDI into Malaysia, the Philippines, Singapore, Thailand, and Vietnam. As such, this equation can be estimated for each of the ASEAN countries; this means there are six equations because *k* ranges from 1 to 6 and $k \neq j$.

This equation is used by Fung to identify the China effect. The model can include the FDI inflows of China to estimate the China effect under an assumed structural and behavioral framework effect for each ASEAN host country. This paper presumes that each country can

affect the other five countries as well as the entire ASEAN region. Therefore, the Indonesia effect, for instance, affects FDI inflows into Malaysia, the Philippines, Singapore, Thailand, and Vietnam; as such, this equation can be used for other countries.

<Figure 2> A Country's Effect on Its Neighbors

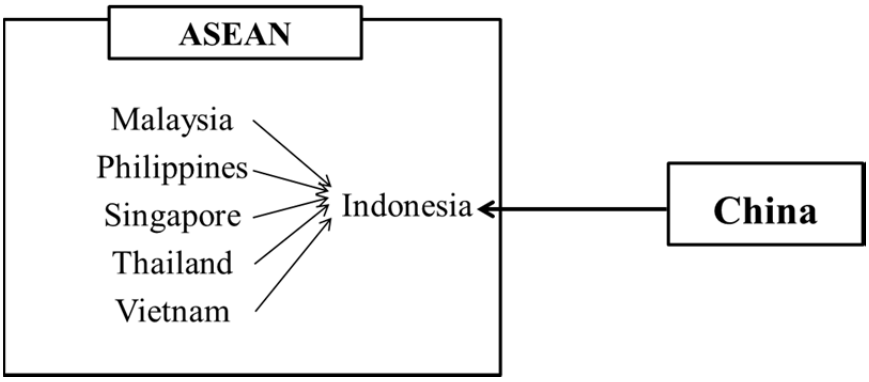


(4) The *Neighbors' Effect on a Country* model:

$$Ln(\mathrm{FDI}_{ij}^{t}) = \alpha_0 + \beta_1 Ln\mathrm{A1FDI}_{ij}^{t} + \beta_2 Ln\mathrm{A2FDI}_{ij}^{t} + \beta_3 Ln\mathrm{A3FDI}_{ij}^{t} + \beta_4 Ln\mathrm{A4FDI}_{ij}^{t} + \beta_5 \mathrm{LnA5FDI}_{ij}^{t} + \beta_6 \mathrm{China}_{ic}^{t} + \boldsymbol{\beta}_7 \mathbf{X}_{ij}^{t} + \mu_j + \mu^t + \varepsilon_{ij}^{t} \text{--- (4)}$$

This model is designed to capture the neighboring host countries' effect on a host country. For example, in the individual estimation, all six ASEAN countries could be affected by the other five countries simultaneously. Thus, this model allows us to incorporate the possible interrelationship of a host country with the other five countries. To find the China effect in this structural and behavioral framework, we simply add the China FDI variable.

<Figure 3> Neighbors' Effect on a Country



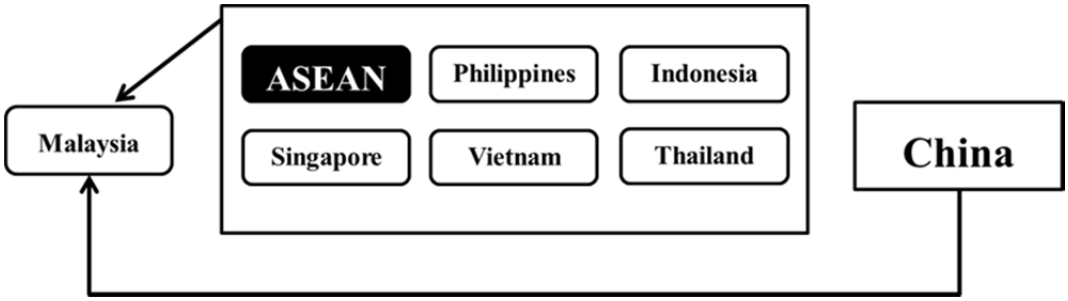
(5) The *Regional Agglomeration Effect* model

$$Ln(\mathrm{FDI}_{ij}^{t}) = \alpha_0 + \beta_1 Ln\mathrm{RAE}_{ij}^{t} + \boldsymbol{\beta}_2 \mathbf{X}_{ij}^{t} + \beta_3 \mathrm{China}_{ic}^{t} + \mu_j + \mu^t + \varepsilon_{ij}^{t} \quad \text{---------- (5)}$$

where RAE_{ij}^{t} denotes the sum of all six ASEAN countries' FDI_{ij}^{t}.

The model examines the possibility of the regional agglomeration effect (which is also known as the clustering effect). If the effect exists, there will be a crowding-in effect within ASEAN on a host country's FDI performance.

<Figure 4> Regional Agglomeration



V. THE EMPIRICAL RESULT

Econometric Tools

Since our data set is in a panel (7 host countries × 38 home countries ×26 years) of country-pairs and there exists the possibility of endogeneity and heteroskedasticity errors in OLS, this paper adds host and year effects into the panel analysis. The knowledge-capital model usually uses OLS; however, FDI has intrinsic endogeneity problems. For this reason, Baier and Bergstrand (2011) provided a better econometrical method to avoid the problem. In this paper, we follow their approach and adapt the host-country fixed effect and year fixed effect in order to avoid endogeneity and self-selection problems. We do not accept the home-country fixed effect because the home country's specific characteristics do not affect its investment decision; rather, the host country's specific characteristics affect that decision.

As the log of FDI stock is the dependent variable in this paper, there exists the possibility of autocorrelation and data selection problems in country pairs. For this reason, this paper uses the system GMM (generalized method of moments) estimator, which is a well-known econometric method for estimation when the dependent variable is correlated with the previous period and possible current realizations of the error as well as heteroskedasticity and autocorrelation within individuals (Roodman, 2009). Furthermore, GMM is supposed to curb such econometric problems as weak instruments and measurement errors and to reconcile time-invariant individual specific effects, such as distance (Kukenova and Monteiro, 2008)[1].

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[1] $Y_{ij}^{t} = \gamma Y_{ij}^{t-1} + \boldsymbol{\beta} \mathbf{X}_{ij}^{t} + \varepsilon_{ij}^{t}$

where $[\gamma] < 1 \ and \ \varepsilon_{ij}^{t} = \mu_{ij} + \nu_{ij}^{t}$

Empirical Results

Table 1reports the results of OLS and panel regression for the basic model. In this table, the China effect consistently shows a strong positive and significant effect. Thus, China's FDI has a positive effect on the investment inflows of ASEAN countries.

The sign of the GDP sum is constantly positive and significant. This result indicates that a joint market has a positive effect on ASEAN countries. This result is expected from the previous literature. A higher total income should lead to a shift from national firms, which are high-marginal-cost suppliers to foreign markets, to horizontal multinationals, which are high-fixed-cost suppliers. The greater the skill difference between China and ASEAN countries, the more the FDI flows into ASEAN countries decrease.

