THE WILLIAM DAVIDSON INSTITUTE
AT THE UNIVERSITY OF MICHIGAN

The MNC as an Agent of Change for Host-Country Institutions: FDI and Corruption

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William Davidson Institute Working Paper Number 882
September 2006

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This version: Sept. 2006

Abstract

Most empirical research examines how the institutional environment of corruption shapes the behavior of MNCs. In this study, we would like to highlight the other side of the picture: how the presence of MNC may shape the institutional environment of corruption over time. We propose three avenues through which the MNC may have an impact on its host institutions: the regulatory pressure effect, the demonstration effect, and the professionalization effect. Based on extensive data on FDI and corruption for a large sample of countries over the last 30 years, the empirical results are consistent with our general hypothesis that foreign direct investment generates positive spillover effects on the institutional environment of host countries. Such findings provide a glimmer of hope for the future of the host country where corruption is most prevalent.

Key Words: Foreign Direct Investment, Corruption
JEL Codes: F21, F23, M14, M16, O73

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The authors would like to thank participants and the editors of the JIBS Special Issue on the "Three Lens" conference for comments and valuable suggestions.

Introduction

With the expansion of international business activities, the study of corruption and its effects has received increased attention recently. Multinational corporations (MNCs) are careful in choosing host countries for their foreign subsidiaries, as they are concerned that pervasive corruption could increase their operational costs and risks. So are also multinational banks, since corruption could drain the investment funds of a country, hampering its economic growth and debt service capacity. International development agencies are concerned that financial aids meant to help economic development and the poor may be squandered by corrupt government officials.

Following Macrae (1982), in this study, we define corruption as an arrangement that involves an exchange between two parties (the "demander" and the "supplier") which i) has an influence on the allocation of resources either immediately or in the future; and ii) involves the use or abuse of public or collective responsibility for private ends. The harmful effects of corruption have been extensively documented in the literature (see, e.g., Mauro (1995, 1997), and Rose-Ackerman (1975)). Corrupt payments amount to a significant percentage of gross national product, since the rents extracted by a corrupt system gets built into the cost structure of organizations. Corruption distorts efficient resource allocation. Corruption rewards unproductive behavior by channeling unmerited contracts and rights to companies in exchange for bribes, at the expense of efficient and innovative firms. The toleration of corruption in some areas of public life can facilitate a downward spiral in which the malfeasance of some encourages more and more people to engage in corruption over time. Pervasive corruption undermines the legitimacy of governments. Corruption in the provision of public goods and services in the imposition of costs casts a cloud over governments seeking popular legitimacy (Rose-Ackerman (1999)).

Most empirical work regarding corruption assumes the context where the institutional setting shapes the behavior of the MNC. We certainly recognize that, in order to strive for external legitimacy, the MNC needs to adapt to its institutional context (Glynn and Abzug (2002)). However, in this study, we would like to point out the other side of the picture: how the presence of MNCs could shape the

institutional environment of corruption over time. We propose three avenues through which the MNC may have an impact on its host institutions: regulatory pressure effect, demonstration effect, and professionalization effect.

The balance of the paper is organized into five sections. Following the introduction, the second section II reviews the literature on corruption. The third section III explores how the MNC interacts with its host environment and formulates the research hypotheses. In the fourth section, we describe the data and methodology used in the paper. Section V reports the empirical results. Finally, section VI concludes the paper and discusses the implications of our findings.

II. Literature review

As a topic of key concern, the study of corruption has generated numerous published scholarly studies. In the academic literature, there are two main streams of studies on the subject. The first stream employs the approach of mathematical modeling to analyze the causes, effects and various conditions related to corruption. For examples, Rose-Ackerman (1975) examines the relationship between market structures and the incidence of corrupt dealings in the government contracting process. She then discusses how revising contracting procedures and reorganizing market structures can reduce criminal incentives of corruption. Shleifer and Vishny (1993) contend that weak governments that do not control their agencies experience high corruption levels. Moreover, the illegality of corruption and the need for secrecy make it much more distortionary and costly than taxation.

The second research stream consists of various empirical studies. This line of research is facilitated by the publication of worldwide corruption indices by agencies such as the Transparency International, World Bank, Economist Intelligence Unit and so forth. The corruption indices can be used either as an independent or dependent variable. For instance, using corruption as an independent variable, studies have found that corruption contributes to suboptimal economic growth (Barro (1996)), poor economic competitiveness (Ades and di Tella (1999)), less investment and inefficient government (Knack

and Keefer (1995); Mauro (1997)), and a decrease in the level of trust or social capital by citizens (La Porta et al. (1997); Knack and Keefer (1997)).

Using the corruption index as the dependent variable, Husted (1999) finds that corruption is significantly associated with GNP per capita and related to the cultural variables power distance, masculinity and uncertainty avoidance. Robertson and Watson (2004) find that in the short run, the more rapid the rate of change of foreign direct investment (FDI), the higher level of corruption.

III. MNCs and corruption in host countries

MNC as an organization shaped by the host institution

Empirical studies have been conducted to show how a host country's corruption significantly reduces its inflows of foreign direct investment (Lambsdorff (1999); Mauro (1995); Wei (1997)). Besides the volume of FDI inflows, Rodriguez, Uhlenbruck and Eden (2005) contend that the type of corruption in the host country would also affect the choice of entry modes. Using the institutional framework, they introduce a two-dimensional framework of corruption: pervasiveness and arbitrariness. They argue that the higher the pervasiveness of corruption, the higher is the likelihood that an MNC will choose to enter via a wholly owned subsidiary rather than a local partner.

Most of the studies mentioned above examine how the institutional environment of corruption may shape the behavior of MNCs. We certainly recognize that in order to strive for external legitimacy, the MNC needs to adapt to its institutional context (Glynn and Abzug (2002)). However, in this study, we would like to highlight the other side of the picture: how the presence of MNC may shape the institutional environment of corruption over time. We contend that the MNC is not just a passive subject; it may also serve an agent of change.

MNC as an agent of change to the host institution

Using the framework of the institutionalization theory, Westney (1993) discusses the potential significant impacts of MNCs on the organizational patterns within a country. MNC subsidiaries in some countries can play a major role in establishing building blocks of organizations. The introduction of new modes of business practice in MNC subsidiaries can challenge the legitimacy of existing patterns and stimulate debates on better business practice in the host country. The mirror image of this influence is the "de-institutionalization" of local firms' existing organizational patterns. Similarly, Dacin, Ventresca and Beal (1999) review research on organizations to highlight prevailing and emerging conceptions on embeddedness. They briefly discuss the concept of "disembeddedness". They argue that globalization may be regarded as a disembedding process that strips individuals and firms from their local structures and allows for restructuring at a more global level.

Following this perspective, we contend that the presence of foreign-owned subsidiaries will, on the average, reduce the level of corruption of the host country. We propose that the MNC influences its institutional environment over time via three major effects: regulatory pressure effect, demonstration effect, and professionalization effect.[1] For better explanation, our main ideas are illustrated in Figure 1. This diagram conveys as a general framework on how the MNC may serve as an agent of change for host-country institutions.

