

## Why Do Firms Bribe?

### Insights from Residual Control Theory into Firms' Exposure and Vulnerability to Corruption

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#### Abstract:

- This study answers the questions of why firms bribe government officials and why some firms pay higher bribes than other firms. Using insights from residual control theory, we examine how governments exercise residual rights of control through regulation or state ownership of firms, and how these rights affect the payment and size of bribes by firms.
- We argue that firms vary in their exposure and vulnerability to residual rights of control by government officials, depending on the firms' characteristics and circumstances. Differences in firms' exposure and vulnerability to corruption affect their threat point (i.e. ability to walk away) and thus affect which firms pay bribes and bribe size.
- Our results show that, at the firm level, bribe size depends on how much a government can exercise residual rights of control and the firm's threat point. At the same time, at the country level, the type of corruption matters; pervasive corruption is positively related, while arbitrary corruption is negatively related, to bribes paid.

**Keywords:** Residual control theory · Corruption · Bribery · Pervasive and arbitrary corruption

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## Introduction

Bribes have been paid at least since 3400 BC, according to archaeologists who found an Assyrian tomb listing the names of “employees accepting bribes” (Martin 1999, p. 1). Despite the longevity of bribery (Martin 1999), our understanding as management scholars of bribery is still limited. For example, how do firm characteristics affect bribes? How does the existing pattern of corruption in a country affect an individual firm’s propensity to bribe? These are the questions we address in this paper.

Following past research (Doh et al. 2003), we define corruption as *the abuse or misuse of public power for private (personal) benefit*<sup>1</sup>. Our goal is to “lift the veil on corruption” by developing and testing a management perspective on bribery that incorporates firm heterogeneity. To do this, we use insights from residual control theory (Grossman and Hart 1986; Hart and Moore 1990; Tirole 1999) to examine how governments exercise residual rights of control through regulation or state ownership of firms, and how the firm’s threat point (i.e., its ability to walk away) affect the level of bribes paid to government officials.

The residual control theory of the firm (Grossman and Hart 1986; Hart and Moore 1990) argues that actual behavior of a firm depends on who owns the residual rights to control the firm’s assets. Residual rights are “the rights to determine the uses of assets under circumstances that are not covered by contractual terms” (Foss and Foss 1999, p. 4). Politicians or government officials can wield their residual rights by imposing rules and regulations on firms. This is why Johnson et al. (1998, p. 387) argue “[i]n most countries politicians maintain property rights in firms, typically in the form of residual control rights...”

Based on their characteristics and circumstances, firms vary in their exposure and vulnerability to residual ownership by government officials.<sup>2</sup> We argue that a firm’s *exposure* (in the sense of the number of stressors or pressures placed on firms by exogenous events) to public corruption should vary depending on the pervasiveness of national corruption and the frequency with which a firm’s activities brings it into contact with government officials. A firm’s *vulnerability* (in the sense of its ability to resist these stressors or pressures) to corruption should also vary, depending on the resources (financial, political or otherwise) firms have at their disposal, which make them better able to resist these pressures. Residual control theory suggests that, the greater firms’ exposure and vulnerability to corruption, the more likely are they to bribe government officials<sup>3</sup>.

This suggests that residual control theory is an appropriate theoretical lens for understanding bribery. In our paper, we examine how firm- and country-level characteristics affect an individual firm’s size of bribes paid (Clarke and Xu 2004; Shleifer and Vishny 1993; Svensson 2003). We argue that, at the country level, the magnitude of the perceived level and ambiguity of public sector corruption in an economy, which affects the firm’s exposure to corruption, will be an important predictor of an individual firm’s bribes. At the firm level, we argue three characteristics of firms are important predictors of the firm’s vulnerability to corruption, and thus of the magnitude of bribes paid to government officials: foreign ownership, government regulation, and state ownership. Our paper proceeds as follows. In Sect. 2, we develop a residual control theory of bribery incorporating

insights from management literature. Section 3 empirically tests our model. Section 4 discusses the results and concludes the paper.

When it comes to bribery, we argue that while it is important to understand the environment a firm is in (which affects the firm's exposure to corruption), it is also important to understand that even in the same environment, depending on how much bargaining power a firm possesses vis-à-vis government officials (which affects the firm's vulnerability to corruption), firms differ in how much they bribe. In other words, examining firm bribing behaviors from either only firm or institutional level can be misleading. For example, even when the majority of the firms give up potential business opportunities in a country because of the high level of corruption, those firms with high bargaining power may actually do well. To the best of our knowledge, our study is the first in the management literature to use the theoretical lens of residual control theory to examine why firms bribe government officials.

## Theory Development

### Residual Control Theory

The residual control theory of the firm (Grossman and Hart 1986; Hart and Moore 1990) argues that the actual ownership of the firm depends on who owns the residual rights to control assets; that is "the rights to determine the uses of assets under circumstances that are not covered by contractual terms" (Foss and Foss 1999, p. 4). The central assumption behind this theory is that real world contracts are incomplete because the allocation of control rights cannot be fully specified in advance. Due to the incompleteness of contracts, firms, more often than not, rather than writing comprehensive contracts among parties, decide which party owns the residual rights and the owner of the residual rights decides how the assets are used that are not specified under the contract.

In turn, since property rights protect their holders against expropriation of their investment, the allocation of property rights determines who holds the control of residual rights. Agents that secure control of residual rights have greater bargaining power and can determine "who wins" in the *ex post* outcome. In addition, the exercise of property rights is limited by the indispensability of the second party to the *ex post* production process. Even though one agent (the government official) controls the residual rights, that control is limited by the *threat point*, the point at which the other agent (the owner of the firm) can walk away from the agreement.

When the firm is indispensable to the agreement, the government agent cannot extract gains beyond the point where the firm's owner would decide to give up all ownership claims over the firm's assets and exit the industry; at that point, exiting as one of the possible alternatives is better for the firm's owner than staying in the agreement. Thus, the final bargain depends not only on who has the residual rights of control, but also on the "ability to walk away from the table" of the agent without the residual rights of control. "Walking away from the table" can, of course, involve a range of actions, the most serious of which would be exiting the industry or country. Firms can also choose less drastic

actions such as building consortiums, renegotiating terms with government officials, and even whistle blowing.

In this sense, residual contract theory matches well with stakeholder theory in management in that it is not only the firm, but also other agents that have stakes in the firm, that are important in considering how firms make decision (Donaldson and Preston 1995). Different stakeholders can have a bigger say in different institutional environments. For example, while shareholders are the most important stakeholders in the United States, employees are more important in corporatist European firms, while managers are more important in Japan (Economist 1993). In this research, we focus on the role of government officials in taking stakes in firm management.

### *The Market for Bribes*

In a corrupt society where government officials seek private gains from their relationships with firms, the bargaining power of officials can be enormous and bribery is likely to occur (Clarke and Xu 2004). Seeking private benefits, government officials want and demand bribes from firms. However, even when corruption is illegal, soliciting and taking bribes is potentially costly for officials, with the cost depending on the probability of being caught and the size of the penalty. Each official therefore weighs the benefits against the costs, at the margin, in deciding whether and how much to demand in bribes.

