Lobbying, Corruption, and Regulatory Constraints: An Analysis of Eastern European Business Associations

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July 2013

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July 8, 2013

Abstract

This paper examines lobbying and corruption as alternative ways of dealing with regulatory obstacles. I propose a model where firms facing a costly regulation can bribe a rule-enforcing bureaucrat to get around it, lobby the government to reduce its impact, or do both. I then use a firm-level dataset of Eastern European enterprises to examine whether firms use membership in a lobby group as a substitute for the bribe payments they make to rule-enforcing bureaucrats. The results indicate that firms who join lobby groups do not stop paying bribes to bureaucrats, and firms more impacted by corruption are no more likely to join a lobby group than their counterparts. On the other hand joining a lobby group increases the likelihood of a firm bribing legislators and other rule makers, suggesting that lobbying introduces the possibility of state capture by allowing firms access to policy makers that they wouldn't otherwise have.

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1 Introduction

Since the fall of the Soviet Union, firms in many post-Soviet countries have been in an ongoing battle against corruption and government interference while operating in an environment of excessive regulation and legal uncertainty. Still the business environment in these countries continues to mature, and a potentially promising development has been the emergence of business associations. These groups provide a number of services to firms, including dispute resolution mechanisms, domestic and international product market information, help with licensing, and perhaps most importantly the lobbying of local and federal governments to achieve outcomes favorable to association members.

Recent literature has explored whether lobbying efforts by business associations can eventually replace bribe payments to bureaucrats. Researchers argue that at the country-level, lobbying should eventually overtake corruption as a mechanism for achieving outcomes in the private sector as economies grow and political and legal institutions develop. A similar argument has been put forward at the firm level, suggesting that as enterprises grow they will forego bribing rule-enforcers (bureaucrats) in favor of lobbying rulemakers; the logic being that the need to bribe bureaucrats to get around complex and unfavorable regulations will disappear once lobbying efforts succeed in making these regulations more firm-friendly. While this outcome appears plausible, as yet there have been no empirical studies attempting to establish a strong causal link between bureaucratic corruption and lobbying by business associations. In addition, while recent studies have examined the relative impact of lobbying and bureaucratic corruption on firm outcomes such as sales growth and political influence, researchers have yet to investigate *political* corruption and whether business associations play a role in state capture through private payments directed at policy makers.

This paper investigates the relationship between lobbying and corruption by first proposing a simple model of a firm dealing with costly government regulations. The model examines the conditions under which the firm will choose to bribe or lobby to deal with the regulations, and offers testable predictions. The empirical analysis begins by examining whether the determinants of bribe payments and lobby group membership

in the former Soviet Union are in fact the ones suggested by the model, and then asks whether bribe payments to bureaucrats have any direct bearing on the decision to join a lobby group. As lobbying is not the sole function of a business association, the analysis also looks at the other services that associations provide in order to determine whether different firms derive different benefits from membership. Finally I ask whether joining a lobby group leads to political corruption by investigating whether firms use business associations to gain access to and bribe rulemakers and other high-level officials.

Utilizing the Business Environment and Enterprise Performance Survey (BEEPS) conducted by the World Bank in 2002 and 2005, I first examine the firm-level determinants of lobby group membership and corruption. Firms that are more harmed by government regulations pay larger bribes and pay bribes more frequently, and are also more likely to be members of business associations. When dealing with regulations the bargaining power of a firm is very important; firms with less bargaining power pay bribes more frequently and are more likely to be association members. Finally the BEEPS data contains nearly 1500 firms that were interviewed in 2002 and again in 2005. I use the panel structure of the data to show that paying bribes does not affect the subsequent decision to join an association, nor does joining an association result in lower bribe payments to rule-enforcing bureaucrats.

Turning the focus to political corruption I find that joining a business association increases the likelihood of a firm making bribe payments to legislators to bring about regulatory change. In other words, not only do association members continue paying bribes to rule-enforcing bureaucrats but they are also more inclined to influence legislation through bribe payments to rulemakers. However not all business association members are equally likely to engage in political corruption. Firms that value the lobbying and dispute resolution services provided by associations are in fact more likely to bribe legislators, but other firms more concerned with accrediting standards or domestic and international product market information are not. I conclude that business associations serve a multitude of functions, many of which are unrelated to political corruption. However they can also act as a gateway to accessing and bribing rulemakers for firms that lobby the government or are involved in regulatory disputes.

The analysis concludes that both regulatory conditions and firm-level characteristics influence decisions regarding bribery and lobby group membership. Though firms do not join business associations simply to avoid paying bribes, the conditions underpinning both decisions are certainly interrelated. Furthermore some firms take advantage of the access to public officials granted by business associations and bribe legislators to affect favorable outcomes. The paper proceeds as follows: Section 2 provides background on business associations and lobby groups in Europe and elsewhere and discusses relevant theoretical and empirical literature. Section 3 proposes a simple model of lobbying and corruption. Section 4 presents the data, while section 5 discusses the empirical strategy and presents the results. Section 6 concludes.

2 Business Associations and Lobby Groups: Theory and Evidence

Many post-Soviet countries share a number of economic and regulatory problems that require collective action on the part of private actors to facilitate change. These include complicated and frequently changing legal codes, regulatory obstacles that increase the costs of starting and operating businesses, few reliable dispute resolution mechanisms, and of course bureaucratic corruption. The emergence of business associations in the late 1990's and early 2000's can be attributed to the desire of businesses to improve many of these conditions. Country-specific case studies have shown that associations targeting specific obstacles can have significant success in promoting efficiency and precipitating regulatory change, including expediting business licensing and registration, providing firms with legal services to combat predatory government practices, and even providing governments with the necessary impetus to undertake large-scale endeavours such as macroeconomic reform (Sullivan, 2007; Duvanova, 2006; Doner & Schneider, 2000). Empirical analyses utilizing surveys of business associations and association members have provided additional support for the positive influence of these organizations. Analyses of Russian associations show that membership offers benefits such as dispute resolution,

consulting, and other services, and that relative to non-members, members are quicker to adopt new technologies, are more likely to import/export, and have higher levels of investment (Pyle, 2005; Pyle, 2006).

The lobbying component of business associations cannot be overlooked, and the assessment of lobby groups as rent-seeking organizations is a constant theme in the literature. Much of the theoretical research assumes lobbying is simply a transfer of resources from one group to another, so that the distinction between lobbying and political corruption is nebulous at best. [1] Deliberate attempts to separate out the effects of lobbying and corruption in a theoretical setting are relatively uncommon, but studies that have done so draw the distinction on the basis of information provision to politicians vs. direct contributions (Bennedsen & Feldmann, 2001) or in the transfer cost differences of the two activities (Begovic, 2005). A unique recharacterization of the distinction between lobbying and corruption is presented by Harstad and Svensson, who define lobbying as any activity (including a transfer of resources) that aims to change existing policy, whereas corruption (in the form of bribery) is a tool to get around rules and regulations (Harstad & Svensson, 2011). They model this relationship in the context of firms paying bribes to avoid regulatory hurdles; bureaucrats cannot commit to not asking for higher bribes in the future, and as bribes are rising in firms' investment levels they find that continuing to bribe rule enforcers becomes relatively less desirable than joining a lobby group to change existing regulations. The result at the micro-level is that small firms bribe whereas large firms lobby.

