Corruption and Foreign Direct Investment

Mohsin Habib*
UNIVERSITY OF MASSACHUSETTS, BOSTON

Leon Zurawicki**
UNIVERSITY OF MASSACHUSETTS, BOSTON

This study examines the impact of corruption on foreign direct investment (FDI). First, the level of corruption in the host country is analyzed. Second, the absolute difference in the corruption level between the host and home country is examined. The analysis provides support for the negative impacts of both. The results suggest that foreign investors generally avoid corruption because it is considered wrong and it can create operational inefficiencies.

INTRODUCTION

Since 1986, with the liberalization of the regimes in many FDI recipient countries, the volume of foreign direct investment (FDI) has been growing over 20% annually (WIR, 2001). Even though FDI is a popular subject in international business literature (see Caves, 1996; and Ensign, 1996), the recent surge in FDI demands new attention. Numerous statistical and econometric analyses addressed the spatial distribution of FDI and the underlying forces. Modeling FDI is a complicated task because so many variables intervene. Among explanatory variables, general economic phenomena are quantifiable and available. Others, like the quality of workforce, government intervention, barriers to entry and competitive climate, are much less so. The analysis is further complicated, as it is not clear at what stage of the FDI decision-making process specific variables are considered (Schniederjans, 1999).

One factor that has drawn attention lately is corruption in the host countries. Corruption has gained prominence as the contacts between less corrupt and more corrupt countries intensified in the last decade. Corruption does not seem to deter FDI in absolute terms. China, Brazil, Thailand and Mexico attract large flows of FDI despite their perceived high corruption. Within the industrialized world, while Italy is perceived relatively corrupt and receives modest inflows of

FDI, Belgium, which is similarly rated on corruption (by Transparency International), attracts substantial FDI. Addressing such a paradox requires careful analysis. So far, scholars in economics and public policy have dealt with corruption (Bardhan, 1997). Analogous empirical research from the international business perspective is scanty.

Understanding the pernicious role of corruption in FDI is important since it produces bottlenecks, heightens uncertainty, and raises costs. Further, corruption creates distortions by providing some companies preferential access to profitable markets. The difference in the exposure to corruption between the host and home countries can also be a concern for investors. The greater such difference between the two countries, the lower the likelihood that they know how to deal mutually. Given a choice between a familiar and a less familiar environment, firms will prefer the former (Davidson, 1980).

This paper adopts a dual approach in assessing the impact of corruption on FDI. First, the effect of the level of corruption in the host country is investigated. Second, the effect of the difference in the corruption levels between the home and host countries is examined. The paper is organized as follows. A review of corruption and its impact on FDI are presented first. Based on this review, hypotheses are developed. Analysis and results are then reported. Finally, the end section discusses the findings and their implications.

THEORY

The OLI paradigm (Dunning, 1988) provides guidance for FDI activities. The ownership (O) and internalization (I) advantages are derived from the exploitation of firm-specific resources and capabilities, and the reduction in transaction costs. The third element, location (L) advantages, has attracted renewed attention due to (1) changes in the extent, character and geography of MNE activity in the last two decades, and (2) the linkages of the spatial aspects of the MNE value-added activities to firm competitiveness (Dunning, 1998). The location of FDI is driven by the search for (1) markets, (2) resources, (3) efficiency, and (4) strategic assets (Dunning, 1998). This implies that different location selection criteria apply to projects of different motivation. Thus, identifying the variables exerting the strongest impact on particular types of investment is important.[1] The majority of previous studies have relied on total FDI inflow data, obscuring the links between specific location characteristics and the type of motivation. This study also uses aggregate FDI data, however, when appropriate, the location variables relevant to specific FDI orientation are highlighted.

Identifying additional variables can expand our knowledge of the (L) advantages and their influence on FDI. To this end, corruption, a factor that has received attention lately, is included among the descriptors of the attractiveness of a location. Corruption is defined in various ways. International organizations (UN) and Western governments equate corruption with "improbity", which encompasses not only what is illegal, but also improper (Malta Conference, 1994). The World Bank emphasizes the abuse of public power for private benefit (Tanzi, 1998). Whereas corruption of public employees is a dominant theme, Coase (1979) also argues that corruption exists between private parties. Although corruption can be operationalized as an all-inclusive variable, comprising bribes, bureaucratic ineffi-

ciency, and political instability, it is used here to describe bribery in private and public sectors.

Studies have looked into the antecedents and consequences of corruption for the national economy. Rose-Ackerman (1975), Shleifer and Vishny (1993), Macrae (1982), and Husted (1994) provided the theoretical frameworks using public choice, game theory, and transaction-cost economics. Shleifer and Vishny (1993) argued that in countries with disorganized corruption, economic growth would suffer. Mauro (1995) linked the corrupt institutions with the perpetuation of inefficiency. Gupta, Davoodi and Alonso-Terme (1998) demonstrated how corruption impacts economic development and worsens poverty.

Simultaneously, another stream of thought (Leff, 1964; Braguinsky, 1996) holds that in case of rigid egalitarian regimes, corruption need not deteriorate economic performance. In this context, bribes "grease" the system and contribute to *Pareto optimality* (Rashid, 1981). However, Kaufmann and Wei (1999) showed that companies that pay more bribes waste more time negotiating with bureaucrats. Hence, because of the greed of the corrupt officials the "grease effect" might not materialize (Tanzi, 1998). Beck and Maker (1986) and Lien (1986) showed that in bidding competition, the most efficient firms pay the most bribes. Lui (1985) suggested that firms placing a high value on time offer bribes to make decisions quickly. Thus, corruption enhances allocation efficiency. However, Tanzi (1998) suggested that those paying the highest bribes are not necessarily the most efficient firms but successful rent-seekers.