Within the host country environment, local governments and the business community influence the behavior of foreign-owned subsidiaries. In Figure 1, we use a thick arrow line to represent such influence, indicating that such influence tends to be strong and immediate. However, we argue that there is a milder force of influence flowing back from the MNC to the host government and business

[1] We benefited much from the insights of DiMaggio and Powell (1983) who discuss institutional isomorphism. Isomorphism is a constraining process that forces one unit in a population to resemble other units that face the similar set of environmental conditions. Our proposed three effects correspond with their three mechanisms of isomorphism: coercive isomorphism; mimetic isomorphism; and normative isomorphism. However, the focus of DiMaggio and Powell is on isomorphism. In order not to confuse readers who are familiar with the institutional theory, we use three other terms to represent the effects through which the MNC may shape the host country institution over time.

community. We use a thin arrow line to represent such influence as it is mild, subtle and takes long time to realize. Besides conforming to the local business practice to gain legitimacy, MNCs are also accountable to and constrained by their home-country environment and the international business community at large. Through the regulatory pressure, demonstration, and professionalization effects, MNCs gradually shape the host-country institutions. One motivating factor for the host institutions to change is that the host country also wants to gain legitimacy within the bigger, global business environment. As the host country grows, it would like to enhance its international reputation and attracts more business. Under this general framework of how MNCs may shape host-country institutions over time, we study the specific relationship between FDI and host-country corruption.

Regulatory pressure effect

In a business culture where corruption is pervasive, corruption becomes the modality of business practice in local businesses and government offices. It becomes part of the regular practice and both parties of the transaction would take it for granted. However, when a government official deals with a foreign entity, he or she may not be able to conduct business as usual. The business people representing the MNCs may be reluctant in offering a bribe. Firstly, the subsidiary of an MNC is faced with two sets of isomorphic pressures --- the MNC's and the host country's (Davis et al. (2000); Kostova and Roth (2002)). Besides trying to gain external legitimacy by adopting the common corrupt business practice of the host country, it also has to strive for internal legitimacy as the headquarter in the home-country environment may have adopted norms and practices that ban corrupt behaviors by their subsidiaries.

Secondly, there is the regulatory pressure from the home government and the international business community (DiMaggio and Powell (1983), Oliver (1997)). For instance, the *U.S. Foreign Corrupt Practices Act*, enacted in 1977, was prompted by a series of scandals involving questionable payments by U.S. firms to overseas government officials. This act prohibits U.S. firms from giving anything of value (such as a payment, gift or bribe) to induce a foreign government to enter into a contract or business advantage or relationship. This act carries criminal penalties, imprisonment for up to five years, fines of up to $100,000 for individuals, and fines up to $2 million for companies.

Similar legislation is enacted in the global business community. On November 21, 1997, representatives from 33 countries signed the *Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*. Among them were 28 of the 29 member states of the Organization for Economic Cooperation and Development (OECD), together with Argentina, Brazil, Bulgaria, Chile, and the Solvak Republic (Doh et al., 2003).

Under regulatory pressure from home country and the international business community, the employees of MNC's subsidiaries are reluctant to offer bribes. If the MNC has enough bargaining power and its presence is much desired by the host government, it may simply refuse offering bribes. Even if the subsidiary employees think that they need to engage in bribery in order to secure business, the local officials may need to think of some circuitous ways to accept the bribes so that the MNC employees are less likely to get caught. Facing a foreign business party, the local government officials are constrained somewhat in their bribery acts. It cannot be just business as usual.

Demonstration effect

In the international business literature, there is a line of research that studies spillover effects of foreign direct investment (Globerman (1979), Haddad and Harrison (1993), Eden et al. (1997), Aitken and Harrison (1999), and Liu et al. (2000)). The discussion of the spillover effects concentrates mainly on productivity and technological transfer. For instance, Blomström and Kokko (1998) and Gorg and Strobl (2001) summarize how FDI may affect the productivity of domestic firms. First, competition from FDI may force domestic firms to update production technology and change management styles in order to maintain their competitiveness. Second, domestic firms may learn from observing the MNCs' practice when there are close relationships between them. Thirdly, MNCs train their employees who may later move to domestic firms with learnt skills.

Following this line of thought, we argue that there may also be a spillover or demonstration effect on corruption (Oliver (1997)). In some host countries, corruption has been immersed deep in the local business culture. Local business people and government officials may think that this is the "normal" way to get business done. However, when they deal with the MNCs through negotiations, joint ventures,

upstream or downstream relationships in the business chains, being geographically and operationally proximate, they have opportunities to observe closely how business decisions and allocations are made within the MNCs (Eden et al. (1997)). Business can be conducted more efficiently in an environment built on trust and ethical conduct. In the past, local advocates might also "talk" about ethical business practice but might not produce a concrete, real example to follow. The presence of MNCs *demonstrates* how a cleaner way of conducting business can be more effective and efficient in the long run. Furthermore, outward-looking local business people and government officials also want to gain legitimacy within the global business community. They want to enhance the country's international reputation and to attract more business. They may model themselves after the MNCs and change their traditional business practices gradually.

Professionalization effect

DiMaggio and Powell (1983) discuss two important aspects of professionalization. One is the resting of formal education and of legitimation in a cognitive base produced by university specialists. The other is the growth and elaboration of professional networks that span organizations and across which new models diffuse rapidly.

MNCs have been in the forefront of the application of automation, information technology and managerial techniques in order to enhance business efficiency. Alternatively, academicians strive to improve business knowledge and develop practical applications by conducting theoretical and empirical research. All areas of business have, to one degree or another, become sciences. Academic curricula have become increasingly standardized and professionalized. Business schools around the world tend to adopt textbooks and course contents from the same pool of leading authors and universities. In order to excel above their peers, managers want to acquire professional business training. Afraid of being left out by competitors, even family-owned businesses consider sending their "heirs" to business schools (Ramirez and Kwok (2006)).

To the younger generation, the MNCs have special appeal. MNCs usually offer substantially better salaries than domestic companies in host countries. Not only is working for MNCs prestigious, they

can be exposed to sophisticated management practices, which will equip them with skills for a successful business career in the long run. Furthermore, they may be given opportunities to go overseas for short-term training or business assignments.

To enhance their chance of being recruited by MNCs, the young generation needs to learn about global business practices. They attend schools to acquire professional business training. To certify their qualifications, they may take public examinations and join professional associations. Such professional organizations may set industry-wide ethical codes of conduct, product quality standards, uniform training or credentialing in occupational professions (Oliver (1997)). Socialized by the professional business values, they become increasingly critical of the traditional ways. As the "new blood" rise in the corporate ladder, they become business leaders. They may work for the MNC, they may have started their own business, or they may have become senior advisors to government officials. They may use their influence to gradually reform the more corrupt old business practices. In short, the professionalization of the management practice and the socialization of the younger generation lead to the changes in the host country institutions over time.