A small empirical literature has sprung up alongside the Harstad and Svensson model. Utilizing the 2000 World Business Environment Survey, Bennedsen and Feldmann find that large firms have more political influence relative to smaller ones. In addition they perceive corruption to be less of a problem and pay bribes to "get things done" less frequently. They also find benefits to political influence in the form of higher sales and more government subsidies (Bennedsen & Feldmann, 2009). Campos and Giovannoni make use of the 2002 Business Environment and Enterprise Performance Survey, and while find-

[1] See Grossman & Helpman (1994), Coate & Morris (1999), Yalcin & Damania (2005). Surveys of the theoretical literature on lobbying include Grossman & Helpman (2002) and Austen-Smith (1997)

ing no direct correlation between bureaucratic corruption and lobby membership their analysis does conclude that large firms are associated with lobbying while small ones are more likely to bribe. In addition they find that lobbying increases both political influence and sales growth whereas corruption does not (Campos & Giovannoni, 2008). However their study suffers from using association membership and lobbying interchangeably, as they do not examine other association functions. They also do not distinguish between bureaucratic and political corruption, and in doing so misrepresent their bribe payments variable in the survey. The most recent study to examine the lobbying and corruption relationship is by Sukiassyan and Nugent. They employ both the 2002 and 2005 BEEPS surveys, as well as the panel of firms surveyed in both years. Exploring primarily firm outcomes they find that association membership increases not only sales growth but also growth in exports and R&D. Most importantly they discover that lobbying has the smallest effect on firm outcomes, with other association benefits such as product market information and accreditation standards being more salient. Like previous studies they find that bribe payments do not affect firm performance (Sukiassyan & Nugent, 2011).

In many of these empirical papers there are potential problems arising from association membership and bribe payments being endogenous to firm outcomes such as political influence and growth. While the latest studies acknowledge these concerns, they are nonetheless limited in their ability to convincingly show causality. This paper contends with endogeneity concerns by making use of the panel structure of the data, examining business association membership dynamics and their effect on relevant outcome variables. In addition I extend the literature in multiple directions, both by proposing a new theoretical framework to study the relationship between lobbying and bureaucratic corruption, and by examining the link between lobby group membership and political corruption.

3 Two-Period Model of Corruption & Lobbying

I propose a simple two-period model to explore a firm's options in dealing with costly government regulations, the results of which will be further explored in the empirical

analysis. A firm faces regulations that cost it c per unit of sales each period. The total regulatory cost in a period is $R = cS$, where S is sales.[2] A firm can either bribe a rule-enforcing bureaucrat to get around the regulations, lobby the government to reduce the regulatory burden, or do both. Firms choose the course of action that maximizes the sum of their two period payoffs. The following section describes a firm's actions and payoffs in each period.

3.1 Strategies & Payoffs

3.1.1 Period 1

In the first period the firm faces a regulatory cost of $R_1 = cS_1$. It can either bribe a bureaucrat to eliminate R_1 entirely, lobby the government to reduce the cost of regulations in the *second* period while still paying R_1 in the current period, or lobby the government *and* pay a bribe in the first period.[3] The first period payoffs are as follows:

$\pi^1_{bribe} = S_1 - b_1$ where b_1 is the first period bribe payment to the bureaucrat

$\pi^1_{lobby} = S_1 - L - R_1$ where L is the amount spent on lobbying efforts

$\pi^1_{lobby+bribe} = S_1 - L - b_1$

If the firm chooses to bribe in the first period, it will negotiate the bribe amount with the bureaucrat. It will never pay more than the cost of the regulation, R_1. Similarly the bureaucrat will not accept anything less than the expected risk of soliciting the bribe. I assume the expected penalty to the bureaucrat is $\theta\alpha b$, where θ is the probability of being caught and $\alpha > 1$ is the severity of the penalty as a function of the bribe amount received. Therefore $b \in [\theta\alpha b, R_1]$. The value of b is determined in a Nash bargaining

[2] This can describe many types of regulations. Tax regulations are directly tied to a firm's profitability. Production licenses, environmental or labor regulations are a function of production and output and therefore tied to sales as well. Though the per-unit cost of regulation is the same for firms of different sizes, in this setup larger firms will pay more in total.

[3] I assume that lobbying efforts take one period to succeed in reducing the burden of regulation.

framework assuming the bureaucrat has a relative bargaining power of $\beta \in (0, 1)$. The bribe amount is then determined through the following optimization problem:

$$\max_{b_1} (b_1 - \theta\alpha b_1)^{\beta}(R_1 - b_1)^{(1-\beta)}$$

I assume $\theta\alpha < 1$ so the bureaucrat will always find it in their interest to negotiate some bribe amount. Plugging $R_1 = cS_1$ into the above maximization problem and solving for the optimal bribe, we have that $b_1 = \beta cS_1$. We can immediately see that lobbying and bribing in the first period strictly dominates lobbying and paying the full cost of the regulation. Whether lobbying and bribing dominates only bribing will depend on how lobbying in period 1 affects regulations in period 2, which is what I turn to now.

3.1.2 Period 2

The firm has sales of $S_2 = (1 + g)S_1$, where g is the growth rate of the firm (and can be negative). It again faces a regulation, R_2. If the firm lobbied in the first period, the cost of the regulation in period 2 is reduced based on the amount spent on lobbying.[4] The second period cost of regulation is defined as follows:

$$R_2 = cS_2(1 - \tfrac{\delta L}{1+L})$$

Where $\delta \in (0, 1]$ represents the extent to which the regulatory environment can be improved through lobbying.[5] This setup assumes that there are decreasing returns to lobbying, with each additional unit of L leading to a smaller reduction in R_2.

In the second period the firm can either choose to pay R_2 or again bribe a bureaucrat to sidestep it. If it chooses to bribe, the bribe amount b_2 is again determined through Nash bargaining:[6]

$$\max_{b_2} (b_2 - \theta\alpha b_2)^{\beta}(R_2 - b_2)^{(1-\beta)}$$

[4]Lobbying effectiveness may also depend on other firms' actions. Introducing an additional parameter to represent other firms' contributions to lobbying efforts does not affect the main results of the model. As this feature of lobbying is not the primary focus of the model, it is not presented here.

[5]For example, $\delta = 0.5$ indicates that even an infinite amount spent on lobbying can only cut the regulatory cost in half. The intuition is that lobbying can improve the regulatory environment and be less costly to firms, but some regulations will always exist.

[6]This form of the bargaining solution is also used in Harstad & Svensson (2011).

Plugging in for R_2 and solving, we have:

$$b_2 = \frac{\beta c S_1(1+g)(L-\delta L+1)}{1+L}$$

To determine whether the firm chooses to pay the regulation or again bribe the bureaucrat we need to compare b_2 and R_2. Some algebra reveals that bribing will alway be preferable to paying R_2 so long as $L > \frac{\beta-1}{\beta(\delta-1)+1}$. This fraction is always negative given the domain of β and δ. Therefore a firm will choose to bribe in period 2 irrespective of its period 1 decision regarding L.

It is interesting to note that a lobby amount $L > 0$ will always reduce b_2.[7] This is because lobbying reduces the period 2 regulatory burden on the firm, which then pushes down the bribe it is willing to pay to avoid what is left of the regulation. However lobbying can only impact the size of the bribe and not whether a firm chooses to pay a bribe. Even when $L = 0$ we have that $b_2 = \beta c S_1(1 + g)$, which is positive so long as $g > -1$ (the firm is still operating). Likewise, $\lim_{L\to\infty} \frac{\beta c S_1(1+g)(L-\delta L+1)}{1+L} = \beta c S_1(1+g)(1-\delta)$, indicating that even infinitely large lobbying efforts still lead to positive equilibrium b_2 so long as $g > -1$ and $\delta < 1$.[8]

3.2 Optimal Lobbying and Model Equilibrium

Given that bribing is a best response in both periods, we are left with two sets of strategies: *{bribe, bribe}* (bribe in both periods) and *{lobby+bribe, bribe}* (both lobby and bribe in the first period and bribe in the second period). To compare these two strategies we must determine whether a firm can justify paying L in period 1 to reduce the bribe payment it makes in period 2. The two-period payoffs for these strategies are as follows:

$$\pi_{bribe,bribe} = S_1 - b_1 + S_2 - b_2 = S_1 - \beta c S_1 + (1 + g)S_1 - \beta c S_1(1 + g)$$

$$\pi_{lobby+bribe,bribe} = S_1 - b_1 - L + S_2 - b_2 = S_1 - \beta c S_1 - L + (1 + g)S_1 - \frac{\beta c S_1(1+g)(L-\delta L+1)}{1+L}$$

[7] This can be seen from taking the derivative of b_2: $\frac{\partial b_2}{\partial L} = \frac{1-\delta}{1+L} - \frac{L-\delta L+1}{(1+L)^2} < 0 \,\forall\, \{L > 0,\, \delta \in (0, 1]\}$

[8] Even at $\delta = 1$, b_2 only approaches 0 in the limit.