Corruption and FDI have only recently been jointly considered. Previously, corruption was incorporated in different approximations of the economic and political risks of host countries. Foreign investors may consider corruption morally wrong and stay away from countries with high levels of corruption. For example, a number of African countries where corruption is rampant, the economy poor and not growing, receive very little FDI (WIR, 2001). Honesty has its price, however, if it means inability to compete in some markets.

Corruption is widespread in countries where the administrative apparatus enjoys excessive and discretionary power, and where laws and processes are barely transparent (Tanzi, 1998; LaPalombara, 1994). Also, lack of economic development and income inequalities increase corruption (Alam, 1995; Macrae, 1982). Corruption inhibits the development of fair and efficient markets (Boatright, 2000). A corrupt economy does not provide open and equal market access to all competitors. Price and quality become less important than access, since bribery takes place in secret. Payments to the host country officials do not have a market value and, hence, raise the cost of goods when compared to a competitive market. This can be a major disincentive for foreign investors. Corruption persists because some companies can use it to advance their own interests. Had each and every investor (local and foreign) resisted corruption, their combined power would have eradicated it. That does not happen because a game of "outsmarting" others is sometimes played.

Empirical analyses have not yet consistently confirmed the negative relationship between corruption and FDI. Hines (1995) found a non-significant relationship between the two. Also, Wheeler and Mody (1992) did not detect a significant negative relationship between FDI and the host country risk factor, a composite

measure including corruption. However, this result could be affected by the measure itself since, besides corruption, it combined twelve other indicators, some of them marginally important for FDI (Wei, 2000). Drabek and Payne (1999) tested how FDI was affected by non-transparency, a composite of corruption, unstable economic policies, weak and poor property rights protection, and poor governance. Results indicated the negative impact of high levels of non-transparency on FDI.

Other studies identified a negative relationship between corruption and FDI. Wei (2000) analyzed data on FDI in the early 1990s from 12 source countries to 45 host countries. Corruption revealed a significant and negative effect on FDI. Busse et al. (1996) looked at the relationship between FDI and the level of corruption exposed by the local media. Reviewing the inconsistent results pertaining to different countries, they hypothesized that FDI increased when investors believed that the government would curb corruption. Alternatively, FDI would decrease with media exposure should investors assume that the government was unwilling to improve the environment. This suggestion, however, was not rigorously validated. Given the state of the literature, the following basic hypothesis is proposed first.

Hypothesis 1a: Corruption will have a negative effect on FDI.

Various institutions monitor and expose corruption. International organizations are better suited to perform this task objectively as the local (corrupt) environment influences them less. Watchdogs like Transparency International (TI) can serve two purposes: as a deterrent to corrupt officials and as a reassurance to the investors that the situation is getting

under control. Also, the host country's willingness to accept the presence of TI chapter sends a positive signal. If, however, corruption is deeply ingrained, bringing in TI can help improve the current FDI situation but may not do much to actually combat corruption. Empirically, the impact of corruption on FDI when a corporate watchdog is present is yet to be determined. Hence, the following hypothesis is proposed.

Hypothesis 1b: Corruption will continue to have a negative effect on FDI when TI in the host country is included as an independent variable in the analysis.

It is believed that political stability positively affects FDI (Kobrin, 1976) and that political stability and corruption are negatively correlated (Wei, 2000). Uncertain political situations make investors and public officials short-term oriented and pursuing personal gains while sacrificing the legality. Alternatively, a stable political environment encourages a long-term orientation and reduces incentives for quick illegal returns. In the end, whether the dual effects of political stability will actually change the FDI-corruption relationship is an open question. The following hypothesis is suggested.

Hypothesis 1c: Corruption will continue to have a negative effect on FDI when political stability is included as an independent variable in the analysis.

Difference Between Home and Host Country Corruption Levels and FDI

For a long time, researchers looked at the order of selection of foreign markets. Since Cyert and March (1963), the behavioral model attempted to identify the

markets firms enter first and determine how they organize at each stage of development within the new market. A decision to enter a foreign market is a function of knowledge and experience, and the selection of a similar market reduces uncertainty (Aharoni, 1966). In the 70's, the Scandinavian authors categorized the "psychic distance," to assert that companies enter markets perceived to be psychologically closer before considering the remote ones (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977, 1990). Two important aspects are emphasized: (1) lower level of uncertainty in psychically close countries (Johanson and Vahlne, 1990), and (2) psychic closeness facilitating learning about the target countries (Kogut and Singh, 1988).

Over the years, more studies were undertaken. Some (Davidson, 1980; Nordström and Vahlne, 1992) corroborated the hypothesis that firms expand first to the psychically close and then to the more psychically remote countries. Yet, Benito and Gripsrud (1992) and Engwall and Walenstal (1988) found no support for the hypothesis that the first FDIs are made in the countries that are culturally closer to the home country. Recently, Ghemawat (2001) suggested that four dimensions of distance namely cultural, administrative, geographic and economic, influence companies considering global expansion. Within this taxonomy, difference in corruption levels between the host and home countries is part of the administrative distance that creates significant barriers for foreign investors.

To complicate matters further, the psychic distance can exert different effects depending on the mode of firms' involvement in international business. To date, only a handful of psychic distance studies addressed FDI, the most serious

and risky commitment among the international business activities (Johanson and Wiedersheim-Paul, 1975). Two influences of opposing directions can occur. First, psychic distance can prove a greater impediment to FDI in a particular country than to other modes of international business. Second, applying previous lessons from exporting and licensing, the international investors may bridge their knowledge and experience gap.