Through the three effects mentioned above, we contend that the presence of MNCs may help reduce corruption in the host country over time. We put forward the following research hypothesis:

H1: *The level of foreign direct investment in a host country is negatively related to its level of corruption over time.* [2]

However, we need to add quickly that it would be naïve to think that the influence of MNCs on its environmental institution is always good. There are plenty of anecdotal evidences that MNCs sometimes bring undesirable influences. In some situations, MNCs exploit natural resources, cause environmental pollution, employ child labor, or take advantage of the looser regulations of the host countries (to bypass the stringent regulations and costly requirements of parent countries). In fact,

[2] Our hypothesis is on an average effect. First, some MNCs may still engage in corrupt transactions to facilitate their operation. Second, there are also foreign direct investment flows among developed countries where both the home and host countries do not experience a high level of corruption. In that case, the corruption-reduction effect may be minimal. To examine this latter point, in our robustness tests, we exclude OECD countries from our sample of host countries. The findings are generally robust. Owing to space constraint, the tables of these additional findings are not included in this paper but will be made available to readers upon request.

Robertson and Watson (2004) argue that foreign direct investment will lead to an increase of corruption in the host country in the short run. Firstly, the increase in FDI represents a larger amount of foreign money flowing into country and, therefore, an expansion of opportunities for bribery. Secondly, the eagerness of foreign investors to enter the market may tempt host country nationals to resort to corruption as a means of sharing in the opportunities for profit presented by their own country (Robertson and Watson (2004)).[3] Thirdly, equipped with advanced knowledge in international business and a vast international network, MNCs may have developed sophisticated skills of bribery. Such practices will "contaminate" firms in the host country. To represent this opposite view, we put forward the following alternative hypothesis:

H1a: *The level of foreign direct investment in a host country is positively related to its level of corruption over time.*

IV. Data and research methodology

We attempt to explain the cross-country variations in the extent of corruption based on variations in the degree of past foreign investment penetration in the economy and other known controls. To that end, we construct a database composed of three sets of data: (1) measures of corruption in the 2000s (the dependent variable); (2) measures of MNC presence or foreign direct investment, education, and culture (the independent variables); and (3) other controls. We have data on these sets of variables for up to 140 countries.

The dependent variable: corruption

Our dependent variable is the extent of corruption in recent years, and is measured by the average of yearly corruption perception indices over the period 2000 through 2004 obtained from Transparency International (TI). The TI Corruption Perception Index provides yearly ranking of countries in terms of the extent of perceived corruption among, primarily, public officials. The index is a composite measure

[3] Robertson and Watson (2004) find empirical support for their hypothesis. They use a 1- and 2-year lag-time between the predictor variable (FDI) and the dependent variable (corruption). Their result reflects more on the short-term effect. On the other hand, the focus of this paper is on the long-term effect of FDI on corruption as the suggested three effects take time to realize.

based on polls and surveys of business leaders, residents and country analysts on their experience of corruption in the respective countries drawn from seven different independent institutions.[4] Table 1 reports the summary statistics of the variables while Table 2 shows their correlation coefficients. There is a wide cross-country variation in the corruption index, ranging from 0.22 in Finland and 0.44 in Denmark to 8.9 in Bangladesh and 8.66 in Nigeria. Consistent with previous research (e.g., Husted (1999)), wealthier countries tend to be less corrupt. The corruption perception index is significantly negatively correlated with log of per capita GDP.

The main independent variable: FDI

We measure the presence of MNCs in a host country by the average net Foreign Direct Investment (FDI) inflows as a percentage of GDP. We attempt to explain variations in corruption in the 2000s based on the degree of foreign investment penetration *in the past*. We expect a significant time lag for the effects to realize but we do not know how far in the past the FDI should be in explaining current variations in corruption. Nonetheless, we have available data on FDI inflows from 1970 through 1997. Thus, we consider decade averages of FDI per GDP in the 1970s, the 1980s and the 1990s, as well as an average over the period 1970 through 1997 respectively. The data on FDI inflows and GDP is obtained from the World Development Database maintained by the World Bank.

Table 1 provides a summary of the decade averages of FDI to GDP ratios for the sample. The flow of FDI shows an increasing trend, the average growing from 0.93 percent of GDP in 1970s to 1.089 percent in the 1980s and 2.128 percent in the 90s. In general, high level of FDI appears to be associated with low corruption in the 2000s. The correlation coefficients between FDI and corruption are mostly negative and significant (see Table 2).

[4] The corruption perception index is a continuous scale variable, taking values from 0 to 10. The higher the value, the less corrupt the country is. To make the scaling more intuitive, we rescale the corruption perception index by deducting it from 10, so that a 0 on the new scale signifies a corruption-free country and a 10 represents an absolutely corrupt country.

V. Empirical findings

FDI and corruption

To explore the relations between corruption and the extent of past FDI while controlling for other potential country factors, we estimate multivariate empirical models. Table 3 presents the main results of the multivariate regression of corruption on FDI, controlling for a host of control variables. The model is of the form:

$$CORRUPTION_C = \alpha + \beta * FDI_C^{70s,80s,90s,or1970-1997} + \sum_{i=1}^{n} \lambda^i Z^i{}_C + \varepsilon_c \ , \qquad (1)$$

where FDI is the FDI inflows as a fraction of GDP, and Z is a set of country-specific control variables representing the macro-economic, political, legal, religious orientation and institutional environments of countries that potentially explain the cross-country variations in corruption. FDI_C will alternatively take the values of decade averages of FDI in 1970s, in 1980s, in 1990s and the average FDI to GDP ratio over 1970 through 1997, whereas CORRUPTION will take the average per country of the yearly Corruption Perception Index averaged over the period 2000 through 2004.

Table 3 clearly shows that past FDI inflows explains a significant portion of the cross-country variations in corruption. Columns I through IV include the decade averages of FDI to GDP ratios in combination with the level of GDP per capita as a measure of wealth in the regression. The results show that the prevalence of corruption today is, on average, lower in countries with larger foreign direct investment in the past, regardless of how far back we measure the FDI. The coefficients on the key variables of interest, FDI in 1970s, 1980s, 1990s and 1970 through 1997, are robustly negative and statistically significant at the one per cent level. The result is broadly consistent with and suggestive of our hypothesis. Consistent with earlier studies (e.g., Husted (1999) and Mauro (1995)), wealthier countries have less prevalence of corruption. In general the model works well; in this large sample of 87 to 100 countries, the model explains up to 79 percent of the cross-country variation in the prevalence of current corruption. To strengthen the veracity of the findings, we control for other variables suggested in

the literature, which may also influence a country's propensity to corruption. We group these controls into three categories: 1) Education/Human Capital; 2) Political Tradition; and 3) Legal Environments.

Control for education/human capital

The benefits of education as an institution to economic welfare have been well documented. Education explains cross-country differences in economic growth across countries (see, e.g., Barro (1991). Education opens up peoples' eyes to new ways of thinking and practice, and is a source of increased productivity, efficiency and growth. The development of a critical mass of educated class would have the potential to change the old ways of life, including corruption. In some way, the effects of education are similar to those of FDI; much of the benefits are not immediate. To control for the impacts of education, we include decade averages of secondary school enrollment (as a percentage of eligible population of the age group) from the World Development database. Columns (V) through (VIII) of Table 3 show that the effect of educational investment on corruption is similar, though weak, as that of FDI.

