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# FDI-friendly Good Business Environments versus FDI-deterring Good Business Environments*

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Using data on Korean outward FDI and Doing Business of the World Bank, this paper examines the constituents of FDI-friendly business environments in host countries and whether the security level of the contract in the host country affects inward FDI. The results of the empirical analysis show that when the host country has a more flexible labor market and the startup cost to establish an affiliate in the host country is lower, Korean multinationals invest more in the host country. As the transaction-cost FDI theory predicts, the inward FDI declines if the host country has a better contract-protection scheme. Furthermore, the higher labor costs in the host country deter direct investment from South Korea. In addition, it seems that Korean investors prefer to invest in a country that has low technology and a larger economy. Such a host country seems to attract more FDI from South Korea.

JEL Classification: F21, F23

Keywords: Transaction Cost Economics, FDI-friendly Business Environments, FDI-deterring Business Environments, Doing Business, Korean outward FDI

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# 1. INTRODUCTION

It is sometimes argued (UNCTAD, 1998) that the business and investment environment within the host country might be one of the factors that drive FDI. For example, 52.3% of 300 respondent firms in a survey of Korean-based multinationals conducted by the Korea Chamber of Commerce and Industry (KORCHAM) in 2006 shows that a superior business and investment environment within the host country is a contributor to FDI. The question arises: does a business-friendly environment indeed stimulate inward FDI for a host country?

From its definition, FDI is a foreign investment to obtain the control-ship of the foreign production facility. Thus, FDI has two different aspects: foreign production and obtaining control-ship of the foreign affiliates. Therefore, from the former aspect of FDI, a business and investment environment in the host country that makes the foreign production of multinationals more profitable is FDI-friendly. That is, given the demand in the host country, factors that reduce the operating costs as well as the fixed costs of foreign affiliates comprise an FDI-friendly environment. For example, the rigidity of the labor market in the host country might be one factor that affects inward FDI. Previous studies have found theoretically (e.g., Haaland *et al*., 2003) and empirically (e.g., Dewit *et al*., 2003; Javorcik and Spatareanu, 2004) that a country with a flexible labor market has a tendency to induce more FDI. Taxation and policy to attract FDI within the host country might be factors that affect inward FDI. Some studies such as Gastanaga *et al*. (1998), Wei (2000), Simmons (2003), and Pica and Mora (2004) ascertained that a moderate tax and an FDI-encouraging policy within the host country indeed entice FDI. However, some researchers such as Wheeler and Mody (1992) have demonstrated that those factors do not increase FDI.[1] Further, various factors such as labor costs,[2] corruption

[1] According to Caves (2007), inward FDI can be tax-neutral because of various arrangements to avoid double taxation such as tax exemption, tax credit, and tax deduction.

[2] It is generally believed that a low labor cost in the host country induces more inward FDI because it reduces multinationals' production costs. However, a few empirical studies

level, openness, political stability, quality of the administration, and environmental regulation can affect the investment decision of a foreign direct investor. Previous studies have confirmed the influence of those factors on inward FDI (e.g., Gastanaga *et al*., 1998; Kolstad and Xing, 1998; Wheeler and Mody, 2002; Wei, 2000; Pica and Mora, 2004). Besides the presented studies, there are hundreds of articles regarding the determinants on FDI, and many articles provide nice reviews on the previous studies (Dunning, 1998; Hill and Athukorala, 1998; UNCTAD, 1998; Miyamoto, 2003; Blomström and Kokko, 2003; Blonigen, 2005; Caves, 2007, ch. 1-3, 6; Bellak, 2008; Dembour, 2008).

Regarding the second aspect of FDI, any environment that increases the incentive of a foreign investor to possess control power regarding the affiliates can be considered an FDI-friendly business and investment environment. The transaction-cost FDI theory focuses on FDI as an investment for purchasing both ownership and control power with regard to foreign affiliates. This theory argues that contracts across countries are incomplete in nature. Further, the incompleteness of contracts in the host country entails transaction costs for multinationals. Multinationals prefer to possess control power regarding foreign affiliates in lieu of overseas outsourcing under international contracts. Therefore, from the viewpoint of the transaction-cost FDI theory, a business and investment environment within the host country that enhances the security of international contracts may be desirable, but lowers the incentive for purchasing control power with respect to foreign production processes. That is, the inward FDI may decline if the host country has a better contract-protection scheme. Thus, if the host country secures international contracts, a good business environment can deter FDI. Although the transaction-cost FDI theory is widely accepted, there is no empirical study of the relationship between the level of security of contracts in the host country and inward FDI.