The coefficient of the GDP difference is negative and significant. This result indicates that the home country's GDP is larger than the host country, which discourages the horizontal motivation of FDI. Furthermore, the result implies that an increase in a parent country's GDP will increase its affiliate sales abroad only if it is small and skilled-labor-scarce (Carr et al., 2001). Here, an increase in affiliate sales means an increase of overseas direct investment in the country. In contrast, in the basic knowledge-capital model, the signs of the skill difference imply that greater skill inequality between the home and host countries brings greater investment. However, this effect becomes mixed or insignificant under the China effect. China's FDI inflow becomes more important than the skill difference between the home and host countries. Therefore, this result indicates that investors who consider investing in ASEAN countries are not doing so to exploit the skill level difference.

The interaction term of GDP and skill difference is constantly negative. It indicates that

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Y_{ij}^{t} denotes the log of FDI stock, while stands forX_{ij}^{t}indicates all the explanatory variables explained before. ε_{ij}^{t} denotes the combinationof μ_{ij} and . ν_{ij}^{t}. μ_{ij} represents the time-invariant individual specific effect and ν_{ij}^{t} represents the stochastic error term. β represents the short-run effects on the dependent variable FDI_{ij}^{t-1}, and γ represents endurance in the process of adjustment toward equilibrium. Arellano and Bond (1991) suggested that by utilizing the first-difference form, the system GMM can eliminate both the constant term and the individual effect as follows:

$$\Delta\, \mathrm{Y}_{\mathrm{ij}}^{\mathrm{t}} = \gamma\, \Delta\, \mathrm{Y}_{\mathrm{ij}}^{\mathrm{t}-1} + \boldsymbol{\beta}\, \Delta\, \mathbf{X}_{\mathrm{ij}}^{\mathrm{t}} + \Delta\, \varepsilon_{\mathrm{ij}}^{\mathrm{t}}$$

where Δ represents the first-difference form and$\Delta\, Y_{ij}^{t} = Y_{ij}^{t} - Y_{ij}^{t-1}$ implies that $\Delta\, Y_{ij}^{t}$ is the first difference of the dependent variable: FDI inflows from the home country to the host country at time *t*. Y_{ij}^{t-1} denotes the one-year lag of the dependent variable .FDI_{ij}^{t}**.** Utilizing system GMM, this paper also provides an Arellano-Bond second-order correlation test for autocorrelation and a Sargan test for over-identifying restrictions.

foreign investment will increase when the home country is small and highly skilled labor is abundant. The coefficient of investment cost shows a consistent negative and significant value, as expected. This result indicates that a decrease of the investment cost in the host country will encourage investment inflows. The coefficients of trade cost are constantly negative and significant. The lower the trade cost, the greater is the increase of investment inflows into host countries in the ASEAN region.

In Table2, the results of the panel regression for FDI inflows into each ASEAN country are reported. The China effect is positive and significant for all individual countries. This result implies that China's FDI affects ASEAN countries positively. Therefore, FDI into China has an apparently positive impact on investment in each ASEAN country.

Panel results for the country effect are shown in Table3. Controlling the fundamental knowledge-capital model, in this estimation, the empirical results show that each ASEAN country exercises a positive effect on neighboring ASEAN countries' FDI inflows. The China effect here also shows a strong positive and very significant value.

Table 4 shows an individual host country is affected by neighboring countries. That is, the model identifies whether a single country is affected by the other six countries in the ASEAN region. For FDI inflow to Indonesia, Thailand has a strong and significant positive effect, Vietnam has a positive effect, and China has an insignificant result. For Malaysia, Singapore has a strong positive effect, while Vietnam shows a negative effect; the China effect has a positive value. In the case of the Philippines, Thailand shows a strong positive effect, while Vietnam has a strong negative effect; China shows an insignificant effect. Malaysia and Vietnam have positive effects on Singapore's FDI inflows, while the China effect is negative. The FDIs into Thailand are positively affected by the Philippines, Singapore, Vietnam, and China. Finally, Vietnam's FDI inflows are negatively affected by Malaysia, but positively by Singapore. Thus, the relationships among the FDIs of each ASEAN country are, in general, more cooperative than competitive.

The empirical results on the regional agglomeration effect are presented in Table5. The result shows a strong positive regional agglomeration effect throughout the ASEAN countries. This indicates that each ASEAN country is reinforced in its FDI inflows by the overall regional FDI performances. Moreover, countries in the ASEAN region have a regional synergy effect. In this case, foreign investors consider the entire region when they determine where to invest because the ASEAN countries are closely interrelated and intertwined. However, the result of the regional agglomeration effect indicates that cooperation with other countries is more beneficial than treating them as potential competitors. Finally, the China effect shows an ambiguous result: it has a positive effect on Indonesia, the Philippines and Thailand, but a negative effect on Singapore and Vietnam and an insignificant effect on Malaysia.

VI. CONCLUSIONS

The empirics confirm that *knowledge-capital model* seems quite appropriate in examining the determinants of FDI in East Asia.

In all empirics, the *China effect* remains positive and significant: it is not a *crowding-out*, but a *crowding-in*. This means that there may exist a *co-movement* or *synchronization* between China's FDI inflows and each ASEAN country's FDI inflows. This may be the outcome of the ever-increasing *interdependence* between China and the ASEAN countries, or their expanding *supply-chain networks*, deepening *production networks*, and increasing *fragmentation* and diversification of the *overseas business activities* of multinational firms in East Asia, which eventually affect the FDI performance of each ASEAN country.

China's rise in attracting FDI is not only a crowding-in of the FDI inflows for the ASEAN region as whole, but it also positively affects the FDI inflows of various individual ASEAN countries. In other words, China's rise generates co-movement for each ASEAN country as well as for the ASEAN region as a whole.

In conclusion, in FDI competition, China is a friend, not a threat, to neighboring ASEAN countries.

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<Table 1> Basic Model for ASEAN

