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The Effects of Corruption on Foreign Direct Investment Inflows: Some Empirical Evidence from Less Developed Countries

Muhammad Azam and Siti Aznor Ahmad

Senior Lecturer and Deputy Dean, School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia

ABSTRACT

This study investigates the effect of corruption on incoming Foreign Direct Investment (FDI) in a set of 33 Less Developed Countries (LDCs) over the period; 1985 to 2011. Using panel data approach, this study reveals that the significant factors influencing FDI inflows in LDCs are corruption index, market size and inflation rate. Results are in line with the hypotheses of the study. Multinational corporations (MNCs) tend to avoid countries with high corruption rates, which in turn, ineluctably, reduces incoming FDI. The findings suggest that lesser foreign investments receiving countries need to create a better conducive environment for MNCs by concentrating on some of the significant factors identified by the present study. In the same vein, increased and sustainable efforts geared towards mitigating corruption at all levels in the countries, must be put in place to encourage FDI inflows.

Key words: Corruption, FDI inflows, Economic Growth, Less Developed Countries

Introduction

"We …… need to address transparency, accountability, and institutional capacity. And let us not mince words: we need to deal with the cancer of corruption."
Wolfensohn (1996)

Globalization has resulted in a significant increase in the FDI inflows. Incoming FDI is considered an important driver for generating employment opportunities, providing capital, improving managerial skills, increasing technological progress, and enhancing productivity. Hence, contributing positively to economic growth and development (Blomstrom & Kokko 1996; Markusen & Venables 1999; Dinko et al. 2011). Javorcik (2012), reported that FDI inflows creates good jobs both from the worker's and the country's perspective. On the one hand, that is, for the worker, such jobs are likely to pay higher wages than jobs in indigenous firms in developing countries. Also, foreign employers tend to offer better and more effective training opportunities than their local counterparts. On the other hand, that is, from the country's perspective, jobs in foreign affiliates are good because FDI inflows tend to increase the aggregate productivity of the host country. Factors influencing FDI inflows are classified in to the demand and supply sides, where the demand side determinants are aggregate variables grouped in three main categories i.e., economic, social and political. The prerequisites for attracting FDI are well explained in the OLI (ownership, location, and internalization) theory as an eclectic approach by Dunning (1988). Dunning affirmed that to undertake FDI, firm should have a specific advantage (ownership), a location advantage to mobilize the firm specific know-how (location) and an incentive to internalize external transactions (internalization). A greater percentage of FDI's are carried out through MNCs. Usually, MNC's invest in specific locations mainly because of the host countries' strong economic fundamentals which includes large market size, stable macroeconomic environment, skilled labor and physical infrastructure that influence the attractiveness of the country to FDI inflows (Dunning, 1993; Globerman & Shapiro, 1999).

Corruption is an institutional factor which discourages FDI as well as economic growth in LDCs. Corruption which refers to the misuse of public power (office) for private benefit is most likely to occur where public and private sectors meet. In other words, it occurs where public officials have a direct responsibility for the provision of a public service or application of specific regulations (Rose-Ackerman, 1997). According to the World Bank, corruption can be defined as "the abuse of public power for private benefit". The act of corruption as a major barrier to economic growth and development has been well documented in academic literature by many researchers. For instance, Mauro (1995) found that corruption lowers private investment, thereby lowering economic growth. The negative association between corruption and investment, as well as growth, is therefore significant, both in a statistical and an economic sense. For example, if Bangladesh was to enhance the integrity and efficiency of its bureaucracy to the level of that of Uruguay, its investment rate would rise by almost 5

Corresponding Author: Muhammad Azam, Senior Lecturer and Deputy Dean, School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia

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percent, and its yearly Gross Domestic Product (GDP) growth rate would rise by over half a percentage points. Akcay (2006) in describing a series of adverse effects of corruption, posits that corruption decreases economic growth, impedes long-term foreign and domestic investments, gives incessant rise to inflation, depreciates national currency, reduces expenditures for education and health, increases military expenditures, misallocates talent to rent-seeking activities, pushes firms underground, distorts markets and the allocation of resources, increases income inequality and poverty, reduces tax revenue, increases child and infant mortality rates, distorts the fundamental role of the government and undermines the legitimacy of government and of the market economy. Usually, developing countries face many problems where high incidence of corruption may further reduce foreign investment and consequently economic development.

