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Does bribery help or hurt firm growth around the world?

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Abstract Does bribery help or hurt firm growth? Some suggest that bribery greases the wheel of commerce, while others believe that bribery sands the wheel of growth. We argue that firms endogenously choose their level of bribery according to their environments and that the benefits and costs may differ for different types of bribery. Specifically, small firms are more likely to be forced to engage in bribery, while big firms may strategically engage in bribery. Utilizing a large, cross-country survey sample involving 2,686 firms in 48 countries, we find that firms choose a higher level of bribery when embedded in under-developed market-supporting institutions. After controlling for endogenous bribery choices, bribery hurts firm growth for small and medium-sized firms, but not for large firms.

Keywords Institutional environments · Bribery · Firm size · Firm growth

A significant body of literature shows that firms around the world often engage in bribery to manage resource dependence on the government (Baron, 1995; Boddewyn & Brewer, 1994; Habib & Zurawicki, 2002; Jackson, 2000; Lee & Hong, 2011; Lee & Oh, 2007; Martin, Cullen, Johnson, & Parboteeah, 2007; Ring, Bigley, D'Aunno, & Khanna, 2005; Rodriguez, Uhlenbruck, & Eden, 2005; Shaffer, 1995; Wang, Jiang, Yuan, & Yi, 2011). However, little is known about whether these costly briberies actually pay-off and help firms grow. The literature suggests two competing

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perspectives: one regards bribery as the grease of commerce that helps firms overcome inefficient institutions (Huntington, 1968; Leff, 1989), and the other blames bribery as an involuntary "tax" that sands the wheel of growth (Mauro, 1995; Meschi, 2009; Shleifer & Vishny, 1993). Endeavoring to reconcile these two perspectives, we argue (1) that firms endogenously choose their level of bribery according to the institutional environment in which they are embedded, and (2) that the benefits and costs of bribery may differ for different firms.

The purpose of this study is to examine firm-level bribery decision and its performance implications on a worldwide basis. We seek to integrate resource dependence theory as well as the institution-based view (Ahlstrom, Chen, & Yeh, 2010; North, 1990; Peng, 2003; Peng, Sun, Pinkham, & Chen, 2009) to explain how institutions affect firms' dependence level on governments and consequently their strategic choices and performance. Drawing on large-sample, cross-country data from the World Bank on 2,686 firms across 48 countries, this study directly investigates two related questions: (1) Does firms' level of bribery vary systematically according to the quality of market-supporting institutions in different countries? (2) Does a high level of bribery help or hurt firm growth?

Institutional variation, resource dependence, and bribery

Resource dependence theory suggests that discretion over the use of valuable resources, information, and the ability to make and enforce rules are the main sources of resource dependence (Pfeffer & Salancik, 1978: 145–146). If market-supporting institutions are weak, government officials often hold a high level of discretion over resource allocation and law enforcement. The higher the discretionary power government officials have, the more opportunities for them to abuse the power for private benefits and solicit illegal payments from firms (Banfield, 1975; Murphy, Shleifer, & Vishny, 1993).

Institutions have many dimensions (North, 2000; Whitley, 1994). From a resource dependence standpoint, we suggest that countries systematically differ in the following three market-supporting institutions: (1) financial market development, (2) policy uncertainty, and (3) legal system quality. These dimensions represent different sources of controlling power in resource dependence theory: discretion over the use of valuable resources, control of important information, and the power to make and enforce the rules (Pfeffer & Salancik, 1978: 145–146). Therefore, the institutional differences on these dimensions may determine the government's controlling power over firms and consequently their incentives to adopt a political strategy such as bribery. The next section spells out our hypotheses in more detail.