The first step is to solve for the equilibrium L if the firm chooses to lobby:

$$\max_{L} \pi_{lobby+bribe,bribe} = \frac{\beta c S_1(1+g)\delta}{(1+L)^2} - 1 \rightarrow L^* = \sqrt{\beta c S_1(1+g)\delta} - 1$$

Clearly lobbying is only an option if $L^* > 0$. If the model parameters are such that the optimal lobby amount is negative, a firm would simply not lobby and choose *{bribe, bribe}*. Therefore $\sqrt{\beta c S_1(1+g)\delta} > 1$ is a condition that must be met in order for a firm to choose *{lobby+bribe, bribe}*. Holding other parameters constant, we see that larger firms (in terms of sales or sales growth) are more likely to lobby than smaller ones, and the amount they choose to spend on lobbying is also a function of their size.

As there are decreasing returns to lobbying, there is an upper bound value of L at which lobbying is no longer justified. To complete the characterization of the equilibrium it is necessary to check that $L^* < L_{cutoff} \; \forall \; L > 0$. First we find L_{cutoff}:

$$\pi_{lobby+bribe,bribe} - \pi_{bribe,bribe} = 0 \; \rightarrow L_{cutoff} = \beta c S_1(1+g)\delta - 1$$

Comparing L^* and L_{cutoff} it is obvious that the equilibrium lobby amount will never exceed the upper bound value. Therefore we can conclude that a firm will choose *{lobby+bribe, bribe}* so long as $L^* > 0$, and *{bribe, bribe}* otherwise.

3.3 Discussion

The model equilibrium provides a number of testable predictions. It first indicates that lobbying is a function of the size of the firm. If a firm is too small in period 1, or if it does not grow enough by period 2, then the benefit of lobbying will not justify the cost. This is because of the assumption that the regulatory cost is a function of firm size, so the proportional reduction in R_2 as a result of lobbying will be significantly smaller if a firm's regulatory burden is low to begin with.

The second important result is that bribing a bureaucrat is always a best response. Unlike Harstad & Svensson (2011), this model suggests that as a firm grows it does not switch from bribing to lobbying but rather engages in both activities simultaneously. This is a more intituitive outcome because lobbying can never completely eliminate all

regulatory costs. Even in an effective and manageable regulatory environment, firms may still choose to bribe rule enforcers to bypass certain expensive regulatory requirements.

The size of the bribe payment is determined by the total regulatory cost. Larger firms are willing to pay more because the benefit of avoiding the regulation is greater. However c, the per-unit cost of the regulation, can be thought of as the relative burden under different regulatory regimes. Bribe payments are also increasing in c, indicating that firms who find the regulatory environment to be a greater obstacle will be paying larger bribes.

Finally there is an interesting interplay between bribing and lobbying. To the extent that lobbying reduces a firm's regulatory burden it will also reduce the bribe payment that the firm is willing to make. Nevertheless, even when no lobbying occurs the firm will still bribe (again bribing is always a best response). Similarly bribing does not directly affect the decision to lobby. However no lobbying will occur when β is low because the firm has enough bargaining power to pay a very small bribe, eliminating the need to lobby. The model therefore suggests that bribing and lobbying only impact each other indirectly, and can be used concurrently depending on the characteristics of the firm and the regulatory environment.

4 Data

To analyze lobbying and corruption at the firm-level I utilize the 2002 and 2005 Business Environment and Enterprise Performance Survey (BEEPS) conducted by the World Bank and EBRD. Local organizations administered the survey in a number of Eastern European and Central Asian countries through face-to-face interviews with firm representatives. The analysis uses both the full dataset, containing 16753 firm-level observations across 26 countries, as well as a subset of the data containing only those firms who were surveyed in both years, creating a two-period panel of 1446 firms for a total of 2892 observations. Table 1 presents the countries included in the survey and the associated number of observations, while Table 2 describes the outcome and explanatory variables relevant to the analysis.

The survey data contain two key sets of variables concerning corruption and lobby group membership. Bureaucratic corruption data is encompassed in two variables:

pay_bribe and *log_total_bribe*. The former is a binary variable that takes a value of 1 if a firm reports having paid a bribe to "get things done" with regard to customs, licenses, or other services that bureaucrats provide, and 0 otherwise; the latter is the log of the total bribe amount (in dollars) that the firm has paid in all interactions with the bureaucracy.[9] Data on *pay_bribe* is available for both survey years, but *log_total_bribe* is only available for 2005.

Lobby group membership is determined by asking firms whether they are a member of a business association. Association membership status is available for both survey years. For the panel data a combination of 2002 and 2005 membership status allows for firms to be segmented into groups with regard to membership in each period: in-in, in-out, out-in, out-out. From this I derive two binary variables, *join_association* (out-in vs. out-out) and *leave_association* (in-out vs. in-in), allowing me to analyze the characteristics of firms that join or leave associations between survey years. These variables capture the dynamics of membership and allow the empirical models to tackle some endogeneity concerns by looking at the initial 2002 characteristics of firms that eventually join or leave an association, and then examining the change in these characteristics by 2005.

While data on bribe payments deals only with bureaucratic corruption, some survey questions provide sufficient information to gauge the firms' involvement in higher-level corruption such as unofficial payments to legislators to affect votes, payments to judges to affect court decisions, and illegal contributions to political parties. It is this set of variables that the analysis will utilize when examining whether business association membership facilitates higher-level corruption by opening the door to a previously inaccessible level of government. For this group of variables the question is asked in the following way:

> *In many countries, firms are said to give unofficial, private payments or other benefits to public officials to gain advantages in the drafting of laws, decrees, regulations, and other binding government decisions. To what extent have the following practices had a direct impact on your business: (a) Private payments or other benefits to Parliamentarians to affect their votes (b) Private payments or other*

[9] *log_total_bribe* is only defined for those firms that reported making positive bribe payments.

benefits to Government officials to affect the content of government decrees (c) Private payments or other benefits to judges to affect the decisions of court cases (d) Illegal contributions to political parties and/or election campaigns to affect the decisions of elected officials.

The responses are ordinal on a scale of 0-4 from no impact to decisive impact. Though the survey makes a point of not directly ask firms their corruption activities with regard to high-level officials, this is clearly the intention of the question. On average over 80% of respondents claimed that these practices had no direct impact on their business, suggesting that most firms do not engage in political corruption.

A second set of variables deals with regulatory obstacles. The firm reports on a scale of 0-4 how much of an obstacle different types of regulations are to daily operations and growth. The obstacles include tax regulations, customs and trade regulations, labor regulations, and license and permit acquisition. An additional variable asks firms to estimate what percent of senior management's time is spent dealing with the aforementioned regulatory obstacles.

Firm characteristics are also relevant to the analysis. Though sales data is unavailable for 2002, I proxy for sales with firm employment. The 2005 pairwise correlation between log(employment) and log(sales) is 0.8, indicating that employment is a suitable proxy. Other firm characteristics, including *exporter*, *pct_foreign*, *new_product*, and *pct_govt_owned*, will measure different aspects of the bargaining power relationship between bureaucrats and firms. Government ownership of the firm is particularly important in that it may indicate the existence of personal ties between the company and the government. This may result in the firm having certain advantages when it comes to dealing with regulations.

Finally, the majority of studies utilizing the BEEPS data have used business association membership and lobbying interchangeably. However associations can serve multiple functions and provide many benefits to members. The BEEPS survey asks firms to rate the six association services described in Table 2 on a scale of 0 to 4 from being of no value to the firm to being of critical value.[10] Looking at the mean values of each category I find

[10]The categories are *no value*, *minor value*, *moderate value*, *major value*, and *critical value*

that firms actually identify lobbying as one of the least important association functions. Firms cite product market information, information on government regulations, and help with certification and accreditation as the most valuable services provided to them.