Paying a bribe imposes a direct cost in the form of reduced cash flow. Since bribe paying is costly, the firm's willingness to offer a bribe and the size of the bribe should depend on its perception of the likely short-term and long-term benefits provided by the government official. However, the firm knows that the bribe bargain may not be sustainable; the official could fail to deliver on his/her commitments or could come back and request an additional bribe. In either situation, the firm cannot appeal to a court of law because corruption contracts are not legally enforceable. Moreover, there can be additional costs on the firm if the government punishes bribe payers in addition to those receiving bribes (for example, the US Foreign Corrupt Practices Act punishes firms paying bribes); this latter cost depends on the probability of being caught and the size of the punishment. When the probability of getting caught is low, government officials are more likely to seek bribes and firms should also be more willing to offer bribes in exchange for private benefits<sup>4</sup>.

The market for bribes therefore brings together demanders (government officials) and suppliers (firms) of bribes. Since countries differ in their corruption characteristics, firms will face varying degrees of exposure to corruption depending on their country location. Moreover, since firms differ in their firm-level characteristics, they will be more or less vulnerable to corruption. We argue that both exposure and vulnerability to corruption will affect the firm's threat point, and thus affect the size of the bribe paid. Building on the medical literature (Grzywacz et al. 2004), we define *exposure* as the quantitative exogenous stressors or pressures that affect a firm; whereas its *vulnerability* depends on its ability to withstand these stressors/pressures. A firm's exposure to bribery therefore depends on country-level characteristics such as the pervasiveness and arbitrariness of corruption in an economy; whereas the firm's vulnerability to bribery depends on its ability to withstand these exogenous pressures. We start first with vulnerability and then address exposure.

## Vulnerability to Corruption: Firm Characteristics and Bribery

### *Foreign Ownership*

Residual control theory suggests that government officials demand fewer bribes from firms that have greater bargaining power (Hakala et al. 2005; Svensson 2003). Svensson (2003), for example, argues that the greater the mobility of capital and the higher the alternative return to capital in other industries, the lower the firm's threat point and the smaller the bribe. Bargaining power represents the firm's ability to withstand the "grabbing hand" of external pressures from government officials to pay bribes; the greater the firm's bargaining power the less its vulnerability to corruption.

The MNE-state relationship literature hypothesizes that the firm's bargaining power rises as its percentage of foreign ownership increases, and is particularly strong at the time of first entry (Eden et al. 2005; Vernon 1971). Foreign firms are more likely to have alternative investment opportunities than local firms, a higher propensity to exit, and thus a higher threat point (Kogut and Kulatilaka 1994). Compared to domestic firms, multinationals are also less embedded in the host environment (Zaheer 1995). In addition, foreign firms, inherently having disadvantages arising from liability of foreignness, would be more likely to invest abroad when equipped with valuable capabilities (Zaheer and Mosakowski 1997). Furthermore, foreign firms from a different cultural background are less likely to know whom to bribe and how much compared to their domestic counterparts (Rodriguez et al. 2005).

In other words, the higher bargaining power of MNEs provides them with larger residual control rights vis-à-vis government officials, leading to smaller bribes paid. For example, Herrera and Rodriguez (2003) find that foreign firms bribe less than domestic firms, arguing that the capabilities foreign owners bring to the host country imply that less government assistance is needed. The International Bribe Payers Index (Transparency International 2006) also shows that domestic firms have a much higher tendency to bribe than their foreign counterparts. For example, foreign owned firms (6.92 out of 10) have experienced a 0.39 point lower incidence of bribery than locally owned counterparts (6.53) in the top 10 countries of BPI 2006. If greater foreign ownership is associated with an enhanced ability to "walk away", in effect, the firm's threat point increases. Thus, we argue:

*Hypothesis 1:* The higher the foreign ownership of the firm, the lower its vulnerability to corruption and the smaller the bribes paid by the firm to government officials.

### *Export Orientation*

In residual control theory, the stronger the residual rights of control held by the firm, the greater the firms' bargaining power relative to the government officials. When firms have stronger residual rights of control compared to government officials, rather than taking bribes, government officials may even provide support for the firms that have stronger residual rights.

For example, national governments in developing countries and in countries with balance of payments problems value exports highly for their contributions to foreign exchange and employment (Grosse 1996; UNCTAD 2006; Vernon 1971). This suggests that export oriented firms have high national salience and that bureaucrats dampen their bribe demands as a result to avoid punishment. In addition, the competition among national governments to attract firms that export also gives export oriented firms more bargaining power. Firms that are heavily involved in exports typically receive government grants, rewarding them for exporting. Since the late 1980s, governments have significantly liberalized their export regulations; as a result, for most countries, export licensing, permits and taxes are minimal (UNCTAD 2006). In addition, heightened competition among nations makes it difficult for the government officials to squeeze bribes from exporting firms. We therefore hypothesize that export orientation is negatively related to bribe payments; that is:

*Hypothesis 2:* The more export oriented is the firm, the lower its vulnerability to corruption and the smaller the bribes paid by the firm to government officials.

### *State Ownership*

In residual control theory, the government has complete residual rights of control when the firm is a state owned enterprise. In the case of state ownership, however, the manager running the state owned firm is part of the overall government apparatus and therefore shares similar goals with other government officials (that is, the manager's goal is to meet government objectives rather than maximizing firm profits). Similarity of interests makes it easier to reach a common agreement (Eden et al. 2005; Grosse 1996). Herrera and Rodriguez (2003) conjecture that the frequency of bribes decreases if firms have effective recourse through government channels to obtain proper treatment without making unofficial payments.

We argue that government officials are less likely to demand financial bribes from state-owned firms, relying instead on feather-bedding activities such as requests to provide jobs for family members. Such hiring is often possible since state-owned firms tend to be larger than their private counterparts and face less pressure to control costs (Boycko et al. 1996). In addition, many retired government officials are later re-employed by state-owned firms (Krueger 1990). We therefore expect influence-seeking and feather-bedding demands by state officials to be more common than requests for financial bribes when the firm is state owned.

In short, we expect that private sector firms are more likely to pay higher bribes than state owned firms. In addition, bribes paid may be when firms are privately owned since they are typically more efficient and thus possess larger cash flows (Clarke and Xu 2004). Thus, we argue;

*Hypothesis 3:* The higher the state ownership of the firm, the lower its vulnerability to corruption and the smaller the bribes paid by the firm to government officials.

## Exposure to Corruption: Country Characteristics and Bribery

We also argue that, at the country level, the magnitude of the perceived level and ambiguity of corruption in an economy will be an important predictor of an individual firm's bribes (Martin et al. 2007). The overall level of corruption in a country determines the firm's exposure level in the sense of the quantitative stressors placed on an individual or firm by exogenous events. As Grzywacz et al. (2004) argue stressors can be either discrete, specific "on-off" events or chronic and enduring daily pressures.

We argue that public sector corruption can also be seen as discrete or chronic pressures on firms. Corruption has two characteristics: pervasiveness and arbitrariness (Rodriguez et al. 2005; Uhlenbruck et al. 2006). *Pervasiveness* is conceptualized as "the average firm's likelihood of encountering corruption in its normal interactions with state officials", that is, "the proportion of interactions with the state that will entail corrupt transactions" (Rodriguez et al. 2005, p. 385). Pervasiveness of corruption is similar to the frequency or incidence of corruption relative to the firm's transactions with the state. Higher pervasiveness implies that a higher proportion of the firm's activities with government officials will involve corrupt behaviors.

*Arbitrariness*, on the other hand, refers to the unpredictability or variability of corruption, more specifically, "the inherent degree of ambiguity associated with corrupt transactions". A high degree of arbitrariness implies that "transactions with government officials are characterized by an enduring uncertainty regarding the size, target, and number of corrupt payments necessary to obtain an approval" (Rodriguez et al. 2005, p. 385). Both characteristics affect firms' exposure to corruption.