Control for political tradition

The political tradition of the country has a significant impact on its institutional environment. Governments differ in their role as facilitators of institutional change, and the effect they have on business practices (see, e.g., Rao et al. (2005)). Autocratic political cultures that lack transparency where political actors are prone to undermine the rule of law tend to be a breeding ground for abuse of public office, including corruption. In contrast, open societies with democratic political culture and appropriate checks and balances in place for constraining actions of political actors are less prone to such abuse. To control for the effects of political traditions, we use two variables: a measure of the extent of democratic political system in the country (Jaggers and Marshall (2000)) and a measure of constraints on political actors in the system (Henisz (2000)). The two variables have significant correlation. To reduce the possibility of multicollinearity from inclusion of both in the same regression, we orthogonalize the democracy variable on political constraint and include only the residual value of political constraint. Columns IX through XII report that the marginal effect of political traditions is not as significant, once

one controls for wealth, FDI and education. More democratic countries tend to be less corrupt on average, though the result is weak and is not sustainable in all specifications.

Control for legal environment

A weak legal system where basic rule of law is lacking would be permissive of abuse of public office through its failure of legally constraining those in power. In addition, even in the presence of basic rule of law, the substantive and procedural contents of the law could be a source of variation in the efficiency of the legal system. Legal systems that are cumbersome in procedural formalism and short of the legal flexibility that are needed for judicial actions tend to increase the costs of legal proceedings, prompting the public to seek extra-judicial means of resolution, including corruption. We include the 'rule of law' and the 'legal formalism' variables developed by Djankov et al. (2003) in our regressions. Consistent with our conjecture, columns (XIII) through (XV) show that countries with the prevalence of rule of law tend to be less prone to corruption. Legal systems that are more formal and less flexible appear to be associated with higher corruption.

As seen in the regression results in Table 3, our main finding that increased past FDI reduced the prevalence of current corruption is robust to the inclusion of controls for the legal environment, political tradition, education and economic development.[5] The findings are broadly consistent with our main hypothesis H1 and not supportive of the alternative hypothesis H1a. We argue earlier that the MNC influences its institutional environment over time via three major effects: regulatory pressure effect, demonstration effect, and professionalization effect. While it is difficult to provide precise, direct tests of

[5] To check for other institutional control variables, instead of the political and legal variables, we also used a variable that denotes the religious orientation of the country – the percentage of population that follow Protestantism. Religion appears to be a dominant influence on the institutional environment of countries, showing significant correlation with our legal and political variables. Our results are robust to such specification, showing that countries with past FDI exhibit lower rate of corruption, after controlling for religion. The coefficient on FDI is -0.385, significant at 1 percent level. Also countries with dominant protestant influence display lower incidence of corruption. In addition, we considered a much broader measure of institutional development (instead of the political and legal variables we have) from Kaufmann et al. (1999). This measure reflects the institutional quality, based on measures of voice and accountability, political stability and absence of violence, government effectiveness, regulatory burden, law and order, and freedom from graft. The results show robust negative relation between FDI and corruption. The coefficient estimate is -0.139 which is significant at 10 percent level. The results using religious orientation or institutional development as controls are not reported in the tables owing to page constraint. They will be made available to readers upon request.

these three effects, we attempt to shed more light on these avenues of influence by examining the moderating role of past FDI on the known effects of two variables on corruption: Culture and Education.

Culture, education and corruption: the moderating effects of FDI

In this section, we interact the FDI variable with two sets of variables, Culture and Education. The objectives of this exercise are twofold. First, evidence that FDI presence moderates the negative effects of culture, or it strengthens the positive effects of education on corruption would be suggestive of the effects of FDI in play. Second, examining interaction (rather than direct) effects also addresses the potential endogeneity problem we are cognizant of. In the previous section, we regress corruption in 2000s on lagged values of FDI, the lagged values going as far back as 30 years. The fact that the FDI values are not contemporaneous with the corruption data minimizes the concerns on reverse causality. However, it can be argued that past FDI is made in anticipation of the institutional environment in the future so much so that prediction of low corruption in the future attracts more FDI today. One effective way of addressing such endogeneity is to focus on the marginal effect of FDI on the effect of a known variable, such as culture, on corruption. The literature indicates that some cultures, as country effects, breed in corruption. We find earlier that education as a social investment deters corruption. If we find that marginally, the known negative effects of culture is moderated and the known positive effects of education is strengthened by the presence of FDI, then we can say that we have a clearer indicator of causality running from FDI to corruption.

Using Hofstede's measures of national culture, Husted (1999) identifies power distance, uncertainty avoidance and masculinity to have significant impact on national corruption. Kimbro (2002) reports power distance and individualism as related to corruption after controlling for legal and monitoring variables the way we do. It appears that the consensus is that individualism and power distance are the cultural traits that are associated with corruption; collectivistic cultures and cultures with high power distance gravitate towards high prevalence of corruption. If FDI has the catalyst role through the three effects, it would moderate the harmful effects of culture on corruption.

Columns (I) through (IV) of Table 4 examine the interaction between power distance and FDI. The results show that, consistent with previous research (see, for examples, Husted (1999), Triandis et al. (2001)), high power-distance countries tend to have high prevalence of corruption. More significantly, the effect of high power-distance on corruption is significantly lower in the presence of FDI; the interaction terms between FDI and power-distance are robustly negative and statistically significant at the one per cent level. Columns (V) through (VIII) provide similar results on the interaction of individualism/collectivism and FDI. Though the coefficient is positive, individualism has no discernible direct effect on incidence of corruption. This is consistent with existing, though ambiguous, evidence about individualism in the literature. For example, Husted (1999) finds no direct effect from individualism to corruption, while Kimbro (2002) finds direct effects, once the effect of countries' wealth is controlled for. More importantly, the effects of individualism/collectivism on corruption are significantly lower in the presence of FDI.[6]

Our analysis in the previous section reveals that one of the critical variables that explain the variations in the prevalence of corruption is education. It can be argued that, via the *professionalization* effect, FDI presence complements education in transforming the institutional environment of countries. Columns (IX) through (XI) report the results. For education we use the average yearly secondary school enrollment, averaged over 1970 though 2000.[7] The use of decade averages over 1970s, 1980s and 1990s does not change the results. Consistent with our earlier results, education has positive, though moderate, direct effects on corruption. The coefficients on the education variable are negative and significant at ten per cent level. Consistent with our conjecture, the positive effects of education on corruption are significantly larger in the presence of FDI; the interaction terms between education and FDI are robustly negative and statistically significant as one per cent level. The models in Table 4 perform well, explaining

[6] For reasons outlined earlier, we focus on the power distance and individualism attributes of national culture. Though not reported for brevity, the results using the other two attributes, masculinity and uncertainty avoidance, provide qualitatively similar evidence. Again for brevity, we use the overall average FDI over the entire period of 1970 through 1997 as the FDI variable. However, the results are robust when we use the decade averages instead.

[7] Secondary school enrollment is a standard measure of human capital in the literature of economic growth (e.g. Barro (1991)).

more than 80 percent of the cross-country variations in corruption, though our sample has significantly shrunk because of missing values.