Three dimensions of institutional differences

Financial market development Financial capital is one of the key resources for firm growth (Levine, 1991). In many emerging economies, financial markets such as commercial banking systems and securities markets are not well established (Jiang & Peng, 2011; La Porta, Lopez-de-Silanes, & Shleifer, 2002; Tihanyi &

Hegarty, 2007). For example, although the proportion of state-owned banks is decreasing in many countries due to privatization,[1] there are still a considerable number of government-controlled banks, from which firms may obtain cheaper capital than from the market if they can get preferential treatment from government officials (Okhmatovskiy, 2010; Wang et al., 2011). Such preferential treatment of course is not obtained for free. Instead, it is often exchanged through a political market via bribery (Boddewyn, 1988). In countries with restrictions on private and foreign bank operations, this capital dependence on the government is even larger, which further provides rent-seeking opportunities for government officials.

Policy uncertainty Uncertainty over government policy is another important institutional factor. Accessing timely information over relevant government policy is an important function of political strategy (Kreiner & Bhambri, 1988). In many emerging economies, government policies are usually not well codified (Boisot & Child, 1996), thus making them difficult to predict (Farashahi & Hafsi, 2009; Stevens & Cooper, 2010). Moreover, business regulations are often subject to constant change, making it difficult, if not impossible, for long-term business planning.[2] Facing such tremendous uncertainty and complexity, it is not surprising that firms are interested in forming strong relationships with government officials to get an "inside scoop" in order to reduce uncertainty. Corruption and bribery may be a speedy way to obtain reliable and timely information. It may help firms to reduce the level of uncertainty and give firms certain assurances to learn about new policies before other competitors. Overall, in the absence of predictable government policy, accessing reliable policy information on a timely basis via bribery or gifts has been common in many countries.

Legal system quality Although government control of financial resources and policy information create pervasive opportunities for rent-seeking, government officials' actual abuse of power depends highly on the probability of being caught and the magnitude of punishment (Cuervo-Cazurra, 2008; Shleifer & Vishny, 1993). An effective and independent judicial system is crucial in monitoring government officials and deterring corruption. The effectiveness of a legal system is also important in reducing transactions costs (Williamson, 1985). Low transparency in laws and regulations governing business transactions may push firms to rely on bribing government officials for protection. If the legal interpretation is subject to government officials' personal discretion, a bribery strategy may be economically rational to obtain favorable treatment (Pistor, Raiser, & Gelfer, 2000). Therefore, a predictable transaction environment also requires

[1] This statement, on the *decreasing* proportion of state-owned banks due to privatization, refers to the situation when the survey was undertaken during 1999–2000. With the 2008 bail-outs of banks throughout the world, the proportion of state-owned banks has been *increasing* more recently.

[2] For example, in the newly independent Baltic state of Lithuania, a total of approximately 3,200 new laws were passed between 1991 and 1996. Many of these laws were not well prepared and were amended frequently. The value-added tax law, for instance, was amended *18 times* over four years (Kriauciunas, 2006: 172). This experience is not alone among many emerging economies going through rapid institutional transitions.

effective, predictable, and independent enforcement of business laws (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2003). Cross-country comparisons demonstrate much greater variation in the effectiveness of laws. For example, about 75 percent of managers surveyed in Russia and other former Soviet Union countries doubt the effective enforcement of business laws and the independence of the judicial system (EBRD, 1999). As long as the enforcement of laws is highly discretionary and the monitoring institutions over law enforcement officials are weak, firms may find it attractive to rely on bribery in exchange for favorable treatment. Taking these three institutional aspects together, we would expect:

Hypothesis 1 The lower the level of market-supporting institutions, measured by financial market development, policy uncertainty, and legal system quality, the higher the level of bribes paid by firms to government officials.

Bribery and firm growth

Bribery is costly, not only in terms of the direct monetary cost, but also in terms of potential political and legal penalty (such as jail time) if it is caught. Does the costly bribery actually pay off and help firms grow? This section derives hypotheses from the two competing perspectives and also from a contingency framework.