Thus, using data on Korean outward FDI and Doing Business of the World

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have reported that the low labor costs do not affect the decision with regard to FDI of multinationals (Wei, 2000).

Bank, we examine the constituents of FDI-friendly business environments in host countries and whether the security level of the contracts in the host country affects inward FDI. The rest of the paper is organized as follows. Section 2 presents the data and empirical formulation that are used for empirical analysis. Section 3 presents the results of the empirical analysis. Finally, section 4 summarizes the results.

## 2. DATA AND EMPIRICAL FORMULATION

### 2.1. Data for Outward FDI from Korea

South Korea has had high economic growth for the last several decades. As the size of the economy in South Korea has expanded, the volume of outward FDI from South Korea also has dramatically increased.[3] The Export-Import Bank of Korea (Korea Eximbank)[4] announces monthly the amount and number of instances of Korean outward FDI for the purpose of ownership acquisition. During 1997, the size of Korean outward FDI was 1.9 billion dollars, and rose to 5.1 billion dollars during 2006 (table 1) in the manufacturing sector. In 2006, Korean investors invested in 109 countries,[5] but the target countries were concentrated in Asia, North America, and Europe. Data from Korea Eximbank show that the Asian region accounted for 69.6% of Korea's outward FDI in the manufacturing sector in 2006; among the Asian countries, the proportion of FDI in China was the highest. Meanwhile, North America received 7.5% of Korea's outward FDI in 2006 in the manufacturing sector.

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[3] For the study of outward FDI of South Korean firms, refer to Chun (2008), Han and Lee (2012), Yun (2010) and etc.

[4] The difference in the amount of outward FDI between UNCTAD and Korea Eximbank exists because of differences in the manner of aggregating outward FDI. Unlike the outward FDI of UNCTAD, that of Korea Eximbank does not include the amount of reinvestment of Korean multinationals in the host country.

[5] The list of target countries are listed in Appendix table A1.

**Table 1 South Korean FDI in the Manufacturing Sector (1997-2006)**

(Unit: million dollars, numbers)

| | 1997-2000 | | 2001-2004 | | 2005 | 2006 |
|---|---|---|---|---|---|---|
| | Accumulated Sum for Four Years | Yearly Average | Accumulated Sum for Four Years | Yearly Average | | |
| Asia | 3,878 (2,426) | 969 (606) | 6,387 (6,156) | 1,597 (1,539) | 2,818 (1,867) | 3,529 (1,991) |
| Europe | 978 (98) | 244 (24) | 2,489 (127) | 622 (32) | 393 (59) | 872 (68) |
| North America | 2,071 (381) | 518 (95) | 1,968 (474) | 492 (119) | 237 (124) | 382 (158) |
| Latin America | 375 (59) | 94 (15) | 233 (58) | 58 (15) | 188 (27) | 216 (26) |
| Middle East | 27 (3) | 7 (1) | 16 (10) | 4 (3) | 15 (4) | 36 (6) |
| Oceania | 42 (36) | 11 (9) | 12 (35) | 3 (9) | 8 (13) | 31 (8) |
| Africa | 93 (19) | 23 (5) | 12 (13) | 3 (3) | 0.5 (4) | 1 (4) |
| Total | 7,463 (3,022) | 1,866 (755) | 11,118 (6,873) | 2,780 (1,718) | 3,660 (2,098) | 5,067 (2,261) |

Note: Numbers are in parentheses.

### 2.2. Doing Business 2005 of World Bank: Measurement of the Business and Investment Environment

The World Bank recently developed an index named ‘Ease of Doing Business Rank’ to measure the quality of the business and investment environment of each country since 2003. The ‘Ease of Doing Business Rank’ is an average sum of rankings of several categories related to the business and investment environment of each country; the number of categories varies across years. For example, the database of Doing Business in 2005 contains ten categories: Starting a Business, Dealing with

Licenses, Employing Workers, Registering Property, Getting Credit, Protecting Investments, Paying Taxes, Trading across Borders, Enforcing Contracts, and Closing Business. Each category consists of several specific components to measure the quality of the business and investment environment in a country.[6)]