Table 3 presents pairwise correlation coefficients for the main outcome and explanatory variables. For both survey years the correlation between paying bribes to bureaucrats and being a member of a business association is extremely low. In fact, the 95% confidence interval for this correlation includes 0 for both years, indicating that we cannot reject that the true correlation between these variables is zero. A few other correlations of note include the relatively large positive correlations between association membership, age of the firm, number of employees, and export status. Paying bribes to bureaucrats is negatively correlated with government ownership and positively correlated with involvement in political corruption. In the following section I further explore the relationship between government regulations, assocation membership and corruption.

5 Empirical Framework and Results

5.1 Regulations, Corruption, and Lobby Group Membership

I first test the theoretical model's prediction that bribe payments are more prevalent among firms that are most affected by government regulations. I use the full survey dataset to estimate the effect of different types of regulations on both the prevalence and magnitude of bribe payments:

$$P(Pay\_Bribe_{i,t} = 1) = \Phi(\beta\, Regulations_{i,t} + \gamma x_{i,t} + v_i + w_t)$$

$$Log\_Total\_Bribe_{i,2005} = \beta\, Regulations_{i,t} + \gamma x_{i,2005} + v_i$$

The first model is a probit regression that examines the determinants of paying bribes, while the second is a linear regression that looks at the magnitude of bribe payments in 2005.[11] $Regulations_{i,t}$ is the set of ordinal regulatory variables described in Table 2. They enter the regressions both individually and together as covariates. $x_{i,t}$ is a vector of firm

[11] As previously mentioned, data on total bribe payments is only available for 2005.

characteristics including *regulations_pct_time, new_product, log_age, log_employees, pct_govt_owned, pct_foreign, exporter* and *wdi_gdpc*. v_i is a vector of time-invariant control variables including the industry and country in which the firm operates, while w_t is the year effect. The results are presented in Tables 4 and 5.

Models 1 through 4 of Table 4 indicate that firms more affected by each of the four regulatory obstacles are more likely to pay bribes to bureaucrats. When including them all as covariates in model 5, I still find that all but the reported effect of labor regulations are significantly associated with an increased likelihood of paying bribes. In addition, firms that spend more time dealing with government regulations are also more likely to pay bribes. Larger companies, as measured by employment, are less likely to bribe than smaller ones. However the magnitude of the effect is economically insignificant, as a doubling of the number of employees leads to a less than one percent reduction in the probability to pay bribes in all model specifications. Note also that government owned firms are less likely to pay bribes.

Table 5 looks at the magnitude of bribe payments. Here we see that burdensome regulations not only increase the likelihood of paying bribes but also the size of the payment. In addition we now have the expected positive sign on employment. The effect of employment on the bribe amount is fairly substantial: a 10% increase in employment is associated with a 7.5% increase in the size of the bribe. Finally, though government ownership reduces the likelihood of paying a bribe it does not affect the size of the payment if one is made. This suggests that government owned firms may be able to secure certain services without going through the regular bureaucratic channels; however when a bribe needs to be paid, even government ownership does not alter the bargaining power relationship between bureaucrat and firm.

I now turn to the determinants of lobby group membership. Recall from the theoretical model that the decision to lobby is largely a function of the size of the firm. In addition the model predicts that firms facing the most regulations will gain the most benefit from lobbying. Finally lobbying becomes less useful if the firm can pay a cheap enough bribe, which again depends on its bargaining power. To test these predictions I estimate the following probit model:

$$P(Firm\_Association_{i,t} = 1) = \Phi(\gamma x_{i,t} + v_i + w_t)$$

Since the theory suggests that bribing and lobbying will share many of the same determinants, I employ most of the explanatory variables from the previous analysis.[12] The results are presented in Table 6. Larger firms are more likely to be association members, as are those that spend more time dealing with government regulations. Exporters, foreign-owned firms, and firms that have recently introduced new products are also more likely to be members. From Table 4 we see that these firms are also more likely to pay bribes. It may be that they face additional regulations which increase their need to bribe, or simply lack the bargaining power to avoid paying. Consequently they have more reason than other firms to be lobby group members and attempt to improve the regulatory environment. Finally government owned firms are less likely to be members. Earlier we saw that these firms are also less likely to pay bribes. It is reasonable to conjecture that these firms simply don't face the same costly regulations as their counterparts in the private sector. Without a significant regulatory burden, they need neither bribe nor lobby.

5.2 Panel Analysis of Lobbying and Bribes

The previous analysis has tested the predictions of the theoretical model with regard to the determinants of bribing and lobbying, albeit in a static setting. However the model suggests that there are dynamics in this relationship, with period 1 actions affecting period 2 outcomes. For example the amount of the bribe paid in period 2 may depend on how effective period 1 lobbying efforts are at improving the regulatory environment. Likewise lobbying is indirectly related to bribe payments through the bargaining power of a firm. If a firm can negotiate a low enough bribe in period 1 then lobbying becomes unnecessary.

Some of these relationships have been uncovered in the pooled regression models presented in the previous section. However, by making use of the panel of firms that

[12]The full set of regulatory variables is not tested here, but I do include total time spent dealing with regulations. However, when the other regulatory variables are included in the model they are positively correlated with association membership (as we would expect).

were interviewed in both 2002 and 2005 I can establish whether joining a lobby group between survey periods affects a firm's future decision to bribe, and whether a firm's initial exposure to bureaucratic corruption affects its subsequent decision to join a lobby group. An analysis of the panel data can therefore examine some of the dynamics of bribing and lobbying suggested by the results of the theoretical model, and can indicate whether or not a direct causal link between corruption and lobbying actually exists.

5.2.1 Do Bribe Payments Affect the Decision to Lobby?

I first analyze the decision to join a lobby group between 2002 and 2005 as a function of the bribes a firm pays to bureaucrats in the first period, controlling for other firm characteristics. I again employ the probit model but define it as follows:

$$P(Join\_Association_i = 1) = \Phi(\beta\, Pay\_Bribe_{i,2002} + \gamma x_{i,2002} + v_i)$$

The dependent variable takes a value of 1 if a firm joins a lobby grouped between 2002 and 2005, and 0 if it remains a non-member. This limits the sample to only those firms that were not members of lobby groups in 2002. The regression model determines whether bribe-paying firms are more or less likely to join a business association, as well as whether other firm characteristics affect the subsequent decision to join over the following three years. Because of the short (two-period) panel this approach is preferred over a fixed effects regression or a first-difference model that uses association membership status as the dependent variable. Since the majority of variation in the data is cross-sectional rather than across time, the "within" estimator of a fixed effects model is likely to be inconsistent and parameter estimates from these models will have inflated standard errors; conversely this approach does not suffer from those drawbacks. I present the regression results in Table 7.

Here we see that the decision to join a lobby group is unaffected by whether or not a firm pays bribes in 2002. We also see that larger firms are more likely to join between survey years. Foreign firms are also more likely to join, again indicating that foreign companies may face additional regulatory constraints vis-a-vis domestic companies and

can benefit more from lobbying. The other bargaining power variables have lost significance as compared to the full-sample regression. This is very likely due to the panel data having a considerably smaller sample size, though it is also possible that the determinants of lobby group entry are not entirely the same as the characterstics of an "average" member firm.

In sum the results of this regression suggest that even though lobbying and corruption may be two means to the same end, the decision to lobby is not directly dependent on whether or not a firm pays bribes. Of particular relevance to the analysis of this dataset is that lobbying by business associations may be a quasi-public good, where efforts to improve the regulatory environment can potentially impact all firms in an industry and not just association members. Non-members might therefore benefit without having to join a lobby group themselves, regardless of how frequently they pay bribes.