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$GDPSUM_{ij}^{t}$	0.182***	0.088***	0.190***	0.061***	0.184***	0.066***	-0.535***	-0.628***
	(26.867)	(13.671)	(28.873)	(8.574)	(29.905)	(9.909)	(-4.313)	(-5.019)
$GDP\ differece\ square_{ij}^{t}$	-0.103***	-0.052***	-0.112***	-0.027***	-0.109***	-0.030***	-1.207***	-1.139***
	(-18.111)	(-10.279)	(-20.302)	(-4.905)	(-21.439)	(-5.894)	(-7.827)	(-7.755)
$Skill\ difference_{ij}^{t}$	0.441***	0.296***	0.410***	0.184***	0.632***	0.219***	-0.213***	16.717***
	(9.801)	(6.311)	(9.128)	(3.938)	(11.807)	(4.797)	(-3.756)	(13.713)
$(GDP\ difference * Skill\ difference)$	-0.808***	-0.469***	-0.808***	-0.462***	-0.669***	-0.431***	-0.078	-0.165
	(-5.780)	(-3.924)	(-5.882)	(-3.994)	(-5.129)	(-4.399)	(-0.727)	(-1.573)
$(Investment\ cost)_{j}^{t}$	-0.126***	-0.043***	-0.105***	-0.060***	-0.128***	-0.083***	-0.019***	-0.023***
	(-18.153)	(-6.173)	(-14.265)	(-9.096)	(-15.245)	(-10.780)	(-2.633)	(-3.188)
$(Trade\ cost)_{j}^{t}$	-0.547***	-0.370***	-0.505***	-0.469***	-0.188**	-0.228***	-0.531***	-0.534***
	(-14.797)	(-10.884)	(-13.361)	(-13.431)	(-2.308)	(-2.748)	(-17.380)	(-17.815)
$ln(Distance)_{ij}$	-15.824***	-2.870	-15.606***	-0.764	-21.475***	-5.672**	-22.138***	-24.033***
	(-6.867)	(-1.446)	(-6.986)	(-0.384)	(-9.476)	(-2.380)	(-3.995)	(-4.534)
$Skill\ difference_{cj}^{t}$		-0.290***		-0.011		1.518***		-16.871***
		(-4.567)		(-0.177)		(3.283)		(-13.722)
$China_{ic}^{t}$		0.574***		0.706***		0.693***		23.076***
		(25.442)		(24.586)		(22.916)		(13.525)
_cons	24.173***	6.585***	22.288***	4.701***	26.297***	8.667***	29.465***	-184.414***
	(13.176)	(3.863)	(12.362)	(2.740)	(14.418)	(4.354)	(6.612)	(-12.629)
Year effect	No	No	Yes	Yes	No	No	No	No
Host country fixed effect	No	No	No	No	Yes	Yes	No	No
Home country fixed effect	No	No	No	No	No	No	Yes	Yes
Number of obs.	1,941	1,756	1,941	1,756	1,941	1,756	1,941	1,756
R-squared	0.484	0.669	0.504	0.692	0.560	0.731	0.844	0.852

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-12}, (GDP difference * Skill difference) rescaled by 10^{-7}. All FDIs are measured in stock.

<Table 2> Basic Model for Each Country

	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
$GDPSUM_{ij}^{t}$	0.115***	0.086***	0.103***	0.113***	0.208***	0.190***	0.084***	0.061***	0.290***	0.273***	-0.005	0.008
	(4.875)	(3.571)	(6.469)	(5.829)	(9.031)	(8.063)	(4.492)	(2.948)	(12.573)	(11.377)	(-0.101)	(0.160)
$GDP\ differece\ square_{ij}^{t}$	-0.413***	-0.295*	-0.436***	-0.514***	0.059	0.291*	-0.043	0.118	-0.404***	-0.268**	0.601*	0.636*
	(-2.785)	(-1.956)	(-3.246)	(-3.223)	(0.366)	(1.765)	(-0.309)	(0.740)	(-3.681)	(-2.417)	(1.896)	(1.950)
$Skill\ difference_{ij}^{t}$	0.233*	0.211*	0.097	0.077	1.029***	1.078***	0.607***	0.524***	1.009***	0.984***	0.284	0.355
	(1.905)	(1.731)	(0.796)	(0.584)	(6.823)	(7.230)	(5.208)	(4.194)	(9.666)	(9.279)	(0.829)	(1.015)
$(GDP\ difference * Skill\ difference)$	-0.111	-0.071	-0.168***	-0.169***	-0.624***	-0.653***	-0.256***	-0.227***	-0.585***	-0.583***	-0.143	-0.183
	(-1.324)	(-0.844)	(-2.758)	(-2.675)	(-6.570)	(-6.950)	(-3.547)	(-3.036)	(-9.250)	(-9.296)	(-0.792)	(-1.002)
$(Investment\ cost)_{j}^{t}$	-0.031***	-0.050***	-0.073**	-0.078**	-0.078***	-0.093***	-0.065***	-0.095***	-0.158***	-0.192***	-0.244***	-0.260***
	(-3.107)	(-4.668)	(-2.492)	(-2.421)	(-5.546)	(-5.999)	(-3.324)	(-4.120)	(-10.870)	(-11.679)	(-5.353)	(-5.316)
$(Trade\ cost)_{j}^{t}$	0.253**	-0.180	0.058	0.333	-0.107	-0.364*	-0.947***	-0.620	0.209**	-0.190	-0.054	0.078
	(2.539)	(-1.016)	(0.319)	(1.257)	(-0.757)	(-1.773)	(-2.905)	(-1.235)	(2.385)	(-1.447)	(-0.333)	(0.402)
$ln(Distance)_{ij}$	-7.968***	-6.893**	-6.545*	-7.392*	1.572	2.335	8.003**	6.183	10.853***	14.116***	-13.665***	-14.590***
	(-2.854)	(-2.432)	(-1.729)	(-1.823)	(0.811)	(1.201)	(2.116)	(1.549)	(4.615)	(6.012)	(-3.162)	(-3.215)
$China_{ic}^{t}$	0.758***	0.803***	0.538***	0.508***	0.400***	0.493***	0.614***	0.672***	0.529***	0.600***	0.795***	0.781***
	(21.352)	(21.011)	(12.021)	(6.974)	(7.739)	(8.573)	(15.041)	(13.723)	(14.279)	(14.313)	(7.696)	(7.099)
_cons	17.399***	17.449***	18.330**	18.725**	0.932	-0.087	-13.233	-8.757	-22.319***	-27.567***	29.120***	31.503***
	(2.720)	(2.721)	(2.164)	(2.058)	(0.205)	(-0.019)	(-1.544)	(-0.963)	(-4.275)	(-5.386)	(2.933)	(3.061)
Host country fixed effect	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Number of obs.	333	333	314	314	299	299	388	388	329	329	93	93
R-squared	0.834	0.852	0.648	0.662	0.705	0.744	0.674	0.687	0.845	0.867	0.722	0.743

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock.

<Table 3> Country effect: Panel

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Indonesia	0.337***					
	(5.727)					
Malaysia		0.509***				
		(11.922)				
Philippines			0.335***			
			(6.524)			
Singapore				0.437***		
				(12.486)		
Thailand					0.534***	
					(9.174)	
Vietnam						0.342***
						(3.944)
$GDPSUM_{ij}^{t}$	0.103***	-0.005	-0.001	0.079***	0.035	0.046
	(4.356)	(-0.375)	(-0.047)	(6.487)	(1.228)	(1.286)
$GDP\ differece\ square_{ij}^{t}$	0.240	0.190*	0.230*	-0.219**	0.315***	0.193
	(1.624)	(1.662)	(1.654)	(-2.334)	(2.894)	(0.793)
$Skill\ difference_{ij}^{t}$	0.380***	0.198**	-0.026	0.217***	0.219*	-0.105
	(3.212)	(2.087)	(-0.185)	(2.638)	(1.790)	(-0.410)
$(GDP\ difference * Skill\ difference)$	-0.300***	-0.077*	-0.037	-0.147***	-0.170**	-0.150
	(-3.693)	(-1.698)	(-0.426)	(-3.151)	(-2.406)	(-1.120)
$(Investment\ cost)_{j}^{t}$	-0.044***	0.019	-0.016	-0.061***	-0.033*	-0.067
	(-4.081)	(0.822)	(-1.107)	(-4.198)	(-1.666)	(-1.592)
$(Trade\ cost)_{j}^{t}$	-0.011	-0.145	0.068	0.673**	-0.271**	-0.117
	(-0.064)	(-0.804)	(0.397)	(2.213)	(-2.169)	(-0.852)
$ln(Distance)_{ij}$	9.576***	0.547	0.115	-10.785***	4.477*	14.335***
	(3.506)	(0.192)	(0.071)	(-4.484)	(1.871)	(4.082)
$China_{ic}^{t}$	0.364***	0.351***	0.624***	0.319***	0.373***	0.824***
	(6.150)	(5.534)	(11.294)	(7.534)	(6.843)	(8.166)
_cons	-17.466***	2.468	2.684	26.292***	-4.967	-30.673***
	(-2.806)	(0.384)	(0.696)	(4.767)	(-0.964)	(-3.829)
Host country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	317	297	289	326	313	90
R-squared	0.815	0.811	0.815	0.883	0.862	0.858