Brief explanations of the ten categories follow.[7)] 'Starting a Business' records the procedures and costs for an entrepreneur to start up and operate a business, and is related to the implicit and explicit fixed costs of a multinational to set up an affiliate within a country. 'Dealing with Licenses' is a category for the construction industry. 'Employing Workers' contains information regarding labor costs and the rigidity of the labor market, and can measure both explicit and implicit labor costs of a multinational within the host country. 'Registering Property' records all procedures for a business to trade and transfer property. 'Getting Credit' contains information about the sharing of credit information and measures the legal rights of lenders and borrowers. This category may be associated with the implicit costs for a multinational to finance funds in the host country. 'Protecting Investment' shows the strength of protection of a minority shareholder, and may be related to portfolio investments rather than FDI. 'Paying Taxes' measures the implicit and explicit tax burdens, and 'Trading across Borders' records the procedures of importing and exporting. These categories may affect the variable cost of an affiliate in the host country. 'Enforcing Contracts' shows the efficiency of the judicial system in resolving a commercial dispute, and is related to the incompleteness of a contract in the host country. Finally, 'Closing Business' records the procedures and costs

6) As described in World Bank (2005), the index presented and analyzed in Doing Business measures government regulation and their effects on businesses on small and medium-sized domestic firms. Thus, clearly the index does not directly target foreign director investor. However, it measures the business and investment environments of countries in comparative manner, and those environments also affect the foreign firms as well as domestic firms. Although Doing Business is not best proxies to captures the business environment regarding FDI, as discussed in the main context, it is one of the most acceptable indexes for the cross-country comparision at least.

7) For more detailed descriptions for categories, refer UNCTAD's webpage and publications (Doing Business in 2005: Removing Obstacles to Growth, 2005).

for an entrepreneur to close a business.

Since the aim of the paper is a study of the influence of the business and investment environment in the host country on inward FDI, a rigorous measurement of the business and investment environment in a country is essential. Therefore, we select and construct variables that measure the business and investment environment in the host country from the Doing Business database. Particularly, we choose the variables in the following ways.

Based on the definition of each category, we exclude 'Dealing with Licenses' and 'Protecting Investment' from the set of explanatory variables because the latter is for portfolio investors and the former is for the construction industry. 'Registering Property' and 'Closing Business' are also excluded from the explanatory variables because these might be important to an ongoing business rather than an entering multinational. Further, since similar control variables are available, 'Paying Taxes' and 'Trading across Borders' are also excluded from the list of explanatory variables.

'Staring a Business' consists of four components: 'Number of procedures for starting a business', 'Required days for starting a business', 'Required cost for starting a business', and 'Minimum capital requirement'. Since the third and fourth components both capture the explicit cost to setup a business, we choose the first three components to construct an index that quantifies the difficulty of establishing an enterprise. Particularly, the three selected components are rescaled and set between 0 (best environment) and 1(worst environment). Then, the index is constructed by averaging those three rescaled components. Similar to 'Starting a Business', 'Employing Workers' includes several components. Since the explicit labor cost is available from other data sources, 'Rigidity of Employment'[8] is chosen to measure the implicit cost of establishing an enterprise in the host country's labor market; we rescale it between 0 (least rigid) and 1 (most rigid). The category of

[8] 'Rigidity of employment' is the average of the 'Difficulty of hiring index', 'Rigidity of hours index', and 'Difficulty of firing index'.

'Getting Credit' in Doing Business includes four components: 'Strength of legal right index', 'Depth of credit information index', 'Public credit registry coverage', and 'Private credit bureau coverage'. Again, each is rescaled between 0 (best) and 1 (worst); then, the index of 'Getting Credit' is computed by averaging all the four rescaled components. Similarly, 'Enforcing Contracts' includes several components,[9] and an index for 'Enforcing Contracts' is calculated by averaging all the rescaled components. A higher index for 'Enforcing Contracts' implies that the contract in the host country might be more incomplete.

In addition, since Doing Business has been available since 2003 and the number of categories in the database varies across years, it is difficult to apply panel data analysis. However, the data in Doing Business do not significantly vary over time because the business and investment environment does not change easily. Thus, the regressions in this paper that analyze Korea's outward FDI during 1997 through 2005 use 'Doing Business 2005' and assume that those are time-invariant variables.[10]

### 2.3. Empirical Formulation

As discussed in the previous section, factors that determine the decisions of multinationals on foreign direct investments in the host country can be classified into explicit factors that affect the cost of production and implicit factors related to the business environment in the host country. Furthermore, the explicit and implicit factors of FDI in the host country can be classified into factors affecting the variable costs to operate affiliates in the host country and factors influencing the fixed costs to setup and operate affiliates in the host country. Further, the legal and social environments that reduce the probability of a complete contract in the host country are also important

[9] Components are number of procedures mandated by law or court regulation that demand interaction between the parties, official cost of going through court procedures, and the time of dispute resolution.

