

Analyzing the Relationship between Foreign Direct Investment and Corruption

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Abstract. This paper adopts the threshold model to estimate the nonlinear impact of corruption on FDI. We identify two governance regimes based on the quality of political institutions. The results of our analysis show that corruption has an insignificant impact on FDI in a regime with high-quality political institutions but a significant impact in a regime with low-quality political institutions.

Keywords: Corruption; Foreign direct investment; Threshold models

1. Introduction

Corruption can act as a tax on investments or increase insecurity concerning costs and thereby deter foreign direct investment (FDI) (Li, 2005; Hakkala, Norbäck, and Svaleryd, 2008). From the point of view that corruption hinders FDI, corruption is a grabbing hand. On the other hand, bribery may be an efficient way of circumventing regulations and thereby can help foreign investors to enter a market (Lui, 1985; Hakkala, et al., 2008). In developing countries, corruption can facilitate transactions and speed up procedures for getting investment projects. Thereby, multinational enterprises are likely to pay bribes to obtain business contracts in the presence of preexisting government failures (Lui, 1985; Shleifer and Vishny, 1994; Kaufmann and Wei, 1999).

The quality of political institutions is in generally classified as two governance regimes depending on governance failures, which one regime is high quality of political institutions and the other is weak quality of political institutions (Aidt et al., 2008). Weak quality of political institutions assists corruption while high quality of political institutions hinders corruption (Aidt, 2003). This study uses a different statistical technique to identify the regimes, jointly determine FDI and corruption within a particular governance regime, and prove the FDI/corruption relationship to be regime specific. This study uses the “threshold regression” method proposed by Caner and Hansen (2004) to estimate the regime-specific marginal impacts of corruption and other determinants of FDI. This study proposes a FDI-corruption model that identifies two regimes of governance, and treats FDI and corruption as endogenous variables since these two variables are jointly determined.

2. Empirical Methodology

This paper adopts the threshold model proposed by Caner and Hansen (2004) to estimate the nonlinear impact of corruption on FDI. The relationship among corruption, FDI, and political institutions can be described by the following equation:

$$FDI_i = \alpha'_1 CPI_i I(q_i \leq \gamma) + \alpha'_2 CPI_i I(q_i > \gamma) + \beta'_1 X_i I(q_i \leq \gamma) + \beta'_2 X_i I(q_i > \gamma) + \varepsilon_i \quad (1)$$

where X_i is a vector of control variables influencing FDI inflows which include market size (GDP_i), human capital (HC_i), openness (OP_i) and macroeconomic stability (MS_i), respectively. q_i is an exogenous variable representing a measure of the quality of a political institution; $I(\cdot)$ is an indicator function, and γ is the threshold value to be estimated; ε_i is an error term; α_j and β_j are parameters to be estimated.

An equation for the reduced form of corruption is a model of the conditional expectation of CPI_i given the relative determinants of corruption Y_i . The reduced form is:

$$CPI_i = f(Y_i, \phi) + u_i; \quad (2)$$

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$$E(u_i|Y_i) = 0 \quad (3)$$

where ϕ is a parameter vector and u_i is an error term. Y_i is a vector of instrumental variables influencing corruption which include rule of law (RL_i), political stability (PS_i), quality of political institution (QP_i), population (POP_i), government effectiveness (GEF_i), government expenditures (GE_i). The sources of all variables are presented in Table 1.

3. Estimation Results and Conclusion

The sample data averages six-year span from 2001 to 2006 covering 69. In Table 2, the effects of market size on FDI inflows in regimes HG and LG are 129.95 and 16.84, respectively. Such effects are statistically significant at the 5% significance level. The effect in regime HG is higher than that in regime LG. This implies that, with respect to FDI inflows, increasing market size in a high-quality political institution is more attractive than the effect in a low-quality political institution.

The effects of human capital on FDI inflows are 346.90 and 397.78 in regimes HG and LG, respectively. In regime LG, the effect is statistically significant at the 5% significance level. But this effect in regime HG is statistically insignificant at the same level. Moreover, the effects of openness on FDI inflows are 1067.09 and 339.58 in regimes HG and LG, respectively. The effect in regime LG is statistically significant at the 5% significance level, but this effect in regime HG is insignificant at the same level. The result in regime LG indicates that countries with economic openness will attract more FDI inflows.

Regarding the impact of corruption on FDI inflows, Table 2 also shows that corruption has a positive impact on FDI in low-quality political institutions, and the effect is -10678.20 and statistically significant at the 5% significance level. On the other hand, the impact of corruption on FDI in high-quality political institutions is 9756.26, which is statistically insignificant at the same level. These findings indicate that corruption in low-quality political institutions does not deter FDI inflow and may act as a helping hand for FDI inflow while corruption in high-quality political institutions is not a helping hand for FDI inflow.

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5. References

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Table 1. Description of variables and their sources

Variables	Meanings of Variables	Explanation and source
FDI	FDI	Net inflows of foreign direct investment (in million U.S. dollars). Source: World Bank, World Development Indicators (WDI) 2007.
CPI	CPI	Corruption perceptions index (rescaled the value by subtracting country scores from 10; higher values correspond with higher perceived levels of corruption). Source: Transparency International.
GDP	Market size	GDP per capita, in constant 2000 US\$, (in billion U.S. dollars). Source: World Bank, WDI 2007.
HC	Human capital	School enrollment, secondary (% gross). Source: World Bank, WDI 2007.
OP	openness	Exports and imports of goods and services (% of GDP). Source: World Bank, WDI 2007.
MS	Macroeconomic stability	Inflation, GDP deflator (annual %). Source: World Bank, WDI 2007.
RL	Rule of law	Rule of law (Score range: -2.5 to 2.5). Source: World Bank, Worldwide Governance Indicators (WGI) 2008.
PS	Political stability	Political stability (Score range: -2.5 to 2.5). Source: World Bank, WGI 2008.
QP	Quality of political institution	Voice and accountability (Score range: -2.5 to 2.5). Source: World Bank, WGI 2008.
GEF	Government effectiveness	Government effectiveness (Score range: -2.5 to 2.5). Source: World Bank, WGI 2008.
POP	population	Total population. Source: World Bank, WDI 2007.
GE	Government expenditures	Government consumption (in billion U.S. dollars). Source: World Bank, WGI 2008.

Table 2. The results of corruption on FDI inflows with threshold

Independent variables	Regime HG ($q \geq 1.21$)	Regime LG ($q < 1.21$)
CPI	9756.26 [-52413.46, 15914.63]	-10678.20* [-22785.12, -9982.07]
Market size	129.95* [124.45, 137.47]	16.84* [16.29, 27.74]
Human capital	346.90 [-19.65, 5929.51]	397.78* [365.57, 690.11]
Openness	1067.09 [-32.18, 3194.66]	339.58* [313.77, 616.17]
Macroeconomic stability	90451.05* [-136368.7, -72519.31]	424.90* [-633.24, -330.07]
Observations	17	52
Bootstrap p-value		0.00
CI (95%) with threshold		[1.07, 1.21]
Adjusted R-squared		0.824

Notes: (1) Two values in brackets are the lower and upper bounds of 95% confidence interval, respectively. (2) * represent significant at the 5% significance level.