Corruption exists all over the world in developing and developed countries. However, it is found worse off in those countries where institutions such as the legislature and judiciary are frail; where neither rule of law nor adherence to formal rules are strictly observed; where political support is standard practice; where the independence and professionalism of the public sector has been eroded; and civil society lacks the means to bring public pressure against corruption in the government (Lawal 2007). According to the Transparency International (2012), the Corruption Perceptions Index (CPI) in the year 2011 indicates that no region or country in the world is immune to the damages of corruption, the vast majority of the 183 countries and territories assessed score below 05 on a scale of 0 (highly corrupt) to 10 (very clean). New Zealand, Denmark and Finland were found on top of the list, while Myanmar North Korea and Somalia are at the bottom. The World Bank identified fraud and corruption as great impediments to economic and social development. Corruption makes economic development sluggish by distorting the rule of law and weakening the institutional foundation on which economic growth depends. The harmful effects of corruption are especially severe on the world's poorest people, who are most reliant on the provision of public services, and are least capable of paying the extra costs associated with fraud and corruption (see World Bank, 2004; Al-Sadig, 2009; Wang & You, 2012). Azam et al. (2013) found that FDI positively and corruption negatively affects economic growth in a set of five South East Asian countries.

This study makes an effort to analyze the effect of corruption on FDI inflows in the context of LDCs. Enhanced level of economic growth and development is required, where incoming FDI plays a significant role in the encouragement of economic growth. The available literature indicates that less consideration has been given to a very important topic in the academic literature, and that is, the problem of corruption, particularly in the developing world. Though, initially it was thought to consider several other LDCs for investigation but due to lack of data availability, this study was confined to 33 LDCs only. All of the sampled countries are low and middle income countries and it is hereby assumed that all included countries possess the same economic, social and political characteristics (See Appendix Table 1 for list of LDCs included in this study). Corruption makes investment expensive and therefore, slowdowns the process of economic development and it is assumed that in the absence of corruption more FDI can be enhanced. Therefore, this study will contribute well in the literature and will certainly give another look at the effect of endemic corruption on FDI inflows in LDCs.

This paper is organized into sections, they include:

Section I above, which briefly states the introduction of the study. Section II discusses review of relevant literature. Section III presents empirical methodology. Section IV interprets estimation and empirical results. Finally, Section V concludes the study.

Literature Review:

Corruption has many forms including practices like bribery, extortion, fraud, and embezzlement. However, for the purpose of this study, corruption is defined broadly as those activities which affect the costs of investment operations in host country. According to Bardhan (1997) in the presence of a rigid regulation and an inefficient bureaucracy, corruption may increase bureaucratic efficiency by speeding up the process of decision making. Regulatory framework, bureaucratic hurdles and red tape, judicial transparency and the extent of corruption in the host country are found insignificant by Wheeler and Mody (1992) in their analysis of firm-level United States data. Wei (2000) however, argued that the reason why Wheeler and Mody (1992) failed to find a significant relationship between corruption and FDI is that corruption is not explicitly incorporated into their model. They pooled corruption with 12 other indicators to form one regressor (RISK), but some of these indicators may be marginally significant for FDI. Akcay (2001) used cross-sectional data from 52 developing countries with two different indices of corruption and evaluated the effect of corruption on FDI inflows. However, he failed to find a negative relationship between FDI and corruption.

Several other empirical studies provide evidence of a negative relationship between corruption and FDI inflows and therefore suggest that corruption is a deterrent factor for foreign investors. For example Rahman et al. (2000) found that corruption has significant negative effect on FDI. Wei (2000) concluded after using three different measures of corruption, that an increase in either the tax rate on multinational firms or the level of corruption in the host countries would reduce inward FDI. Abed and Davoodi (2000) used both cross-sectional

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and panel data analysis and examined the effect of corruption on per capita FDI inflows to transition economies. They found that countries with a low level of corruption attract more per capita FDI. However, once the structural reform gains control, corruption becomes insignificant. Habib and Zurawicki (2001) found that foreign firms tend to avoid situations where corruption is visibly present because corruption is considered immoral and might be a vital cause of inefficiency. Habib and Zurawicki (2002) suggested that foreign investors generally avoid corruption because it is considered wrong and it can create operational in-efficiencies. Asiedu (2005) concluded that macroeconomic instability, investment restrictions, corruption and political instability have negative impacts on FDI to Africa. Azam and Khattak (2009) found that the key determinants of FDI are market size, domestic investment, trade openness, and return on investment in Pakistan during 1970-2005. Al-Sadig (2009) found that the cross-sectional regressions are consistent with the argument that corruption discourages FDI inflows over the period from 1984-2004 in 117 developed and developing countries. Alemu (2012) found negative effect of corruption on FDI inflows in 16 Asian economies during the period from 1995-2009.