[10] Because of a similar reason and the limited availability of data in Doing Business, Demirguc-Kunt *et al*. (2006) and Djankov *et al*. (2006) also used the method of this paper for their analysis.

determinants of FDI.

Considering these classifications of factors, we construct the following specification of the outward-FDI equation. Since outward-FDI data possess the property of censored data,[11] the Tobit model is used to estimate the outward-FDI equation:[12]

$$\ln(FDI^{*}_{K,j,t}) = \beta_0 + \Theta_{j,t}\beta_1 + \Omega_{j,t}\beta_2 + \Phi_{j,t}\beta_3 + Z_{j,t}\gamma + \varepsilon_{K,j,t},$$

$$FDI_{K,j,t} = \begin{cases} 0 & \text{if } FDI^{*}_{K,j,t} \le 0 \\ FDI^{*}_{K,j,t} & \text{if } FDI^{*}_{K,j,t} > 0 \end{cases},$$

where $K$ is the home country of FDI (that is, Korea), $j$ is the host country, and $t$ is the year. $\Theta_{j,t}$ is the vector of implicit and explicit factors that affect the variable cost of production in host country $j$ at year $t$. $\Omega_{j,t}$ is the vector of implicit and explicit factors that affect the fixed costs to setup and operate affiliates within the host country. $\Phi_{j,t}$ is the vector containing factors that reduce the security of contracts. Further, $Z_{j,t}$ is the vector of other control variables that are widely used for analyzing FDI. $\varepsilon_{K,j,}$ is a stochastic error term.

### 2.4. Dependent and Control Variables

$FDI_{K,j,t}$ is the amount of South Korean FDI in the manufacturing sector in host country $j$ at year $t$ during 1997 through 2005, and is acquired from the database of Korea Eximbank.[13][14] Table 2 presents summary statistics.

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[11] We have a considerable number of observations at zero outward-FDI.

[12] To check the robustness, we also employ the random-effects model and the pooled OLS method.

[13] We analyze the aggregated FDI rather than industry level due to the lack of data. Further, although numbers of target countries reach 109 countries, observations in our empirical analysis are reduced to 158 due to the missing data. Particularly, we lost a lot of observations due to missing values in compensation of labor, tax, and tariff.

[14] As Lipsey (2003) has pointed out, FDI cannot measure the actual activity of multinationals. FDI flow can underestimate the activity of multinationals because multinationals can

**Table 2 Summary Statistics**

| Variable | Obs. | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| ln(*FDI*) | 158 | 5.35 | 4.64 | 0 | 14.59 |
| *credit* | 158 | 0.23 | 0.21 | 0 | 0.91 |
| *rigid* | 158 | 0.44 | 0.22 | 0 | 0.82 |
| *comp* | 158 | 11.57 | 8.85 | 0.13 | 30.9 |
| *start* | 158 | 0.18 | 0.10 | 0.06 | 0.53 |
| *contract* | 158 | 0.09 | 0.12 | 0.02 | 0.69 |
| *tax* | 158 | 30.65 | 7.26 | 12.5 | 48 |
| *tariff* | 158 | 6.68 | 5.81 | 0 | 34.05 |
| *patent* | 158 | 7,341.3 | 25,792 | 2 | 133,960 |
| ln(*GDP*) | 158 | 26.24 | 1.21 | 22.75 | 29.18 |
| *edu* | 158 | 106.6 | 38.24 | 52.28 | 256 |
| ln(*dist*) | 158 | 8.85 | 0.747 | 6.87 | 9.82 |

Table 3 shows the variables that are included in the vectors, $\Theta_{j,t}$, $\Omega_{j,t}$, $\Phi_{j,t}$, and $Z_{j,t}$. $\Theta_{j,t}$ consists of three variables: $credit_{j,t}$, $rigid_{j,t}$, and $comp_{j,t}$. *credit* and *rigid* are the indexes of 'Getting Credit' and the rigidity of the labor market in the host country, respectively, and are obtained from the Doing Business database as discussed in the previous section. *comp* is the labor-compensation per hour in the host country and captures the explicit labor costs. *comp* is obtained from the International Institute for Management Development (IMD) in Switzerland, and is the sum of the wage per hour and the incentive per hour. Note that *rigid* and *comp* are the implicit and explicit labor costs to operate affiliates, and the coefficients of these variables are expected to be negative. The *start* variable is the index

finance their funds from the local capital market. Moreover, FDI flow can overestimate the activity of multinationals because it may include investment without purchase of the ownership. Since FDI data from Korea Eximbank counts the magnitude and number of instances of Korean outward FDI for the purpose of ownership acquisition, our analysis can avoid the latter risk. However, the former risk still exists, and the FDI data can underestimate the activity of multinationals.