5.2.2 Does Lobby Group Membership Impact Future Bribes?

Though the decision to bribe does not affect the decision to join a lobby group, it is still possible that lobbying can reduce the need to bribe. Again, the theoretical model predicts that equilibrium bribes in period 2 are falling in lobbying efforts in period 1 because a reduction in the regulatory burden will subsequently reduce the maximum bribe a firm is willing to pay. I test this model prediction by determining whether joining a lobby group after 2002 affects bribe payments in 2005. I look at both the probability of paying a bribe as well as the total bribe amount paid:

$$P(Pay\_Bribe_{i,2005} = 1) = \Phi(\beta_1 \, Join\_Association_i + \beta_2 \, Pay\_Bribe_{i,2002} + \gamma x_{i,2002} + v_i)$$

$$Log\_Total\_Bribe_{i,2005} = \beta \, Join\_Association_i + \gamma x_{i,2002} + v_i$$

Both the probit and linear regression models look at the effect of joining an association on subsequent bribe payments, controlling for initial 2002 firm characteristics. For the probit I include whether or not a firm paid a bribe in 2002 as an additional control variable. I am unable to control for *Log_Total_Bribe* in 2002 because the data is unavailable. The results are presented in Table 8.

Neither the frequency nor magnitude of bribe payments in 2005 is significantly different between firms that join lobby groups and those that remain non-members. Here the predictions of the theoretical model do not hold up, yet this is not entirely surprising. The theory predicts that lobbying will reduce future bribe payments to the extent that it is successful in improving regulatory conditions. Some degree of success is guaranteed in the model (albeit with reducing marginal returns to lobbying), but this may not be the case in reality. Lobby groups may be unsuccessful in bringing about regulatory reform thus necessitating larger bribe payments. In addition three years may be an insufficient amount of time to improve conditions. Finally we must consider that some business associations simply lobby less than others and instead direct their efforts to the provision of other services. This last point is the focus of the following section.

5.3 Services Provided by Business Associations

As in previous studies, this paper has thus far used lobbying interchangeably with association membership. However there are many other services that business associations offer. As mentioned earlier the firms in the BEEPS data actually value lobbying to a lesser degree than product market and regulatory information or accreditation and licensing services. But do all firms seek the same benefits, or are certain firm characteristics associated with one particular association function or another? This issue is explored empirically using the six questions regarding the value of different association services described in the data section. Using the full-sample survey data I estimate an ordered probit model of the following form:

$$P(Value_{i,t} = j) = \Phi(\mu_j - \gamma x_{i,t} - v_i - w_t) - \Phi(\mu_{j-1} - \gamma x_{i,t} - v_i - w_t)$$

$Value_{i,t}$ is the vector of different association services that firms can rate. The probability of observing an ordinal response category j for a particular service is a function of the underlying latent continuous variable $Value^*_{i,t}$, itself a function of the regressors, being within empirically determined threshold values μ_j and μ_{j-1}. $x_{i,t}$ is again the vector of explanatory variables used in the previous analyses, but with one important addition: *impact_bribe_legislators*, the measure of a firm's involvement in political corruption, is

now included as a covariate. v_i is again the vector of fixed effects and w_t is the year effect. The results are presented in Table 9.

As expected all firms do not value every association service equally. Firms burdened by customs and trade regulations value multiple services, however they value international product market information to a significantly greater degree than the rest. Similarly dealing with labor regulations is associated with valuing informational services on government regulations, while licensing and permit problems are associated with valuing dispute resolution mechanisms. Firms recently introducing new products appear to value every single association service, as do larger firms. However in the case of company size the parameter estimate is biggest with regard to lobbying services, supporting previous results that large firms do in fact lobby more frequently. Foreign firms value lobbying services while exporters are concerned with international product market information and accreditation standards.

Of particular interest is that *impact_bribe_legislators* is positively and significantly associated with every association service. That is, firms engaging in political corruption appear to be interested in all of the services a business association offers. However the magnitude of the parameter estimate in the lobbying and dispute resolution models is much larger than for any other association service, suggesting that political corruption is most closely linked to these two functions. This result implies a close relationship between lobbying and political corruption within the framework of business association membership, and will be further examined in the next section.

5.4 Do Business Associations Facilitate Political Corruption?

The distinction between lobbying and political corruption has always been tenuous. In both the Harstad and Svensson framework and the model presented here, lobbying is defined as a lump-sum transfer from the firm to the government without much thought as to where the money is going. In the United States rules have been put in place to ensure the legality and legitimacy of lobbying activities, however the same can hardly be said of lobbying in other countries. Lobbying regulations in the European Union are more concerned with granting access to policy makers than they are with transparency,

and amount to little more than a system of voluntary registration and guidelines for conduct (Lehmann & Bosche, 2003; Holman & Luneburg, 2012). In Eastern Europe few countries have lobbying regulations of any kind, though recent scandals have created the impetus for enacting new laws, as was the case in Hungary and Poland (Kalnins, 2011). The question is then whether lobbying activities by business associations increase the likelihood of bribe payments to legislators in order to receive favorable treatment.

5.4.1 Political Corruption After Joining an Association

This section will measure the effect of association membership on a firm's involvement in political corruption activities by determining whether firms that joined an association between 2002 and 2005 became more impacted by bribe payments to legislators relative to firms that remained non-members. As such the outcome variable of interest is *Impact_Bribe_Legislators* in 2005. It is an ordinal variable from 0 to 4, where 0 indicates that a firm is not impacted by bribes to legislators while 4 indicates that it is decisively impacted. I estimate an ordered probit regression of the following form:

$$P(Impact\_Bribe\_Legislators_{i,2005} = j) =$$
$$\Phi(\mu_j - \beta_1\, Join\_Association_i - \beta_2 Impact\_Bribe\_Legislators_{i,2002} - \gamma x_{i,2002} - v_i) -$$
$$\Phi(\mu_{j-1} - \beta_1\, Join\_Association_i - \beta_2 Impact\_Bribe\_Legislators_{i,2002} - \gamma x_{i,2002} - v_i)$$

The main explanatory variable is *Join_Association* and the model controls for the 2002 impact of bribing legislators as well additional 2002 firm characteristics and fixed effects. Table 10 presents these results. The regression results indicate that firms who joined an association between 2002 and 2005 are signifcantly more likely to see an increase in their political corruption activities relative to those that remained non-members. In addition firms that were already bribing legislators in 2002 are are likely to continue to do so in 2005. That I observe significance while controlling for the initial corruption score and other firm characteristics indicates that the increase in political corruption activities is in fact the result of joining an association. But is it in fact the lobbying efforts of these associations that makes bribing legislators so appealing, or do associations exert a corrupting influence on all members regardless of whether they value lobbying or not?

5.4.2 Political Corruption and Association Services

When looking at the services provided by business associations the results suggested that political corruption was most strongly associated with lobbying and dispute resolution. To more formally investigate this point I again use the full sample survey data to estimate an ordered probit model similar to the one presented in section 5.3, but now use *Impact_Bribe_Legislators* as the dependent variable and the association services as regressors. The model is as follows:

$$P(Impact\_Bribe\_Legislators_{i,t} = j) =$$
$$\Phi(\mu_j - \beta\, Value_{i,t} - \gamma x_{i,t} - v_i - w_t) - \Phi(\mu_{j-1} - \beta\, Value_{i,t} - \gamma x_{i,t} - v_i - w_t)$$

$Value_{i,t}$ is again the vector of association services. These services enter the model both individually and collectively creating multiple model specifications. The results are presented in Table 11, and indicate that while multiple association services are positively correlated with an increased impact of bribing legislators, when including them as covariates (specification (7) in the table) only lobbying and dispute resolution remain significant.

The association services variables are highly correlated, which suggests that multicollinearity may be causing a reduction in their statistical significance when they enter the model as covariates. However even individually we see that lobbying and dispute resolution have the strongest correlation with bribing legislators based on the size of the parameter estimates alone. As interpreting the magnitude of an effect is difficult by simply looking at an ordered probit regression table, I also present the predicted probabilities of different levels of *Impact_Bribe_Legislators* at different valuations of lobbying and dispute resolution.

