The Impact of Institutional Quality on FDI Inflows:
The Evidence from Capital Outflow of Asian Economies*

Anh Hoang LE[1], Taegi KIM[2]

Abstract

This paper investigates the effect of institutional quality on FDI inflows by using FDI outflows from Asian countries from 2009 to 2017. We used the FDI data from five major Asian economies, which are South Korea, China, Japan, Singapore, and Hong Kong. The gravity model was used to examine the effect of institutional quality on FDI flows. The regression model considers several independent variables, and we select the most appropriate variables by using the Bayesian Model Averaging (BMA) estimator. We have shown that foreign direct investment from Asian countries depends on the size of home and the partner countries, geographical distance, trade interaction between two countries, economic freedom, labor supply, tariff rate, and capacity of the government. The results of different estimation techniques emphasize that multinational enterprises prefer to invest in those countries which have a higher income, which shows the evidence for Lucas's paradox. The results also show that economic freedom and control of corruption have a positive impact on FDI inwards. The regression results show that better institutional quality in host countries encourages more FDIs from Asian economies. It suggests that the state should control corruption and create a free economic environment to attract FDIs.

Keywords: Foreign Direct Investment, Institutional Quality, Asian Economies, Gravity Model, Bayesian Model Averaging

JEL Classification Code: F21, F23, E02

1. Introduction

Half a century ago, we had observed many dynamic changes in the world economy, especially in foreign direct investment (FDI). In the past, Asia had received investments from advanced countries to boost its economies. Previous research examined FDI flows from developed countries into Asian economies. However, recently capital outflows from Asian countries to the rest of the world have increased rapidly. For instance, the FDI outflows from five Asian countries (South Korea, China, Japan, Singapore, and Hong Kong) increased approximately 2.4 times between 2009 to 2017 (WB, 2020).

This paper investigates the effect of institutional quality on FDI inflows by using FDI outflows from Asian countries from 2009 to 2017. We used the FDI data from five major Asian economies, which are South Korea, China, Japan, Singapore, and Hong Kong. The gravity model was used to examine the effect of institutional quality on FDI flows. We collect the data from reliable sources, such as the World Bank (WB), the International Monetary Fund (IMF), and the Fraser Institute's Economic Freedom of the World. The regression model considers several independent variables, and we selected the most appropriate variables by using the Bayesian Model Averaging (BMA) estimator.

This study provides some implications for policymakers. First, FDI generates a lot of benefits to recipient countries, such as creating employment, tax revenue, and knowledge transfer. Second, increasing FDI brings many benefits to multinational firms and their shareholders (Choi & Yuce, 2016). Thus, the source country's also gains from the growth of these corporations. Therefore, international capital management is one of the crucial policies in an open

[1]First Author. Department of Economics, Chonnam National University, Republic of Korea. Email: anhlebanking@gmail.com
[2]Corresponding Author. Professor of Economics, Dept. of Economics, Chonnam National University, Korea [Postal Address: 77 Yongbong-Ro, Buk-Gu, Gwangju, 500-757 Korea] Email: tgkim@jnu.ac.kr

economy. In a globalization era, it becomes more important to understand capital flows.

The remainder of this paper is structured as follows. Section 2 is the literature review, and section 3 defines the measurement of economic freedom and governance quality and introduces the research methodology. Section 4 presents the empirical results and section 5 is the conclusion.

2. Literature Review

Previous research has confirmed the important role of institutional quality as a determinant of FDI. Most of them noted that there is a positive linkage between improvement in institutional quality and increasing FDI inwards and that better institutional quality reduces the volatility of FDI flows.

Bénassy-Quéré et al. (2007) implemented cross-section estimations based on a newly available database with unprecedented detail on institutions for a set of 52 countries, as well as panel data estimations based on Fraser Institute's data. Iamsiraroj (2016) used the Economic Freedom of the World data from the Fraser Institute's database and Freedom House's report which assesses the condition of political rights and civil liberties around the world. Mishra and Jena (2019) used the economic freedom index composited by three indices, which are, trade freedom, investment freedom, and freedom from corruption. The study used World Development Indicators, CEPII, KOF, and Heritage Foundation data for the period 2001–2012. Other studies employed the World Governance Indicators (WGI) I measure for institutional quality. Daude and Stein (2007) considered six components of WGI, Buchanan et al. (2012) considered the first principal component of six indicators of WGI to construct the governance variable, and Masron and Nor (2013) used the average institutional quality and six components of WGI.