**Table 3 Variables**

| Variable | Description | Expected Sign |
|---|---|---|
| Factors related to the Variable Cost ($\Theta$) | | |
| *credit* | Indexes of 'Getting Credit' | – |
| *rigid* | Rigidity of the Labor Market | – |
| *comp* | Labor-compensation per Hour | – |
| Factors related to the Fixed Cost ($\Omega$) | | |
| *start* | Index of 'Starting Business' | – |
| Factors related to the Security of Contracts ($\Phi$) | | |
| *contract* | Index of 'Enforcing Contract' | + |
| Other Control Variables ($Z$) | | |
| *tax* | Corporate Tax Rate | – |
| *tariff* | Tariff Rate | + or – |
| *patent* | Number of Patent Applications by Resident | + or – |
| *gdp* | GDP | + |
| *edu* | Enrollment Ratio regarding secondary Education | + or – |
| *dist* | Physical Distance from Korea | + or – |

of 'Starting Business', which is calculated from the 'Doing Business' database, and captures the fixed cost to establish affiliates. The expected sign of the coefficient of *start* is negative because a higher fixed cost raises the entry barrier of the host country as well as decreases the profit of affiliates. *contract* is an index of 'Enforcing Contract', which is calculated from the 'Doing Business' database. As discussed before, *contract* is related to the incompleteness of contracts in the host country, and if the transaction cost due to incomplete contracts is significant enough for multinationals, the coefficient of *contract* should be positive.

*tax* is the corporate tax rate in the host country, as provided by KPMG.[15)]

[15)] KPMG is a global accounting, financial, and consulting company. KPMG's data for the corporate tax rate are used as the official data of the OECD.

As discussed in the previous section, taxation in the host country can affect inward FDI and has been widely used in many empirical studies. A higher corporate tax rate in the host country may reduce the after-tax profits of multinationals and deter inward FDI (Gastanaga *el al*., 1998; Wei, 2000; Simmons, 2003). However, some researchers such as Wheeler and Mody (1992) could not find any evidence of the negative effects of the corporate tax rate on inward FDI. Therefore, a negative or non-significant relationship between *tax* and FDI is expected. *tariff* is the tariff rate from the OECD database.[16] The traditional tariff-jumping FDI model implies that firms prefer a direct investment to avoid trade barriers such as tariffs if they are considerably high (Copithorne, 1971; Horst, 1971; Hirsch, 1976). However, some researchers have reported that trade barriers may not influence or may deter inward FDI (Gastanaga *et al*., 1998). Thus, the estimated coefficient of *tariff* could have any sign. If *tariff* has a positive relationship with FDI, then tariff-jumping is a motivation for Korean FDI. *patent* is the number of patent applications by residents, and is obtained from the World Bank. *patent* captures the level of technology within the host country. If Korean multinationals want to utilize a high level of technology in the host country, firms invest in the industrialized country, and then *patent* is positively related to FDI. However, since highly industrialized host countries are more likely to possess competitive local rivals, multinationals could be reluctant to invest in those countries. In this case, the estimated coefficient of *patent* will have a negative sign. $\ln gdp$ is the logarithmic value of the GDP, and is obtained from the World Bank. $\ln gdp$ captures the influence of the size of the economy on inward FDI. If FDI is market-seeking and multinationals enter into the host country to exploit its market, those size variables matter to multinationals. $edu$ is the enrollment ratio with regard to secondary schools in the host country, and captures the abundance of highly educated skilled workers in the country. If Korean FDI is seeking cheap unskilled workers in the host

16) *tariff* is the average import tariff rate applied on non-agricultural and non-fuel products (the MFN rate).

country, the sign of the coefficient of *edu* might be negative. However, if it is seeking to utilize well-trained skilled workers in the host country, the sign of the coefficient of *edu* can be positive as well. $\ln dist$ is obtained from Nicita and Olarreaga (2007), and is the logarithm of the physical distance between the host and home countries. If the two countries are physically close, lower transportation costs are entailed between the headquarters in the home country and the local production facility in the host country; further, multinationals can supply the output produced in the host country to the home market at lower cost. Further, the similarity between the two countries can make the multinational familiar with the host country. However, it is possible that the firms may decide to invest in the country that is physically far from the home country to penetrate the market in the host country that is unfamiliar to them.