In this study, the notion of similarity that closely resembles the psychic distance idea is adopted. The similarity approach is simpler and more clear-cut as it does not presuppose managers' level of knowledge about the host country. Corrupt practices represent a component of local business and administrative customs. Inability to handle corruption makes FDI challenging for companies from less corrupt countries and can result in a negative FDI decision. Alternatively, exposure to corruption at home provides a learning experience preparing the individual companies to handle them abroad. Hence, acquiring skills in managing corruption helps develop a certain competitive advantage. This advantage is lost or turned into disadvantage when expertise in corruption becomes redundant in "clean" markets. While it is easy to comprehend that the difference in corruption level between two countries would be more problematic for investors coming from a less corrupt environment than those from a more corrupt one, it still constitutes a "distance" that both types of investors have to overcome. Applying the similarity approach to corruption, the following hypothesis is proposed.

Hypothesis 2: The greater the absolute difference in the corruption levels be-

tween the home and the host countries, the lesser the FDI inflow for the host country.

METHODOLOGY

The study includes a large number of host countries offering a broad perspective on FDI and corruption. The statistics on aggregate bilateral FDI flows are analyzed in conjunction with key observational variables. Most of the data for the sample is derived from the International Monetary Fund (IMF, 2000). The latest three years with significant country data (1996-1998) are chosen. Altogether, 89 countries are included. These countries represent the whole spectrum, comprising developed, developing, and the transition economies. The selection of the home countries: Germany, Italy, Japan, Korea, Spain, UK and the USA aims to provide a fair representation of the Triad, while incorporating countries with markedly varying levels of Corruption Perception Index (CPI), a measure produced by Transparency International (TI). This is very important, as based on the methodology applied by TI relatively small differences in CPI for individual countries are not statistically significant. The three-year bilateral FDI data was pooled together for statistical analysis. Accordingly, a maximum of (7 x 89 x 3) 1869 observations for the variables was expected. However, a large number of missing values related to a country or a year produced fewer total observations.

Two different models are used in this study to analyze the effects of corruption on FDI. The first is an OLS regression model. The second is a PROBIT model, devised to assess the impact on FDI of the absolute differences in corruption levels between the home and the host countries. The OLS approach is appropriate given the use of continuous variables in the study. In this model, the dependent variable is the log of FDI. FDI is the annual inflow between the home and the host country. Log of FDI is used in the analysis to render the distributions nearly normal and the error term homoscedastic. Data on FDI is collected from the IMF (2000).

The key independent variables are corruption (measured by CPI) and the absolute difference in corruption (Abs. Diff. in CPI) between the host and the home country. Measuring corruption is problematic. There is no consensus among researchers regarding what should be measured (Lambsdorff, 1999). Objective measures are hardly available because of the secrecy of corrupt dealings. Subjective measures relying on questionnaire-based surveys represent an acceptable alternative for this problem. They measure the perception of corruption rather than corruption per se. Such surveys are compiled by organizations like Transparency International (TI), Political Risk Services, and World Economic Forum. Interestingly, the respective indices are highly correlated (Tanzi, 1998). In this study, the corruption measure collected by TI (1999) is used. TI, a non-governmental organization, publishes the Corruption Perception Index (CPI), which is an average of multiple surveys of country and business experts. The index ranks up to 100 countries from the most to the least corrupt on a 0 to 10 scale. Since its inception in 1995, academics and companies have used the CPI extensively.

Besides the key independent variables, the regression model includes "control" variables reflecting the determinants of FDI suggested in the literature. First, variables that affect all FDI endeavors are included. Second, variables that influence the location of spe-

cific types of FDI are highlighted. A brief discussion of the variables follows.

A classic reason for FDI is the search for new markets. FDI is positively influenced by the size of the host economy measured by its GDP or population (Kobrin, 1976). Large markets provide a reasonable scope for investment and hence influence market-seeking FDI. Log of population is our measure of country size.

Host countries' growth rates of GDP seem to be positively related to FDI (Kobrin, 1976; Nigh, 1986). High growth ensures demand for the output of the local market-oriented FDI. GDP growth is included in this study.

GDP/capita is a significant explanatory variable for FDI (Wells and Wint, 2000; Grosse and Trevino, 1996). High GDP/capita reflects high consumption potential in the host country. Log of GDP per capita is used in this study.

Export orientation of the host country can stimulate FDI (Jun and Singh, 1996). Countries open to international trade provide a good platform for global business operations. Also, a country's international orientation reflects its competitiveness. International orientation of a country is measured as the trade/GDP ratio from the IMF (2000) data.

Political stability strongly affects FDI (Kobrin, 1976). It is considered an imperative for planning, profitability, and long-run success. Political Risk Services, Inc. (2000) publishes Political Risk Index, which is on a scale of 0 to 100, with 100 being the most politically stable. The index is used in this study.

Labor is another factor important to foreign investors. The more abundant (with lower costs) labor is, the more attractive the location becomes. Country-level unemployment figures have been considered a proxy for labor availability (Billington, 1999). Under high unemployment, workers value their current job higher and are willing to accept lower wages to keep the jobs. Thus, a high unemployment would positively affect the resource-seeking FDI. The unemployment data was gathered from the International Labor Organization (ILO, 2001).

Strategic linkage theory (Nohria and Garcia-Pont, 1991) and the network approach (Johanson and Mattson, 1988) have been presented as other explanations for FDI. Accordingly, FDI serves to acquire strategic resources that the firms are lacking. Dunning (1998) and Doz, Santos & Williamson (2001) emphasized the need for most foreign firms to find locations supporting innovative activities. Host countries with higher scores on science and technology will be preferred for asset-seeking FDI. Country ratings for science and technology are adopted for this study from the World Competitiveness Yearbook (1999).