Bribery greases the wheel of commerce Since bribery may help firms obtain cheaper financial capital, access timely policy information, and overcome a weak legal system, resource dependence theory implies that managing dependence successfully may lead to a positive performance impact. Empirical evidence has been sketchy on the direct performance impact of bribery largely because of the difficulty in obtaining empirical data on *firm-level* bribery. In Indonesia, where corruption has been pervasive and predictable, Fisman (2001) found that firms' market values are highly correlated with their connections with top government officials. In China, studies have shown that ties with government officials (some of which may be bribery-based) have a positive effect on firm performance in general, although they may not be sufficient without a competitive advantage in market-based capabilities (Park & Luo, 2001; Peng & Luo, 2000). In Central and Eastern Europe, Hellman, Jones, and Kaufmann (2003) demonstrated that good connections with government officials, often characterized by corruption, bring huge advantages to entrenched firms. Since bribery is an important means to build up good connections with government officials in many countries, we hypothesize:

Hypothesis 2a Bribes by firms to government officials have a positive effect on firm growth.

Bribery sands the wheel of growth Contrary to the "grease" literature above, which emphasizes the benefits of managing resource dependence via political connections, the institutional economics literature focuses on the high costs of managing dependence on

the government when market-supporting institutions are poor. Empirical evidence suggests that high levels of corruption impose high costs on business and hurt firms' performance instead (Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002; Wei, 2000). Officials extract private benefit by abusing their discretionary power and exerting high costs on firms (Banfield, 1975; Murphy et al., 1993). This literature considers bribery not as a strategic choice to improve firm performance, but as an involuntary "tax" imposed by greedy government officials in poor institutional environments (Fisman & Svensson, 2007). Firms under the pressure of this type of involuntary "tax" may seek some alliance partners that are capable of reducing the bribery pressure (Young, Ahlstrom, Bruton, & Rubanik, 2011). Shleifer and Vishny's (1993) political market model shows that, due to the secrecy of corruption, corruption is even more costly than tax. This type of coercive bribery drains firms' financial resources and impedes economic growth (Mauro, 1995; Wei, 2000). Poor institutions breed more corruption and increase firms' costs of doing business. Consequently, firm growth is hindered. Therefore, as an alternative to Hypothesis 2a, we propose:

Hypothesis 2b Bribes by firms to government officials have a negative effect on firm growth.

A contingency approach

The third approach rejects the universal positive or negative effect of bribery on firm performance. Instead, when consolidating the two opposite perspectives on both the benefits and costs of managing dependence on the government, it may well be that the net benefit of bribery may differ for different firms. Small firms may be more vulnerable to poor institutional quality than large firms (Peng & Luo, 2000; Peng & Zhou, 2005). The liability of "smallness" in business competition under poor institutional structure ranges from lacking access to financial capital when the financial market is underdeveloped (Beck, Demirguc-Kunt, & Maksimovic, 2005), to higher risk of government interference and expropriation when legal institutions, especially property right protections, are weak (Peng & Luo, 2000; Zhou & Peng, 2010). Therefore, small firms, due to their weak bargaining power, often have little choice when facing government officials' rent-seeking activities and may be coerced to undertake bribery (Young et al., 2011). In addition, constrained by limited resources, small firms are likely to be hit much more harshly than large firms, because the same amount of bribery money drains a disproportionally larger portion of resources for small firms than for large firms.

While poor market-supporting institutions may push small firms to engage in forced bribery, large firms with more resources in their "deep pocket" and more established connections with government officials are more likely to strategically engage in bribery to gain favorable treatment (Dieleman & Sachs, 2008). Moreover, large firms may enjoy economies of scale in bribery investment to establish good relationships with government officials and to gain tremendous benefit from favorable policy or decisions (Hellman & Schankerman, 2000). Entrenched large firms with good political connections may even capture the

state, and derive private benefits by distorting state policies and imposing high costs on small firms (Hellman et al., 2003). Therefore:

Hypothesis 2c Bribes by firms to government officials have a positive effect on firm growth for large firms, and a negative effect on firm growth for small firms.