What is most apparent is that, of the services provided by business associations, lobbying and dispute resolution are clearly the two areas where political corruption can play the most significant role. Firms can either bribe legislators to affect favorable regulatory change or other lawmakers to gain an upper hand in disputes with regulators and competing companies.

6 Conclusion

Corruption and lobbying are frequently two means to the same end, and previous studies have documented the relative success of each approach. This paper examines when and why firms choose either strategy, and how the two are related in contending with government regulations. I propose a model where regulations can be overcome by either bribing a bureaucrat responsible for their implementation or lobbying the government to bring about regulatory reform. I show that paying bribes is always part of an optimal strategy, and that the bribe amount is increasing in the cost of the regulation and decreasing in the bargaining power of the firm. Whether a firm chooses to lobby in addition to paying bribes depends on several factors. In particular, larger firms are more likely to lobby than smaller ones because they benefit the most from regulatory reform, while firms with the most bargaining power are able to pay a low enough bribe to eliminate the need for lobbying altogether.

Using the 2002 and 2005 BEEPS dataset of Eastern European enterprises I test the predictions of the theoretical model by analyzing the firm-level determinants of lobbying and corruption. I find that both the magnitude and frequency of bribe payments to bureaucrats is increasing in the regulatory burden a firm faces. In addition firms with less bargaining power, such as exporters or foreign owned companies, are more likely to pay bribes. These same firms are also more likely to be members of business associations, which is consistent with the model prediction that lobbying becomes increasingly more useful when firms have less bargaining power and face large regulatory costs. Finally I find that large firms are in fact more likely than smaller ones to be members of business associations.

Though lobbying and bribe payments depend on many of the same variables, I do not find a direct causal link between the two activities. Examining a subset of firms that were interviewed in both survey years I find that bribe paying firms are no more likely to join a business association between 2002 and 2005 than firms that do not pay bribes; likewise firms do not stop paying bribes to bureaucrats after joining an association. As suggested by the theory, the decision to engage in either activity appear to be more a

result of regulatory constraints than anything else. It may be that successful lobbying can improve regulations to the point where bribe payments fall in the future. That this is not borne out in the data may suggest that lobbying efforts were unsuccessful between 2002 and 2005, or that these countries required more time to enact the appropriate reforms.

Finally I find that firms joining business associations are more likely to bribe rule-makers than those that remained non-members. Involvement in political corruption is particularly related to how interested a firm is in association lobbying and dispute resolution services. Since lobby groups grant access to politicians, it is not unreasonable to think that some firms may take advantage of this opportunity and channel their bribes to higher-level officials to either speed up the pace of regulatory reform or gain other advantages. Likewise when firms are in a dispute with competitors or regulators, bribing the right person may go a long way towards improving their situation.

Bribing and lobbying are two important weapons in a firm's arsenal, and their use is dependent on regulatory conditions and firm characteristics. We can only hope that as conditions improve and countries grow, the firms in Eastern Europe will move away from corruption and take greater advantage of the lobbying and other services offered by business associations.

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List of Tables

Table 1: Countries in BEEPS Survey

Country	N_{Full}	N_{Panel}
Albania	374	130
Armenia	522	98
Azerbaijan	520	136
Belarus	575	92
Bulgaria	550	178
Croatia	423	122
Czech Republic	611	72
Estonia	389	138
Georgia	370	116
Hungary	374	118
Kazakhstan	860	120
Kyrgyzstan	835	80
Latvia	375	108
Lithuania	381	112
Macedonia	405	68
Moldova	524	64
Poland	1,475	156
Romania	855	128
Russia	1,107	82
Serbia	550	86
Slovakia	390	58
Slovenia	411	150
Tajikistan	376	36
Turkey	1,884	94
Ukraine	1,057	294
Uzbekistan	560	56
Total	16753	2892

Table 2: Variable Descriptions

Variable Name	Type	Description
Government Regulations: How big of an obstacle is the following to the operation and growth of firm (0-4; no obstacle to severe obstacle)		
tax_admin	Ordinal	Tax administration
customs_trade	Ordinal	Customs and trade regulations
labor	Ordinal	Labor regulations
license_permit	Ordinal	Licensing and operating permits
Business Association Membership:		
firm_association	Binary	Value of 1 if firm is in a business association and 0 otherwise
join_association	Binary	Value of 1 if firm joined an association between 2002 and 2005
Business Association Services: How much does the firm value each of the following (0-4; no value to critical value):		
value_lobbying	Ordinal	Lobbying government
value_dispute_res	Ordinal	Dispute resolution between firms or firms and government
value_domestic_mkt	Ordinal	Domestic product market information
value_int_mkt	Ordinal	International product market information
value_info_reg	Ordinal	Information on government regulations
value_accredit	Ordinal	Accrediting standards and reputational benefits
Corruption Variables:		
pay_bribe	Binary	Value of 1 if firm has paid a bribe to bureaucrats to "get things done" , and 0 otherwise
log_total_bribe	Continuous	Log of the total bribe (in US $) paid by the firm
impact_bribe_legislators	Ordinal	Impact on firm of private payments to legislators to affect votes (no impact to decisive impact)
Firm Characteristics:		
log_employees	Continuous	Log of the number of employees of the firm
log_age	Continuous	Log of the age of the firm
pct_foreign	Continuous	Percentage of firm owned by the foreign private sector
exporter	Binary	Value of 1 if the firm is an exporter
pct_govt_owned	Continuous	Percentage of firm owned by municipal or federal government
regulations_pct_time	Continuous	Percent of senior management's time spent dealing with government regulations
new_product	Binary	Value of 1 if firm has developed major new product line in last 3 years
year	Discrete	Survey year (2002 or 2005)
industry	Categorical	Industry in which firm operates
country	Categorical	Country in which firm operates
wdi_gdpc	Continuous	GDP per capita in country of operation (in US $)

Table 3: Pairwise Correlations by Year

2002 Correlations:

	1	2	3	4	5	6	7	8	9	10	11
1. pay_bribe	1										
2. firm_association	0.0188	1									
3. new_product	0.0447	0.0736	1								
4. regulations_pct_time	0.134	0.0349	0.0749	1							
5. pct_govt_owned	-0.189	-0.0002	-0.0111	0.0355	1						
6. impact_bribe_legislators	0.159	0.0816	0.0487	0.0619	-0.0437	1					
7. log_age	-0.115	0.152	0.0291	0.0124	0.405	0.0030	1				
8. log_employees	-0.0641	0.232	0.179	0.0354	0.352	-0.0178	0.408	1			
9. pct_foreign	-0.0006	0.0916	0.0737	-0.0073	-0.155	-0.0020	-0.106	0.130	1		
10. exporter	0.0055	0.202	0.145	-0.0171	0.0157	-0.0026	0.120	0.291	0.212	1	
11. wdi_gdpc	-0.136	0.183	-0.0527	-0.0646	-0.0490	-0.0405	0.0908	-0.0479	0.0361	0.0847	1

2005 Correlations:

	1	2	3	4	5	6	7	8	9	10	11
1. pay_bribe	1										
2. firm_association	0.0079	1									
3. new_product	0.0723	0.101	1								
4. regulations_pct_time	0.124	0.0803	0.0677	1							
5. pct_govt_owned	-0.0685	0.0305	-0.0280	0.0486	1						
6. impact_bribe_legislators	0.175	0.0640	0.0522	0.0710	-0.0177	1					
7. log_age	-0.0945	0.197	0.0334	0.0650	0.304	-0.0198	1				
8. log_employees	-0.0077	0.275	0.176	0.109	0.266	0.0095	0.375	1			
9. pct_foreign	0.0052	0.115	0.0724	0.0084	-0.0876	-0.0009	-0.0583	0.176	1		
10. exporter	-0.0212	0.211	0.127	0.0443	-0.0184	0.0128	0.162	0.346	0.172	1	
11. wdi_gdpc	-0.115	0.120	-0.0763	-0.0389	-0.0258	-0.0776	0.0986	-0.0605	-0.0059	0.0922	1

