FORMAL VERSUS INFORMAL CHANNELS: HOW FIRM SIZE AFFECTS CORPORATE POLITICAL ACTIVITIES*

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ABSTRACT –Using a novel and global database, this paper undertakes a systematic analysis of the approaches and determinants of firms' corporate political activities. The empirical results suggest that large firms are more likely to utilize formal channels (i.e., lobbying), whereas small firms are more likely to utilize informal channels (i.e., bribes) for seeking policymaking influence. These nonmarket approaches are conditioned, however, by the extent of competition in the market environment and the consistency and predictability of procedures in the regulatory environment in which firms operate in. Nonmarket strategy implications that follow from this refined understanding are developed and discussed.

Keywords: nonmarket strategy, corporate political activity, lobbying, bribery, corruption

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INTRODUCTION

Corporate political activity (CPA) represents the proactive actions taken by firms to influence their policy arenas in ways that increase expected payoffs (Baysinger, 1984). Firms' corporate political activities—akin to their market strategies—are not surprisingly varied. This paper examines two political activities in detail: lobbying—a formal channel of policymaking influence—and bribery—an informal channel of policymaking influence. Lobbying is often described as those activities aimed at changing existing rules, regulations or policies, while bribery is generally described as those activities that bend or get around these rules, regulations and policies.

Some limited research suggests that lobbying and bribery are substitutes (de Figueiredo, 2009; Harstad *et al.*, 2011), but somewhat surprisingly, these policymaking influence channels have largely stood apart in the extant literature. But firm decisions on whether to bribe, to lobby, or to undertake both approaches—and to what extent—are intuitively seen as part of a larger determination of how firms seek to influence policymaking. And as observed by Harstadt and Svensson (2011), "the question of why firms choose to lobby or bribe, and the consequences of this choice remain largely unexplored." This paper suggests that firms' particular political activities will be determined by their own unique resources and capabilities and further shaped by the environments in which they operate in. In short, different types of firms will respond to different kinds of environments heterogeneously when it comes to nonmarket and corporate political activity.

Several factors have unfortunately inhibited empirical examinations of the circumstances when and the conditions where firms engage in nonmarket and corporate political activities at sufficient and comprehensive levels of detail. First, direct measures of these activities are not widely available in firms, among industries, or across countries. Most prior empirical studies instead examine firms' political activities using indirect measures that are relatively poor proxies or derived from either a single industry or single country. Second, extant research is predominantly conducted at a single 'level' of analysis (i.e., firm, industry, or country). There have been relatively few attempts in the literature to empirically examine the multiple levels or interrelationships between levels which shape firms' policymaking influence approaches. Third, firms have multiple approaches available with which to influence policymaking, including

formal channels (e.g., lobbying) and informal channels (e.g., bribes). Extant research has dedicated considerable attention to the determinants of lobbying activities and to the determinants of corruption (i.e., bribery), but rarely have both been examined together.

This paper attempts to address some of these shortcomings and subsequently improve understanding of how firms attempt to influence the policy arena. It does so by drawing upon a novel survey of thousands of firms from dozens of countries that directly and indirectly report their corporate political activities and perceived policymaking influence. These data allow for empirical tests of the direct and interrelated effects of firm-level (i.e., size) and environment-level determinants (i.e., market and regulatory) on firms' political activities and subsequent policymaking influence. The empirical setting and approach therefore add to developing research that examines firms' policymaking approaches and nonmarket performance (Baron, 1995; Bonardi *et al.*, 2005a; Bonardi *et al.*, 2006), by emphasizing the importance of resources (Bonardi, 2011), capabilities (Holburn *et al.*, 2010) and environmental conditions (Macher *et al.*, 2016; Weymouth, 2012).