### *Pervasiveness of Corruption*

First, at the country level, the pervasiveness of public sector corruption is likely to affect each official's assessment of the benefits and costs of demanding bribes (Doh et al. 2003). Residual control theory suggests that the government official's demand for bribes depends on his/her net marginal valuation of the received bribe. This includes the official's assessment of the probability of being caught and punished for accepting a bribe, and the expected size of the punishment. This assessment should vary with the pervasiveness of corruption at the country level. For example, President Suharto of Indonesia was often referred to as "Mr. Ten Percent" because it was widely understood that paying 10% of the deal to the government would secure the business in Indonesia (Wei 2000; Fisman 2001). Thus, given the high pervasiveness of corruption in Indonesia, government officials would assess their likelihood of being caught and punished for seeking bribes as low.

Murphy et al. (1993, p. 409) argue that an increase in corrupt activities in a country makes corrupt behaviors more attractive; as the "strength in numbers" speaks, "the probability of any one ... getting caught is much lower" when more people are stealing. When most government officials ask for bribes, it is less risky for another government official to do the same (Blackburn et al. 2004; Rose-Ackerman 1975); moreover, where bribery is prevalent, the risk involved in non-compliance increases (Drabek and Payne 2001). This is well put by Mauro (1998): In a country where everybody steals the probability of your



being caught for stealing too is low and, even if you are caught, the probability of severe punishment is also low; thus, you steal, too.

Moreover, when pressures for bribes are repeated and chronic, they become an “additive and cumulative toll of daily hassles” (Grzywacz et al. 2004, p.3) with a stronger impact than the sum of the individual bribe requests would suggest. Therefore, we argue that the more pervasively corrupt the country environment, the more it becomes acceptable for government officials to demand bribes. Therefore, we argue:

*Hypothesis 4:* The more pervasive is corruption in an environment, the greater the firm’s exposure to corruption and the larger the bribes paid by the firm to government officials.

### *Arbitrariness of Corruption*

The greater the arbitrariness of corruption, the less predictable it becomes. Firms do not know when to expect bribery demands, or from whom, or what size, or if the firm does pay a bribe whether the government official will deliver the promised service. Arbitrariness complicates the predictability and planning of firms’ bribery and thus can make bribing more damaging (Rodriguez et al. 2005). In a situation where there are no norms, we argue that high arbitrariness should be seen by the firm as less of a threat (reduced exposure) and should dampen a firm’s willingness to pay a bribe.

Residual control theory suggests that firms will only assume the risk of paying bribes when the rewards are adequate and predictable (Kauffman et al. 1999). When unpredictability is associated with corruption, the potential varied interpretation and distortion of government policies by each government official may make bribery ineffective from the firm’s perspective, thus lessen the bargaining power of the government officials in under-the-table deals (Levy 1989; Oldenburg 1987).

If the probability of gaining preferential treatment in exchange for bribery is unclear, or if government officials come back and demand more bribes than originally agreed upon (Klitgaard 1990), corruption is seen as arbitrary in nature (Rodriguez et al. 2005). When arbitrariness is high, it is costly for firms to distinguish between government officials who claim to have, and those who do have, residual rights of control over the firm (Campos and Lien 1999).

In a sense, when corruption arbitrariness is high, the external environment is perceived by the firm as an “an ungoverned space” that the firm must navigate. This is why Martin et al. (2007) use anomie theory to explain bribery activity of the firms, defining anomie as “a condition of normlessness and social disequilibrium where the rules once governing conduct have lost their savor and force” (Merton 1964, p. 226). Vaaler and Schrage (2009) also find that firms are less able to cope with the external environment when the policy environment is unstable. We therefore see high arbitrariness as equivalent to high opacity of exposure; firms cannot determine the degree of corruption exposure facing them in a particular country, industry or activity. As a result, firms may misperceive or underestimate their exposure to corruption.

Given the increased unmeasurable uncertainty of high arbitrariness, firms are reluctant to bribe government officials, which in turn lowers their residual control rights vis-à-vis



firms (Doh et al. 2003). Consequently, as corruption becomes more arbitrary, firms should pay smaller bribes.

*Hypothesis 5:* The more arbitrary the corruption is in an environment, the more difficult it is for the firm to determine its exposure to corruption and therefore the smaller the bribes paid by the firm to government officials.

## Methodology and Results

### Dataset and Variables

To test our hypotheses, we build a dataset using three World Bank datasets: The World Business Environment Survey (WBES), the World Development Indicators, and the Governance Indicators dataset. WBES dataset contains unique firm level survey data, covering more than 10,000 firms in 81 countries in 2000 (Batra et al. 2003) and has been used in the past research (i.e., Uhlenbruck et al. 2006). Due to bribery being a sensitive subject in many countries, the WBES suffers from missing values especially for from Africa and Middle East regions. Thus, our final data set consists of firm respondents from five broad regions: Transition Europe, East Asia, South Asia, Latin America, and the OECD. Our final data include 61 countries and consist of 5,215 observations. After screening for sample selection bias (see below), we have 3,119 observations for our analysis.

Our dependent variable is the total amount of bribes paid annually by a firm to all government officials, measured as a percentage of the firm's total annual sales. Our proxy is based on the WBES survey question: *On average, what percentage of revenues do firms like yours typically pay per annum in unofficial payments to public officials?* The score ranges from 1 to 7, which corresponds to a range of 0 to more than 25%.

Our independent variables are at two levels: Firm and country. At the firm level, *Foreign Ownership* is operationalized as the percentage of foreign shares in the total ownership of a firm. WBES data, on average, contains about 15% of firms with some degree of foreign ownership. Following previous research (Shaked 1986), we measure *Export Orientation* as the ratio of a firm's export sales to its total sales. Past research finds that export orientation is associated with corruption (Ades and Di Tella 1999). *State Ownership* is the percentage of governmental shares in the total ownership of a firm. WBES data, on average, contains around 13% of firms in which government has some share of firms' ownership. State ownership has been widely used in past research on corruption (Hellman et al. 2003; Milovanovic 2002; Shleifer and Vishny 1993).

At the country level, we have two variables: *Pervasiveness* and *Arbitrariness* of corruption. These variables denote the country average of the individual firms' perceptions of the pervasiveness and arbitrariness of corruption in that country. Both variables are constructed using the same WBES questions and methodology developed in Uhlenbruck et al. (2006). Our results show that the two latent variables, pervasiveness and arbitrariness, are independent of each other and can be used for reflecting two idiosyncratic features of corruption.

We control for various country specific and region specific factors that might influence firms' tendencies to engage in corruption. First, we include the logged value of Gross Domestic Product (*GDP*) and *GDP Growth* (Habib and Zurawicki 2002; Wei 2000). Both variables come from the World Development Indicators: *GDP* for 2000 and the average annual *GDP* growth rate for 1996–2000. Regional dummy variables are used to control other differences among countries. Our region dummies are *Transition Europe*, *East Asia*, *South Asia*, *Latin America* and *OECD*, where *OECD* is the referent (see Table 1 for a detail country list).