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 4>Neighboring effect: Panel

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Indonesia		-0.080	0.148	0.186	0.075	0.258
		(-0.648)	(1.276)	(1.366)	(1.019)	(1.345)
Malaysia	-0.161		0.077	0.343***	0.041	-0.418*
	(-1.253)		(0.632)	(2.720)	(0.529)	(-1.923)
Philippines	0.112	0.019		-0.020	0.375***	0.005
	(0.915)	(0.156)		(-0.141)	(5.909)	(0.015)
Singapore	0.060	0.223*	-0.096		0.240***	0.561***
	(0.536)	(1.924)	(-0.879)		(3.501)	(2.688)
Thailand	0.457***	0.180	0.772***	0.311		-0.122
	(2.656)	(1.008)	(5.379)	(1.613)		(-0.290)
Vietnam	0.164*	-0.175**	-0.312***	0.163*	0.192***	
	(1.849)	(-2.095)	(-4.054)	(1.777)	(3.740)	
$GDPSUM_{ij}^{t}$	-0.612	0.175	0.275	0.076	1.579***	-0.230
	(-1.184)	(0.490)	(0.733)	(0.369)	(5.819)	(-0.435)
$GDP\ differece\ square_{ij}^{t}$	-0.632**	-0.480	0.681*	-0.180	0.177	0.340
	(-1.985)	(-1.317)	(1.908)	(-0.754)	(0.938)	(0.835)
$Skill\ difference_{ij}^{t}$	-0.509	-0.580	0.610	-0.328	0.630***	0.233
	(-1.421)	(-1.576)	(1.487)	(-1.159)	(3.446)	(0.555)
$(GDP\ difference * Skill\ difference)$	0.414*	0.335	-0.384	0.158	-0.486***	-0.099
	(1.899)	(1.535)	(-1.566)	(0.990)	(-4.530)	(-0.438)
$(Investment\ cost)_{j}^{t}$	0.014	0.160	0.005	-0.146***	-0.094***	0.004
	(0.734)	(1.467)	(0.185)	(-2.850)	(-4.347)	(0.049)
$(Trade\ cost)_{j}^{t}$	0.061	0.035	-0.060	0.133	-0.030	-0.063
	(0.483)	(0.226)	(-0.509)	(0.233)	(-0.367)	(-0.379)
$ln(Distance)_{ij}$	-18.752***	-6.894	-5.732*	1.173	19.933***	-13.460**
	(-4.081)	(-0.812)	(-1.824)	(0.186)	(7.153)	(-2.191)
$China_{ic}^{t}$	-0.081	0.651**	-0.064	-0.608***	0.453***	0.771*
	(-0.466)	(1.966)	(-0.314)	(-3.488)	(3.289)	(1.943)
_cons	48.420***	15.202	14.004	8.410	-49.330***	25.309
	(4.230)	(0.723)	(1.621)	(0.544)	(-7.231)	(1.353)
Host country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	99	99	99	99	99	62
R-squared	0.871	0.883	0.909	0.895	0.957	0.758

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-6}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 5> Regional Agglomeration Effect: Panel

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Ln(RAE)	0.372***	0.862***	0.587***	1.040***	0.505***	0.642***
	(6.986)	(14.800)	(8.609)	(30.800)	(11.028)	(5.519)
$GDPSUM_{ij}^{t}$	0.041*	0.062***	0.140***	-0.001	0.181***	-0.021
	(1.858)	(4.076)	(6.405)	(-0.047)	(8.388)	(-0.517)
$GDP\ differece\ squar$	-0.402***	-0.407***	0.099	-0.049	-0.360***	0.399
	(-2.962)	(-3.353)	(0.659)	(-0.591)	(-3.937)	(1.464)
$Skill\ difference_{ij}^{t}$	-0.001	-0.164	0.793***	0.037	0.623***	0.339
	(-0.013)	(-1.608)	(5.661)	(0.551)	(6.461)	(1.169)
$(GDP\ difference * Skill\ difference)$	0.585	-0.027	-4.615***	0.065	-3.365***	-0.610
	(0.768)	(-0.054)	(-5.286)	(0.164)	(-5.910)	(-0.400)
$(Investment\ cost)_{j}^{t}$	-0.032***	-0.069***	-0.059***	0.008	-0.128***	-0.168***
	(-3.093)	(-2.799)	(-4.059)	(0.684)	(-8.503)	(-3.827)
$(Trade\ cost)_{j}^{t}$	-0.148	0.174	-0.336*	-0.738***	-0.009	0.093
	(-0.954)	(0.878)	(-1.836)	(-2.917)	(-0.084)	(0.593)
$ln(Distance)_{ij}$	-8.583***	-5.690*	1.765	12.388***	8.670***	-18.919***
	(-3.427)	(-1.850)	(1.011)	(6.103)	(4.361)	(-5.081)
$China_{ic}^{t}$	0.523***	-0.007	0.080	-0.097***	0.238***	0.076
	(10.628)	(-0.097)	(1.118)	(-2.799)	(5.088)	(0.529)
_cons	20.061***	10.943	-1.947	-27.417***	-18.809***	40.934***
	(3.535)	(1.581)	(-0.471)	(-5.901)	(-4.412)	(4.848)
Host country fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Number of obs.	321	307	292		320	90
R-squared	0.882	0.817	0.797	0.918	0.911	0.814

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-7}. All FDIs are measured in stock