There are many other variables, which determine FDI flows from home countries to host countries. We employed BMA methodology as a powerful approach to select the best variable to fit the model. This technique is widely applied in selecting the drivers for FDI flows (Behera & Mishra, 2020; Blonigen & Piger, 2014; Camarero et al., 2021). Blonigen and Piger (2014) used BMA to compare the results of previous studies and gave a critique on the significant covariates and the omitted covariates done by previous studies. For instance, the impacts of infrastructure and political institutions in recipient countries are not strong for most studies, and distance and real GDP per capita of the source country are good explanatory variables, but those covariates are not used in previous studies.

Aleksynska and Havrylchyk (2013) using a novel dataset of bilateral FDI flows, analyzed location choices of investors from emerging economies, with an emphasis on

institutions and natural resources. They showed that FDI from the South has a more regional aspect than investment from the North. Institutional distance has an asymmetric effect on FDI depending on whether investors choose countries with better or worse institutions. In the latter case, large institutional distance discourages FDI inflows, but this deterring effect is diminished for destination countries with substantial resources. They also find a complementary relationship between capital flows from the North and the South in developing recipient countries, which they attributed to different FDI patterns of these investors.

3. Data and Methodology

3.1. Data

Bilateral foreign direct investment data is collected from the Coordinated Direct Investment Survey (CDIS) dataset of the IMF database from 2009 to 2017 (IMF, 2020). We consider outflow FDI from Asian countries to the rest of the world. The data of foreign direct investment from Korea, Hong Kong, and Japan are outward foreign direct investment reported by home countries, whereas the data of foreign direct investment from China and Singapore are inward foreign direct investment reported by host countries because data of outward foreign direct investment for China and Singapore is not available. Our data consists of 3346 observations for bilateral direct investment.

There are many definitions of institutional quality. Olander (2019), Rothstein and Teorell (2008), and Williamson (1998) provided an excellent overview of the definitions of institutional quality. An institution is related to the legal system, which controls and affects the interactions between government and citizen, or between a nation and others. Institutional quality is the degree of a good institution. It is not easy to set a standard to judge institutional quality. Previous research on institutional quality has focused on enhancing individual rights and reducing the power of interest groups. Previous research mentioned institutional quality as controlling corruption, law enforcement, and economic freedom. In this research, we employ the economic freedom data from the Fraser Institute and governance quality data from World Bank.

As for the data from the Fraser Institute - the Economic Freedom of the World Index measures the degree of economic freedom present in five areas—the size of government, legal structure and property rights, access to sound money, freedom to trade internationally, regulation of credit, labor, and business. Each area consists of several sub-components. Following Le and Kim (2020), this study considers the impact of the overall index (Freedom index) and its sub-components (Capital free), that is control of capital movement on FDI inwards. Whereas the overall

index measures economic liberty in general, the control of capital movement is more focused on the freedom of foreign investors. This sub-component measures three aspects, which are foreign ownership or investment restrictions, capital controls, and the freedom of foreigners to travel.

We also consider the definition of governance in Kaufmann et al. (2011). The World Bank Group's Worldwide Governance Indicators reports on six dimensions of governance 1) Voice and Accountability (VA) expresses the freedom of citizens. 2) Political Stability and Absence of Violence/Terrorism (PV) expresses the stability of the government. These two dimensions indicate how the government can be replaced, monitored, and selected. 3) Government Effectiveness (GE) describes the quality of the government. 4) Regulatory Quality (RQ) describes the ability of the government. We can consider 3) and 4) as the capacity of the government. 5) Rule of Law (RL), and 6) Control of Corruption (CC). 5) and 6) describe governing economic and social interactions between citizens and the state. Both RL and CC measure other aspects of economic freedom. Data is collected from the WB database.

We also consider the impact of governance distance between home and host country using political risk. This indicator measures the dissimilarity in political perception and institution quality between countries. This variable is calculated following Heuchemer et al. (2009), who used Euclidean distances between the two countries for a set of six dimensions of WGI in Kaufmann et al. (2011). The larger gap implies higher risk and less foreign direct investment inwards.