**Table 1:** Country list and sample size (3,119)

Region	Countries	Sample size	Countries	Sample size
Transition	Armenia	105	Lithuania	48
Europe	Azerbaijan	83	Moldova	70
	Belarus	81	Poland	154
	Bulgaria	63	Romania	67
	Croatia	108	Russia	322
	Czech Rep	92	Slovakia	101
	Estonia	85	Slovenia	121
	Georgia	106	Ukraine	150
	Hungary	81	Uzbekistan	100
	Kazakhstan	55	Albania	107
	Kyrgyzstan	33	Turkey	130
East Asia	China	75	Singapore	89
	Malaysia	68	Philippines	84
	Indonesia	72	Thailand	37
South Asia	Pakistan	90	India	164
	Bangladesh	26		
Latin America	Bolivia	69	Nicaragua	78
	Colombia	67	Panama	78
	Costa Rica	65	Peru	76
	Dominican Republic	73	Trinidad & Tobago	98
	Ecuador	65	Uruguay	69
	El Salvador	77	Venezuela	60
	Guatemala	65	Argentina	65
	Haiti	78	Brazil	156
	Honduras	60	Chile	72
	Mexico	77	Belize	37
OECD	United Kingdom	74	Italy	51
	France	87	Sweden	79
	Germany	77	Canada	81
	Spain	62	United States	76
	Portugal	90		

We also include two country-level variables related to export, export promotion and export taxes, which may be compounded with the effect of export orientation on a firm's size of bribes. Export promotion may induce a heightened competition for such funds which may raise the level of bribery. Also, the extent of export taxes may affect the size of a firm's bribery. *Export promotion* is measured by the difficulty of accessing to specialized export finance and *Export taxes* capture taxes on exports as a% of total tax revenue.

The WBES survey may suffer either a non-response or an under-response bias related to country-level political conditions, whereby firms in countries with little political freedom either do not respond or underestimate their bribes paid. Vaaler and McNamara (2004) use an annual average of country political and civil rights from Freedom House to proxy for the level of political freedom in a country, as a way to correct for these biases. A lower value means that the people in a country enjoy more political freedom. Controlling for *Political Rights* may therefore also help correct for any systematic non-response or under-response bias by country.

Industry dummies are included to correct for any industry level differences in bribing. Herrera and Rodriguez (2003) show that manufacturing firms are less prone to bribe than service firms. Four categories of industries are used: *Manufacturing*, *Service*, *Construction*, and *Agriculture*, with *Agriculture* as the referent. We also include the number of industry competitors (*Competition*) as a control variable. Existing theory argues that political and economic competition reduces corruption levels; whereas monopolistic markets produce high levels of corruption (Ades and Di Tella 1999; Shleifer and Vishny 1993).

Lastly, we employ two firm level variables as control variables: Firm size and firm age. *Firm Size* is measured by the number of employees of a firm. This measure is recoded as small (5–50 employees), medium (51–500 employees), and large (larger than 500 employees) firms. *Firm Age* is measured by duration year since foundation<sup>5</sup>.

Due to the secret and illegal nature of bribery, it is perhaps not surprising that the WBES dataset has missing values in its variables that measure corruption. We therefore impute missing values with new values using the multiple imputation procedure “ice” in STATA (Newman 2003; Royston 2005)<sup>6</sup>. Multiple imputation has been widely used in management research (e.g., Glomb and Liao 2003; Katila 2002; Mitchell 1994; Spell and Blum 2005)<sup>7</sup>.

## Empirical Work

Descriptive statistics and correlation coefficients are presented in Table 2. Variance inflation factors (VIF) indicate no potential multicollinearity problems in our data (Chatterjee and Price 1991; Neter et al. 1996). To correct for any possible heteroscedasticity, we also use White-corrected (robust) standard errors, with clustering of identity groups by country.

An analysis of bribe size, excluding observations where no bribe was paid, might create an endogeneity problem and bias our results (Shaver 1998). To avoid sample selection bias, we conduct a two stage analysis: In the first stage we predict whether firms bribe or not, and in the second stage we predict bribe size where the second stage drops firms that

**Table 2:** Descriptive statistics and Pearson correlation coefficients

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Bribe size	3.25	1.31	1.00									
2. GDP (Log)	10.58	0.83	-0.08	1.00								
3. GDP growth	5.16	2.78	-0.03	0.11	1.00							
4. Political right	3.49	1.58	0.09	-0.18	0.39	1.00						
5. Trans-Europe	0.61	0.49	0.00	-0.33	0.30	0.18	1.00					
6. East Asia	0.06	0.24	0.03	0.19	0.10	0.07	-0.33	1.00				
7. South Asia	0.07	0.25	0.05	0.22	-0.09	0.07	-0.34	-0.07	1.00			
8. Latin America	0.21	0.41	-0.01	-0.07	-0.30	-0.15	-0.66	-0.14	-0.14	1.00		
9. OECD	0.04	0.20	-0.05	0.43	-0.13	-0.29	-0.27	-0.06	-0.06	-0.11	1.00	
10. Manufacturing	0.38	0.48	-0.08	0.06	-0.06	-0.06	-0.11	0.02	0.17	0.02	-0.01	1.00
11. Service	0.40	0.49	0.07	-0.01	-0.01	-0.02	0.08	0.07	-0.11	-0.10	0.05	-0.63
12. Agriculture	0.14	0.35	0.00	-0.10	0.03	0.09	-0.01	-0.09	-0.08	0.16	-0.07	-0.32
13. Construction	0.08	0.28	0.02	0.05	0.08	0.04	0.07	-0.04	-0.01	-0.06	0.02	-0.23
14. Competition	2.44	0.71	0.05	-0.06	0.19	0.08	0.46	-0.07	0.07	-0.45	-0.20	-0.10
15. Firm size	1.74	0.70	-0.16	0.15	-0.08	-0.02	-0.21	0.04	0.12	0.13	0.06	0.23
16. Firm age	16.89	20.15	-0.13	0.15	-0.15	-0.11	-0.23	0.00	0.04	0.16	0.17	0.12
17. Export promotion	2.13	1.24	0.08	-0.07	-0.01	0.03	0.04	-0.02	0.01	-0.01	-0.07	0.13
18. Export tax	28.38	73.27	0.01	0.00	-0.03	-0.03	-0.08	-0.06	-0.05	-0.01	0.35	0.03
19. Foreign ownership	44.87	38.99	-0.19	0.04	-0.07	-0.05	-0.08	-0.01	-0.03	0.09	0.06	0.07
20. Export orientation	30.90	34.26	-0.10	-0.05	-0.09	-0.01	-0.10	0.03	0.03	0.08	-0.01	0.13
21. State ownership	35.30	40.52	-0.20	-0.08	-0.03	-0.05	-0.05	-0.05	-0.04	0.11	0.01	0.09
22. Pervasiveness	0.14	1.30	0.13	0.10	-0.04	0.01	-0.14	0.13	0.07	-0.01	0.09	-0.01
23. Arbitrariness	-0.36	0.84	-0.22	0.05	0.01	-0.08	0.07	-0.03	-0.06	-0.07	0.07	0.01
	11	12	13	14	15	16	17	18	19	20	21	22
11. Service	1.00											
12. Agriculture	-0.33	1.00										
13. Construction	-0.25	-0.12	1.00									
14. Competition	0.07	-0.02	0.07	1.00								
15. Firm size	-0.25	0.06	-0.03	-0.16	1.00							
16. Firm age	-0.13	0.05	-0.05	-0.16	0.34	1.00						
17. Export promotion	-0.13	0.02	-0.03	0.01	0.04	-0.02	1.00					
18. Export tax	-0.01	0.00	-0.03	-0.07	-0.01	0.11	0.06	1.00				
19. Foreign ownership	-0.06	0.01	-0.01	-0.17	0.27	0.09	0.03	0.01	1.00			
20. Export orientation	-0.09	-0.03	-0.03	-0.16	0.23	0.04	0.03	0.00	0.35	1.00		
21. State ownership	-0.13	0.06	0.00	-0.20	0.33	0.29	0.01	0.01	0.47	0.16	1.00	
22. Pervasiveness	0.04	-0.02	-0.03	-0.04	0.05	0.02	-0.03	0.03	-0.01	0.05	-0.03	1.00
23. Arbitrariness	-0.01	0.03	-0.03	0.05	0.03	0.04	-0.04	0.05	-0.04	-0.03	0.12	0.03