## 3. RESULTS

### 3.1. Tobit Model

Table 4 shows the results of Tobit regression. Particularly, the second column in table 4 is the result of the regression described in the previous section (Model 1), and the third column is the result of regression using the 'Doing Business' index that is announced by the World Bank (Model 2) instead of using elements of the 'Doing Business' database. The result of Model 1 reveals that the effects of *rigid* and *comp* are negative and very significant, which implies that higher labor-market rigidity and higher labor cost in the host country deter direct investment from South Korea. The fixed cost to establish an affiliate in the host country, as measured by *start*, also has a significant, negative influence on FDI from South Korea. Interestingly, as predicted by transaction-cost theory, the coefficient of *contract* is positive and significant. This implies that the incompleteness of contracts in the host country indeed induces FDI in lieu of off-shore production

**Table 4 Determinants of Target Countries of Korean FDI**

| | Model 1 | Model 2 |
|---|---|---|
| *credit* | –2.503 (0.322) | |
| *rigid* | –3.747* (0.082) | |
| *comp* | –0.437*** (0.000) | –0.438*** (0.000) |
| *start* | –22.249*** (0.001) | |
| *contract* | 8.940** (0.026) | |
| *dbusi* | | –9.674*** (0.000) |
| *tax* | 0.040 (0.562) | –0.002 (0.973) |
| *tariff* | –0.081 (0.301) | –0.001 (0.986) |
| *patent* | –0.000* (0.089) | –0.000** (0.023) |
| ln *gdp* | 3.976*** (0.000) | 3.651*** (0.000) |
| *edu* | –0.008 (0.507) | 0.004 (0.758) |
| ln *dist* | –0.594 (0.360) | –1.488** (0.015) |
| Year Dummies | - | - |
| No. of obs. | 158 | 158 |
| $R^2$ | 0.194 | 0.180 |

Notes: Significance levels in parentheses. ***, **, and * stand for the 1%, 5%, and 10% significance levels, respectively.

without the purchase of ownership. In summary, the estimated results show that cost savings are one of the motivations for Korean direct investors; these costs include the transaction cost as well as the production cost.

The high level of technology in the host country captured by *patent* significantly deters the direct investment of a Korean investor. In other words, Korean investors prefer to invest in a country with low technology, which will probably be a less industrialized country. A possible intuition behind this is that since highly industrialized host countries are more likely to possess competitive local rivals, Korean firms are reluctant to invest in those countries. In addition, as the size of the economy of the host country

increases, the host country attracts more FDI from South Korea. This shows that market-seeking is one of the motivations behind FDI for Korean firms.

With respect to the regression using the 'Doing Business' index that is announced by the World Bank, the estimated result is similar to that of Model 1. The estimated result might be interpreted as showing that a better business and investment environment in the host country, as measured by the 'Doing Business' index (*dbusi*), attracts more Korean FDI. However, this interpretation is more likely to be wrong: as discussed in the previous section, the 'Doing Business' index includes various factors related to production costs and the incompleteness of contracts. Each factor may have an influence on Korean FDI in a different direction. As shown in the second column in table 4, the business and investment environment regarding the production and transaction costs may have a different effect on FDI. That is, a better business and investment environment regarding the production cost may stimulate inward FDI, but a better environment regarding bilateral contracts may deter inward FDI. Therefore, the 'Doing Business' index from the World Bank can be a reasonable indicator for an international comparison of business and investment environments. However, it is not a suitable indicator for studying the effect of the business and investment environment in the host country on FDI decisions.

### 3.2. Robustness Issues

This subsection conducts several additional analyses to test the robustness of the models. Since the dataset used in the analysis has the property of panel data, the same empirical formulation was estimated using a random-effects model,[17] and the second column of table 5 shows the estimated result. The estimated coefficients of the variables from the 'Doing Business' dataset in

[17] Considering the heterogeneity bias, we use panel estimation to eliminate a potential source of omitted-variable bias. That is, via panel estimation, we can control for time-invariant, country-specific, unobserved effects and thus capture the unobserved heterogeneity that causes bias in the OLS regression.