Empirical Methodology:

A simple multiple regression model is used in this study to verify relationship between corruption and FDI inflows in a set of 33 LDC's. This study includes along with corruption index as an institutional quality variable, the other explanatory variables such as inflation rate as a policy variable and GDP proxy used for market size as the domestic factor.

It is generally perceived that corruption is a bad curse in the way of FDI and consequently makes the process of economic growth sluggish. When foreign investors undertake investment, they have to pay extra and additional costs in the form of bribes in order to get licenses or government permits, therefore, corruption raises the costs of investment and reduces the incentives to invest. Hence, this kind of additional costs reduce the expected profitability of investment. To this end, corruption is generally viewed as a tax on profits (Macrae's, 1982; Bardhan, 1997). Usually, foreign investors would choose to avoid investing in those countries where high levels of corruption exist. Thus, corruption index is postulated to be positively related to the FDI inflows in LDC's but implying that negatively affect FDI inflows.

Larger market size of the host countries can provide better opportunities and therefore, can attract more FDI. FDI will move to those countries which have relatively larger expanding markets and greater purchasing power, where firms can potentially get a higher return on their capital and by implication receive higher profit from their investments. GDP is used as a proxy for market size (see Janicki & Wunnava, 2004). Thus, market size is postulated to be positively related to the FDI inflows.

Usually, when prices upsurge substantially in a country, it is a harbinger of macroeconomic instability. High inflation disturbs economic activities and discourages investment in productive enterprises and mitigates economic growth. Thus, a negative relationship between inflation rate and FDI inflows is hypothesized.

To estimate the effects of corruption along with other explanatory variables of FDI inflow in LDC's, the following empirical model is proposed:

$$FDI = \alpha_0 + \alpha_1 MKTZ + \alpha_2 CP + \alpha_3 P + \varepsilon \tag{1}$$

$\alpha_1, \alpha_2, \alpha_3$ are to be estimated.

Where, FDI is foreign direct investment net inflows (current US$) as ratio of Gross Domestic Product (GDP) at current US$, MKTZ is GDP proxy used for market size, CP is corruption index, as per the International Country Risk Guide (ICRG). Corruption index is one of the component of political risk rating system with 6 points out of 100, where toward 0 indicates high level corruption and toward 6 indicates low level corruption, and P denotes inflation, consumer prices (annual %).

FDI is a dependent variable. It is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the aggregate of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows total net, that is, net FDI in the reporting economy from foreign sources less net FDI by the reporting economy to the rest of the world and the data are in current U.S. dollars.

The fixed effects model is used in order to investigate empirically the effects of corruption (CP) on FDI inflows along with other explanatory variables namely inflation rate and market size of the host countries in a set of 33 LDCs. For empirical analysis, panel data set over the period 1985 through 2011 are used due to data availability. The data have been gleaned from ICRG (2012), World Development Indicators (various issues) and World Investment Report (various issues) respectively.

Empirical Results:

For empirical investigation panel data set of 27 years is balanced from 33 LDCs. The sample size is 891 (= 27 x 33). Summary of the descriptive statistics and correlation matrix using panel data averaged during the period from 1985 to 2011 are presented in Table 1. It is evident from Table 1 that the results obtained are with correct signs and in accordance to the hypotheses of the study. Panel method is supposed to be used which is relatively suitable. The Hausman's test is utilized in order to decide whether fixed or random effects models are appropriate for estimation purpose. After using the Hausman's test, it has found that the fixed effects model is preferable to the random effects model. The utilization of the fixed effects model is more consistent because it does not entail the assumption of no correlation between the country specific effects (Baltagi, 2005; Stock & Watson, 2010). The results are presented in Table 2. The F-stat, t-stat values are acceptable and coefficients shows expected signs which validate that the overall model is technically and statistically satisfactory. The R^2 explains 35 percent variations by the incorporated regressors such as corruption, market size and inflation rate in the response variable that is FDI inflows.