Table 4: Effect of Regulations on Likelihood of Paying Bribes to Bureaucrats

	(1)	(2)	(3)	(4)	(5)
tax_admin	0.146***				0.0732***
	(0.0102)				(0.0124)
customs_trade		0.139***			0.0375***
		(0.0108)			(0.0132)
labor			0.125***		0.0167
			(0.0116)		(0.0145)
license_permit				0.178***	0.138***
				(0.0105)	(0.0135)
regulations_pct_time	0.0124***	0.0123***	0.0126***	0.0118***	0.0113***
	(0.00111)	(0.00116)	(0.00110)	(0.00110)	(0.00118)
new_product	0.165***	0.162***	0.162***	0.160***	0.155***
	(0.0244)	(0.0252)	(0.0244)	(0.0246)	(0.0259)
log_age	-0.0388**	-0.0343*	-0.0442***	-0.0300*	-0.0228
	(0.0170)	(0.0175)	(0.0169)	(0.0171)	(0.0179)
log_employees	-0.0167**	-0.0277***	-0.0229***	-0.0215**	-0.0293***
	(0.00851)	(0.00880)	(0.00850)	(0.00858)	(0.00900)
pct_govt_owned	-0.00570***	-0.00564***	-0.00584***	-0.00573***	-0.00545***
	(0.000482)	(0.000493)	(0.000479)	(0.000485)	(0.000507)
pct_foreign	-0.000455	-0.000940**	-0.000462	-0.000565	-0.000682
	(0.000443)	(0.000450)	(0.000442)	(0.000447)	(0.000461)
exporter	0.0980***	0.0449	0.105***	0.0963***	0.0699**
	(0.0315)	(0.0324)	(0.0314)	(0.0318)	(0.0332)
wdi_gdpc	0.0000260	0.0000265	0.0000213	0.0000364	0.0000313
	(0.0000307)	(0.0000317)	(0.0000308)	(0.0000309)	(0.0000325)
year_2005	-0.376***	-0.376***	-0.395***	-0.414***	-0.417***
	(0.0566)	(0.0585)	(0.0569)	(0.0571)	(0.0600)
constant	0.0528	0.101	0.245	0.0596	-0.0773
	(0.182)	(0.187)	(0.182)	(0.183)	(0.192)
Industry Dummies:	Yes	Yes	Yes	Yes	Yes
Country Dummies:	Yes	Yes	Yes	Yes	Yes
N	14301	13334	14298	14146	12893
R^2	0.1039	0.1028	0.0987	0.1086	0.1150

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 5: Effect of Regulations on Magnitude of Bribe Payments to Bureaucrats

	(1)	(2)	(3)	(4)	(5)
tax_admin	0.141***				0.105**
	(0.0348)				(0.0424)
customs_trade		0.109***			0.0298
		(0.0336)			(0.0399)
labor			0.124***		0.0863*
			(0.0355)		(0.0453)
license_permit				0.110***	0.0518
				(0.0328)	(0.0421)
regulations_pct_time	0.0184***	0.0174***	0.0193***	0.0180***	0.0160***
	(0.00324)	(0.00340)	(0.00328)	(0.00326)	(0.00341)
new_product	0.112	0.112	0.115*	0.133*	0.108
	(0.0695)	(0.0724)	(0.0696)	(0.0701)	(0.0737)
log_age	-0.0880	-0.0763	-0.106*	-0.0844	-0.0715
	(0.0555)	(0.0579)	(0.0557)	(0.0560)	(0.0582)
log_employees	0.779***	0.763***	0.777***	0.782***	0.761***
	(0.0284)	(0.0296)	(0.0286)	(0.0286)	(0.0299)
pct_govt_owned	0.00184	0.00134	0.00163	0.00207	0.00181
	(0.00158)	(0.00169)	(0.00157)	(0.00159)	(0.00170)
pct_foreign	0.00242*	0.00177	0.00225	0.00223	0.00235*
	(0.00138)	(0.00140)	(0.00137)	(0.00138)	(0.00142)
exporter	0.200**	0.169*	0.218**	0.203**	0.194*
	(0.0949)	(0.0976)	(0.0949)	(0.0958)	(0.0993)
wdi_gdpc	0.000978***	0.000972***	0.000967***	0.000988***	0.000968***
	(0.0000606)	(0.0000626)	(0.0000618)	(0.0000626)	(0.0000639)
constant	-6.141***	-6.018***	-5.899***	-6.078***	-6.221***
	(0.452)	(0.462)	(0.456)	(0.470)	(0.486)
Industry Dummies:	Yes	Yes	Yes	Yes	Yes
Country Dummies:	Yes	Yes	Yes	Yes	Yes
N	2326	2145	2326	2295	2087
R^2	0.744	0.745	0.744	0.746	0.745

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 6: Determinants of Lobby Group Membership

	Firm_Association
regulations_pct_time	0.00813***
	(0.00112)
new_product	0.223***
	(0.0255)
log_age	0.126***
	(0.0183)
log_employees	0.211***
	(0.00915)
pct_govt_owned	-0.00390***
	(0.000487)
pct_foreign	0.00214***
	(0.000456)
exporter	0.319***
	(0.0335)
wdi_gdpc	-0.0000562*
	(0.0000306)
year_2005	0.0778
	(0.0577)
constant	-0.00534
	(0.199)
Industry Dummies:	Yes
Country Dummies:	Yes
N	14712
R^2	0.2382

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 7: Do Bribes Affect Lobby Group Membership?

	Join_Association
2002.pay_bribe	0.156
	(0.130)
2002.regulations_pct_time	0.00189
	(0.00589)
2002.new_product	0.215
	(0.139)
2002.log_age	-0.00344
	(0.101)
2002.log_employees	0.205***
	(0.0535)
2002.pct_govt_owned	-0.000440
	(0.00234)
2002.pct_foreign	0.00719***
	(0.00228)
2002.exporter	0.187
	(0.199)
2002.wdi_gdpc	0.000310
	(0.000214)
Constant	-1.760*
	(0.990)
Industry FE:	Yes
Country FE:	Yes
N	714
R^2	0.2045

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 8: Does Joining a Lobby Group Affect Bribe Payments?

(a) Likelihood of Paying a Bribe

	2005.Pay_Bribe
join_association	0.0520
	(0.156)
2002.pay_bribe	0.951***
	(0.122)
2002.regulations_pct_time	-0.0119*
	(0.00627)
2002.new_product	0.275**
	(0.125)
2002.log_age	0.0342
	(0.0956)
2002.log_employees	0.0288
	(0.0535)
2002.pct_govt_owned	-0.00488**
	(0.00232)
2002.pct_foreign	-0.000781
	(0.00246)
2002.exporter	-0.249
	(0.211)
2002.wdi_gdpc	0.000321
	(0.000227)
Constant	-1.714*
	(0.928)
Industry FE:	Yes
Country FE:	Yes
N	645
R^2	0.2104

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

(b) Magnitude of Bribe Payment

	2005.Log_Total_Bribe
join_association	-0.126
	(0.366)
2002.regulations_pct_time	-0.00318
	(0.0157)
2002.new_product	0.0438
	(0.305)
2002.log_age	0.0755
	(0.220)
2002.log_employees	0.678***
	(0.166)
2002.pct_govt_owned	-0.000522
	(0.00518)
2002.pct_foreign	-0.00575
	(0.00545)
2002.exporter	0.659
	(0.450)
2002.wdi_gdpc	0.00178***
	(0.000447)
Constant	-8.412***
	(1.977)
Industry FE:	Yes
Country FE:	Yes
N	216
R^2	0.727