The empirical results indicate a direct effect of size on firms' political activities. Large firms are more likely to utilize formal channels (i.e., lobbying), whereas small firms are more likely to utilize informal channels (i.e., bribes) in attempts to either garner policymaking influence. The empirical results also indicate the extent of competition in the market environment and the level of consistency and transparency in the regulatory environment influence firms' corporate political activities—but differently and dependent upon firm size. Large firms moderately increase their lobbying efforts in more competitive market environments and decrease their lobbying efforts in more predictable and transparent regulatory environments. Small firms moderately decrease their lobbying efforts in more competitive market environments. By contrast, small and large firms increase their use of bribery in more competitive market environments and decrease their use of bribery in more predictable and transparent regulatory environments. These findings demonstrate that the "lobbying gap" and "bribery gap" between large and small firms respectively increase in more competitive environments and decrease in my predictable and transparent regulatory environments: large firms predominantly alter their lobbying activity while small firms predominantly alter their bribery activity with changes in these environments. Via empirical analyses and several tests of robustness, heterogeneity in firm type and in market and regulatory environments are found to substantially shape firms' political

activities. The empirical investigation provides insights into nonmarket strategy in general and policymaking influence in particular.

The rest of this paper is organized as follows. The next section provides theoretical motivation and develops several testable hypotheses via an overview of the extant literature. The following section describes the data and variables, provides summary and correlation statistics, and considers potential survey data biases. The following section undertakes an empirical examination of the determinants of firms' corporate political activities, offers several figures of the economic significance of the results, and considers several tests of empirical robustness. The final section makes concluding comments.

THEORY AND HYPOTHESES

MOTIVATION

The political market for policymaking is most commonly examined through the forces of supply and demand (Bonardi *et al.*, 2005a; Hillman, 1995). On the supply side, legislators, agencies and the courts advocate and pursue a set of policies that either are in agreement with their ideology or maximize their probability of achieving or maintaining political power (de Figueiredo, 2009). On the demand side, firms and other social actors seek policies that favor their own interests. Policymaking is in a state of continual competition, as interest groups attempt to influence this process using their available resources and capabilities and implementing particular approaches. Corporate political activity (CPA) thus represents the proactive actions taken by firms to influence their policy arenas in ways that increase expected payoffs (Baysinger, 1984). Two such political activities are lobbying—a formal channel of policymaking influence—and bribery—an informal channel of policymaking influence. Lobbying is often described as those activities aimed at changing existing rules, regulations or policies, while bribery is generally described as those activities that bend or get around these rules, regulations and policies (Harstad *et al.*, 2011).

Three features largely characterize the research that examines firms' political activities.[1] First, measuring the manifest and latent consequences of firms' political activities in meaningful

[1] See Baron Baron DP. 1995. Integrated strategy: Market and Nonmarket Components. *California Management Review* **37**(2): 47-65. and Bonardi, Hillman and Keim Bonardi JP, Hillman AJ, Keim GD. 2005a. The attractiveness of political markets: Implications for firm strategy. *Academy of Management Review* **30**(2): 397-413. for comprehensive reviews.

ways presents research challenges (Hillman *et al.*, 2004). Bonardi, Holburn and Vanden Bergh (2006) suggest that these difficulties result from limited data availability that accurately relate firms' nonmarket strategies to their policymaking impact. The absence of direct measures has subsequently resulted in the use of either ancillary or highly aggregated data. Many studies examine firms' nonmarket approaches using proxies, such as measures of political action committee (PAC) activity, campaign contributions, congressional testimonies, petition filings, and lobbying efforts (Bonardi *et al.*, 2005a; Hillman *et al.*, 2004). Other studies use more indirect measures—such as cross-industry variations in effective tax rates or particular regulatory outcomes (Lenway *et al.*, 1991; Salamon *et al.*, 1977; Schuler *et al.*, 2002)—or highly aggregated data—such as corporate financial profitability (Hillman *et al.*, 1999b; Shaffer *et al.*, 2000). Most studies also examine firms' political activities solely within the confines of a single industry or single country.[2] While these approaches have advanced understanding of firms' corporate political activities, more direct and more comprehensive (i.e., inter-industry or inter-country) measures of firms' political activities are desirable.

Second, a variety of factors are important to firms' political activities, but the academic disciplines that examine these factors have operated predominantly at a single 'level' (i.e., firm, industry or country). Limited theoretical and empirical accounting for determinants operating at multiple levels (or their interrelationships) that likely affect firms' nonmarket strategy approaches are considered.[3] While recent efforts have begun to unpack exactly how nonmarket strategy manifests between and among levels (Macher *et al.*, 2016; Weymouth, 2012), more research is required.