It has been shown that the duration of diplomatic and economic ties between the home and host country increases the likelihood of FDI (Tse, Pan and Au, 1997). Greater business interactions should promote understanding between the home and host country that is conducive to FDI. Economic ties reflecting the home and the host country participation in the same common market areas (EU, NAFTA, ASEAN) or preferential trade agreements (Lome Convention, Caribbean Initiative) are included as a (dummy) variable in this study. Data was collected from the official membership lists of the regional blocs.

As mentioned earlier, cultural and geographic distance affects FDI. Cultural proximity between the two countries will facilitate FDI operations. It was calculated applying the Kogut and Singh

(1988) formula to Hofstede's four dimensions of culture. Geographic proximity exerts a multifaceted impact on FDI, facilitating contact with host country and reducing the transportation costs. Also, in case of large geographic distance, the transportation costs encourage substitution of exports by market-oriented FDI (Brainard, 1997). Log of geographic distance between the home and the host countries was calculated from Hengeveld (1996).

Finally, the presence of the corporate watchdogs in the host country is included as a variable affecting FDI. It is expected that the presence of organizations such as TI will improve the investment climate. Representation of TI in the host country was included as a dummy variable in the study (TI, 1999).

In order to avoid a problem known as the "omitted variable bias," the regression model is developed to be as inclusive as possible. All the independent variables described earlier are included in the same model. A test of multicollinearity among independent variables using the variance-inflation factor (VIF) did not suggest any serious problem. None of the VIF values exceeded 3. VIF values of 5.3 (Hair, Anderson, Tatham and Black, 1992) and 10 (Studenmund, 1992) have been suggested as cutoffs for multicollinearity. Table 1 reports the descriptive statistics.

The second (PROBIT) model attempts to explain the differences between the host country's share in the global (total) incoming FDI and the same country's share in a specific home country's FDI. First, the raw differences were calculated:

Difference in share of FDI = Global Share − Country$_i$ Share, where i denote a particular home country of outgoing FDI.

Then a categorical variable was developed. 0 is assigned if the host country's share in global FDI exceeds its share in the home country's total outgoing FDI (under-investment). 1 applies to cases when the host country's share in global FDI is equal to or lower than its share in the home country's total FDI (over-investment). This categorical variable which focused on relative "under-investment," as opposed to relative "over-investment," is subsequently used as a dependent variable in the PROBIT analysis, to estimate the probability that the bilateral FDI flows would fit one or another category as a function of a set of independent variables. Data on a country's share in global FDI is calculated from the IMF (2000). Data on the country's share in the total FDI of the home country is calculated from the OECD (2000) statistics.

Most of the independent variables included referred to the same factors as in the OLS regression model.[2] However, since the PROBIT model focuses on the impact of similarities, except for the geographic distance and economic ties, all other independent variables are considered in terms of absolute differences between the home and the host country levels. It is expected that these differences would lead to greater difficulties in operations of foreign firms and, hence, deter FDI. The only new variable added is the log of the absolute difference in Gross Capital Formation/capita. Like most other variables, it is included to capture as much as possible the macro environmental differences between the host and home countries. GCF data is calculated from the IMF (2000). Table 2 presents the descriptive statistics for the PROBIT model.

TABLE 1
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR OLS REGRESSION

Variable	Mean	s.d.	N	1	2	3	4	5	6	7	8	9	10	11	12
1. Log population	2.70	1.48	1785												
2. GDP Growth	3.65	4.49	1750	-.05*											
3. Log GDP/Capita	8.01	1.44	1750	-.12***	-.12***										
4. Unemployment	7.82	4.09	889	.05	-.07*	.02									
5. Trade/GDP	0.69	0.51	1750	-.35***	.08**	.12***	-.15***								
6. Science & Technology	50.72	14.55	903	-.01	-.09*	.62***	-.09*	-.03							
7. Cultural Distance	59.74	22.97	1029	-.12***	.02	-.15***	-.20***	.23***	-.08*						
8. Political Stability	72.41	11.71	1582	-.26***	-.07**	.78***	-.19***	.31***	.41***	-.05					
9. Log Distance	8.11	0.89	1848	.09***	.06*	-.25***	-.13***	-.09***	-.14***	.14***	-.27***				
10. Economic Ties	0.20	0.40	1830	.07**	-.05	.31***	.11**	.07**	.12**	-.17***	.26***	-.43***			
11. Corruption Perception Index (CPI)	4.96	2.45	1491	-.30***	-.03	.86***	-.07	.20***	.55***	.06*	.80***	-.21***	.28***		
12. Abs. Diff. In CPI	2.79	1.72	1465	.12***	.01	-.31***	-.00	-.14***	-.17***	.42***	-.35***	.09***	-.10***	-.34***	
13. Log FDI	4.34	2.45	785	.20***	.02	.23***	-.00	-.06	.22***	-.14**	.18***	-.10**	.28***	.17***	-.05

*p < .05, **p < .01, ***p < .001.