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 9: Services Provided by Business Associations

	value_lobbying	value_dispute_res	value_domestic_mkt	value_int_mkt	value_info_reg	value_accredit
impact_bribe_legislators	0.124***	0.156***	0.0666***	0.0556***	0.0901***	0.0740***
	(0.0234)	(0.0218)	(0.0207)	(0.0201)	(0.0211)	(0.0212)
tax_admin	0.00370	0.00111	0.0104	-0.00227	0.00236	0.00443
	(0.0211)	(0.0207)	(0.0189)	(0.0196)	(0.0193)	(0.0196)
customs_trade	0.0576**	0.0498**	0.0418**	0.105***	0.0381*	0.0448**
	(0.0227)	(0.0216)	(0.0195)	(0.0199)	(0.0200)	(0.0207)
labor	0.0438*	0.0265	0.00566	0.0256	0.0424**	0.0246
	(0.0223)	(0.0227)	(0.0202)	(0.0211)	(0.0206)	(0.0217)
license_permit	0.0284	0.0483**	0.0222	0.0247	0.00117	0.0130
	(0.0218)	(0.0213)	(0.0194)	(0.0203)	(0.0204)	(0.0207)
new_product	0.170***	0.160***	0.139***	0.152***	0.159***	0.141***
	(0.0391)	(0.0388)	(0.0347)	(0.0360)	(0.0350)	(0.0357)
regulations_pct_time	0.00247	0.00181	0.000542	0.000844	0.00253*	0.00347**
	(0.00166)	(0.00173)	(0.00153)	(0.00161)	(0.00154)	(0.00157)
pct_govt_owned	-0.000534	-0.000287	0.000136	-0.000175	-0.0000475	0.000603
	(0.000683)	(0.000669)	(0.000596)	(0.000619)	(0.000619)	(0.000633)
log_age	0.0489*	0.0149	-0.00524	-0.0328	0.0183	-0.0288
	(0.0266)	(0.0258)	(0.0233)	(0.0238)	(0.0240)	(0.0237)
log_employees	0.0812***	0.0326***	0.0500***	0.0520***	0.0571***	0.0581***
	(0.0131)	(0.0126)	(0.0117)	(0.0120)	(0.0117)	(0.0117)
pct_foreign	0.00118**	0.000496	0.0000442	0.000729	0.000608	-0.000109
	(0.000570)	(0.000572)	(0.000532)	(0.000528)	(0.000532)	(0.000534)
exporter	0.0245	0.0757*	0.0842**	0.387***	0.0560	0.192***
	(0.0438)	(0.0431)	(0.0394)	(0.0397)	(0.0388)	(0.0394)
wdi_gdpc	-0.000176***	-0.000145***	-0.000122***	-0.000141***	-0.0000829*	-0.0000920**
	(0.0000484)	(0.0000471)	(0.0000435)	(0.0000433)	(0.0000442)	(0.0000451)
year_2005	0.467***	0.324***	0.281***	0.312***	0.188**	0.245***
	(0.0973)	(0.0937)	(0.0843)	(0.0851)	(0.0874)	(0.0894)
Industry Dummies:	YES	YES	YES	YES	YES	YES
Country Dummies:	YES	YES	YES	YES	YES	YES
N	3964	4055	4336	4263	4287	4232
R^2	0.0525	0.0465	0.0358	0.0516	0.0288	0.0378

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 10: Association Membership and Political Corruption

	2005.Impact_Bribe_Legislators
join_association	0.414**
	(0.206)
2002.impact_bribe_legislators	0.301***
	(0.0749)
2002.regulations_pct_time	0.00203
	(0.00765)
2002.new_product	0.0406
	(0.175)
2002.log_age	0.0632
	(0.122)
2002.log_employees	0.0321
	(0.0627)
2002.pct_govt_owned	-0.00491*
	(0.00267)
2002.pct_foreign	-0.00441
	(0.00369)
2002.exporter	0.275
	(0.276)
2002.wdi_gdpc	0.00186***
	(0.000167)
Industry FE:	Yes
Country FE:	Yes
N	547
R^2	0.1883

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 11: Political Corruption and Association Services

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
value_lobbying	0.157***						0.0627**
	(0.0196)						(0.0273)
value_dispute_res		0.182***					0.156***
		(0.0191)					(0.0278)
value_domestic_mkt			0.0962***				-0.0202
			(0.0176)				(0.0283)
value_int_mkt				0.103***			0.0461*
				(0.0169)			(0.0257)
value_info_reg					0.105***		-0.0167
					(0.0171)		(0.0236)
value_accredit						0.100***	0.0165
						(0.0166)	(0.0240)
regulations_pct_time	0.00377*	0.00381**	0.00374**	0.00415**	0.00402**	0.00349*	0.00331
	(0.00194)	(0.00191)	(0.00183)	(0.00187)	(0.00186)	(0.00186)	(0.00203)
new_product	0.0974**	0.107**	0.104**	0.0905**	0.0922**	0.0933**	0.0960**
	(0.0457)	(0.0453)	(0.0435)	(0.0438)	(0.0437)	(0.0438)	(0.0473)
log_age	0.00676	-0.00187	0.0106	0.00774	0.00382	0.00901	0.0161
	(0.0303)	(0.0299)	(0.0288)	(0.0290)	(0.0290)	(0.0290)	(0.0313)
log_employees	-0.0304*	-0.0247	-0.0161	-0.0221	-0.0231	-0.0243	-0.0339**
	(0.0157)	(0.0151)	(0.0148)	(0.0150)	(0.0149)	(0.0150)	(0.0160)
pct_govt_owned	-0.000996	-0.000888	-0.00126	-0.000879	-0.000924	-0.00108	-0.000763
	(0.000844)	(0.000832)	(0.000783)	(0.000799)	(0.000791)	(0.000793)	(0.000870)
pct_foreign	-0.00146**	-0.00133*	-0.00118*	-0.00120*	-0.00110*	-0.00110*	-0.00134*
	(0.000680)	(0.000679)	(0.000655)	(0.000657)	(0.000661)	(0.000666)	(0.000702)
exporter	-0.0171	-0.0225	-0.00927	-0.0544	-0.00868	-0.0293	-0.0412
	(0.0509)	(0.0500)	(0.0487)	(0.0493)	(0.0488)	(0.0494)	(0.0530)
wdi_gdpc	-0.0000582	-0.0000267	-0.00000240	-0.0000153	-0.0000316	-0.0000442	-0.0000831
	(0.0000582)	(0.0000572)	(0.0000546)	(0.0000551)	(0.0000547)	(0.0000553)	(0.0000613)
year_2005	0.0843	0.0290	-0.0190	0.00773	0.0450	0.0569	0.123
	(0.108)	(0.106)	(0.100)	(0.101)	(0.101)	(0.102)	(0.114)
Industry Dummies:	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies:	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4226	4325	4648	4547	4597	4524	3986
R^2	0.0506	0.0514	0.0429	0.0437	0.0457	0.0429	0.0581

Robust standard errors in parentheses

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 12: Predicted Probabilities of Response Categories for *Impact_Bribe_Legislators*

		Impact of Bribing Legislators on the Firm:				
		No Impact	Minor	Moderate	Major	Decisive Impact
Value of Business Association Lobbying Services to the Firm:	No Value	79.24%	11.25%	5.78%	2.94%	0.79%
	Minor	74.04%	13.24%	7.37%	4.10%	1.25%
	Moderate	76.89%	12.18%	6.50%	3.44%	0.98%
	Major	74.13%	13.21%	7.35%	4.08%	1.24%
	Critical Value	64.71%	16.14%	10.21%	6.52%	2.42%

		Impact of Bribing Legislators on the Firm:				
		No Impact	Minor	Moderate	Major	Decisive Impact
Value of Business Association Dispute Resolution Services to the Firm:	No Value	82.36%	10.00%	4.82%	2.27%	0.55%
	Minor	74.03%	13.35%	7.38%	4.04%	1.20%
	Moderate	71.00%	14.40%	8.31%	4.78%	1.51%
	Major	67.32%	15.54%	9.44%	5.73%	1.96%
	Critical Value	75.70%	12.73%	6.86%	3.66%	1.04%