Third, lobbying and corruption (i.e., bribery) have each been extensively researched in the literature, but have largely been examined separately or (incorrectly) viewed as one in the same. While both are considered approaches toward influencing policy and often considered substitutes

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[2] See Grier, Munger and Roberts Grier KB, Munger MC, Roberts BE. 1994. The Determinants of Industry Political Activity, 1978-1986. *American Political Science Review* **88**(4): 911-926. and Salamon and Siegfried Salamon LM, Siegfried JJ. 1977. Economic Power and Political Influence - Impact of Industry Structure on Public-Policy. *American Political Science Review* **71**(3): 1026-1043. as notable industry exceptions and Henisz Henisz WJ. 2000b. The Institutional Environment for Multinational Investment. *Journal of Law, Economics, and Organization* **16**(2): 334-364. and Chong and Gradstein Chong A, Gradstein M. 2010. Firm-Level Determinants of Political Influence. *Economics & Politics* **22**(3): 233-256. as notable country exceptions.

[3] See Hillman, Keim and Schuler Hillman AJ, Keim GD, Schuler D. 2004. Corporate political activity: A review and research agenda. *Journal of Management* **30**(6): 837-857. and the references provided therein for a comprehensive review of the firm-, industry-, and institutional-specific antecedents to corporate political activity.

(Bennedsen, 2011; Harstad *et al.*, 2011), they differ in important aspects. Lobbying is a legal and regulated corporate political activity, while bribery is generally not. The returns to lobbying are generally non-excludable and non-rivalrous—i.e., rule or regulatory changes are bestowed upon all industry participants—while the returns to bribery are generally more firm-specific. Understanding the firm- and environmental-level conditions with which one channel of policymaking influence is used in favor of another channel potentially provides important theoretical, empirical and policy implications.

To that effort, this paper develops hypotheses that delineate how firm- and environment-level factors directly and interactively affect firms' lobbying and bribery activities. We develop our hypotheses by suggesting that firms engage in these corporate political activities if the expected outcome of those activities is profit maximizing (i.e., it increases revenues or reduces costs). But we simultaneously recognize that the particular political activities that firms pursue are conditioned by their own unique resources and capabilities and further shaped by the environments in which they operate in.

HYPOTHESES

Firm Size

The extant literature indicates a large and positive relationship between firm size and firms' political activities. Size is often considered an important antecedent to political engagement (Boddewyn *et al.*, 1994; Masters *et al.*, 1985). Often a proxy for resources available, size represents an indicator of firms' abilities to become politically active (Schuler *et al.*, 1997). Size also conveys advantages in establishing the infrastructure required to engage in nonmarket activities, which normally entails substantial costs. As such, large firms are more likely to possess the requisite resources to warrant such efforts. Size also suggests advantages in working with government officials. Large firms offer more to policymakers in the way of votes, income, or post-governmental employment (de Figueiredo, 2009), in comparison to their smaller counterparts. Size finally suggests a superior ability to capture public policy participation rents (Hillman *et al.*, 2004).

With these theoretical underpinnings, empirical examinations predominantly document a strong positive relationship between firm size and political activity using several measures, including sales (Schuler *et al.*, 2002), assets (Meznar *et al.*, 1995), market share (Schuler, 1996),

and employees (Hillman, 2003). More recent empirical research documents that firm size is positively associated with policymaking influence across different government branches and regulatory agencies (Chong *et al.*, 2010; Macher *et al.*, 2012; Macher *et al.*, 2011; Weymouth, 2012). But this research does not explicitly consider the particular nonmarket channels—i.e., formal (e.g., lobbying) or informal (e.g., bribery)—that firms take in attempts to influence policymaking nor does it recognize how firm-level heterogeneity potentially conditions these approaches.

Formal channels of policymaking influence represent a variety of political activities, and include not only lobbying, but also constituency-building, political action committees, and soft money (campaign) contributions. The establishment of these formal policymaking influence channels generally require significant capital investments in resources and relationships. The up-front costs and returns to experience associated with establishing a lobbying infrastructure are found to act as an entry barrier for other firms (Kerr, 2014), which directly affect decisions on whether to lobby or not (Bombardini, 2008). Given their scale advantages, large firms should be not only more willing and able to make these requisite investments, but also more likely to find such formal political activities effective (Macher *et al.*, 2016). By contrast, small firms are less likely to possess the requisite capital and relationships in place that lobbying effective. We therefore suspect that large firms will engage in lobbying to a greater extent than small firms (Hillman *et al.*, 2004; Masters *et al.*, 1985).