TABLE 2
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR PROBIT

Variable	Mean	s.d.	N	1	2	3	4	5	6	7	8	9	10
1. FDI Mode	.229	.4205	1283										
2. Abs. Diff. ln GDP Growth	2.298	2.144	1785	-.074**									
3. Log Abs. Diff. in GDP/Capita	4.071	.3884	1785	-.214**	-.175**								
4. Log Abs. Diff. ln GCF/Capita	3.362	.4062	1785	-.111**	.209**	.512*							
5. Abs. Diff. ln Unemployment	6.276	4.767	747	-.109**	-.049	-.019	-.085*						
6. Abs. Diff. ln Trade/GDP	18.599	13.712	879	-.100**	-.076*	.178**	-.115**	-.174**					
7. Abs. Diff. ln Science & Techn.	23.070	18.402	879	-.039	.005	.261**	.218*	-.108*	.416**				
8. Abs. Diff. ln Political Stability	11.970	9.571	1562	-.113**	.259**	.415**	.403**	-.050	.123**	.116**			
9. Log Distance	3.523	0.390	1764	-.271**	.051*	.170**	.229**	.049	.247**	.254**	.187**		
10. Economic Ties	0.206	0.405	1758	.431**	-.178**	-.275**	-.248**	-.030**	-.193**	-.182**	-.263**	-.438**	
11. Abs. Diff. ln CPI	2.780	1.722	1431	-.138**	.051	.335**	.142**	-.093**	.345**	.132**	.450**	.098**	-.097**

$*p < .05$, $**p < .01$.

RESULTS

The OLS regression results for the full sample are presented in Table 3. Five regression models are run. Model 1 includes all the independent variables except political stability, TI chapters, CPI, and absolute difference in CPI. In model 1, log of population, log GDP/capita, and economic ties are significant while trade/GDP is marginally significant. Hence, consistent with the extant literature, country size, consumer purchasing power, open economy, and network of economies positively affect FDI. The overall model is statistically significant and explains 15 percent of the variance (F = 9.01, p < .001, adjusted R^2 = 0.151). Model 2 introduces the corruption variable, CPI. CPI is significant and negatively affects FDI (β = 0.25, p < .05). The standardized coefficient is positive because a high CPI means less corruption. Overall, model 2 is significant (F = 8.97,

p < .001, adjusted R^2 = 0.165). This supports Hypothesis 1a.

Models 3 and 4 are used to test Hypotheses 1b and 1c. Model 3 added political stability as a variable. As expected, it shows a significant positive effect on FDI. More importantly, CPI remains a significant variable affecting FDI but only at the p < 0.10 level and the value of its coefficient drops from 0.25 to 0.18. Model 4 added "TI Chapters" variable that also shows a significant positive effect on FDI. In this model, the CPI variable continues to have a significant, albeit weaker (p < 0.10), negative effect on FDI (coefficient drops from 0.25 to 0.18). These results support Hypotheses 1b and 1c.

In model 5, the absolute difference in CPI is included. The results show that difference in CPI negatively affects FDI (β = - 0.18, p < .001). Also, CPI remains significant. The overall model explains 20 percent of the variance (adjusted R^2 =

TABLE 3
REGRESSION RESULTS FOR THE FULL SAMPLE
(DEPENDENT VARIABLE = LOG FDI)

Variable	Model 1		Model 2		Model 3		Model 4		Model 5	
Log Population	0.33***	(0.14)	0.43***	(0.16)	0.40***	(0.17)	0.39***	(0.16)	0.44***	(0.16)
GDP Growth	0.01	(0.06)	−0.03	(0.06)	−0.02	(0.06)	−0.04	(0.06)	−0.04	(0.06)
Log GDP/Capita	0.22**	(0.25)	0.05	(0.31)	−0.08	(0.35)	0.14	(0.32)	0.05	(0.31)
Unemployment	0.04	(0.03)	0.07	(0.03)	0.11†	(0.03)	0.07	(0.03)	0.06	(0.03)
Trade/GDP	0.11†	(0.22)	0.15**	(0.22)	0.13*	(0.22)	0.11†	(0.23)	0.12*	(0.22)
Science & Technology	0.02	(0.01)	−0.02	(0.01)	0.04	(0.01)	−0.03	(0.01)	−0.05	(0.01)
Cultural Distance	−0.05	(0.01)	−0.06	(0.01)	−0.07	(0.01)	−0.04	(0.01)	0.02	(0.01)
Log Distance	−0.01	(0.15)	−0.05	(0.15)	−0.07	(0.15)	−0.03	(0.16)	−0.05	(0.15)
Economic Ties	0.19**	(0.31)	0.15*	(0.32)	0.13*	(0.32)	0.15*	(0.32)	0.16**	(0.32)
CPI			0.25*	(0.11)	0.18†	(0.11)	0.18†	(0.11)	0.26**	(0.11)
Political Stability					0.18*	(0.02)				
TI Chapters							0.14**	(0.30)		
Abs. Diff. In CPI									−0.18***	(0.09)
Adjusted R^2	0.151		0.165		0.173		0.179		0.203	
Change in Adj. R^2			0.014		0.008		0.006			
F	9.01***		8.97***		8.68***		9.00***		9.48***	
N	405		405		405		405		403	

Standardized regression coefficients are reported; standard errors are in parenthesis.

†p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001.

0.203). Model 5 supports both Hypotheses 1a and 2.[3]

Hypothesis 2 is also tested using the PROBIT model. The results are shown in Table 4. Model 1 includes all the control variables, several of which show significant results (discussed later). In model 2, the difference in the CPI variable is introduced and shows a marginally significant negative effect on the share of FDI flow (β = -0.09, p < .10). To further test the robustness of the difference in CPI effect, two additional models were run without the absolute difference in GDP/capita and the absolute difference in political stability (Models 3 and 4). This

was done because it has been suggested that GDP/capita and political stability not only affect FDI, but also corruption (Wei, 2000; Husted, 1999). In both models, difference in CPI remains significant and negatively affects FDI. In fact, the significance level increases to p < 0.05 level when the two variables are excluded from the regression model (Model 4). Looking at the coefficients of the difference in CPI across models, there is no indication that the effect is weaker in the presence of two other variables. The results support the negative effect of the difference in CPI on FDI.