Robustness tests

Using alternative measures for the independent variable

We provide additional sensitivity checks in this section. First, instead of using the actual values of FDI as independent variable, we include group indicator of high or low FDI countries in the regression. We group the countries into three categories based on their rankings of FDI flows, and designate the bottom-third countries as low-FDI countries with a dummy variable value of 0, and the top-third countries as high-FDI countries with a dummy variable value of 1. Columns (I) through (IV) of Table 5 show that our main findings are robust to the alternative measure of FDI. For brevity, we report the results using the FDI and Education variables generated based on averages over the period 1970 through 1997. The results are similar if we use values based on decade averages in 1970s, 1980s or 1990s.

Instrumental variables methodology

Our findings are based on regressing corruption in 2000s on lagged values of FDI, the lagged values going as far back as 30 years. The fact that the FDI values are not contemporaneous with the corruption data minimizes the concerns one may have about the possibility of reverse causality. However, it could still be argued that past FDI is made based on predictions about the institutional environment in the future such that a forecast of low corruption in the future attracts more FDI today. The robust findings on the channels through which past FDI moderates the harmful effects of culture and strengthens the beneficial effects of education, shown in the previous section, go a long way in allaying our concerns on reverse causality.

An alternative approach to address the endogeneity issue would be to use instruments that disentangle the link between FDI and corruption. We estimate the basic models using the instrumental variables methodology, where we attempt to relate the exogenous component of FDI to corruption. The ideal instruments are variables that might affect corruption but less likely to be affected by it. The most

difficult task in this setting, however, is the identification of appropriate instruments. It is customary in the finance and economics literature to use such institutional variables as legal origin or colonial history. These variables however, are not useful for our case, as both corruption and FDI are driven by the institutional environment. We look for variables that explain FDI but less likely to be related with corruption. The literature provides a menu of FDI determinants, but most variables are institutional. In addition to variables related to the host country investment climate, FDI is facilitated by better infrastructure including communication networks and supply of power. We use two variables of this nature as instruments: (a) per capita electricity power consumption, and (b) telephone lines (per 1,000 people). We examine the effects of the exogenous component of FDI (the component explainable by our instruments) on corruption. Columns (V) through (VIII) of Table 5 present the instrumental variables (IV) results. Column (V) confirm the major findings from Table 4 that corruption is lower in countries with high past FDI predicted by the instruments. Columns (VI) through (VIII) confirm the main results that FDI moderates the harmful effects of culture and strengthens the positive effects of education.[8]

Change in corruption as a dependent variable

To address the concern on causality further, we also examine the relation between past FDI and changes (rather than levels) in the corruption measures. Based on the data, we compute the difference between the average corruption level over 2000 through 2004 and the average corruption index between 1995 and 1999, and examine whether the change in the index levels is related to past FDI flows as hypothesized. The results, shown in Table 6, confirm the main results so far. The change in corruption is inversely related to past FDI. In addition, FDI appears to moderate the harmful effects of culture and

[8] We follow a two-step procedure where we predict the level of FDI using our two instruments in the first step, and use the predicted FDI values and other predetermined variables to explain variations in corruption. The test for the validity of the instruments using GMM estimation does not support the hypothesis. However, in this test, the set of instruments include both the two instrumental variables we specified and the six exogenous explanatory variables in the model; since, with only two instruments, the model will be under-identified. Nevertheless, this result reflects the difficulty of finding good instruments in our context and suggests that the readers should interpret our instrumental variables results with this limitation in mind.

strengthens the positive effects of education, as the interaction terms between past FDI and our proxies of culture and education are significantly negative.[9]

VI. Summary and conclusions

Most empirical research so far examines how the institutional environment of corruption shapes the behavior of MNCs. In this study, we highlight the other side of the picture: how the presence of MNC may shape the institutional environment of corruption over time. We recognize that, in order to strive for external legitimacy, the MNC needs to adapt to its institutional context. Most FDI represents flows from developed countries, where there is generally less corruption. The behavior of MNC in host country is constrained by the regulatory pressure from home country and the international business community (e.g. U.S. Foreign Corrupt Practices Act and OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions). In dealing with a foreign business party, the local government officials are constrained somewhat in their bribery acts; it cannot be just business as usual. Over time, together with the demonstration and the professionalization effects, local government officials and business people may model themselves after the MNCs and modify their traditional business practices. They may want to enhance legitimacy within the global business community, raise the country's international reputation, and attract more business into their country.

We empirically examine our propositions based on an extensive data on FDI and corruption around the world, for a large sample of countries, over the last 30 years. First, consistent with our thesis, we find that current corruption level is significantly lower in countries with high FDI flows in the past. This is true whether we use FDI in 1970s, 1980s or 1990s. Second, we find strong evidence that the harmful effects of culture on corruption are lower and the beneficial effects of education on corruption are higher in countries with higher FDI in the past. Our results are robust to omitted variables bias as we

[9] In this study, we do not use the *change* of corruption level as our main dependent variable. Transparency International computes the Corruption Perception Index as a composite of a number of independent surveys. As explained in Robertson and Watson (2004, p. 390), the sources used differ from year to year. Hence, the CPI is suitable for cross-sectional comparisons but unsuitable for longitudinal comparisons. To alleviate the concern of varying sources over time, we use the average corruption levels of two broad periods to compute the difference. Nevertheless, the readers should interpret the findings with such limitation in mind.

control for a host of host-country characteristics, including the level of economic development, political tradition, education, culture, legal system, religious orientation and institutional development.

We use multiple ways to alleviate the potential concerns of reverse causality. Firstly, we regress corruption in 2000s on lagged values of FDI, the lagged values going as far back as 30 years. Secondly, we explore the interaction effects between FDI and variables such as culture and education. Thirdly, we employ the instrumental variables methodology, using two instrumental variables, communication network and supply of power, to relate the exogenous component of FDI to corruption. Fourthly, we regress changes (rather than levels) in the corruption measures on past FDI. The robust results give us confidence that there is a causal effect flowing from FDI to corruption.

Our findings confirm the fruitfulness of studying the potential impact of MNCs on the organizational patterns within a country. As contended by Westney (1993), MNC subsidiaries in some countries can play a major role in establishing building blocks of organizations. The introduction of new modes of business practice in MNC subsidiaries can challenge the legitimacy of existing patterns and stimulate debates on better business practices, initiating a "de-institutionalization" process.

Certainly, it would be naïve to think that the influence of MNCs on its institutional environment is always good. There are plenty of anecdotal evidences that MNCs sometimes bring in undesirable influences. However, in the area of corruption, our empirical findings show that the average effect is positive: the presence of FDI could help reduce the corruption level of a host country over time. It enables the MNC to point out to the host government and its people another potential benefit of opening its doors to foreign direct investment. Such a dynamic perspective provides a glimmer of hope to host countries where corruption is widely prevalent.