Observations N=3,119. Correlations above |0.021| are significant at the 5% level (2-tailed t-test)

do not bribe. We follow Heckman’s two stage procedure (Greene 2003, p. 784; Heckman 1979; Sartori 2003) where the first stage selection model predicting the probability of bribery is estimated by a probit model. We calculate the inverse Mills ratio (*IMR*) from the selection equation and include the inverse Mills ratio in our equation estimating bribe size. Following Sartori (2003), we include *Property Rights Protection (IPR)* only in the first stage selection equation<sup>8</sup>. Table 3 provides the results of our first stage probit model and maximum likelihood model.

**Table 3:** Heckman selection model: The incidence of bribery and the size of bribes (probit and maximum likelihood analyses)

Variables	The incidence of bribery		The size of bribery	
Constant	0.258	(0.290)	4.788 <sup>†</sup>	(0.460)
GDP (Log)	-0.153 <sup>†</sup>	(0.025)	-0.082**	(0.036)
GDP growth	0.010	(0.008)	-0.027***	(0.009)
Political rights	0.123 <sup>†</sup>	(0.014)	0.037**	(0.019)
Property rights protection	0.178 <sup>†</sup>	(0.015)		
Manufacturing	0.105*	(0.061)	-0.122*	(0.071)
Service	0.046	(0.062)	0.010	(0.070)
Construction	0.228**	(0.094)	0.004	(0.098)
Competition	0.440 <sup>†</sup>	(0.028)	-0.046	(0.051)
Trans-Europe			-0.168	(0.149)
East Asia			-0.027	(0.158)
South Asia			0.090	(0.158)
Latin America			-0.105	(0.142)
Firm Size	-0.103 <sup>†</sup>	(0.031)	-0.115***	(0.038)
Firm Age	-0.004 <sup>†</sup>	(0.001)	-0.003**	(0.001)
Export promotion	0.076 <sup>†</sup>	(0.017)	0.078 <sup>†</sup>	(0.019)
Export tax	-0.002 <sup>†</sup>	(0.000)	0.001	(0.000)
Export orientation	0.001	(0.001)	-0.002***	(0.001)
Foreign ownership	-0.003 <sup>†</sup>	(0.001)	-0.004 <sup>†</sup>	(0.001)
State ownership	-0.002 <sup>†</sup>	(0.001)	-0.002 <sup>†</sup>	(0.001)
Pervasiveness	0.133 <sup>†</sup>	(0.018)	0.122 <sup>†</sup>	(0.019)
Arbitrariness	-0.314 <sup>†</sup>	(0.024)	-0.279	(0.035)
Mills lambda	-0.283	(0.290)		
Observation N	5215		3119	
Wald $\chi^2(36)$	1366.42			
Prob. > $\chi^2$	0.0000			

\* $p < 0.001$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ; <sup>†</sup> $p < 0.10$  (2-tailed)

The values shown in each block are the unstandardized regression coefficients B. Standard errors are in parentheses. Dependent variable for Probit is the incidence of bribery. Dependent variable for Maximum Likelihood is the amount of bribery money. For ‘industry’ control, omitted category (reference) is agriculture. For ‘region’ control, omitted category (reference) is OECD

As shown in Table 3, *Export Orientation*, *Foreign Ownership*, and *State Ownership* are significant and negative. This shows that firms with high level of foreign ownership and state ownership and more export oriented firms are less likely to bribe. When we examine the two dimensions of corruption, *Pervasiveness* and *Arbitrariness*, high pervasiveness is associated with high likelihood of bribery while high arbitrariness is associated with lower likelihood of bribery.

Several control variables are also worthwhile to examine. The coefficient for *GDP(log)* is significant and negative, suggesting the less affluent a country, the more likely firms are to bribe. The *Political Rights* variable is positively associated with the likelihood of bribery; thus firms in countries with stronger political rights are less likely to pay bribes, as expected. The results also show that firms in *Manufacturing* and *Construction* are more likely to bribe than the base case *Agriculture*. *Firm Size* and *Firm Age* are also negatively associated with the likelihood of bribery. Further, the higher are *Export Taxes*, a firm is more likely to bribe. *Export Promotion* (lower values imply higher export promotion) is positively related to the likelihood of bribery. In addition, *Competition* is positively associated with the likelihood of bribery and significant. *Property Rights Protection* (lower values imply higher property rights) has a positive relationship with the likelihood of bribery.

Table 4 presents the results of our hierarchical regression analyses of bribe size. Note that these are stage two regressions using Heckman's (1979) two stage model so they include only those firms that paid a certain percentage of sales as bribes to government officials. Model 1 is the baseline regression for control variables at the country, region, industry and firm levels. In model 2, we add our firm level independent variables. Model 3 shows the full model, adding our country level independent variables.

Our results indicate that all models are statistically significant at the 0.001 level (using a more conservative two-tailed t-test for statistical significance). The adjusted R squared values range from 0.116 to 0.15, which is similar to previous research on corruption (Habib and Zurawicki 2002). The Inverse Mills Ratio is negative and statistically significant at the 0.001 level. The overall fit of the models improves as we add the firm level and country level independent variables, as shown by the change in F statistics.

As predicted by Hypothesis 1, the relationship between *Foreign Ownership* and *Bribe Size* is negative and statistically significant ( $p < 0.001$ ); that is, for firms that pay bribes, higher levels of foreign ownership are negatively correlated with bribe size. Foreign firms have a greater ability to "walk away" and thus show a higher threat point compared to domestic firms. They are therefore better able to resist bribe demands from government officials. Hypothesis 2 predicts that the more export oriented the firm, the smaller will be bribe size because exporting is a high valued activity that increases the firm's bargaining power. Table 4 shows that the relationship between *Export Orientation* and *Bribe Size* is negative and statistically significant at the 0.01 level; of firms that pay bribes, more export oriented firms pay lower bribes on average. Thus, we find a strong support for Hypothesis 2. Hypothesis 3 predicts a negative relationship between *State Ownership* and *Bribe Size*; the relationship is negative and significant ( $p < 0.001$ ) so Hypothesis 3 is supported. The greater the state ownership of the firm, the smaller the bribe size, for those firms that pay bribes. Hypotheses 4 and 5 are also supported in that *Pervasiveness* of corruption is associated with more bribes, but *Arbitrariness* of corruption is associated with fewer bribes paid by the firms.<sup>9</sup>