3.2. Methodology

The traditional gravity model is well applied for the study of foreign direct investment flows between countries (Anderson, 2011). Following this idea, we employ the horizontal model to investigate the driving factors for foreign direct investment flows from five Asian countries to their host countries. The independent variables of the linear regression model consist of three main variables and 18 potential variables shown in the following equation.

$$
\ln\text{FDI}_{ijt} = \alpha_0 \times \ln\text{GDP}_{it} + \beta_1 \times \ln\text{GDP}_{jt} \\
- \beta_2 \times \ln\text{dist}_{ij} + \sum \beta_m X_{i,jt}
\tag{1}
$$

where subscript i is home country, j is host country, and t is time. FDI_{ijt} is foreign direct investment, GDP_{it} is GDP of the home country, and GDP_{jt} is the GDP of the host country. dist_{ij} is the distance between home country i and host country j. All variables enter the model as natural logarithm forms. GDP data is collected from WB (2020), Distance measures the weighted distance collected from CEPII.

$X_{i,jt}$ is a vector that presents auxiliary variables. This vector includes two variables (Freedom_index and Capital_free) from Fraser Institute, seven variables (CC, RL, VA, PV, GE, RQ, and Political risk) calculated from WGIs, and nine other variables (Continent, Trade, GDPPC_home and GDPPC_host, Relative, Tariff_rate, Labor_force, Inflation, Real_int). Definitions and sources of all independent variables are explained in the Appendix.

Among many potential explanatory variables, we select some variables which are more appropriate in the model. The Bayesian model averaging (BMA) approach is a powerful estimator that can choose the best models among a set of potential classical linear models. The idea can be found in Hoeting et al. (1999). We employ the BMA estimator on STATA introduced by Magnus et al. (2010), to choose explanatory variables from a set of 18 independent variables.[1] Whereas main independent variables enter in every model, auxiliary variables are added to the basic model. The output will show the posterior inclusion probability (PIP) which presents the probability of the regression coefficient.

Using the BMA estimator, we will choose indicators for measuring economic freedom and governance quality. The variables that show PIP equal to 1 in the BMA estimator are retained. In the next step, we do panel regressions with the random effect model and the time fixed-effect model. Because our model includes geographical distance on bilateral direct investment, we do not employ a cross-section fixed-effect model.

4. Results and Discussions

We use BMA to calculate the posterior inclusion probability of 18 auxiliary variables. The system generates 262144 (2^{18}) possible models. Table 1 shows that CC presents the highest probability to enter the model with significance among six governance indicators. Next, RQ and GE also offer good explanations for foreign direct investment inflows. Since six governance dimensions (PV, VA, RL, CC, RQ, and GE) have a high similarity of impact and potentially correlate to each other, we only consider the impact of CC in the later analysis. Although the host country's rule of law index is a significant determinant of FDI in Mishra and Jena (2019), this indicator is not suggested by BMA. Bilateral trade between the home country and the host country (Trade), GDP per capita in the home country (GDPPC_home), and the tariff rate (Tariff rate) in the host country are highly recommended candidates for determinants of foreign direct investment (with PIP equal to 1).

Using the results of BMA, we did panel regression. The results are in Table 2. Column (1) presents the estimation result of the basic gravity equation, including three independent variables. Column (2) is estimation results for the augmented model by three candidates which is strongly

Table 1: Bayesian Model Averaging (BMA) Estimator Result

Auxiliary	PIP
Trade	1.00
GDPPC_home	1.00
Tariff_rate	1.00
CC	0.93
Labor_force	0.93
Inflation	0.76
GE	0.67
Continent	0.62
RQ	0.57
Relative	0.51
Freedom_index	0.33
VA	0.13
GDPPC_host	0.11
Political risk	0.10
Capital_free	0.10
Real_int	0.08
RL	0.06
PV	0.03

Note: 1) PIP is posterior inclusion probability. 2) Refer to Table A1 for more details about variable notations, definitions, calculations, and sources.

recommended by the BMA estimator. Columns (3)–(4) investigate the impact of institutional quality by adding Freedom_index and CC. Due to the high correlation between Tariff_rate and Freedom_index, we exclude the Tariff_rate in column 3. In columns (5)–(6), we replace the three variables added in column (2) with Freedom_index and CC.