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Figure 1: MNC as an Agent of Change for Host-Country Institutions

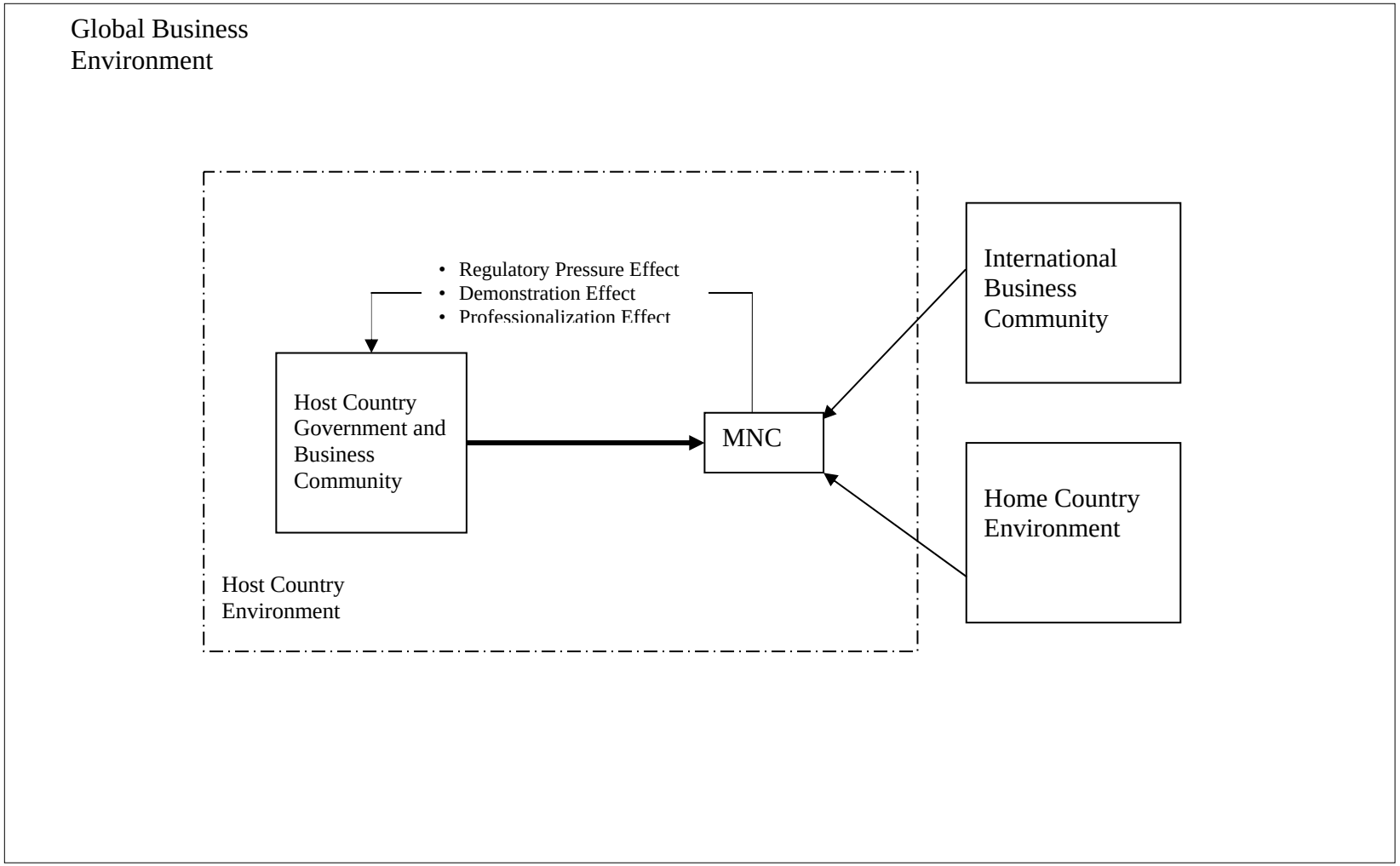

Table 1: Summary Statistics

Variable	Mean	Std Dev	Minimum	Maximum	N
Dependent Variables:					
Corruption 2000-04	5.634	2.313	0.220	8.900	120
Independent Variables:					
FDI to GDP in 1970s	0.933	1.318	-1.844	5.838	113
FDI to GDP in 1980s	1.089	2.089	-4.206	14.838	136
FDI to GDP in 1990s	2.128	4.057	-11.028	37.284	140
FDI to GDP 1970-1997	1.488	2.204	-4.365	14.191	142
Control Variables:					
Per Capita GDP	8.291	1.123	6.064	10.164	133
Education in 1970s	36.846	27.741	1.000	94.667	128
Education in 1980s	47.376	30.237	3.460	107.679	131
Education in 1990s	55.001	33.795	5.257	129.966	130
Education in 1970-1997	44.408	29.482	1.171	104.442	143
Democracy	5.051	3.775	0	10.000	85
Political Constraint	0.348	0.324	0	0.893	133
Rule of Law	6.907	2.445	1.670	10.000	76
Legal Formalism	3.549	1.015	1.414	5.907	94
Culture					
Power Distance	56.41	21.48	11.00	104.00	56
Individualism/Collectivism	43.50	25.20	6.00	91.00	56
Instrumental Variables:					
Telephone Lines	85.85	123.44	0.65	594.81	134
Electricity Consumption (kwh per capita)	7.2E10	2.8E11	2.6E7	2.7E12	104

Table 2: Correlation Matrix (figures in parentheses are p values)

	Corruption	Per capita GDP	FDI in 1970s	FDI in 1980s	FDI in 1990s	FDI 1970-1997	Education in 1970s	Education in 1980s	Education in 1990s	Education in 1970-1997	Power Distance	Individualism Collectivism	Democracy	Political Constraint
Per Capita GDP	-0.835 (0.0001)													
FDI in 1970s	-0.1154 (0.141)	0.125 (0.207)												
FDI in 1980s	-0.285 (0.003)	0.208 (0.022)	0.464 (<.0001)											
FDI in 1990s	-0.174 (0.076)	0.109 (0.223)	0.078 (0.409)	0.419 (<.0001)										
FDI in 1970-1997	-0.208 (0.032)	0.119 (0.180)	0.405 (<.0001)	0.761 (<.0001)	0.867 (<.0001)									
Education in 1970s	-0.771 (0.0001)	0.889 (<.0001)	0.086 (0.386)	0.088 (0.343)	0.019 (0.839)	0.022 (0.817)								
Education in 1980s	-0.745 (0.0001)	0.834 (<.0001)	0.775 (<.0001)	0.054 (0.557)	0.108 (0.233)	0.069 (0.439)	0.954 (<.0001)							
Education in in 1990s	-0.799 (0.0001)	0.881 (<.0001)	0.089 (0.371)	0.087 (0.347)	0.079 (0.388)	0.027 (0.766)	0.923 (<.0001)	0.951 (<.0001)						
Education in 1970-1997	-0.746 (0.0001)	0.824 (<.0001)	0.120 (0.208)	0.091 (0.303)	-0.026 (0.762)	-0.019 (0.818)	0.964 (<.0001)	0.989 (<.0001)	0.975 (<.0001)					
Power Distance	0.682 (<.0001)	-0.616 (<.0001)	-0.002 (0.984)	-0.018 (0.904)	-0.043 (0.765)	-0.004 (0.977)	-0.594 (<.0001)	-0.618 (<.0001)	-0.627 (<.0001)	-0.591 (<.0001)				
Individualism/Collectivism	-0.702 (<.0001)	0.742 (<.0001)	-0.122 (0.418)	-0.030 (0.833)	-0.151 (0.295)	-0.136 (0.344)	0.686 (<.0001)	0.666 (<.0001)	0.749 (<.0001)	0.669 (<.0001)	-0.647 (<.0001)			
Democracy	-0.686 (<.0001)	0.689 (<.0001)	0.104 (0.366)	0.061 (0.585)	0.071 (0.528)	0.091 (0.413)	0.709 (<.0001)	0.673 (<.0001)	0.737 (<.0001)	0.704 (<.0001)	-0.688 (<.0001)	0.721 (<.0001)		
Political Constraint	-0.607 (<.0001)	0.579 (<.0001)	0.103 (0.315)	0.075 (0.429)	-0.026 (0.776)	-0.018 (0.840)	0.648 (<.0001)	0.596 (<.0001)	0.611 (<.0001)	0.610 (<.0001)	-0.449 (<.0001)	0.533 (<.0001)	0.825 (<.0001)	
Rule of Law	-0.801 (<.0001)	0.703 (<.0001)	0.050 (0.694)	0.175 (0.151)	0.074 (0.542)	0.120 (0.322)	0.632 (<.0001)	0.571 (<.0001)	0.608 (<.0001)	0.583 (<.0001)	-0.645 (<.0001)	0.693 (<.0001)	0.524 (<.0001)	0.420 (<.0001)