**Table 5 The Random-Effects Model and the OLS Model**

| | Random Effects[1)] | OLS |
|---|---|---|
| *credit* | –1.400 (0.552) | –1.532 (0.385) |
| *rigid* | –2.499 (0.245) | –2.050 (0.149) |
| *comp* | –0.286*** (0.000) | –0.318*** (0.000) |
| *start* | –15.908** (0.020) | –16.089*** (0.001) |
| *contract* | 7.635** (0.043) | 6.749*** (0.010) |
| *tax* | 0.070 (0.264) | 0.023 (0.627) |
| *tariff* | –0.031 (0.666) | –0.049 (0.365) |
| *patent* | –0.000 (0.139) | –0.000** (0.045) |
| ln *gdp* | 2.579*** (0.000) | 2.764*** (0.000) |
| *edu* | –0.009 (0.505) | –0.004 (0.600) |
| ln *dist* | –1.280* (0.075) | –1.127** (0.013) |
| Year Dummies | - | - |
| No. of Obs. | 158 | 158 |
| $R^2$ | 0.765 | 0.684 |

Notes: Significance levels in parentheses. ***, **, and * stand for the 1%, 5%, and 10% significance levels, respectively. 1) within $R^2 = 0.018$, Number of groups=34, Observation per group = 4.6.

the random-effects model are weaker than in the Tobit model, and *rigid* has lost its significance. However, the signs of the coefficients are not changed and thus, there are no significant differences in the qualitative results from those in table 4. Further regressions were run with the same empirical formulation using a simple pooled OLS model instead of the Tobit model, and the third column of table 5 shows the result of the pooled OLS regression. Like the results of the random-effects model, the qualitative results of the pooled OLS regression are similar to those in table 4.[18)]

The FDI in a host country could be pre-determined by FDI in the previous

[18)] As a referee suggests, it is possible that the effect of Asian financial crises lasted at least 2-3 years. Therefore, our results might not be robust for the shorter period. We analyze a supplementary regression using observations over 2001-2005, and find the same result in terms of quality.

**Table 6 Pre-determined FDI and Effect of Income Level**

| | Tobit | OLS |
|---|---|---|
| $\ln(FDI_{t-1})$ | 0,319*** (0.005) | 0.233*** (0.002) |
| *credit* | –1.054 (0.710) | –0.578 (0.760) |
| *rigid* | –3.146 (0.161) | –1.577 (0.275) |
| *comp* | –0.346*** (0.000) | –0.249*** (0.000) |
| *start* | –19.319*** (0.006) | –13.792*** (0.003) |
| *Contract* | 7.323* (0.064) | 5.291** (0.037) |
| *Tax* | 0.039 (0.586) | 0.020 (0.668) |
| *Tariff* | –0.052 (0.575) | –0.032 (0.613) |
| *Patent* | –0.000 (0.233) | –0.000 (0.116) |
| $\ln gdp$ | 3.037*** (0.000) | 2.137*** (0.000) |
| *edu* | –0.006 (0.604) | –0.004 (0.645) |
| $\ln dist$ | –0.319 (0.628) | –0.943** (0.043) |
| *highincome* | 0.532 (0.744) | 0.222 (0.834) |
| Year Dummies | - | - |
| No. of Obs. | 158 | 158 |
| $R^2$ | 0.197 | 0.692 |

Notes: Significance levels in parentheses. ***, **, and * stand for the 1%, 5%, and 10% significance levels, respectively.

year. Further, the determinants of FDI in developed country might differ from that in those in developing countries. Hence, additional estimations including $\ln(FDI_{t-1})$ and a dummy variable of high income countries as additional explanatory variables are conducted, and table 6 shows results. The second and the third columns in table 6 are the estimated results using Tobit and OLS models, respectively. The estimated results suggest that the FDI in a host country is more likely to be pre-determined by FDI in the previous year, but the income level in a host country does not affect the inflow FDI. Further, the two additional explanatory variables do not change the results in table 4.