As shown in Table 2 all the variables reveal the expected signs and significance.[2] Table 2 also reports goodness-of-fit measures, including AIC (Akaike information criterion), BIC (Bayesian information criterion), and adjusted R-square in time fixed-effect. Generally, these augmented models can explain more than 50% of the bilateral direct investment. The adjusted R-square is higher than the figure reported from the original gravity equation. Noticeably, the estimation in column 5 can explain nearly 55% of the foreign direct investment with only one variable augmented, while column 2, which adds three more variables, improves the adjusted R-square to about 60%. This comparison implies the important role of economic freedom in determining bilateral direct investment. According to AIC (Akaike information criterion) and BIC (Bayesian information criterion), column 4 shows the smallest values, which note as the best-fit-model.

The basic gravity model in column 1 shows that the sizes of the home economy and the host economy have positive effects on bilateral direct investment, and distance reduces FDI. Although this model just employs three variables, it explains around 50% of the dependent variable. Therefore, the basic gravity model is well applied in FDI flows in Asia case.

The positive coefficients of GDP host mean that FDI increases with the size of the host country. Despite the law of diminishing marginal return, Lucas (1990) argued that most foreign direct investment flows to rich countries. Therefore, these findings shed light on Lucas's paradox. The coefficients of bilateral trade (Trade) are a significant positive sign. The coefficients of GDP_home are also significantly positive. Consistent with Blonigen and Piger (2014) and Mishra and Jena (2019), a richer country invests more in foreign countries than a poorer country does. The coefficients of Tariff_rate show a negative sign. This result is inconsistent with the proximity-concentration trade-off theory. However, this result strengthens the positive relationship between physical trade and capital flows.

Table 2 shows that the quality of the institution is also an important determinant of foreign direct investment. Both coefficients of freedom_index and CC have a significant positive sign. These results imply that better control of corruption and improvement in the freedom level encourage higher foreign direct investment inwards.

For a robust check, we separate the whole sample into two groups; better institution and worse institution. Similar to Aleksynska and Havrylchyk (2013), we assume that the characteristics of FDI differ among the institutional qualities of the countries. If the host country has a higher institutional quality than the home country does, we classify it as a better group; otherwise, if the host country has a lower institutional quality or it does not report the score, we classify it as a worse group. We note that institutional quality can be measured by overall economic freedom (Freedom_index) or a simple average of six governance indicators (AGI).

Regression results are shown in Table 3. Even if we regroup the sample into a better institution and worse institution, most of the results are similar to those of the whole sample. The coefficients of GDP_home and GDP_host remain positive and statistically significant. The coefficient of GDPPC_home is also positive and significant, as higher productivity firms tend to invest abroad. The coefficient of Trade is positive and significant, supporting that trade in physical assets encourages trade in capital. The variable tariff rate has a negative effect on FDI inflow, which means that removing trade barriers in host countries motivates higher capital inflow. Our findings are consistent with previous research on the relation between trade openness and FDI (Blonigen & Piger, 2014; He & Choi, 2020; Mishra & Jena, 2019; Tintin, 2013).

Table 2: The Results of Panel Regression

	(1)	(2)	(3)	(4)	(5)	(6)
GDP_home	0.124**	0.707***	0.589***	0.701***	0.160⁺	0.125
	(3.17)	(4.20)	(3.35)	(4.32)	(1.68)	(1.28)
GDP_host	0.996***	0.203⁺	0.227⁺	0.191	1.079***	0.919***
	(47.15)	(1.74)	(1.96)	(1.61)	(17.27)	(14.80)
Distance	−1.503***	−0.504**	−0.575**	−0.590**	−1.435***	−1.571***
	(−19.92)	(−2.66)	(−2.93)	(−2.93)	(−8.17)	(−8.37)
Trade		0.786***	0.790***	0.769***		
		(7.42)	(7.78)	(7.23)		
GDPPC_home		2.397***	2.146***	2.348***		
		(7.38)	(6.22)	(7.35)		
Tariff_rate		−0.265*		−0.105		
		(−2.25)		(−0.78)		
Freedom_index			3.298***		4.230***	
			(3.82)		(4.60)	
CC				0.973⁺		1.993***
				(1.95)		(4.20)
_cons	−10.64***	−45.36***	−46.26***	−44.92***	−22.78***	−10.68**
	(−7.61)	(−5.94)	(−5.82)	(−6.05)	(−6.23)	(−2.90)
adj. R^2	0.486	0.607	0.623	0.61	0.55	0.51
AIC	14751.3	11311.8	12362.8	11291.7	13049.8	14555.6
BIC	14823.7	11399.3	12451.8	11385.1	13127.1	14634
No. obs	3075	2533	2788	2533	2820	3064
No. groups	428	397	388	397	391	425