Table 3: FDI and Corruption

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
FDI															
FDI in 1970s	-0.191[b] (0.095)				-0.169[c] (0.092)				-0.186 (0.117)						
FDI in 1980s		-0.289[a] (0.088)				-0.313[a] (0.086)				-0.359[a] (0.092)			-0.322[a] (0.092)		
FDI in 1990s			-0.206[a] (0.066)				-0.197[a] (0.064)				-0.198[b] (0.019)			-0.162[b] (0.076)	
FDI in 70-1997				-0.281[a] (0.088)				-0.269[a] (0.085)				-0.327[a] (0.103)			-0.263[b] (0.102)
Education															
Education in 1970s					-0.016[b] (0.008)				-0.0.13 (0.011)						
Education in 1980s						-0.013[b] (0.006)				-0.014[c] (0.008)			-0.023[b] (0.009)		
Education in 1990s							-0.016[b] (0.006)				-0.019[b] (0.008)			-0.025[a] (0.008)	
Education in 70-1997								-0.015[a] (0.006)				-0.016[b] (0.008)			-0.019[b] (0.008)
Political Tradition															
Democracy									-0.091 (0.071)	-0.149[b] (0.063)	-0.107 (0.065)	-0.117[c] (0.064)	-0.066 (0.051)	-0.003 (0.054)	-0.035 (0.050)
Political Constraint									0.798 (0.759)	0.619 (0.703)	0.788 (0.718)	0.719 (0.708)	0.305 (0.777)	0.426 (0.779)	0.341 (0.786)
Legal Environment															
Rule of Law													-0.281[a] (0.094)	-0.273[a] (0.088)	-0.276[a] (0.089)
Legal Formalism													0.285[b] (0.094)	0.323[b] (0.133)	0.302[b] (0.137)
GDP per Capita	-0.0004[a] (2E-5)	-0.0004[a] (2E-4)	-0.0004[a] (2E-4)	-0.0004[a] (2E-4)	-0.0004[a] (5E-5)	-0.0004[a] (4E-5)	-0.0003[a] (4E-5)	-0.0004[a] (3E-5)	-0.0004[a] (6E-5)	-0.0003[a] (5E-5)	-0.0003[a] (5E-5)	-0.0001[a] (4E-5)	-0.0001[b] (7E-5)	-0.0001[b] (7E-5)	-0.0002[a] (6E-5)
Adjusted R-Square	0.78	0.79	0.79	0.79	0.80	0.81	0.82	0.81	0.80	0.83	0.82	0.82	0.86	0.85	0.84
Sample	87	96	100	100	84	92	95	99	66	68	69	71	56	57	59

[a] Significant at 1 per cent; [b] significant at 5 per cent; [c] significant at 10 per cent. The figures in parentheses are standard errors.

Table 4: FDI and Corruption – Channels of Influence

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Culture											
Power Distance	0.040[a]	0.035[a]	0.036[a]	0.026[b]							
	(0.009)	(0.010)	(0.011)	(0.012)							
Individualism/Collectivism					0.000	0.005	0.011	0.017			
					(0.009)	(0.009)	(0.012)	(0.012)			
Education											
Education in 70-1997		-0.021[b]	-0.024[b]	-0.023[b]		-0.0221[b]	-0.023[b]	-0.024[b]	-0.009	-0.021[c]	0.021[c]
		(0.009)	(0.010)	(0.010)		(0.008	(0.010)	(0.010)	(0.006)	(0.010)	(0.010)
FDI X Power Distance Interactions											
FDI in 1970-1997 X Power Distance	-0.006[a]	-0.006[a]	-0.006[a]	-0.004[b]							
	(0.002)	(0.001)	(0.002)	(0.001)							
FDI X Individualism/Collectivism Interaction											
FDI in 70-1997 X Individualism/Collectivism					-0.014[a]	-0.013[a]	-0.015[a]	-0.010[b]			
					(0.003)	(0.003)	(0.003)	(0.004)			
FDI X Education Interaction											
FDI in 70-1997 X Education in70-1997									-0.006[a]	-0.007[a]	-0.004[b]
									(0.002)	(0.002)	(0.002)
Political Tradition			0.011	0.088			-0.033	0.0311		-0.066	0.040
Democracy			(0.091)	(0.102)			(0.091)	(0.094)		(0.085)	(0.099)
Political Constraint			-0.216	-0.175			-0.483	-0.194		-0.305	-0.128
			(0.948)	(0.970)			(0.979)	(0.980)		(0.996)	(1.005)
Legal Environment											
Rule of Law				-0.195				-0.238[b]			-0.238[c]
				(0.119)				(0.116)			(0.121)
Legal Formalism				0.276				0.325			0.327
				(0.189)				(0.213)			(0.198)
GDP per Capita	-0.0003[a]	-0.0003[a]	-0.0003[a]	-0.0002[a]	-0.0004[a]	-0.0003[a]	-0.0003[a]	-0.0003[a]	-0.0003[a]	-0.0003[a]	-0.0002[a]
	(4E-5)	(5E-5)	(5E-5)	(7E-5)	(5E-5)	(5E-5)	(6E-5)	(7E-4)	(3E-5)	(6E-5)	(7E-5)
Adjusted R-Square	0.83	0.85	0.83	0.84	0.83	0.84	0.82	0.84	0.83	0.81	0.83
Sample	48	48	42	42	48	48	42	42	99	42	42

[a] Significant at 1 per cent; [b] significant at 5 per cent; [c] significant at 10 per cent. The figures in parentheses are standard errors.