Informal channels of policymaking influence also include a variety of political activities, but are most commonly associated with corruption (i.e., bribery). Bribery is obviously an "unregulated" political activity and a more targeted approach by firms seeking to bend or get around some rule or regulation. While firm-level expenditures occur through specific payoffs to bureaucrats and government officials, there is no infrastructure associated with bribery *per se*. The different time horizons around rule and regulatory changes between lobbying outcomes (i.e., longer-lasting effects) and bribery outcomes (e.g., one-off exemptions) suggest, moreover, that bribery is less costly (Bennedsen, 2011). The relative ease (at least in a financial sense) with which informal payments can be made to bureaucrats and government officials in some countries suggest that this political activity is the least costly in comparison. Research does suggests that firms are most likely to bribe when their own level of capital is small (Harstad *et al.*, 2011), when they are considered "weaker" (Bennedsen, 2011), and when they face certain financial

constraints or performance failures (Cuervo-Cazurra, 2006). Small firms thus have more limited channels at their disposal to influence policymaking. We therefore suspect that this pushes these firms toward bribery as a means of gaining policymaking influence to a greater extent than large firms. We therefore propose the following hypothesis.

H1: *Large (small) firms are more likely to engage in formal (informal) political activities than small (large) firms, ceteris paribus*

Market and Regulatory Environments

Institutions represent constraints that structure political, economic, and social interaction (North, 1990). Firms are embedded in institutional environments that fundamentally shape their behaviors as well as the behaviors of other social actors (North, 1991). Institution-based research most commonly takes a comparative approach, highlighting in particular the impact that institutional variation has on economic development (Olson, 1996), economic growth (Keefer *et al.*, 1997), and foreign direct investment (Henisz, 2000b), among others. Two institutional settings that importantly shape firms' political activities are the market environment and the regulatory environment.

The market environment has received significant scholarly attention regarding firms' political activities. Early research considers the effects of industry competition on regulatory and legislative approaches and outcomes. Olson (1965) notes that more participants (e.g., firms) in a group (e.g., industry) erode the effectiveness of successfully securing outcomes that are in the collective interest, given increasing organization costs and subsequent free rider problems. Stigler (1971) and Peltzman (1976) subsequently propose an economic theory of regulation, whereby large firms gain over small firms in more concentrated industries given more effective political action organization and reduced collective action problems.

Empirical examinations of the relationship between market environment structure and firms' political activities and influence have produced mixed results. Some research finds firms in concentrated industries are more likely to lobby (Ozer *et al.*, 2009; Weymouth, 2012), to form political action committees (Grier *et al.*, 1994), and to engage in campaign contributions (Schuler *et al.*, 2002), in comparison to firms in fragmented industries. Concentrated market environments might increase the ability or effectiveness of securing favorable policy outcomes, as policymakers need only consider the unified voice of a select few industry players (Holburn *et al.*, 2008) or allow these firms either more opportunities to make their case—via more or more

frequent face-time with these policymakers (Getz, 1997). Other research instead suggests that firms in more concentrated market environments neither need nor require political assistance: fewer competitors lowers the cost of obtaining favorable policy outcomes, but simultaneously reduces the benefits of engaging (or the need to engage) in political activity (Potters *et al.*, 1996:417). Along this same vein, more concentrated market environments and collective action approaches might suggest a lack of effective representation and thereby push some firms to increase individual action (Wilson, 1990). Rival firms have incentives to match the lobbying of their counterparts and subsequently crowd each other out (Bhagwati, 1982). Potters and Sloof's (1996:417) empirical survey thus best summarizes the empirical literature by noting "most scholars indeed find an increased scope for political influence with higher degrees of concentration, but there are many that find no effect or even a negative effect."

We nevertheless suggest that the market environment does affect firms' decisions to engage in political activities. Policy is a public good, as it provides non-rivalrous and non-excludable benefits. Firm incentives to engage in influence-seeking political activities should therefore increase in more concentrated markets and decrease in more fragmented markets. But most of the empirical literature that examines firms' political activities does so in a narrow fashion, rarely considering the multitude of political activities that firms have at their disposal. Firms may find it in their best interest to shift their allocation of or alter their level of participation in certain political activities, due either to limited resources (Barnett, 2006), to issue salience (Ozer *et al.*, 2009) or to new opportunities, depending upon the market environment. Firm-specific contingencies might therefore help to explain the mixed empirical results between political activity participation and the market environment.