Notes. (1) This Table presents the results by the time fixed-effect model. The dependent variable is the natural logarithm of bilateral foreign direct investment (FDI). (2) CC denotes control of corruption. (3) AIC is the Akaike information criterion and BIC is the Bayesian information criterion. (4) adj. R^2 is the adjusted R-square. (5) No. obs and No. groups are the number of observations and number of bilateral pairs. (6) We use command testparm to test for time-fixed effects and all the results indicate that time fixed effects are needed in these cases at the 0.05 level. (7) z statistics in parentheses, ⁺$p < 0.1$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 3 also suggests that institutional quality has a greater impact on bilateral FDI. The coefficients of Freedom_index and CC in a better institution group are higher than those in a worse institution group. It means that institutional quality has a positive effect in attracting foreign direct investment inflow.

5. Conclusion

Foreign direct investment is recognized as the most important part of international capital flows, which can affect the economic stability of the home country and the host country. Hence, this study gives new evidence on foreign direct investment outwards from major Asian economies.

We have shown that foreign direct investment from Asian countries depends on the sizes of home and the partner countries, geography distance, trade interaction between two countries, economic freedom, labor supply, tariff rate, and capacity of the government. The results of different estimation techniques emphasize that multinational enterprises prefer to invest in those countries which have a closer economic relationship to the home countries. More importantly, foreign direct investment flows from Asian

Table 3: Robustness by Institution Group

	(1)	(2)	(3)	(4)	(5)	(6)
	Better	**Worse**	**Better**	**Worse**	**Better**	**Worse**
GDP_home	0.968***	0.417***	0.835***	0.525***	0.128	0.285***
	(6.32)	(4.69)	(6.51)	(5.21)	(1.63)	(5.13)
GDP_host	0.0454	0.344***	0.238**	0.213***	0.802***	0.950***
	(0.59)	(6.41)	(2.79)	(3.90)	(18.86)	(36.88)
Distance	−0.22	−0.743***	−0.132	−0.738***	−1.193***	−1.713***
	(−1.50)	(−8.15)	(−0.78)	(−7.41)	(−8.24)	(−19.82)
Trade	0.938***	0.707***	0.678***	0.778***		
	(12.53)	(15.96)	(8.53)	(16.64)		
GDPPC_home	2.707***	1.531***	2.799***	1.755***		
	(9.80)	(7.38)	(10.76)	(8.00)		
Freedom_index	5.191***	3.438***				
	(4.26)	(7.86)				
Tariff_rate			−0.267**	−0.0491		
			(−2.67)	(−0.59)		
CC			1.527**	0.203	3.883***	1.815***
			(3.14)	(0.65)	(8.90)	(6.75)
_cons	−66.06***	−36.31***	−58.41***	−32.49***	−14.19***	−14.26***
	(−9.88)	(−8.46)	(−9.96)	(−6.87)	(−4.48)	(−7.56)
N	938	1836	961	1572	1049	2015
adj. R^2	0.571	0.645	0.521	0.654	0.424	0.528

Note: (1) This table presents time fixed-effect regressions. The dependent variable is the natural logarithm of bilateral foreign direct investment (FDI). (2) Standardized beta coefficients; t statistics in parentheses $*p < 0.05$, $**p < 0.01$, $***p < 0.001$. (3) Better, Worse indicates the host country's institutional quality is better or worse than the home country's institutional. If the host country has a higher score of overall economic freedom than the home country does, we classify it as better; otherwise, if the host country has a lower score of overall economic freedom or it does not report the score, we classify it as worse.

economies to high-income partners, which shows evidence for Lucas's paradox.