Results given in Table 2 indicate that institutional quality variable corruption index (CP) is positively related (see ICRG definition of corruption index) to FDI and statistically significant at 1 percent level. The estimated coefficient size is 0.323; it suggests that one percentage point increase in the corruption index will discourage 3.23 percentage points in the FDI inflows in LDCs. The coefficient of the variable MKTZ (i.e. market size of the host countries) precisely reflects theoretical expectations. The estimated coefficient of market size is 0.075; meaning that one unit increase in GDP will encourage 7.5 percent incoming FDI. The estimated coefficient is statistically significant at 1 percent level; this confirms that it is an important factor of FDI inflows. Likewise, the effect of inflation rate (P) on FDI found is statistically significant at the 5 percent level of significance and carries negative sign as was expected. The estimated coefficient of inflation rate is 0.0002; meaning that one unit increase in inflation rate will dampen, 0.0002 percent FDI inflows in LDCs. Empirical results of the present study are consistent with other studies findings (Rahman et al. 2000; Habib & Zurawicki, 2002; Al-Sadig, 2009; Azam, 2010).

Table 1: Summary statistics and correlation matrix (1985-2011).

	summary statistics				correlation matrix			
Variables	Mean	St Dev.	Min.	Max.	FDI	MKTZ	P	CP
FDI	2.623	7.524	-28.624	144.516	1			
MKTZ	3.772	4.395	-24.700	26.269	0.104	1		
P	116.958	1151.854	-27.049	26762.02	-0.009	-0.154	1	
CP	2.404171	0.9785	0.000	5.000	0.0377	0.033	-0.024	1

Eview7 computer software is used for computation analysis.

Table 2: Panel data estimates: 1985 to 2011.

Dependent Variable: FDI as GDP ratio		
Method: Panel EGLS (Cross-section weights)		
Explanatory variables	Estimated coefficients	t- ratio
Constant	3.143	20.626
MKTZ	0.075[*]	5.182
P	-0.0002[**]	2.450
CP	0.323[*]	5.899
R-squared	0.352	
Adjusted R-squared	0.325	
S.E. of regression	6.693	
F-stat.	13.229	
Prob(F-stat.)	0.000	
Hausman Test (p-value)	10.479 (0.014)	

Note: Eview7 computer software is used for computation analysis.
Asterisks *, ** shows statistically significant at 1 and 5 percent level of significance

Summary And Conclusion:

After a thorough review of the existing literature that posits FDI inflows as an important driver for sustainable economic growth and development, though, many factors influence FDI inflows by MNCs who consider all of them with the prime objectives to maximize profit. It is however, perceived that institutional quality variable, that is, corruption is a bad curse in the way of FDI inflows and consequently makes the process of economic growth hindered.

After utilizing panel data and fixed effects model, the results are significant statistically and thus vigorously support the hypotheses of the study. The findings accurately reflect the theoretical expectations. Empirical results reveals that a robust linkage between corruption and FDI inflows exists, implying that corruption adversely affected incoming FDI inflows in 33 LDCs during the period under study. It is true that corruption

raises business costs and reduces the incentives to invest. Therefore, high level of corruption deters investment in the host countries. Thus, it is concluded that multinational corporation stay away from countries where a high level of corruption is prevalent. In the light of our findings, this study suggests that countries seriously need to take dynamic action to mitigate corruption and also give proper attention to keep keen check and balance on such unwanted factors. This will certainly help to enhance incoming foreign investment and strengthen economic growth of the host countries.

A suggestion for future studies would be to analyze primary data collected through interviews from foreign investors about the nature and the root of corruption as well as its impact on their investment decision in the host countries. Also, further studies should examine the significance of other factors which have not been investigated in this study to determine their significance as factors of FDI in LDCs.

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Appendix

Table 1: List of LDCs included in the study

Algeria, Angola, Bangladesh, Bolivia, Cameroon, Colombia, Congo, Dem. Rep., Ecuador, Egypt, Arab Rep., El Salvador, Ghana, Guatemala, India, Indonesia, Iran, Islamic Rep., Jordan, Kenya, Malawi, Mongolia, Nicaragua, Niger, Nigeria, Pakistan, Papua New Guinea, Philippine, Senegal, Sierra Leone, Sri Lanka, Tanzania, Thailand, Uganda, Zambia, and Zimbabwe.