Table 5: Robustness Tests

	FDI as a dummy Variable				Instrumental Variables			
	I	II	III	IV	V	VI	VII	VIII
FDI in 1970-1997	-0.535[b]				-1.221[a]			
	(0.182)				(0.342)			
Culture								
Power Distance		0.026[b]				0.025[b]		
		(0.012)				(0.012)		
Individualism/Collectivism			0.027[b]				0.026[b]	
			(0.013)				(0.012)	
Education in 70-1997	-0.015[c]	-0.014	-0.022[b]	-0.013	-0.016[b]	-0.017	-0.023[b]	-0.006
	(0.008)	(0.010)	(0.010)	(0.011)	(0.008)	(0.010)	(0.010)	(0.011)
FDIXPD Interaction								
FDI in 1970-1997 X Power Distance		-0.011[b]				-0.013		
		(0.004)				(0.008)		
FDI X IC Interaction								
FDI in 70-1997XIC			-0.010[b]				-0.014[b]	
			(0.004)				(0.005)	
FDI X Education								
FDI in 70-1997 X Education in 70-1997				-0.007[b]				-0.010[b]
				(0.003)				(0.004)
Political Tradition								
Democracy	-0.058	0.066	0.041	0.068	0.023	0.161	0.107	0.121
	(0.072)	(0.099)	(0.093)	(0.093)	(0.071)	(0.100)	(0.093)	(0.091)
Political Constraint	0.533	0.386	0.121	0.112	0.266	0.030	-0.016	-0.047
	(0.775)	(0.939)	(0.956)	(0.980)	(0.735)	(0.994)	(0.946)	(0.969)
Legal Environment								
Rule of Law	-0.256[a]	-0.258[b]	-0.273[b]	-0.251[b]	-0.237[a]	-0.249[b]	-0.270[b]	-0.262[b]
	(0.088)	(0.111)	(0.112)	(0.116)	(0.086)	(0.119)	(0.110)	(0.113)
Legal Formalism	0.316[b]	0.307	0.458[b]	0.362[c]	0.382[a]	0.429[b]	0.564[a]	0.467[a]
	(0.133)	(0.174)	(0.185)	(0.182)	(0.129)	(0.174)	(0.176)	(0.168)
GDP per Capita	-0.0002[a]	0.0002[a]	0.0003[a]	0.0002[a]	-0.00008	-0.0002[b]	-0.0002[a]	-0.0002[a]
	(6E-5)	(7E-5)	(7E-5)	(7E-5)	(6E-5)	(8E-5)	(7E-5)	(7E-5)
Adjusted R-Square	0.85	0.84	0.85	0.84	0.85	0.83	0.84	0.83
Sample	59	42	42	42	57	42	42	42

[a] Significant at 1 per cent; [b] significant at 5 per cent; [c] significant at 10 per cent. The figures in parentheses are standard errors.

Table 6: FDI and Change of Corruption

	Corruption as a Change			
	I	II	III	IV
FDI in 1970-1997	-0.595[a]			
	(0.221)			
Culture				
Power Distance		0.064[b]		
		(0.024)		
Individualism/Collectivism			0.051 [c]	
			(0.026)	
Education in 70-1997	-0.043[a]	-0.047[b]	-0.054[b]	-0.040 [c]
	(0.017)	(0.019)	(0.021)	(0.021)
FDIXPD Interaction				
FDI in 1970-1997 X Power Distance		-0.010[a]		
		(0.004)		
FDI X IC Interaction				
FDI in 70-1997XIC			-0.020[b]	
			(0.0086)	
FDI X Education				
FDI in 70-1997 X Education in 70-1997				-0.011[b]
				(0.005)
Political Tradition				
Democracy	-0.090	0.174	0.025	0.034
	(0.152)	(0.198)	(0.186)	(0.193)
Political Constraint	0.714	-1.703	-1.115	-1.516
	(1.709)	(2.127)	(2.121)	(2.230)
Legal Environment				
Rule of Law	-0.631[a]	-0.401[c]	-0.549[b]	-0.485[b]
	(0.175)	(0.231)	(0.227)	(0.237)
Legal Formalism	0.667[b]	0.715 [c]	0.906[c]	0.733[c]
	(0.289)	(0.387)	(0.481)	(0.409)
GDP per Capita	-0.0003[a]	0.0004[a]	0.0005[a]	0.0004[a]
	(1E-4)	(1E-4)	(1E-4)	(1E-4)
Adjusted R-Square	0.86	0.86	0.85	0.84
Sample	54	40	40	40

[a] Significant at 1 per cent; [b] significant at 5 per cent; [c] significant at 10 per cent.
The figures in parentheses are standard errors.

Appendix 1: Variables and Sources

Variables	Definition	Sources
Dependent Variables:		
Corruption	A measure of the corruption perception. Corruption is defined as abuse of public office, and the corruption index measures the corruption perception based on survey of business people and analysts. The measure is rescaled from the original by taking the difference from 10. The values are averages over the period 2000 through 2004	Source: Transparency International (various issues)
Independent Variable:		
FDI to GDP ratio (%) in 70s, 80s, 90s and 1970-1997	Foreign direct investment is 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 sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. The values are decade averages over 1970s, 1980s, 1990s and over the period 1970 through 1997.	Source: World Bank (1999)
Education (in 70s, 80s, 90s, and 1970-1997)	Gross secondary enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. It is measured as secondary school enrollment at a fraction of the age group eligible to the level of education. The values are decade averages over the 1970s, the 1980s, the 1990s and overall average over the period 1970 through 1997.	Source: World Bank (1999)
Culture		
Power Distance	Hofstede's cultural value that reflects the response of people to inequality. It represents the extent to which the less powerful members of society accept, expect or prefer injustice.	Source: Hofstede (2001)
Individualism/Collectivism	Hofstede's cultural value that reflects the degree to which people in society are primarily concerned with their own self-interest over that of the collective.	Source: Hofstede (2001)
Control Variables		
Per capita GDP	The logarithm of average per capita GDP	Source: World Bank (1999)
Democracy	A measure of the degree of democracy in a given country based on: (1) the competitiveness of political participation; (2) the openness and competitiveness of executive recruitment; and (3) the constraints on the chief executive. The variable ranges from zero to ten, where higher values equal a higher degree of institutionalized democracy. This variable is calculated as the average from 1960 through 2000, or for specific years as needed in the tables.	Source: Jaggers and Marshall (2000).
Political Constraints	A measure of the extent of institutionalized constraints on the decision making of political actors. The values are averages over 1970 through 2000	Source: Henisz (2000)
Rule of Law	A measure of the prevalence of law and order and is based on the Political Risk Services Group's International Country Guide (various issues), on a scale of 0 to 10.	Source: Djankov et al. (2003)
Legal Formalism	The index measures substantive and procedural statutory intervention in judicial cases at lower-level civil trial courts, and is formed by adding up the following indices: (i) professionals vs. laymen, (ii) written vs. oral elements, (iii) legal justification, (iv) statutory regulation of evidence, (v) control of superior review, (vi) engagement formalities, and (vii) independent procedural actions. The index ranges from 0 to 7, where 7 means a higher level of control or intervention in the judicial process.	Source: Djankov et al. (2003)
Instrumental Variables		
Telephone Lines	Telephone lines are the total number of fixed lines and mobile phone subscribers (per 1,000 people). Fixed lines are telephone mainlines connecting a customer's equipment to the public switched telephone network. Mobile phone subscribers refer to users of portable telephones subscribing to an automatic public mobile telephone service using cellular technology that provides access to the public switched telephone network. The values are averages over 1970 through 1997.	Source: World Bank (1999)
Electricity Consumption	Electric power consumption measures the production of power plants and combined heat and power plants, less distribution losses, and own use by heat and power plants per capita. The value is average over 1970 through 1997.	Source: World Bank (1999)

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