Moreover, economic freedom and control of corruption are found to have a positive impact on FDI inwards. It seems that the host country should improve economic freedom and control corruption to attract more FDI. Remarkably, the institutional quality has a greater impact on bilateral FDI in better environment countries than the countries with poorer institutions.

References

Aleksynska, M., & Havrylchyk, O. (2013). FDI from the south: The role of institutional distance and natural resources. *European Journal of Political Economy, 29*, 38–53. https://doi.org/10.1016/j.ejpoleco.2012.09.001

Anderson, J. E. (2011). The gravity model. *Annual Review of Economics, 3*(1), 133–160. https://doi.org/10.1146/annurev-economics-111809-125114

Behera, P., & Mishra, B. R. (2020). Determinants of bilateral FDI positions: Empirical insights from ECs using model averaging techniques. *Emerging Markets Finance and Trade*, 1–17. https://doi.org/10.1080/1540496X.2020.1837107

Bénassy-Quéré, A., Coupet, M., & Mayer, T. (2007). Institutional determinants of foreign direct investment. *World Economy, 30*(5), 764–782. https://doi.org/10.1111/j.1467-9701.2007.01022.x

Blonigen, B. A., & Piger, J. (2014). Determinants of foreign direct investment. *Canadian Journal of Economics/Revue canadienne d'économique, 47*(3), 775–812. https://doi.org/10.1111/caje.12091

Buchanan, B. G., Le, Q. V., & Rishi, M. (2012). Foreign direct investment and institutional quality: Some empirical evidence.

International Review of Financial Analysis, 21, 81–89. https://doi.org/10.1016/j.irfa.2011.10.001

Camarero, M., Moliner, S., & Tamarit, C. (2021). Japan's FDI drivers in a time of financial uncertainty. New evidence-based on Bayesian model averaging. *Japan and the World Economy, 57*, 101058. https://doi.org/10.1016/j.japwor.2021.101058

Choi, Y., & Yuce, A. (2016). Foreign direct investment projects of Korean companies. *The Journal of Asian Finance, Economics, and Business, 3*(1), 5–14. https://doi.org/10.13106/jafeb.2016.vol3.no1.5

Daude, C., & Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics & Politics, 19*(3), 317–344. https://doi.org/10.1016/j.japwor.2021.101058

He, Y., & Choi, B.-R. (2020). China's outward foreign direct investment patterns: Evidence from Asian financial markets. *The Journal of Asian Finance, Economics, and Business, 7*(2), 157–168. https://doi.org/10.13106/jafeb.2020.vol7.no2.157

Heuchemer, S., Kleimeier, S., & Sander, H. (2009). The determinants of cross-border lending in the Eurozone. *Comparative Economic Studies, 51*(4), 467–499. https://doi.org/10.1057/ces.2009.9

Hoeting, J. A., Madigan, D., Raftery, A. E., & Volinsky, C. T. (1999). Bayesian model averaging: a tutorial. *Statistical Science*, 382–401. https://www.jstor.org/stable/2676803

Iamsiraroj, S. (2016). The foreign direct investment–economic growth nexus. *International Review of Economics & Finance, 42*, 116–133. https://doi.org/10.1016/j.iref.2015.10.044

Internal Monetary Fund (IMF). (2020). *Coordinated direct investment survey* (CDIS). https://data.imf.org

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators (WGI) project. *Hague Journal on the Rule of Law, 3*, 220–246. https://doi.org/10.1017/S1876404511200046

Le, A. H., & Kim, T. (2020). The effects of economic freedom on firm investment in Vietnam. *The Journal of Asian Finance, Economics, and Business, 7*(3), 9–15. https://doi.org/10.13106/jafeb.2020.vol7.no3.9

Lucas, R. E. (1990). Why doesn't capital flow from rich to poor countries? *American Economic Review, 80*(2), 92–96. https://www.jstor.org/stable/2006549

Magnus, J. R., Powell, O., & Prüfer, P. (2010). A comparison of two model averaging techniques with an application to growth empirics. *Journal of Econometrics, 154*(2), 139–153. https://doi.org/10.1016/j.jeconom.2009.07.004