The effect of the market environment on firms' political activity participation should therefore not be constant across the population of firms. Large firms are likely better able to navigate these more competitive environments than their smaller brethren, however, given their existing political resources and capabilities (Bonardi, 2011; Holburn *et al.*, 2010), capital (Siegel, 2007), and relationships (Faccio, 2006; Fisman, 2001; Okhmatovskiy, 2010). A lobbying infrastructure already in place likely continues to be effective in limiting and/or blocking rival firms' influence in the policymaking arena. But at the same time, large firms might feel more fragmented market environments limits their own effective representation—via lobbying—and requires an increase in individual action—via more targeted lobbying and/or bribery (Wilson,

1990). More competitive industry conditions might also force small firms to increase their own unique and concerted approaches to achieving policymaking influence. Similar to large firms, small firms also desire more effective representation in more competitive markets. But these firms are already constrained in their available political activity choice set. Small firms would therefore likely increase the level of bribery with more competitive market environment conditions, relative to large firms. We therefore suggest that large firms are more likely to increase their use of formal channels of policymaking influence in comparison to small firms as the market environment becomes more competitive. By contrast, small firms are more likely to increase their use of informal channels of in comparison to large firms as the market environment becomes more competitive. We examine the following set of hypotheses.

H2a: Large (small) firms increase their use of formal (informal) channels of political activity relative to small (large) firms as the market environment become more competitive, ceteris paribus

H2b: The "lobbying gap" ("bribery gap") between large and small (small and large) firms increases as the market environment become more competitive, ceteris paribus

The regulatory environment represents the laws, rules and procedures put into place by government actors to control the behavior and actions of business activities. Given its potential effects on firms' operations and profitability, the regulatory environment has received significant scholarly attention from nonmarket strategy researchers. Early theoretical research examined the extent to which regulatory policies favored consumers via ideology or favored organized interest groups via capture (Peltzman, 1976; Posner, 1974; Stigler, 1971). More recent empirical research examines how heterogeneity in regulatory institutions affects firms' nonmarket strategies and subsequent performance. The regulatory and political environment—i.e., rivalry among interest groups and politicians—is found to shape utilities' abilities to garner larger rate increases (Bonardi *et al.*, 2006). Regulators with "better" information (i.e., lower information asymmetries) around the firms they regulate are found to have lower decision costs, and subsequently, are less likely to implement rate reductions or approve utility requests for rate increases (Fremeth *et al.*, 2010). Legislators that seek to insulate regulatory policies against future reform are more likely to create independent consumer advocates and allow them to intervene in public utility rate-making procedures—thereby benefiting consumers and harming firms (Holburn *et al.*, 2006). Variation in regulatory processes—measured as the level of

information available and regulatory change notifications—are respectively found to decrease and increase firms' perceived influence over regulatory agencies (Macher *et al.*, 2012). Firm incentives to engage in lobbying activities increase in regulatory environments that are less predictable and/or consistent (Weymouth, 2012).

A growing set of empirical analyses therefore suggests that the regulatory environment directly affects firms' political activities. But most of the empirical research neither examines heterogeneity in the regulatory environment nor considers the plethora of political activities that firms have at their disposal. Similar to the market environment, firms may find it in their best interest to shift or alter their participation levels in certain political activities, due for instance to regulatory policy salience or ambiguity. Moderating factors, such as firm-level resources and capabilities, might also influence this relationship.

We therefore suggest that the effect of the regulatory environment on firms' political activities should not be constant across the population of firms. In more unpredictable or less transparent regulatory arenas, all firms likely believe that some type of firm-level political action is required (Wilson, 1990). Large firms are arguably better equipped to navigate these more difficult regulatory environments than their smaller counterparts, given their resources (Bonardi, 2011), capital (Siegel, 2007) and relationships (Faccio, 2006; Fisman, 2001). The lobbying infrastructure that large firms have at their disposal is more likely to be put to use—and more likely to be effective—in more inconsistent and unpredictable regulatory environments. But recognizing that lobbying provides collective benefits to a set of firms or the entire industry, large firms are therefore more likely to engage in bribery to garner more individual benefits (i.e., regulatory relief) in these types of environments. More unpredictable and more transparent regulatory environments similarly suggest that small firms will seek ways to increase their policymaking influence. But these firms are already constrained in their available political activity choice set, and would therefore likely increase their levels of bribery, relative to large firms. In more consistent and predictable regulatory environments, however, we suggest that the opposite is true. Consistency, predictability and transparency in laws, rules and procedures suggests that all firms are more confident as to the level of information available and the timing of any regulatory changes. Large firms are both less likely to lobby and less likely to bribe in these types of environments, while small firms are unlikely to lobby given the fixed cost investment and less likely to bribe. The "lobbying gap" between large and small firms should