TABLE 4
PROBIT ESTIMATION RESULTS FOR FDI
(0 = LESS SHARE OF FDI, 1 = MORE SHARE OF FDI)

Variable	Model 1		Model 2		Model 3		Model 4	
Constant	−0.37	(1.02)	−0.37	(1.02)	−1.01	(0.86)	−0.96	(0.84)
Abs. Difference in GDP Growth	0.04	(0.05)	0.04	(0.05)	0.04	(0.05)	0.04	(0.05)
Log Abs. Difference in GDP/Capita	−0.31†	(0.18)	−0.24	(0.19)				
Log Abs. Difference in Gross Capital Formation per capita	0.41*	(0.20)	0.37†	(0.20)	0.30†	(0.19)	0.31†	(0.18)
Abs. Difference in Unemployment	−0.00	(0.02)	−0.00	(0.02)	−0.00	(0.02)	−0.00	(0.02)
Abs. Difference in Trade/GDP	0.00	(0.01)	0.01†	(0.01)	0.01†	(0.01)	0.01†	(0.01)
Abs. Difference in Science & Technology	0.01*	(0.01)	0.01*	(0.01)	0.01*	(0.01)	0.01†	(0.01)
Abs. Difference in Political Stability	0.00	(0.01)	0.01	(0.01)	0.01	(0.01)		
Log Distance	−0.42*	(0.19)	−0.43*	(0.19)	−0.42*	(0.19)	−0.42*	(0.19)
Economic Ties	1.19***	(0.18)	1.18***	(0.19)	1.20***	(0.18)	1.19***	(0.18)
Abs. Difference in CPI			−0.09†	(0.05)	−0.10†	(0.05)	−0.10*	(0.05)
χ^2	109.61***		110.23***		108.75***		110.59***	
N	475		471		471		474	
Correctly Predicted	73.7%		74.3%		74.1%		74.1%	
−2 Log Likelihood	425.35		420.23		421.71		423.75	
Pseudo R^2	0.300		0.304		0.300		0.303	

Standard errors are in parenthesis.
†p < .10, *p < 0.05, **p < 0.01, ***p < 0.001.

Apart from the difference in CPI, geographic distance and economic ties show expected significant results in the PROBIT analysis (negative and positive relationships to FDI, respectively). However, some unexpected results emerge. Log of absolute difference in GCF/capita, absolute difference in internationalization, and absolute difference in science and technology all showed positive significant relationships to the share of FDI (some only marginally significant at the $p < 0.10$ level). It seems the greater the difference the higher the FDI flows into the host country. These results require further inspection for possible explanations.

DISCUSSION AND CONCLUSION

This study examined the relationship between corruption and FDI based on the recent three-year data. The findings are consistent with the arguments presented in the literature and suggest that corruption is a serious obstacle for investment. The data for this study are obtained from international statistics on FDI, aggregated by countries of origin and destination. As such, it generalizes the individual experiences of thousands of investment projects and adds to our understanding of the pattern of investors' reactions to corruption.

The theoretical arguments against corruption derive from both ethics and economics. Foreign investors may shun corruption because they believe it is morally wrong. They may also try to avoid corruption because it can be difficult to manage, risky, and costly. The negative effect of corruption on FDI found in this study suggests that firms, as a whole, do not support corruption. However, in addition, the study also found a negative effect due to the *difference in corruption* levels between the home and host coun-

tries. This further suggests that foreign firms are unwilling to deal with the planning and operational pitfalls related to an environment with a different corruption level. This important fine point is worth emphasizing, as it has not yet been empirically tested in the literature.

Including corruption in the FDI model should help the companies realize the individual importance of that factor in the site selection.[4] More importantly, in a dynamic business environment, considering corruption relative to other dimensions will help the managers implement complex analyses and refine country evaluation procedures. Based on this study, even small changes in corruption matter. Thus, once companies determine the importance of corruption for FDI, their response to the expected deterioration/improvement in the host country corruption level would have to be programmed.

Foreign investors should take an aggressive stance and combat corruption for their own long-term interest. For example, if a competitor obtains a license to operate or secures a contract through corrupt dealings it is up to the disadvantaged companies left behind to blow the whistle. In many national legal systems, one can render null and void the agreements obtained through corrupt activities provided convincing proof is presented (Malta Conference, 1994). Exchange of information within the business community can foster the process.

Examples can be found where companies have made a difference in the way they managed FDI in a relatively "corrupt" country. McDonalds opened its successful outlet in Moscow instilling its international standards and making no compromise for the local "corrupt" environment. The name McDonald, obviously helped maintain a strong stand

against corruption. Another example involving Russia is the 3M Inc., which capitalized on both the strengths and weaknesses of the Russian culture positioning itself as a socially and morally responsible company. It raised its involvement with the locals by creating successful networks but at the same time actively promoted ethical behavior, training its salespeople to avoid illegal acts and personal harm (Gratchev, 2001). Notwithstanding such encouraging but infrequently reported initiatives, a continuing challenge for the companies is how to achieve a unified stance when some companies can obtain an unfair advantage through corruption and, in that respect, outperform their competitors.

This study has its limitations. It relied on the perception-based measure of corruption. The measure is broad and fails to capture the different forms of corruption, which can exert varying impacts on FDI. Including specific indices of corruption in future analyses can help uncover important nuances regarding the overall burden for the investors (e.g. between a petty and grand corruption). Another limitation of this study is that it could not probe into the specific impact of corruption on FDI driven by contrasting motives (e.g. market vs. asset-seeking FDI). FDI data classified by projects (reflecting different motives) will be required to address this issue. Finally, it is worthwhile to examine if the impact of corruption on FDI varies with the size of the company, the project, or the nature of the industry in question. Addressing those issues is an important and timely task.