**Table 4:** Hierarchical regression analysis predicting bribe size

Variables	Hypo.	Model 1	Model 2	Model 3
Foreign ownership	H1		-0.003* (0.001)	-0.004* (0.001)
Export orientation	H2		-0.002** (0.001)	-0.002** (0.001)
State ownership	H3		-0.001*** (0.001)	-0.002** (0.001)
Pervasiveness	H4			0.122* (0.021)
Arbitrariness	H5			-0.279* (0.037)
Inverse Mills ratio		-1.463* (0.144)	-1.268* (0.152)	-0.283† (0.161)
GDP (Log)		-0.014 (0.052)	-0.041 (0.048)	-0.082† (0.046)
GDP growth		-0.029† (0.015)	-0.030*** (0.014)	-0.027*** (0.012)
Political rights		-0.027 (0.018)	-0.017 (0.018)	0.037*** (0.018)
Trans-Europe		-0.383 (0.293)	-0.360 (0.288)	-0.168 (0.260)
East Asia		-0.123 (0.305)	-0.107 (0.300)	-0.027 (0.267)
South Asia		0.009 (0.299)	0.015 (0.294)	0.090 (0.266)
Latin America		-0.302 (0.307)	-0.279 (0.302)	-0.105 (0.274)
Manufacturing		-0.188*** (0.082)	-0.163*** (0.076)	-0.122† (0.072)
Services		0.005 (0.093)	0.015 (0.088)	0.010 (0.084)
Construction		-0.115 (0.115)	-0.080 (0.112)	0.004 (0.112)
Competition		-0.270* (0.053)	-0.267* (0.051)	-0.046 (0.050)
Firm size		-0.117* (0.034)	-0.055 (0.035)	-0.115** (0.036)
Firm age		0.000 (0.001)	0.000 (0.001)	-0.003*** (0.001)
Export promotion		0.030 (0.026)	0.040 (0.026)	0.078** (0.024)
Export tax		0.002* (0.000)	0.002* (0.000)	0.001*** (0.000)
Constant		5.495* (0.649)	5.715* (0.615)	4.788* (0.604)
R-squared		11.57	12.79	15.01
Change in F stat.		32.79*	1.02***	2.04**
Observations		3119	3119	3119

\* $p < 0.001$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.05$ ; † $p < 0.10$  (Significance tests are two-tailed for control variables and one-tailed for hypothesized effects)

The values shown in each block are unstandardized regression coefficients. Robust White Standard errors are in parenthesis (clustering identical country groups). Dependent variable is the amount of bribery money. For ‘industry’ control, omitted category (reference) is agriculture. For ‘region’ control, omitted category (reference) is OECD

Our control variables warrant some attention as well. *GDP(log)* and *GDP Growth* are negatively related to bribes paid as past research finds (Robertson and Watson 2004; Husted 1999); wealthy and growing countries suffer less from bribery. *Political Rights* (a reversed measure) is positively and significantly related to bribes paid in the full regression model; that is, as expected, stronger rights are negatively related to bribery. The regional dummy variables are generally not statistically significant. Of the industry dummy variables, only *Manufacturing* is marginally significant and negative, suggesting that average bribe size is less in manufacturing than in the base case industry *Agriculture*. *Competition* was negative but not statistically significant. *Firm Size* and *Firm Age* are negatively related to *Bribe Size*. Overall, these results suggest that, of those firms that pay



bribes, bigger and older firms have a weak tendency to pay more bribes. *Export Promotion* (a reversed measure) has a positive relationship with the size of bribes, suggesting that when access to export finance is limited, average bribe size rises for those firms that pay bribes. Higher *Export Taxes* are also more likely to induce an increase in bribe size<sup>10</sup>.

## Discussion and Conclusion

Management researchers have paid relatively less attention to the issue of corruption from the firm's perspective. Our study attempts to fill this void by developing a residual control theory of bribery that incorporates insights from the management literature. One of the contributions of our paper is to distinguish between a firm's exposure and its vulnerability to corruption.

Firms are more or less vulnerable to corruption depending on their ability to withstand government officials' demands for bribes. We argue that three firm-level characteristics affect vulnerability, two of which reflect a firm's international orientation. First, we found that higher foreign ownership leads to smaller bribe payments to government officials. Second, we also found a weakly negative relationship ( $p < 0.10$ ) between export orientation and bribe payments. This suggests that greater international orientation of the firm, whether through foreign ownership or export orientation, is associated with lower bribes paid. This might also suggest that more internationally oriented firms have higher resources and capabilities, and therefore less need for government assistance. Past research also shows that more internationally oriented firms learn by engaging in international activities (Salomon and Shaver 2005). This potential learning advantage can be an incentive to go international for domestic firms managing in a highly corrupt environment.

The third firm level characteristic affecting vulnerability is state ownership. We found that higher state ownership is associated with lower bribe size. The reason for this negative relationship comes not from the firm's having more bargaining power and a greater ability to "walk away", but rather from shared relationships and other alternative ways for government officials to "pluck the goose" such as featherbedding and inflated costs. In other words, when there is less conflict over the residual control rights in a firm due to high government ownership, firms might be able to satisfy government officials' demands in the ways other than paying bribes. When there are few agency conflicts, government officials can extract rents from firms without getting directly asking for bribes. On the other hand, when extracting rents from the firms is harder, the bargaining power relationship becomes important and firms need higher bargaining power to bribe less. This might also explain why government firms are less efficient. Given that the need to be more competitive (which can increase the bargaining power of firms) is lower when residual control is held by government officials, it is not surprising that government owned firms are less efficient (Meyer and Zucker 1989).

Firms are more or less exposed to corruption depending on a country's corruption characteristics. We found strong support for our hypotheses that the two characteristics of corruption, pervasiveness and arbitrariness, present sharply differential effects on bribe size. Pervasiveness has a strong, positive impact on the average size of bribe paid, while

arbitrariness negatively affects the average bribe. A highly pervasive environment exposes firms to strong corruption pressures, which are difficult for firms to resist. Thus, the probability of bribes being paid and the average bribe size both rise. These findings support the arguments made by Shleifer and Vishny (1993) in that organized, more predictable corruption regimes are likely to extract more bribes than unorganized ones. On the other hand, when corruption is highly arbitrary and unpredictable, who, what, when and how much to bribe is unclear; moreover, firms lack surety that government officials will deliver on their promises. When corruption pressures are unclear, firms are more reluctant to pay bribes. Firms perceive lower levels of corruption exposure due to its opacity and unpredictability, and average bribe size falls.

Our study has managerial implications, hinging on how firms interact with government agents in paying bribes. The stronger the residual rights held by government officials, the greater the officials' ability to demand bribes. Understanding this notion may help executives decide whether and how the firm should secure its residual rights. For example, in terms of ownership, a firm may decide to involve foreign owners in order to increase its bargaining power relative to government officials. Involvement of the government through state ownership may also protect the firm from bribe demands. Understanding where is the firm's threat point – when can and should the firm walk away – is critical for managers in determining whether and how much they should pay in bribes. Moreover, the overall corruption environment, both in terms of level and uncertainty, has implications for the firm's managers. When pervasiveness is high, firms are likely to imitate their competitors and pay larger bribes. High arbitrariness suggests, however, that firms may reduce bribe payments.

Our study suggests that corruption is both a country level and an industry level phenomenon. Firms' exposure to corruption varies across industries, as evidenced in our empirical work where we find that firms in manufacturing are less likely to pay and pay lower bribes to government officials, whereas firms in construction are more likely to pay bribes, compared to agriculture. Our results support Herrera and Rodriguez (2003)'s finding that manufacturing firms are less prone to bribe than service firms. We also find it not surprising that the construction industry has a Global Infrastructure Anti Corruption Centre specifically geared to lessening bribery in the construction industry (<http://www.giacentre.org>).