Masron, T. A., & Nor, E. (2013). FDI in ASEAN-8: Does institutional quality matter? *Applied Economics Letters, 20*(2), 186–189. https://doi.org/10.1080/13504851.2012.687090

Mishra, B. R., & Jena, P. K. (2019). Bilateral FDI flows in four major Asian economies: A gravity model analysis. *Journal of Economic Studies, 46*, 71–89. https://doi.org/10.1108/JES-07-2017-0169

Olander, P. (2019). Economic diversification and institutional quality: Issues of concentrated interests. *Studies in Comparative International Development, 54*(3), 346–364. https://doi.org/10.1007/s12116-019-09287-0

Rothstein, B., & Teorell, J. (2008). What is the quality of government? A theory of impartial government institutions. *Governance, 21*(2), 165–190. https://doi.org/10.1111/j.1468-0491.2008.00391.x

Tintin, C. (2013). The determinants of foreign direct investment inflows in the Central and Eastern European Countries: The importance of institutions. *Communist and Post-Communist Studies, 46*(2), 287–298. https://doi.org/10.1016/j.postcomstud.2013.03.006

Williamson, Ó. (1998). The institutions of governance. *American Economic Review, 88*, 75–79. https://www.jstor.org/stable/116896

World Bank (WB). (2020). *World Bank database*. https://data.worldbank.org

Endnotes

[1]The command *bma* on STATA allows us to run linear regression for numerous potential models from a set of focus regressors and auxiliary variables.

[2]We also did panel regression with random effect. The results by random effect model are consistent with the results by time fixed-effect model.

Appendix

Table A1: Variable description

No	Variables	Definition/Description/Calculation	Sources
1	Continent	A dummy variable indicates whether the home country and host country are located in the same region. If the pair countries are located in the same region, Continent equal to 1, otherwise Continent equal to 0.	World Bank database https://data.worldbank.org/
2	Trade	Sum of Export and Import between home countries and their counterpart countries	International Monetary Fund, https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85
3	GDPPC_home/ GDPPC_ host	Gross domestic product per capita of the home country/the host country, PPP (current international $)	World Bank database https://data.worldbank.org/
4	Relative	abs(lnGDPPCit-lnGDPPCjt)	World Bank database https://data.worldbank.org/
		The Host Country's Characteristics	
5	Tariff_rate	Indicate the cost of export to the host country	World Bank database https://data.worldbank.org/
6	Labor_force	The labor force comprises people ages 15 and older who supply labor for the production of goods and services during a specified period	World Bank database https://data.worldbank.org /
7	Inflation	the consumer price index of the host country	World Bank database https://data.worldbank.org/
8	Real_int	International Monetary Fund, International Financial Statistics and data files using World Bank data on the GDP deflator of the host country	World Bank database https://data.worldbank.org/
		Institution Quality Indicators	
9	Freedom_index	Economic Freedom Summary Index of the host country	The Fraser Institute's Economic Freedom of the World index https://www.fraserinstitute.org/economic-freedom/dataset?geozone=world&page=dataset&min-year=2&max-year=0&filter=0
10	Capital_free	Controls of the movement of capital and people in the host country	The Fraser Institute's Economic Freedom of the World index https://www.fraserinstitute.org/economic-freedom/dataset?geozone=world&page=dataset&min-year=2&max-year=0&filter=0
11	VA	Voice and Accountability index, estimate in the host country	World Bank, www.govindicators.org
12	PV	Political Stability and Absence of Violence/Terrorism, estimate in the host country.	World Bank, www.govindicators.org

13	RL	Rule of Law index, estimate in the host country	World Bank, www.govindicators.org
14	CC	Control of Corruption index, estimate in the host country	World Bank, www.govindicators.org
15	GE	Government Effectiveness index, estimate in host country	World Bank, www.govindicators.org
16	RQ	Regulatory Quality, estimate in host country	www.govindicators.org
17	Political risk	This variable is calculated follows Heuchemer, Kleimeier, and Sander (2009), using Euclidean distances applies for six dimensions of the Governance indicators estimated by Kaufmann et al. (2011)	World Bank, www.govindicators.org

Note: 1) Variables enter the models in natural logarithm and the Institution Quality Indicators enter the model as to avoid the non-positive value of those variables. 2) All source data is available on December 16, 2020.