NOTES

1. Various motives can be present simultaneously (Chudnovsky, Lopez and Porta, 1995) and blur the distinctions.

2. The only omission is the cultural distance variable. The regression analysis did not find it significant (Table 3). Given its correlation with several control variables (Table 1), we decided to exclude it from further analysis.

3. As an additional test of the hypotheses, regressions for the FDI samples of individual home countries are run. Apart from CPI and difference in CPI variables, fewer control variables are included so as to accommodate the sample size. The majority of the results are consistent with hypotheses 1a and 2.

4. Highlighting, for example, that a change in the level of corruption may have the same impact on FDI as a change in the tax rate on earned income.

REFERENCES

Aharoni, Yair. 1966. The Foreign Investment Decision Process. Division of Research, Harvard Business School, Boston.

Alam, M. 1995. A Theory of Limits on Corruption and Some Applications. *Kyklos*, 48: 419-435.

Bardhan, Pranab. 1997. Corruption and Development: A Review of Issues. *Journal of Economic Literature,* XXXV (September): 1320-46.

Beck, Paul & Michael Maker. 1986. A Comparison of Bribery and Bidding in Thin Markets. *Economic Letters*, 20: 1-5.

Benito, Gabriel & Geir Gripsrud. 1992. The Expansion of Foreign Direct Investments: Discrete Rational Location Choices or a Cultural Learning Process? *Journal of International Business Studies*, 3: 461-476.

Billington, Nicholas. 1999. The Location of Foreign Direct Investment: An Empirical Analysis. *Applied Economics*, Jan, 31: 65-80.

Boatright, John. 2000. *Ethics and the Conduct of Business*. Third Edition. New Jersey: Prentice Hall.

Braguinsky, Serguey. 1996. Corruption and Schumpeterian Growth in Different Economic Environments. *Contemporary Economic Policy*, XIV, July: 14-25.

Brainard, Lael. 1997. An Empirical Assessment of the Proximity-Concentration Tradeoff Between Multinational Sales and Trade. *American Economic Review*, 87: 520-544.

Busse, Laurence, Noboru Ishikawa, Morgan Mitra, David Primmer, Kenneth Surjadinata & Tolga Yaveroglu. 1996. The Perception of Corruption: A Market Discipline Approach. Working Paper, Emory University, Atlanta, GA.

Caves, Richard. 1996. *Multinational Enterprise and Economic Analysis*. Second Edition. Cambridge: Cambridge University Press.

Chudnovsky, D., Andre Lopez, & Fernando Porta. 1995. New Foreign Direct Investment in Argentina: Privatization, the Domestic Market, and Regional Integration. In Agosin, Manuel, editor, *Foreign Direct Investment in Latin America*. Washington, D.C.: Inter-American Development Bank and the Johns Hopkins University Press.

Coase, Ronald. 1979. Payola in Radio and Television Broadcasting. *Journal of Law and Economics*, 22: 269-328.

Cyert, Richard & James March. 1963. *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice Hall.

Davidson, William. 1980. The Location of Foreign Direct Investment Activity: Country Characteristics and Experience Effects. *Journal of International Business Studies*, 11(2): 9-22.

Doz, Yves, J. Santos, & P. Williamson. 2001. *From Global to Metanational: How Companies Win in the Knowledge Economy*. Boston: Harvard Business School Publishing.

Drabek, Zdenek & Warren Payne. 1999. The Impact of Transparency on Foreign Direct Investment. Staff Working Paper ERAD-99-02, Geneva, World Trade Organization.

Dunning, John. 1988. The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. *Journal of International Business Studies*, 19 (Spring): 1-31.

_____. 1998. Location and the Multinational Enterprise: A Neglected Factor? *Journal of International Business Studies*, 29 (1): 45-66.

Engwall, Lars & M. Wallenstal. 1988. Tit for Tat in Small Steps: The Internationalization of Swedish Banks. *Scandinavian Journal of Management*, 4 (3/4): 147-55.

Ensign, Prescott. 1996. An Examination of Foreign Direct Investment Theories and the Multinational Firm: A Business/Economics Perspective. In M. Green & R. McNaughton, editors, *The Location of Foreign Direct Investment*, Avebury: Aldershot.

Ghemawat, Pankaj. 2001. Distance Still Matters: The Hard Reality of Global Expansion. *Harvard Business Review*, September: 3-11.

Gratchev, Mikhail. 2001. Forethought: Making the Most of Cultural Differences. *Harvard Business Review*, October: 2-3.

Grosse, Robert & Len Trevino. 1996. Foreign Direct Investments in the United States: An Analysis by Country of Origin. *Journal of International Business Studies*, 27(1): 139-55.

Gupta, Sanjeev, Hamid Davoodi & Rosa Alonso-Terme. 1998. Does Corruption Affect Income Inequality and Poverty? IMF Working Paper, International Monetary Fund, Washington D.C.

Hair, Joseph, Rolph Anderson, Ronald Tatham & William Black. 1992. *Multivariate Data Analysis*. New York, NY: Macmillan.

Hengeveld, W.A.B. 1996. *World Distance Tables, 1948-1974* [Computer File]. Ann Arbor, MI: ICPSR.

Hines, James. 1995. Forbidden Payments: Foreign Bribery and American Business After 1977. Working Paper 5266, National Bureau of Economic Research, Cambridge.