Our work suggests that future scholars should look into highly corrupt nations as a special case. The reason is that in highly corrupt countries, it is possible that firms that do not bribe might be quite different from the rest of the firms. In addition, while we find that high arbitrariness leads to reduced bribes paid to government officials, it is very possible that when the level of arbitrariness is really high, firms might have to bribe all the stakeholders, which would make the firms bribe more, not less. In other words, as stakeholder theory suggests (Mitchell and Agle 1997), firms might have to bribe all interested parties given that it would be very costly to find out whom not to bribe, especially when arbitrariness is very high<sup>11</sup>. In addition, we do not look into a specific country for corruption. Future study may, however, examine the details of corruption in a specific country. For example, the United States has a Foreign Corruption Practices Act (1977) that prohibits firms bribing in foreign countries. As Rodriguez et al. (2005) argue, US firms may bribe less due to this formal institutional arrangements.

Our research also suffers from limitations. Data collected from surveys are prone to problems such as misreporting and missing values. This is especially true when it comes to corruption data, given the secrecy attached to bribing. This is why we dealt with missing values using the multiple imputation method. Also, our study is cross-sectional; a panel study that incorporated bribery levels over time would be an important addition that would help separate cause from effect when it comes to patterns of corruption. Future studies should look at the longitudinal aspects of endogenous corruption. Our study also focuses only on foreign ownership and export orientation; other forms of international involvement such as import penetration could also be investigated.<sup>12</sup> Lastly, our finding that wealthy and growing countries suffer less from bribery shows the two constructs are correlated, not the direction of causation. Our paper does not address the issue of whether causation runs from wealth to corruption or the reverse.

In conclusion, our paper was designed to answer the question: Why do some firms pay more bribes than others? We found that residual control theory, supplemented by insights from the international management literature, offers a useful theoretical lens for analyzing firms' exposure and vulnerability to corruption.

## Endnotes

- 1 We do not include legal ways of affecting government officials such as facilitating payments specified in the Foreign Corrupt Practices Act (1997) in the United States.
- 2 We are indebted to a reviewer who asked us to consider the difference between exposure and vulnerability.
- 3 In this study, we mainly focus on home country government officials. One potential exception is when we consider the level of foreign ownership. From the foreign partner firm's standpoint the government can be viewed as the host country government.
- 4 At the same time, we recognize that firms with little bargaining power may be more likely to voluntarily pay bribes, particularly if they see the reciprocal private benefits as essential to doing business in that country or industry. Voluntary bribes, in this case, become "good faith" payments that help build long-term relationships with government officials.
- 5 These two variables, age and size, are separate and do not load into one variable using confirmatory factor analysis. Thus, they may capture distinct aspects of firm visibility respectively.
- 6 The multiple imputation procedure (Rubin 1987) replaces each missing value with a set of plausible values, instead of filling in a single value for each missing value that represents the uncertainty about the right value to impute. We imputed missing values, around 30% of sample, with new values by multiple imputation (MI) procedures (Newman 2003; Royston 2005). Extant research shows that the multiple imputation estimator is not only more efficient with a smaller standard error but also larger in the magnitude of the effect parameter compared to other substitutions such as list wise deletion, linear interpolation or a single imputed value (Allison 2002; Brownstone and Valletta 2001; King et al. 1999; Newman 2003).
- 7 To see if multiple imputation is effective, we compare the equality of distribution function of the bribe money in the final sample with that of the original sample, using the two sample Kolmogorov-Smirnov test (Siegel and Castellan 1988; Westphal 1999). The results show that the two samples are not different from each other (p-value=0.254).

- 8 Sartori (2003) shows that if two equations have the same variables and the variables have substantially the same influence on selection and second-stage dependent variable, then the Heckman procedure faces a problem of having to estimate the effect of the variables and functions of the same variables on the dependent variable. The recommended correction is the exclusion restriction; that is, add another more meaningful variable in the first stage selection equation that is not included in the second stage equation.
- 9 In order to determine whether the relationships between bribery and the organizational and country characteristics were robust to the type of country, we repeated our econometric analyses (not shown) by splitting our firms in subsamples of more and less corrupt countries, based on the CPI provided by Transparency International. The results show that the more corrupt subsample has more consistent and significant effects in the main relationships than the less corrupt subsample, providing additional support for our hypotheses. Results are available from the authors on request.
- 10 We also used export cost based on the Doing Business Survey data (2005) as an alternative measure of the export tax as a robustness check and we do not find any qualitative differences of the results.
- 11 For example, in Somalia, anybody can shoot a person, but only a few (e.g. doctors and nurses) can save a person's life. Especially given that who will gain is uncertain, it would be important to bribe all stakeholders in such an environment.
- 12 The WBES dataset does not have data on firm imports; as a result, we could not investigate the relationship between import intensity and bribe size.

## References

- Ades, A., & Di Tella, D. (1999). Rents, competition, and corruption. *American Economic Review*, 89(4), 982–993.
- Allison, P. (2002). *Missing data*. Sage: Thousand Oaks.
- Batra, G., Kaufmann, D., & Stone, A. (2003). *Investment climate around the world: Voices of the firms from the world business environment survey*. Washington: The World Bank.
- Blackburn, K., Bose, N., & Haque, E. (2004). *Endogenous corruption in economic development*, Research paper 2004–16. UK: Nottingham University.
- Boycko, M., Shleifer, A., & Vishny, R. (1996). A theory of privatization. *Economic Journal*, 106(4), 309–319.
- Brownstone, D., & Valletta, R. (2001). The bootstrap and multiple imputations Harnessing increased computing power for improved statistical tests. *Journal of Economic Perspectives*, 15(4), 129–141.
- Campos, J., & Lien, D. (1999). The impact of corruption on investment predictability matters. *World Development*, 27(6), 1059–1067.
- Chatterjee, S., & Price, B. (1991). *Regression analysis by example*. New York: Wiley.
- Clarke, G., & Xu, L. (2004). Privatization, competition, and corruption: How characteristics of bribe takers and payers affect bribes to utilities. *Journal of Public Economics*, 88(9–10), 2067–2097.
- Doh, J., Rodriguez, P., Uhlenbruck, K., Collins, J., & Eden, L. (2003). Coping with corruption in foreign markets. *Academy of Management Executive*, 17(3), 114–127.
- Donaldson, T., & Preston, L. (1995). The stakeholder theory of the corporation: concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91.
- Drabek, Z., & Payne, W. (2001). *The impact of transparency on foreign direct investment*. Working paper ERAD-99-02. Geneva: World Trade Organization.