Methodology

Our sample was drawn from the World Business Environment Survey (WBES) conducted by the World Bank.[3] It used a uniform core questionnaire (in local languages) administrated in 81 countries during 1999–2000. The questionnaires were distributed to senior managers (general managers or owners), who were interviewed face-to-face by trained interviewers. It surveyed senior managers' perceptions about key constraints in the business environment that affect their business decisions (Batra, Kaufmann, & Stone, 2003). Given the sensitive nature of the research questions of the survey, written assurance of the confidentiality of their response from the World Bank was issued. The WBES data provide one of the best datasets available on country-level comparisons of business environment and activities and have been used by several studies so far (Beck et al, 2005; Djankov et al., 2003; Uhlenbruck, Rodriguez, Doh, & Eden, 2006). These data also provide valuable firm-level evidence of bribery, instead of country-level aggregate analysis as is often the case in institutional economics literature (Djankov et al., 2002; Mauro, 1995). Excluding firms with missing data, our final sample was composed of a total of 2,686 firms from 48 countries (see Table 1) with different sizes, ownerships, and industries (see Table 2).

Dependent variables

Level of bribery was operationalized as the amount of money a firm spent in bribing government officials, measured by the percentage of sales used as bribery payments to government officials. *Firm growth* was measured as a firm's sales growth over the past three years. Sales growth has been found to be positively associated with ties with government officials (Park & Luo, 2001; Peng & Luo, 2000).

Explanatory variables

The measurement of the three institutional variables was based on the perception of senior managers in each country in the WBES survey about the corresponding dimension of institutional constraints. To assure the internal consistency and validity, the items that measure the institutional variables were selected by conducting a factor analysis based on the criteria of eigenvalue greater than 1 (Hair, Anderson, Tatham, & Black, 1998). Specifically, *financial*

[3] http://publications.worldbank.org/ecommerce/catalog/product?item_id=1923391

Table 1 Countries in the sample.

Country	No. of firms	Percentage	Country	No. of firms	Percentage
Albania	46	1.7%	Malaysia	57	2.1%
Argentina	48	1.8%	Mexico	57	2.1%
Armenia	50	1.9%	Nicaragua	63	2.3%
Azerbaijan	23	0.9%	Pakistan	62	2.3%
Bolivia	43	1.6%	Panama	57	2.1%
Brazil	23	0.9%	Peru	73	2.7%
Bulgaria	33	1.2%	Philippines	39	1.5%
Canada	71	2.6%	Poland	50	1.9%
Chile	56	2.1%	Portugal	53	2.0%
Colombia	185	6.9%	Romania	28	1.0%
Costa Rica	32	1.2%	Russia	54	2.0%
Croatia	29	1.1%	Singapore	70	2.6%
Dominican Rep.	87	3.2%	Slovak Republic	69	2.6%
Ecuador	50	1.9%	Slovenia	49	1.8%
El Salvador	80	3.0%	Spain	40	1.5%
Estonia	60	2.2%	Sweden	36	1.3%
France	55	2.0%	Trinidad & Tobago	58	2.2%
Georgia	68	2.5%	Turkey	44	1.6%
Germany	54	2.0%	Ukraine	47	1.7%
Guatemala	72	2.7%	United Kingdom	49	1.8%
Haiti	54	2.0%	United States	83	3.1%
Honduras	56	2.1%	Uruguay	49	1.8%
Hungary	65	2.4%	Uzbekistan	61	2.3%
Indonesia	57	2.1%	Venezuela	41	1.5%
			TOTAL	2,686	100.0%

Table 2 Size, ownership, and industries.

Firm size	Small	Medium	Large			Total
Number of firms	1,115	1,143	428			2,686
Percentage	41%	43%	16%			100%
Firm ownership	Private/other owned	Government owned	Foreign owned			Total
Number of firms	2,053	172	461			2,686
Percentage	77%	6%	17%			100%
Industry	Manufacturing	Service	Agriculture	Construction	Other	Total
Number of firms	903	1,168	124	204	287	2,686
Percentage	34%	43%	5%	8%	10%	100%

market development was an aggregated measure of five financial obstacles. On a 1–4 scale (the higher the scores, the worse the institutions), firms assessed the financial obstacles in terms of (1) lack of access to non-bank equity, (2) lack of long-term loans, (3) banks' lack of money to lend, (4) lack of access to foreign banks, and (5) lack of credit financing (Cronbach's alpha of .88).