<Table 6> Basic Model For ASEAN: System GMM

	(1)	(2)	(3)	(4)	(5)	(6)
	1985~99	**1990~94**	**1995~99**	**2000~04**	**2005~09**	**2006~10**
$GDPSUM_{ij}^{t}$	0.175	-0.017	0.039	0.209	0.024	0.021
	(0.807)	(-0.306)	(0.537)	(1.627)	(0.505)	(0.230)
$GDP\ differece\ square_{ij}^{t}$	-0.154	0.032	-0.033	-0.099*	-0.036	-0.006
	(-0.519)	(0.735)	(-0.831)	(-1.666)	(-0.968)	(-0.120)
$Skill\ difference_{ij}^{t}$	-0.074	-0.100	0.465	0.486	-0.793**	-0.902**
	(-0.044)	(-0.298)	(1.328)	(1.621)	(-2.244)	(-2.490)
$(GDP\ difference * Skill\ difference)$	0.307	0.096	0.031	-0.089	0.022	-0.051
	(0.232)	(0.963)	(0.148)	(-0.495)	(0.171)	(-0.463)
$(Investment\ cost)_{j}^{t}$	-0.068	0.010	0.021	0.008	0.007	0.020
	(-1.123)	(0.645)	(1.518)	(0.292)	(0.231)	(0.591)
$(Trade\ cost)_{j}^{t}$	-0.182	-0.152	0.138	-0.200	-0.028	-0.041
	(-0.292)	(-0.923)	(0.528)	(-0.819)	(-0.661)	(-1.111)
$ln(Distance)_{ij}$	-13.914	-5.988	28.885	215.447	25.404**	15.501
	(-0.427)	(-0.246)	(1.508)	(1.020)	(2.428)	(0.415)
$China_{ic}^{t}$	0.010	0.064	0.301	-0.002	0.202***	0.369***
	(0.034)	(1.224)	(1.597)	(-0.010)	(3.190)	(4.700)
FDI (t-1)	0.416	0.502***	0.730***	0.839**	0.246***	0.272*
	(1.213)	(4.712)	(3.992)	(2.121)	(2.579)	(1.849)
_cons	35.395	18.525	-66.064	-476.092	-47.871**	-28.543
	(0.481)	(0.342)	(-1.548)	(-1.014)	(-2.092)	(-0.360)
Number of obs.	94	193	288	308	378	382
Sargan	8.330	22.147	0.671	11.018	12.878	17.552
sargan(p-value)	**(0.304)**	**(0.002)**	**(0.999)**	**(0.138)**	**(0.075)**	**(0.014)**
abond1	-0.709	-1.312	-2.247	-1.217	-2.100	-1.610
abond1(p-value)	(0.478)	(0.190)	(0.025)	(0.224)	(0.036)	(0.107)
abond2	-0.430	0.221	1.368	0.778	0.576	-0.062
abond2(p-value)	(0.667)	(0.825)	(0.171)	(0.436)	(0.565)	(0.950)

Note: Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-12}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 7>Basic Model for each Country: System GMM

	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
$GDPSUM_{ij}^{t}$	0.349	-0.931	0.127	-0.917	0.491**	3.129*	0.047	1.518	0.461**	1.505	0.636	0.621
	(1.320)	(-0.385)	(0.836)	(-0.492)	(2.157)	(1.833)	(0.273)	(0.468)	(2.333)	(1.284)	(0.951)	(0.485)
$GDP\ differece\ square_{ij}^{t}$	-0.789	-0.895	-0.104	4.471	-2.235***	-0.029	0.106	-6.766	-1.549***	-7.797	-6.747	-0.871
	(-0.827)	(-0.063)	(-0.103)	(0.300)	(-2.999)	(-0.004)	(0.121)	(-0.380)	(-2.671)	(-1.142)	(-1.484)	(-0.080)
$Skill\ difference_{ij}^{t}$	0.119	-0.355	-0.050	-0.288	0.101	0.208	0.258**	-0.715	0.114	-0.443	-0.048	-1.582
	(0.826)	(-0.151)	(-0.437)	(-0.234)	(0.846)	(0.299)	(2.255)	(-1.083)	(1.334)	(-1.063)	(-0.157)	(-1.286)
$(GDP\ difference * Skill\ difference)$	-0.062	0.255	0.102**	0.304	-0.066	-0.970*	-0.056	0.110	-0.044	0.081	0.048	-0.155
	(-0.745)	(0.313)	(2.030)	(0.465)	(-0.977)	(-1.886)	(-0.992)	(0.353)	(-0.881)	(0.371)	(0.490)	(-0.580)
$(Investment\ cost)_{j}^{t}$	0.009	0.013	-0.082***	0.049	-0.014**	0.061	-0.012	0.063	-0.004	-0.037	-0.051	-0.059
	(1.173)	(0.170)	(-4.738)	(0.072)	(-2.312)	(1.030)	(-1.007)	(0.596)	(-0.601)	(-0.899)	(-1.410)	(-0.213)
$(Trade\ cost)_{j}^{t}$	0.078	-0.042	-0.064	0.089	-0.079*	-0.033	-0.523***	-3.201	-0.045	-0.079	-0.064	-0.038
	(1.579)	(-0.418)	(-1.201)	(0.559)	(-1.719)	(-0.505)	(-4.212)	(-1.143)	(-1.338)	(-0.833)	(-1.192)	(-0.528)
$ln(Distance)_{ij}$	2.624	-116.572	-16.948***	-23.837	-1.848	-7.520	0.454	-26.786	-6.291*	-22.672	-1.862	-16.591
	(0.611)	(-1.418)	(-2.818)	(-0.123)	(-0.805)	(-0.665)	(0.085)	(-0.226)	(-1.868)	(-0.629)	(-0.229)	(-1.253)
$China_{ic}^{t}$	0.129***	0.586**	0.116***	0.279	0.015	0.235	0.116***	0.467**	0.047**	0.167	0.226***	0.595**
	(3.683)	(2.086)	(4.342)	(1.320)	(0.553)	(1.393)	(3.388)	(1.985)	(1.999)	(1.396)	(2.786)	(2.505)
FDI (t-1)	0.759***	0.265	0.671***	0.836**	0.722***	0.809*	0.774***	0.763***	0.718***	0.370	0.496***	-0.043
	(21.095)	(0.638)	(18.270)	(2.236)	(22.209)	(1.855)	(25.537)	(2.935)	(25.607)	(1.099)	(8.358)	(-0.417)
_cons	-5.325	260.343	40.052***	51.137	7.177	14.156	0.678	56.375	16.321**	55.253	6.310	43.828
	(-0.550)	(1.412)	(3.013)	(0.121)	(1.384)	(0.497)	(0.057)	(0.219)	(2.171)	(0.665)	(0.353)	(1.357)
Number of obs.	302	69	290	60	277	56	361	80	307	65	82	52
Sargan	314.673	12.022	324.207	5.261	287.064	3.362	334.810	3.539	309.624	7.471	68.807	2.124
sargan(p-value)	**(0.042)**	**(0.100)**	**(0.003)**	**(0.628)**	**(0.082)**	**(0.850)**	**(0.108)**	**(0.831)**	**(0.045)**	**(0.382)**	**(0.350)**	**(0.953)**
abond1	-2.612	-0.542	-1.707	-1.080	-2.350	-1.199	-2.664	-1.326	-1.958	-1.525	-1.194	-0.818
abond1(p-value)	(0.009)	(0.588)	(0.088)	(0.280)	(0.019)	(0.231)	(0.008)	(0.185)	(0.050)	(0.127)	(0.233)	(0.413)
abond2	-0.116	-1.041	1.297	0.505	1.682	1.233	1.583	1.696	0.185	-0.098	1.214	-0.224
abond2(p-value)	(0.908)	(0.298)	(0.195)	(0.614)	(0.093)	(0.218)	(0.113)	(0.090)	(0.854)	(0.922)	(0.225)	(0.823)

Note: Column (1) indicates periods of 1985 to 2010 while Column (2) indicates period of 2006 to 2010 ; Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-6}, GDP difference square rescaled by 10^{-14}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 8> Country effect: System GMM