- Economist. (1993, September 11). The future of capitalism. pp. 52–57.
- Eden, L., Lenway, S., & Schuler, D. (2005). From the obsolescing bargain to the political bargaining model. In R. Grosse (Ed.) *International business-government relations in the 21st century*. Cambridge: Cambridge University Press.
- Fisman, R. (2001). Estimating the value of political connections. *American Economic Review*, 91(4), 1095–1102.
- Foss, K., & Foss, N. (1999). *Understanding ownership: Residual rights of control and appropriable control rights*. Working paper. DRUID Working Paper No. 99-4.
- Glomb, T., & Liao, H. (2003). Interpersonal aggression in work groups social influence, reciprocal, and individual effects. *Academy of Management Journal*, 46(4), 486–496.
- Greene, W. (2003). *Econometric analysis*. Upper Saddle River, NJ: Prentice-Hall.
- Grosse, R. (1996). The bargaining relationship between foreign MNEs and host governments in Latin America. *International Trade Journal*, 10(4), 467–499.
- Grossman, S., & Hart, H. (1986). The costs and benefits of ownership: A theory of lateral and vertical integration. *Journal of Political Economy*, 94(4), 691–719.
- Grzywacz, J., Almeida, D., Neupert, S., & Etnner, S. (2004). Socioeconomic status and health: A micro-level analysis of exposure and vulnerability to daily stressors. *Journal of Health and Social Behavior*, 45(1), 1–16.
- Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. *Journal of International Business Studies*, 33(2), 291–308.
- Hakala, K., Norback, P., & Svaleryd, H. (2005). *Asymmetric effects of corruption on FDI Evidence from Swedish multinational firms*. Working Paper No. 641.
- Hart, O., & Moore, J. (1990). Property rights and the nature of the firm. *Journal of Political Economics*, 98(6), 1119–1158.
- Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, 47(1), 153–161.
- Hellman, J., Jones, G., & Kaufmann, D. (2003). Seize the state, seize the day: State capture and influence in transition economies. *Journal of Comparative Economics*, 31(4), 751–773.
- Herrera, A., & Rodriguez, P. (2003). *Bribery and the nature of corruption*. Working paper. Darden School of Business, University of Virginia.
- Husted B. (1999). Wealth, culture, and corruption. *Journal of International Business Studies*, 30(2), 339–360.
- Johnson, S., Kaufmann, D., & Zoido-Lobaton, P. (1998). Regulatory discretion and the unofficial economy. *American Economic Review*, 88(2), 387–392.
- Katila, R. (2002). New product search over time past ideas in their prime? *Academy of Management Journal*, 45(5), 995–1010.
- Kauffman, D., Pradhan, S., & Ryterman, R. (1999). World Bank finds new ways to diagnose corruption symptoms. *Transition*, 10(1), 10–11.
- King, G., Honaker, J., Joseph, A., & Scheve, K. (1999). Analyzing incomplete political science data: An alternative algorithm for multiple imputation. Cambridge: Harvard University, Mimeo.
- Klitgaard, R. (1990). *Tropical gangsters*. New York: Basic Books.
- Kogut, B., & Kulatilaka, N. (1994). Operating flexibility, global manufacturing, and the option value of a multinational network. *Management Science*, 40(1), 123–139.
- Krueger, A. (1990). Government failures in development. *Journal of Economic Perspectives*, 4(3), 9–23.
- Levy, P. (1989). The Waterfront Commission of the Port of New York: A history and appraisal. *Industrial Labor Relations Review*, 42(4), 508–523.
- Martin, A. (1999). The development of international bribery law. *Natural Resources Environment*, 14(2), 1–13.
- Martin, K., Cullen, K., Johnson, J., & Parboteeah, K. (2007). Deciding to bribe: A cross-level analysis of firm and home country influences on bribery activity. *Academy of Management Journal*, 50(6), 1401–1422.

- Mauro, P. (1998). Corruption causes, consequences, and agenda for further research. *Finance Development*, 35(1), 11–14.
- Merton, R. (1964). Anomie, anomia, and social interaction. In M. Clinard (Ed.), *Anomie and deviant behavior*. New York: Free Press.
- Meyer, M., & Zucker, L. (1989). *Permanently failing organizations*. Newbury Park: Sage.
- Milovanovic, M. (2002). *Endogenous corruption in privatized companies*. Working paper.
- Mitchell, W. (1994). The dynamics of evolving markets The effects of business sales and age on dissolutions and divestitures. *Administrative Science Quarterly*, 39(4), 575–602.
- Mitchell, R., & Agle, B. (1997) Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853–886.
- Murphy, K., Shleifer, A., & Vishny, R. (1993). Why is rent-seeking so costly to growth? *AEA Papers and Proceedings*, 83(2), 409–414.
- Neter, J., Kutner, M., Nachtsheim, C., & Wasserman, W. (1996). *Applied linear statistical models* (4th ed.). Chicago: Irwin.
- Newman, D. (2003). Longitudinal modeling with randomly and systematically missing data: A simulation of ad hoc, maximum likelihood, and multiple imputation techniques. *Organizational Research Methods*, 6(3), 328–362.
- Oldenburg, P. (1987). Middlemen in third-world corruption. *World Politics*, 39(4), 508–535.
- Robertson, C., & Watson, A. (2004) Corruption and change: The impact of foreign direct investment. *Strategic Management Journal*, 25(4), 385–396.
- Rodriguez, P., Uhlenbruck, K., & Eden, L. (2005). Government corruption and the entry strategies of multinationals. *Academy of Management Review*, 30(2), 383–396.
- Rose-Ackerman, S. (1975). Economics of corruption. *Journal of Public Economics*, 4(1), 187–203.
- Royston, P. (2005). Multiple imputation of missing value update. *The Stata Journal*, 5(2), 1–14.
- Rubin, D. (1987). *Multiple imputation for nonresponse in surveys*. New York: Wiley.
- Salomon, R., & Shaver, J. (2005). Learning by exporting: New insights from examining firm innovation. *Journal of Economics & Management Strategy*, 14(2), 431–460.
- Sartori, A. (2003). An estimator for some binary-outcome selection models without exclusion restrictions. *Political Analysis*, 11(2), 111–138.
- Shaked, I. (1986). Are multinational corporations safer? *Journal of International Business Studies*, 17(1), 83–106.
- Shaver, M. (1998). Accounting for endogeneity when assessing strategy performance: Does entry mode choice affect FDI survival? *Management Science*, 44(4), 571–585.
- Shleifer, A., & Vishny, R. (1993). Corruption. *Quarterly Journal of Economics*, 108(3), 599–617.
- Siegel, S., & Castellan, N. (1988). *Nonparametric statistics for the behavioral sciences* (2nd ed.). New York: McGraw-Hill.
- Spell, C., & Blum, T. (2005). Adoption of workplace substance abuse prevention programs: Strategic choice and institutional perspective. *Academy of Management Journal*, 48(6), 1125–1142.
- Svensson, J. (2003). Who must pay bribes and how much? Evidence from a cross section of firms. *Quarterly Journal of Economics*, 111, 204–240.
- Tirole, J. (1999). Incomplete contracts: Where do we stand? *Econometrica*, 67(4), 741–781.
- Transparency International. (2006). *Bribe payers index 2006: Analysis report*.
- Uhlenbruck, K., Rodriguez, P., Doh, J., & Eden, L. (2006). The impact of corruption on entry strategy: Evidence from telecommunication projects in emerging economies. *Organization Science*, 17(3), 402–414.
- UNCTAD, World Investment Report 2006. (2006). *Transnational corporations and the internationalization of R&D*. New York: United Nations.

- Vaaler, P., & McNamara, G. (2004). Crisis and competition in expert organizational decision making: credit-rating agencies and their response to turbulence in emerging economies. *Organization Science*, 15(6), 687–703.
- Vaaler, P., & Schrage, B. (2009). Residual ownership, policy stability and financial performance following strategic decisions by privatizing telecoms. *Journal of International Business Studies*, 40, 621–641.
- Vernon, R. (1971). *Sovereignty at Bay: The multinational spread of US enterprises*. New York: Basic Books.
- Wei, S.-J. (2000). How taxing is corruption on international investors? *The Review of Economic Statistics*, 82(1), 1–11.
- Westphal, J. (1999). Collaboration in the boardroom behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42(1), 7–24.
- Zaheer, S. (1995). Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2), 341–363.
- Zaheer, S., & Mosakowski, E. (1997). The dynamics of the liability of foreignness: A global study of survival in financial services. *Strategic Management Journal*, 18(6), 439–464.