Policy uncertainty was measured on a 1–6 scale by the extent to which (1) legal, regulatory policy and (2) economic and financial policy are predictable, with a Cronbach's alpha of .87.

Finally, *quality of legal system* was measured by the composite of (1) enforceability of courts' decisions, (2) fairness and impartiality of courts, and (3) consistency of courts' decisions, each on a 1–6 scale. The Cronbach's alpha for these three items is .74. To measure the overall market-supporting institutions, we also constructed a composite measure of institutions by summing up the three institutional variables.

Control variables

Four firm characteristics were controlled. Specifically, firm size was measured by the number of employees. Two dummy variables of firm size are *small firms* (5–50 employees) and *large firms* (more than 500 employees), with medium-sized firms (51–500 employees) as the benchmark. Although ideally it would be better to measure firm size as a continuous variable, the WBES survey only provides the categorical data of firm size. Moreover, according to our hypotheses specifications, in testing Hypotheses 1, 2a, and 2b, we treat firm size as a control variable, and in Hypothesis 3 as a moderator. *Firm age* was measured as the number of years after a firm was established. Firm ownership was measured by two dummy variables, *government ownership* and *foreign ownership*, with private local firms as the benchmark, according to the identity of the controlling shareholder. Industry effects were controlled by four dummy variables: *manufacturing*, *service*, *agriculture*, and *construction*, with other industries as the benchmark. Finally, country GDP growth was also controlled since firms in high GDP growth countries are likely to experience high firm growth.

Econometric issues

Hierarchical Linear Model (HLM) was used to test the hypotheses, given the nested nature of the data (firms nested within countries). According to Raundenbush and Bryk (2002), HLM produces more efficient estimation of parameters' standard errors, by correcting heteroskedasticity and autocorrelation common in hierarchical data. Further, when testing the relationship between level of bribery and firm growth, we used a generalized two-stage least square (G2SLS) model to correct for the endogenous nature of bribery choices (Greene, 2003). Without controlling the endogeneity, the estimation of the bribery effect on firm growth will be biased (Ahlstrom et al., 2010). Finally, institutional measures from other data sources such as *Global Competitiveness Report* (World Economic Forum, 2000) were also utilized as a robustness check to avoid the common method problem.

Findings

The impact of institutional variation

Table 3 presents the HLM results of level of bribery on the institutional variables. Models 1–3 test the effect of the three institutional variables (the higher the scores, the worse the institutions) on the level of bribery.[4] The results demonstrate that poorer financial market development ($p < .01$), higher policy uncertainty ($p < .01$), and lower quality of legal system ($p < .01$) do significantly increase firms' monetary resources spent in bribing government officials, thus supporting Hypothesis 1. Model 4 is regressed on the overall measure of market-supporting institutions, from which we can see that a higher level of institutional development is significantly associated with a lower level of bribery ($p < .01$). These pieces of firm-level evidence indicate that the effect of institutions on bribery seems quite generalizable across countries, therefore supporting Hypothesis 1.

Implications for firm growth

Models 1–3 in Table 4 test the relationship between the level of bribery and firm growth (Hypotheses 2a to 2c). Model 1 is the control model. Model 2 tests the main effect of level of bribery on firms' sales growth. To control for the endogeneity of level of bribery, we construct a G2SLS model: the first stage is a random effect estimation of level of bribery according to the quality of market-supporting institutions as shown in Model 4 of Table 3, and then put the predicted value of level of bribery, Bribe (p), from the first stage estimation into the second-stage model of firm growth. From the G2SLS regression, we find a significantly negative relationship ($p < .01$) between level of bribery and firm growth when controlling the endogeneity of level of bribery (see Model 2). Thus, our results support Hypothesis 2b that overall managing resource dependence on the government via bribery to government officials is very costly to firms' operation and hurts firms' growth.