Husted, Bryan. 1994. Honor Among Thieves: A Transaction-Cost Interpretation of Corruption in the Third World. *Business Ethics Quarterly*, 4(1): 17-27.

_____.1999. Wealth, Culture, and Corruption. *Journal of International Business Studies*, 30(2): 339-360.

ILO. 2001. *Yearbook of Labor Statistics*. International Labor Organization Publications.

IMF. 2000. *International Financial Statistics*. (CD-ROM). Washington, D.C.: International Monetary Fund.

Johanson, Jan & Jan-Erik Vahlne. 1977. The Internationalization Process of the Firm—A Model of Knowledge Development and Increasing Foreign Market Commitment. *Journal of International Business Studies*, 8 (Spring/Summer): 23-32.

_____.1990. The Mechanism of Internationalization. *International Marketing Review*, 7 (4): 11-24.

_____. & L-G. Mattson.1988. Internationalization in Industrial Systems— A Network Approach. In N. Hood & J-E. Vahlne, editors, *Strategies in Global Corporation,* London: Routledge.

_____. & F.Wiedersheim-Paul. 1975. The Internationalization of the Firm— Four Swedish Cases. *Journal of Management Studies*, 8(1): 305-322.

Jun, K. & H. Singh. 1996. The Determinants of Foreign Direct Investment in Developing Countries. *Transnational Corporation*, 5(2): 67-105.

Kaufmann, Daniel & Shang-Jin Wei. 1999. Does "Grease Money" Speed Up the Wheels of Commerce? Policy Research Working Paper 2254, The World Bank.

Kobrin, Steven. 1976. The Environmental Determinants of Foreign Direct Manufacturing Investment: An Expost Empirical Analysis. *Journal of International Business Studies*, 7(1): 29-42.

Kogut, Bruce & Harbir Singh. 1988. The Effect of National Culture on the Choice of Entry Mode. *Journal of International Business Studies,* 19(3): 411-432

Lambsdorff, Johann. 1999. The Transparency International Corruption Perceptions Index 1999—Framework Document, www.transparency.org.

LaPalombara, Joseph. 1994. Structural and Institutional Aspects of Corruption. *Social Research*, 61(2): 325-350.

Leff, Nathaniel. 1964. Economic Development Through Bureaucratic Corruption. *American Behavioral Scientist,* 8-14.

Lien, Donald. 1986. A Note on Competitive Bribery Games. *Economic Letters*, 22: 337-41.

Lui, Francis. 1985. An Equilibrium Queuing Model of Bribery. *Journal of Political Economy*, August: 760-781.

Macrae, John. 1982. Underdevelopment and the Economics of Corruption: A Game Theory Approach. *World Development*, 10 (8): 677-87.

Malta Conference. 1994. Report of the Netherlands Ministry of Justice. *Proceedings of the 19th Conference of the European Ministers of Justice.* La Val-

etta 14-15th of June, 1994. Strasbourg: Council of Europe Publishing.

Mauro, Paolo. 1995. Corruption and Growth. *The Quarterly Journal of Economics*, August: 686-706.

Nigh, Douglas. 1986. Political Events and the Foreign Direct Investment Decision: An Empirical Examination. *Managerial and Decision Economics*, 7: 99-106.

Nohria, Nitin & Carlos Garcia-Pont. 1991. Global Strategic Linkages and Industry Structure. *Strategic Management Journal*, 12 (Special Issue): 105-24.

Nordstrom, Kjell & Jan-Erik Vahlne. 1992. Is the Globe Shrinking? Psychic Distance and the Establishment of Swedish Sales Subsidiaries During the Last 100 years. International Trade and Finance Association's Annual Conference, April 22-25, Laredo, Texas.

OECD. 2000. *International Direct Investment Statistics Yearbook 1999*, Paris.

Political Risk Services, Inc. 2000. *Political Risk Services Yearbook*. International Country Risk Guide.

Rashid, Salim. 1981. Public Utilities in Egalitarian LDC's: The Role of Bribery in Achieving Pareto Efficiency. *Kyklos*, 34: 448-60.

Rose-Ackerman, Susan. 1975. The Economics of Corruption. *Journal of Public Economics,* 4: 187-203.

Schniederjans, Marc. 1999. *International Facility Acquisition and Locational Analysis*. Westport, CT: Quorum Books.

Shleifer, Andrei & RobertVishny. 1993. Corruption. *Quarterly Journal of Economics*. 108(3): 599-617.

Studenmund, A. H. 1992. *Using Econometrics: A Practical Guide*. New York, NY: Harper Collins.

Tanzi, Vito. 1998. Corruption Around the World: Causes, Consequences, Scope, and Cures. IMF Working Paper WP/98/63, International Monetary Fund, Washington, D.C.

TI. 1999. *www.transparency.org/documents/cpi*.

Tse, David, Yigang Pan & Kevin Au. 1997. How MNCs Choose Entry Modes and Form Alliances: The China Experience. *Journal of International Business Studies*, 28(4): 779-805.

Wei, Shang-Jin. 2000. How Taxing is Corruption on International Investors? *The Review of Economics and Statistics,* 82(4): 1-12.

Wells, Louis & Alvin Wint. 2000. Marketing a Country: Promotion as a Tool for Attracting Foreign Investment, Occasional Paper no. 13, Washington, D.C.: World Bank.

Wheeler, David & Ashoka Mody. 1992. International Investment Location Decisions: The Case of U.S. Firms. *Journal of International Economics,* 33: 57-76.

World Competitiveness Yearbook. 2000. Lausanne: Institute for Management Development.

WIR. 2001. *World Investment Report. 2001*. Geneva: United Nations