## 4. CONCLUDING REMARKS

It is widely perceived that a good business and investment environment in the host country may encourage inward FDI. However, economic theories on FDI predict that if the host country secures international contracts, a good business environment could be an FDI-deterring environment. Using Korean outward FDI data and 'Doing Business' from the World Bank, this paper examines the constituents of an FDI-friendly business environment in the host country and whether the security level of contracts in the host country affects inward FDI. The results of empirical analysis show that a business environment that reduces the production costs of the affiliates of multinationals is FDI-friendly. Particularly, when the host country has a more flexible labor market and when the startup cost to establish an affiliate in the host country is lower, Korean multinationals invest more in the host country. As the transaction-cost FDI theory predicts, the inward FDI declines if the host country has a better contract-protection scheme. Further, a higher labor cost in the host country deters direct investment from South Korea. In summary, the estimated results show that cost savings are one of the motivations of a Korean direct investor, and the costs include the transaction cost as well as the production cost. In addition, it seems that Korean investors prefer to invest in a country with low levels of technology, which also probably indicates that it is a less industrialized country; further, as the economy of the host country increases in size, the host country attracts more FDI from South Korea.

Although the results of the paper confirm the predictions of FDI theory and provide meaningful implications for FDI-friendly business environments, the estimation in the paper has several limitations. First of all, aggregate data on outward FDI from South Korea are used because firm-level data on Korean multinationals are not available in the public domain. However, since decisions on the FDI of multinationals and the location of foreign affiliates are firm-level decisions, firm-level data, if available, will be better for studying the issues examined in this paper. In addition, the effect of the

environment was examined only to secure contracts on inward FDI, but this study does not shed light on the transaction costs that are incurred due to the incompleteness of contracts. Revisiting the empirical study using richer firm-level data may provide a deeper understanding of the FDI decisions of multinationals.

## APPENDIX

**Table A1 Host Countries of Korean FDI (1997-2005)**

| Per Capita GDP (2005) | Countries |
|---|---|
| -1,000 | Burundi, Ethiopia, Liberia, Malawi, Eritrea, Sierra Leone, Afghanistan, Rwanda, Zimbabwe, Guinea, Nepal, Madagascar, Uganda, Central African Republic, Tanzania, Mozambique, Togo, Burkina Faso, Mali, Cambodia, Bangladesh, Iraq, Tajikistan, Kyrgyzstan, Loas, Ghana, Benin, Haiti, Uzbekistan, Kenya, Chad, Solomon Islands, Mauritania, Vietnam, Zambia, Pakistan, Sudan, Moldova, Yemen, Senegal, **India**, Mongolia, Nigeria, Papua New Guinea, Bhutan, Nicaragua, Cote d'Ivoire, Guyana |
| 1,000-5,000 | Cameroon, Bolivia, Honduras, Philippines, Sri Lanka, Egypt, Republic of Congo, **Indonesia**, Paraguay, Georgia, Syria, Azerbaijan, Armenia, Morocco, Vanuatu, **China**, Ukraine, Angola, Jordan, Tonga, El Salvador, Bosnia and Herzegovina, Swaziland, Guatemala, Albania, **Colombia**, Thailand, Maldives, Ecuador, Peru, Iran, Tunisia, Macedonia, Belarus, Namibia, Algeria, Dominican Republic, Surinam, **Bulgaria**, Fiji, Jamaica, Beliz, Kazakhstan, Saint Lucia, Brazil Costa Rica, Romania, Argentina, Panama, Uruguay, **Turkey**, Malaysia |
| 5,000-10,000 | **South Africa**, **Venezuela**, **Russia**, Mauritius, Gabon, Lebanon, Botswana, Libya, Latvia, **Chile**, **Mexico**, Lithuania, Poland, Croatia, **Slovak Republic** |
| 10,000-20,000 | Estonia, Oman, **Hungary**, **Czech Republic**, Saudi Arabia, Malta, Cyprus, Korea, Slovenia, Israel, Bahamas, Bahrain**, Greece** |
| 20,000- | UEA, **Spain**, **Hong Kong**, **New Zealand**, Singapore, Kuwait, Italy, **Australia**, **France**, Canada, **Japan**, **UK**, Netherlands, **Finland**, Austria, **Sweden**, US, **Denmark**, **Ireland**, **Switzerland**, **Iceland**, **Norway**, Luxembourg |
| Others | **Belgium**, British Virgin Islands, Cayman Islands, Democratic Republic of Congo, Germany, Guam, Lesotho, Macao, Marshall Islands, Monaco, Myanmar, Northern Mariana Islands, Palau, Qatar, Samoa, Serbia-Montenegro, Taiwan, US Samoa, Niger, Puerto Rico, Timor-Leste, Micronesia, West Bank and Gaza, Serbia, Saint Vincent and the Grenadines, Bermuda, Barbados, Netherlands Antilles, Aruba, Brunei, Kiribati, Sao Tome and Principe |

Note: Countries with bold letter are analyzed in the regressions.

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