	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Indonesia	0.120***	0.101										
	(3.738)	(0.697)										
Malaysia			0.097***	0.119								
			(2.594)	(0.601)								
Philippines					0.036	0.035						
					(1.591)	(0.174)						
Singapore							0.131***	0.184				
							(5.197)	(1.200)				
Thailand									0.189***	0.466		
									(4.871)	(1.534)		
Vietnam											0.048	-0.129
											(1.025)	(-1.574)
$GDPSUM_{ij}^{t}$	0.341**	0.126	-0.075	2.356	-0.081	-0.877	0.400***	0.246	0.324*	0.451	-0.481	-0.731
	(2.088)	(0.065)	(-0.536)	(0.797)	(-0.709)	(-0.484)	(3.093)	(0.223)	(1.798)	(0.314)	(-1.244)	(-0.884)
$GDP\ differece\ square_{ij}^{t}$	0.138*	-0.614	0.099	-1.425	-0.045	-0.262	-0.182***	-0.028	-0.023	-0.363	0.237	0.305
	(1.951)	(-0.539)	(1.070)	(-0.731)	(-1.061)	(-0.185)	(-2.919)	(-0.031)	(-0.429)	(-0.356)	(1.095)	(0.544)
$Skill\ difference_{ij}^{t}$	0.261***	-1.459	-0.236**	-1.265	-0.023	-1.145	0.172**	0.352	0.248***	-1.044	-0.021	-1.403
	(2.617)	(-1.146)	(-2.002)	(-0.746)	(-0.283)	(-0.572)	(2.262)	(0.312)	(3.015)	(-0.681)	(-0.138)	(-1.139)
$(GDP\ difference * Skill\ difference)$	-0.140***	0.285	0.106***	0.367	0.059	0.451	-0.028	-0.013	-0.092**	0.026	0.065	0.162
	(-2.694)	(0.546)	(2.617)	(0.469)	(1.463)	(0.408)	(-0.728)	(-0.061)	(-2.104)	(0.062)	(0.828)	(0.717)
$(Investment\ cost)_{j}^{t}$	-0.001	0.016	-0.029	-0.129	0.009**	-0.010	-0.002	0.024	0.007	0.050	0.002	-0.266*
	(-0.211)	(0.143)	(-1.374)	(-0.159)	(2.468)	(-0.138)	(-0.325)	(0.131)	(1.168)	(0.614)	(0.084)	(-1.754)
$(Trade\ cost)_{j}^{t}$	0.001	-0.000	-0.048	0.058	0.025	-0.000	0.033	4.165	0.078**	-0.021	-0.045	-0.017
	(0.021)	(-0.003)	(-0.872)	(0.303)	(0.892)	(-0.003)	(0.421)	(1.218)	(2.386)	(-0.143)	(-1.152)	(-0.318)
$ln(Distance)_{ij}$	2.057	-10.071	-8.047	17.998	-2.412	5.035	-7.454*	-35.995	1.867	-66.577	-3.967	-28.963
	(0.499)	(-0.446)	(-1.404)	(0.232)	(-1.350)	(0.059)	(-1.843)	(-0.837)	(0.461)	(-1.148)	(-0.587)	(-0.893)
$China_{ic}^{t}$	0.011	0.335	0.116***	0.182	0.088***	0.371	0.062**	0.123	0.081***	0.208	0.159**	0.418**
	(0.370)	(1.482)	(3.909)	(0.496)	(4.245)	(1.489)	(2.561)	(0.769)	(3.041)	(0.978)	(2.241)	(2.134)
FDI (t-1)	0.784***	0.704**	0.606***	0.824***	0.763***	0.572	0.575***	0.863*	0.628***	0.167	0.690***	0.221
	(22.646)	(2.221)	(15.853)	(3.007)	(26.171)	(1.395)	(17.333)	(1.693)	(18.291)	(0.557)	(11.725)	(0.584)
_cons	-3.521	23.837	20.933	-43.574	7.104*	-8.245	19.176**	74.757	-3.094	152.126	11.030	74.987
	(-0.382)	(0.446)	(1.632)	(-0.246)	(1.762)	(-0.044)	(2.125)	(0.745)	(-0.344)	(1.170)	(0.741)	(0.971)
Number of obs.	302	69	284	64	277	60	310	65	298	63	88	54
Sargan	323.637	1.405	329.523	14.534	367.401	2.759	320.042	7.958	393.625	5.073	62.022	2.975

sargan(p-value)	**(0.021)**	**(0.985)**	**(0.001)**	**(0.043)**	**(0.000)**	**(0.906)**	**(0.032)**	**(0.336)**	**(0.000)**	**(0.651)**	**(0.649)**	**(0.887)**
abond1	-1.652	-1.865	-2.460	-1.921	-2.030	-1.996	-1.887	-0.023	-2.227	-0.636	-1.605	-0.924
abond1(p-value)	(0.099)	(0.062)	(0.014)	(0.055)	(0.042)	(0.046)	(0.059)	(0.982)	(0.026)	(0.525)	(0.108)	(0.356)
abond2	0.779	-0.334	-0.935	-0.533	0.729	-0.161	0.271	-1.364	0.406	-0.926	-1.109	-1.215
abond2(p-value)	(0.436)	(0.739)	(0.350)	(0.594)	(0.466)	(0.872)	(0.786)	(0.173)	(0.685)	(0.355)	(0.267)	(0.224)

Note: Column (1) indicates periods of 1985 to 2010 while Column (2) indicates period of 2006 to 2010 ; Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-6}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 9> Neighboring effect: System GMM