Finally, Model 3 tests whether there is a difference in the net benefit of bribery for small and medium-sized firms versus large firms. The coefficient on Bribe (p), the main effect for small and medium-sized firms, is negative and significant, indicating that bribery has a detrimental effect on the performance of small and medium-sized firms. In contrast, the positive and significant interaction effect between large firms and level of bribery ($p < .05$) indicates large firms are not hurt as much as smaller firms, and may even potentially gain from bribery activities. In fact, the sub-sample analysis of large firms shows an insignificant but positive effect of bribery on firm growth. Therefore, the results partially support Hypothesis 2c, in that bribery hurts performance only for small and medium-sized firms, while for large firms there is no evidence of a negative effect of bribery on firm growth. This finding is robust to using alternative measures of institutions from the *Global Competitiveness Report* (World Economic Forum, 2000).

[4] The three theoretical constructs are also regressed on the amount of time senior managers spent with government agents (not reported here). We find that low quality in the three institutional dimensions also significantly increases senior managers' time spent in cultivating ties with government agents.

Table 3 Hierarchical linear model (HLM) on level of bribery.

	(1)	(2)	(3)	(4)
Constant	2.411***	2.414***	2.418***	2.412***
	(.154)	(.159)	(.160)	(.155)
Small firms	.105	.105	.104	.105
	(.073)	(.073)	(.073)	(.073)
Large firms	−.290***	−.289***	−.288***	−.284**
	(.073)	(.073)	(.073)	(.073)
Firm age	−.002	−.002	−.002	−.001
	(.002)	(.002)	(.002)	(.002)
Gov-owned	−.074	−.085	−.078	−.074
	(.097)	(.100)	(.098)	(.098)
Foreign-owned	−.136*	−.135*	−.135*	−.135*
	(.074)	(.074)	(.074)	(.074)
Manufacturing	−.121	−.123	−.127	−.134
	(.127)	(.127)	(.127)	(.127)
Service	−.094	−.098	−.103	−.112
	(.128)	(.128)	(.128)	(.128)
Agriculture	−.308*	−.312*	−.318*	−.329*
	(.173)	(.173)	(.173)	(.172)
Construction	.186	.183	.177	.167
	(.159)	(.159)	(.160)	(.160)
Independent variables				
Financial market	.411***			
	(.104)			
Policy uncertainty		.338***		
		(.090)		
Legal system			.274***	
			(.093)	
Institutions (composite)				.413***
				(.132)
N	2,686	2,686	2,686	2,686
Country	48	48	48	48
Chi-Square	899	951	1,069	1,008
Significance	***	***	***	***

Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Discussion

Contributions and implications

Integrating resource dependence theory and the institution-based view, this study contributes to the literature by testing two competing perspectives on the

Table 4 G2SLS estimates on sales growth (H2a-H2c).

	(1)	(2)	(3)
Constant	15.742***	40.466***	43.625***
	(4.804)	(10.258)	(10.302)
Firm age	−.418***	−.485***	−.490***
	(.086)	(.089)	(.089)
Large firms	11.718***	8.726***	−12.701
	(2.797)	(2.983)	(10.799)
Gov-owned	−7.755*	−7.505*	−7.448*
	(3.997)	(3.992)	(3.989)
Foreign-owned	4.949*	3.237	3.585
	(2.624)	(2.704)	(2.707)
Manufacturing	−1.093	−1.953	−2.205
	(3.523)	(3.534)	(3.534)
Service	4.392	3.520	3.458
	(3.501)	(3.506)	(3.503)
Agriculture	.752	−.837	−1.161
	(5.681)	(5.718)	(5.716)
Construction	−1.249	.484	.522
	(4.700)	(4.725)	(4.721)
GDP growth	.449	.160	.174
	(.780)	(.717)	(.710)
Bribe (p)		−9.235***	−10.510***
		(3.427)	(3.456)
Bribe (p)×large			10.599**
			(5.137)
N	2,686	2,686	2,686
Country	48	48	48
Wald	56.44	63.41	67.79
R-square	.02	.03	.03

Standard errors in parentheses.