	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Indonesia			0.052	0.025	0.034	0.102	0.019	-0.100	0.069**	-0.276	0.049	0.149
			(0.683)	(0.132)	(0.433)	(0.684)	(0.255)	(-0.624)	(2.055)	(-1.626)	(0.487)	(0.565)
Malaysia	-0.133*	0.445			0.026	0.127	0.121**	0.092	0.035	0.226	-0.073	0.933***
	(-1.944)	(0.865)			(0.390)	(0.534)	(2.084)	(0.379)	(1.181)	(0.681)	(-0.874)	(2.657)
Philippines	0.071	-0.127	-0.061	0.358			0.085	-0.047	0.024	0.928***	0.246*	-1.095**
	(1.024)	(-0.116)	(-1.221)	(1.160)			(1.533)	(-0.168)	(0.863)	(2.847)	(1.822)	(-2.308)
Singapore	-0.073	-0.027	0.202***	0.053	-0.079	0.069			0.074**	0.163	0.395***	0.341**
	(-0.707)	(-0.101)	(2.681)	(0.325)	(-0.935)	(0.562)			(2.174)	(1.261)	(3.829)	(2.056)
Thailand	0.026	-0.208	-0.064	-0.042	0.259**	-0.011	0.259**	0.359*			-0.056	-0.376
	(0.219)	(-0.459)	(-0.641)	(-0.193)	(2.434)	(-0.052)	(2.565)	(1.743)			(-0.304)	(-1.166)
Vietnam	0.146**	0.123	-0.014	0.363**	-0.083	-0.206	-0.004	0.673***	0.022	-0.054		
	(2.210)	(0.314)	(-0.241)	(2.038)	(-1.559)	(-1.275)	(-0.083)	(4.276)	(0.907)	(-0.282)		
$GDPSUM_{ij}^{t}$	0.279	1.220	-0.447**	0.447	0.516	1.992	-0.684**	1.240	0.157	-1.391	-0.473	3.141
	(0.617)	(0.354)	(-2.049)	(0.338)	(1.552)	(1.426)	(-2.549)	(1.312)	(0.673)	(-1.465)	(-1.234)	(1.190)
$GDP\ differece\ square_{ij}^{t}$	-0.116	-0.982	0.394**	-0.521	0.209	0.586	0.341*	-0.685	-0.046	0.529	-0.040	-0.905
	(-0.442)	(-0.553)	(2.432)	(-0.541)	(1.082)	(1.148)	(1.732)	(-1.177)	(-0.498)	(0.746)	(-0.180)	(-0.459)
$Skill\ difference_{ij}^{t}$	0.060	-1.031	0.197	-0.767	0.396	0.754	-0.441***	-0.976**	0.022	3.704***	-0.288	1.283*
	(0.220)	(-0.613)	(0.649)	(-0.550)	(1.517)	(0.629)	(-2.877)	(-2.537)	(0.208)	(2.584)	(-1.188)	(1.669)
$(GDP\ difference * Skill\ difference)$	-0.014	0.118	-0.018	0.360	-0.280**	-0.799	0.121*	0.223	-0.026	-0.124	0.075	-1.176**
	(-0.102)	(0.103)	(-0.126)	(0.783)	(-2.132)	(-1.337)	(1.805)	(1.207)	(-0.478)	(-0.382)	(0.793)	(-2.136)
$(Investment\ cost)_{j}^{t}$	0.010	-0.031	0.118	0.011	-0.013	-0.112**	-0.035*	0.120	-0.004	0.015	0.002	1.831
	(0.933)	(-0.104)	(1.462)	(0.030)	(-1.496)	(-2.177)	(-1.792)	(0.593)	(-0.689)	(0.222)	(0.051)	(1.175)
$(Trade\ cost)_{j}^{t}$	-0.008	-0.059	-0.183***	-0.003	-0.059	-0.040	0.045	5.260	-0.019	-0.091	-0.035	-0.072
	(-0.111)	(-0.404)	(-4.042)	(-0.025)	(-1.149)	(-0.743)	(0.298)	(1.534)	(-0.713)	(-0.964)	(-0.664)	(-0.925)
$ln(Distance)_{ij}$	4.269	-36.487	3.085	-4.562	1.994	-19.447	8.237**	-51.431	0.398	-149.915***	-3.702	-19.234
	(0.742)	(-0.284)	(0.702)	(-0.052)	(0.675)	(-0.506)	(2.020)	(-1.094)	(0.211)	(-2.787)	(-0.771)	(-1.141)
$China_{ic}^{t}$	0.115	0.153	0.302***	-0.129	0.048	0.192	0.111	-0.205	-0.044	0.095	0.519***	0.453*
	(0.886)	(0.366)	(3.256)	(-0.582)	(0.494)	(1.159)	(1.217)	(-0.983)	(-1.042)	(0.413)	(3.049)	(1.793)
FDI (t-1)	0.550***	-0.199	0.284***	0.359	0.752***	0.472	0.542***	0.041	0.708***	-0.645	0.387***	-0.206
	(6.530)	(-0.648)	(4.671)	(1.597)	(14.184)	(1.218)	(7.951)	(0.329)	(13.245)	(-1.265)	(4.399)	(-1.054)
_cons	-5.562	93.983	-2.983	10.791	-4.466	43.341	-18.115**	115.721	0.796	328.733***	0.912	47.595
	(-0.439)	(0.344)	(-0.304)	(0.056)	(-0.655)	(0.486)	(-2.018)	(1.112)	(0.189)	(2.768)	(0.080)	(1.171)
Number of obs.	99	38	97	38	99	38	98	37	97	36	56	36

Sargan	78.531	8.643	88.666	9.268	126.173	6.063	75.890	4.851	111.176	5.157	32.065	6.272
sargan(p-value)	**(0.840)**	**(0.279)**	**(0.550)**	**(0.234)**	**(0.009)**	**(0.532)**	**(0.873)**	**(0.678)**	**(0.074)**	**(0.641)**	**(0.777)**	**(0.508)**
abond1	-1.443	-1.330	-1.584	-1.603	-1.517	-1.340	-1.763	-1.330	-1.999	-1.417	-1.473	-1.966
abond1(p-value)	(0.149)	(0.184)	(0.113)	(0.109)	(0.129)	(0.180)	(0.078)	(0.183)	(0.046)	(0.157)	(0.141)	(0.049)
abond2	-1.010	-0.725	0.250	1.091	-0.017	0.948	0.586	-0.036	-1.795	-0.188	0.571	-0.285
abond2(p-value)	(0.313)	(0.468)	(0.803)	(0.275)	(0.987)	(0.343)	(0.558)	(0.971)	(0.073)	(0.851)	(0.568)	(0.776)

Note: Column (1) indicates periods of 1985 to 2010 while Column (2) indicates period of 2006 to 2010; Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-6}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-6}. All FDIs are measured in stock