Bribe (p) is the predicted level of bribery from the first stage equation in Table 2, Model 4.

* significant at 10%; ** significant at 5%; *** significant at 1%.

consequences of bribery on firm growth as well as institutional determinants of bribery. We argue that large firms are more likely to engaging in strategic bribery while small firms are forced to engage in bribery. Therefore, bribery may be detrimental to small firms while beneficial to large firms. Utilizing a large firm-level cross-country dataset, we find that poor financial market, high policy uncertainty, and weak legal system significantly increase firms' level of bribery. More importantly, controlling for the endogeneity of firms' level of bribery, we further report robust firm-level evidence that bribery hurts the growth of small firms, but not large ones. Therefore, we suggest a contingency approach for future studies to

further explore the performance implications of managing resource dependence via bribes. Overall, we attempt to go beyond the general argument that institutions matter and use in-depth analyses to probe into how they matter and in what specific ways around the world (Ahlstrom, 2011; Peng et al., 2009; Wright, Filatotchev, Hoskisson, & Peng, 2005).

This study also has practical implications for both senior managers and policymakers in various countries. For senior managers, our cross-country analysis points out that the intensity of political investment can vary according to the particular institutional context in which their firms are embedded. In addition, when making strategic choices to manage resource dependence, the cost side of the strategy should be also taken into consideration, especially for small and medium-sized firms whose internal resources are limited. For policymakers interested in promoting economic growth, it seems imperative to build effective market-supporting institutions to reduce firms' costs of dealing with governments. These efforts can help firms, especially small firms, grow and allow firms to devote more resources to market-based capabilities in the long run.

Limitations and future research directions

Despite the merits, this article should be read with four limitations in mind. First, our conclusions are limited by the nature, availability, and quality of the data used. Due to the highly sensitive nature of the bribery question, it is likely that some respondents may underreport the level of bribery,[5] despite the World Bank's written assurance of the confidentiality of their responses. Our sensitivity analysis using the *Global Competitiveness Report* data addresses this issue to some extent. Second, the data availability also prevents us from other interesting exploration. For example, it would be interesting to analyze the effects on alternative measures of firm growth other than sales growth. It is possible that the bribery effects may be different for different measures of firm performance. Third, although we find that bribery has a negative effect on firm growth for small firms, the reversal causality is also possible that firms lacking in growth may attempt to bribe government officials to gain some advantages. To test this possibility, we did additional analysis and found that while sales growth does have a negative effect on the level of bribery, this effect is not statistically significant. This may be due to the financial constraints a slow-growth small firm often faces. In other words, it may have the motivation, nevertheless not enough resources to compete with high-growth firms in gaining corruption advantage. Future research may further advance the understanding of the causality between bribery and growth under different contingencies. Finally, our theoretical framework mainly focuses on formal institutions and their impacts on firms' resource dependence on the government. Future research may also examine the impact of informal institutions such as cultures, norms, and values, which create the cognitive expectation and normative pressure in adopting bribery strategy (Hillman & Wan, 2005; Husted, 1999; Martin et al., 2007).

[5] This may more likely be the case for those firms in or from the US and the UK, where there are more strict anti-corruption regulations and laws. However, when we exclude those firms, our results remain the same.

Conclusion

This study investigates the institutional determinants and growth consequences of firm-level bribery around the world. We argue that bribery could either grease the wheel of commerce or sand the wheel of growth for different types of firms. Utilizing a large firm-level cross-country dataset, we find that poor financial market, high policy uncertainty, and weak legal system significantly increase firms' level of bribery. More importantly, the results show that bribery has a significantly negative effect on firm growth only for small firms, but not for large firms. Therefore, we suggest a contingency approach for future studies to further explore the performance implications of bribery.

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