<Table 10>Regional Agglomeration Effect: System GMM

	Indonesia		Malaysia		Philippines		Singapore		Thailand		Vietnam	
	(1)	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**	**(1)**	**(2)**
RAE (log)	0.166***	0.469**	0.325***	0.651***	0.121***	0.012	0.483***	1.237***	0.113***	0.282**	0.348***	1.072***
	(3.718)	(2.056)	(6.492)	(2.940)	(2.706)	(0.070)	(14.914)	(13.914)	(3.040)	(2.363)	(3.243)	(4.153)
$GDPSUM_{ij}^{t}$	0.010	-0.123	0.015	-0.225	0.045**	0.310*	-0.004	0.043	0.053***	0.147	0.026	0.059
	(0.394)	(-0.545)	(1.118)	(-1.250)	(2.146)	(1.805)	(-0.336)	(0.437)	(2.952)	(1.454)	(0.427)	(0.599)
$GDP\ differece\ square_{ij}^{t}$	-0.179**	0.118	-0.051	1.022	-0.233***	0.005	-0.029	-0.039	-0.167***	-0.723	-0.406	0.196
	(-1.987)	(0.102)	(-0.564)	(0.825)	(-3.402)	(0.007)	(-0.453)	(-0.072)	(-3.165)	(-1.145)	(-0.993)	(0.230)
$Skill\ difference_{ij}^{t}$	-0.089	-0.031	-0.037	-0.636	0.056	0.244	-0.096	-0.048	0.163**	-0.157	-0.091	0.004
	(-0.647)	(-0.019)	(-0.342)	(-0.641)	(0.497)	(0.329)	(-1.128)	(-0.230)	(2.095)	(-0.365)	(-0.335)	(0.004)
$(GDP\ difference * Skill\ difference)$	0.460	2.302	0.635	2.946	-0.546	-9.639*	-0.025	-1.086	-0.800*	0.135	0.405	-3.446
	(0.588)	(0.324)	(1.342)	(0.581)	(-0.873)	(-1.874)	(-0.061)	(-1.129)	(-1.748)	(0.070)	(0.471)	(-1.604)
$(Investment\ cost)_{j}^{t}$	0.004	0.016	-0.089***	-0.073	-0.012**	0.060	0.003	0.045	-0.005	-0.004	-0.021	0.076
	(0.585)	(0.148)	(-5.023)	(-0.160)	(-2.078)	(0.997)	(0.351)	(1.380)	(-0.836)	(-0.090)	(-0.661)	(0.337)
$(Trade\ cost)_{j}^{t}$	0.059	-0.029	-0.057	0.071	-0.107**	-0.032	-0.306***	1.652*	-0.007	-0.069	-0.087*	-0.016
	(1.285)	(-0.308)	(-1.169)	(0.548)	(-2.489)	(-0.486)	(-3.397)	(1.789)	(-0.215)	(-0.784)	(-1.812)	(-0.281)
$ln(Distance)_{ij}$	0.077	-110.386	-7.777	182.682	-1.128	-8.056	12.625***	-53.311	-3.569	-21.653	-6.355	-14.452
	(0.020)	(-1.293)	(-1.408)	(1.105)	(-0.518)	(-0.702)	(3.194)	(-1.451)	(-1.130)	(-0.707)	(-0.869)	(-1.382)
$China_{ic}^{t}$	0.072**	0.456*	0.004	0.054	-0.019	0.234	-0.001	-0.089	0.041*	0.127	0.171**	0.203
	(2.027)	(1.667)	(0.140)	(0.275)	(-0.677)	(1.290)	(-0.037)	(-1.035)	(1.797)	(1.132)	(1.965)	(0.987)
FDI (t-1)	0.660***	-0.090	0.541***	0.351	0.689***	0.779	0.536***	-0.144	0.675***	0.257	0.355***	-0.117
	(16.826)	(-0.232)	(14.153)	(1.079)	(20.503)	(1.624)	(20.107)	(-1.633)	(21.884)	(0.817)	(5.549)	(-1.439)
_cons	0.493	245.177	18.225	-403.861	4.860	15.481	-28.079***	115.999	9.174	50.237	13.811	25.684
	(0.056)	(1.312)	(1.484)	(-1.116)	(0.977)	(0.536)	(-3.185)	(1.455)	(1.289)	(0.717)	(0.863)	(0.994)
Number of obs.	293	68	288	62	272	56	355	80	301	64	81	51
Sargan	343.682	10.830	344.043	6.069	312.644	3.434	422.259	9.157	331.845	6.070	74.967	5.266
sargan(p-value)	**(0.001)**	**(0.146)**	**(0.000)**	**(0.532)**	**(0.004)**	**(0.842)**	**(0.000)**	**(0.242)**	**(0.003)**	**(0.532)**	**(0.144)**	**(0.628)**
abond1	-2.078	-0.605	-1.622	-0.015	-2.406	-1.277	-2.831	0.868	-1.593	-1.286	-1.004	1.005
abond1(p-value)	(0.038)	(0.545)	(0.105)	(0.988)	(0.016)	(0.202)	(0.005)	(0.385)	(0.111)	(0.199)	(0.316)	(0.315)
abond2	-0.129	-1.150	1.370	-0.199	1.820	1.229	1.513	1.293	-0.310	-1.306	1.102	0.801
abond2(p-value)	(0.897)	(0.250)	(0.171)	(0.842)	(0.069)	(0.219)	(0.130)	(0.196)	(0.757)	(0.192)	(0.271)	(0.423)

Note: Column (1) indicates periods of 1985 to 2010 while Column (2) indicates period of 2006 to 2010 ; Shown in parentheses are t-statistics, *** p<0.01, ** p<0.05, * p<0.1. Time specific effects included at Panel; GDPSUM rescaled by 10^{-5}, GDP difference square rescaled by 10^{-13}, (GDP difference * Skill difference) rescaled by 10^{-7}. All FDIs are measured in stock

<Table A1> Data Sources

Variable	Description	Definition	Source
FDI_{ij}^{t}	Bilateral stock of FDI from *i* to *j* at time *t*	1,000USD, bilateral FDI	OECD-International Direct Investment Data
$\ln(FDI)_{ij}^{t}$	log (Bilateral stock of FDI from *i* to *j* at time *t*)	Log form of bilateral FDI	OECD-International Direct Investment Data
$China_{ic}^{t}$	log of FDI into China from *i* at time *t*	1,000USD, China effect	OECD-International Direct Investment Data
$GDPSUM_{ij}^{t}$	$(GDP_{i}^{t} + GDP_{j}^{t})$	Million USD in constant 2000 prices, sum of GDP between *i* and *j*	World Bank-WDI
GDP differece $square_{ij}^{t}$	$(GDP_{i}^{t} - GDP_{j}^{t})^{2}$	Million USD in constant 2000 prices, GDP squared difference between *i* and *j*	World Bank-WDI
Skill $difference_{ij}^{t}$	$(Skll_{i}^{t} - Skill_{j}^{t})$	Skill difference between *i* and *j*	Barro and Lee(2010) - Average years of secondary schooling for pop lation over age 15
(GDP difference ∗ Skill difference)	$\left(GDP_{i}^{t} - GDP_{j}^{t}\right) * (Skll_{i}^{t} - Skill_{j}^{t})$	Interaction term between GDP difference and Skill difference	World Bank-WDI Barro and Lee(2010)
$(Investment\ cost)_{j}^{t}$	Investment $const_{j}^{t} * BIT_{ij}^{t}$	BIT_{ij}^{t} = 0, if no BIT BIT_{ij}^{t} = 1, if BIT implemented Financial Risk index	ICSID, UNCTAD, Country Risk Guide(ICRG)
$(Trade\ cost)_{j}^{t}$	Trade $cost_{j}^{t} * FTA_{ij}^{t}$	FTA_{ij}^{t} = 0, if no FTA FTA_{ij}^{t} = 1, if FTA implmented Free trade index of c untry j at time t	Freedom to trade internationally of Economic Freedom of the World of Fraser Institute, WTO
$\ln(Distance)_{ij}$	log (Bilateral distance between *i* and *j*)	Geographical distance between *i* and *j*	CEPII-'Etudes Prospectives et d'Informations Internationales

< Table A2> Composition of FDI Data

i \ *j*	*OECD countries*	*ASEAN countries*	*China*
OECD countries	**North to North**	**North to South**	
ASEAN countries	**South to North**	**South to South**	
China			

<Table A3> List table of Home countries

OECD countries	
Australia	Japan
Austria	Korea Rep.
Belgium	Luxembourg
Canada	Mexico
Chile	Netherlands
Czech Rep.	New Zealand
Denmark	Norway
Estonia	Poland
Finland	Portugal
France	Slovakia
Germany	Slovenia
Greece	Spain
Hungary	Sweden
Iceland	Switzerland
Ireland	Turkey
Israel	UK
Italy	US

Note: The data excluded with Israel, Mexico, and Canada for home countries because of data availability