therefore decrease as the regulatory environment becomes increasingly predictable and transparent. The "bribery gap" between small and large firms should also decrease in more predictable and more transparent regulatory environments, however, as small firms face tighter political activity budget constraints than their larger brethren. If regulatory rules and procedures are well understand, information is readily available and change notifications are provided *ex-ante*, the benefits to bribery are diminished. We suggest that the cost-benefit net decision calculus around bribery in stable and transparent regulatory arenas is reduced for small firms more so than large firms. We examine the following set of hypotheses.

> *H3a: Large (small) firms decrease their use of formal (informal) channels of political activity relative to small (large) firms as the regulatory environment become more predictable or more transparent, ceteris paribus*
>
> *H3b: The "lobbying gap" ("bribery gap") between large and small (small and large) firms decreases as the regulatory environment become more predictable or more transparent, ceteris paribus*

EMPIRICAL SETTING

Our theoretical and empirical discussion suggests that firms' approaches toward influencing policymaking are determined by factors that operate at multiple levels. While a positive relationship between firm size and participation in the policymaking arena is predominantly observed, questions remain as to whether firm size implicates one channel of policymaking influence (e.g., lobbying) over another (e.g., bribery). Moreover, the use of one channel versus (or in concert with) another channel likely depends upon environmental conditions, such as the extent of market competition and the predictability of regulations, which are unlikely to remain constant across the population of firms. This discussion of the determinants and interrelationships around firms' nonmarket strategies and political activities motivates our empirical analysis. We describe below the data and variables used, provide summary and correlation statistics, and address some common biases that are susceptible to survey data.

Data

The World Bank Enterprise Survey collected firm and business environment information from more than 20,000 firms that operate in 42 countries over 2002-2006. This survey covers a broad range of business environment topics, including corruption, infrastructure, competition and performance. Sampling frames were tailored to reflect the distribution of firms in each country

by sector, size, and location. Adequate representation across countries was achieved via sampling targets on such measures as sample size; industry sector composition; firm size, ownership, export orientation and location; among others (Batra *et al.*, 2003).[4] A high survey response rate obtained, but missing values reduce the number of observations for different measures.

The Enterprise Survey specifically queries firms on the extent of their nonmarket activities related to influencing the content of new laws, rules or regulations. The Enterprise Survey also includes detailed firm-, industry- and country-level information, which we supplement with other country-level data sources. The combined data permit novel analyses of the determinants of firms' specific nonmarket strategies and political activities around influencing policymaking.

Dependent Variables

Our dependent variables represent two political activities that firms employ in efforts to achieve policymaking influence: lobbying and bribery. We consider lobbying a more formal channel of policymaking influence and bribery a more informal channel of policymaking influence. The Enterprise Survey asks firms directly whether they "seek to lobby government or otherwise influence the content of laws or regulations affecting it." *Lobby* is coded as a dichotomous variable, equaling one if firms reply positively and zero if otherwise. It would be a rare case where a firm admits to engaging in bribery. The Enterprise Survey therefore does not ask firms directly whether they bribe, but instead asks firms whether "a typical firm like yours" is required to make gifts or informal payments to public officials to "get things done" with regard to customs, taxes, licenses, regulations services, etc. We recognize that the Enterprise Survey avoids asking firms directly whether they engage in bribery, but it likely elicits more truthful responses and plausibly suggests that respondent answers are in reference to their own activities (Bennedsen, 2011). Firms report as a percentage of annual sales the average of these aforementioned expenses. *Bribe to Sales* is therefore coded as a continuous variable, and ranges (theoretically) from 0 to 100. As the vast majority of the reported values are exceedingly small (less than five percent), permutations of this variable are created for empirical and robustness analyses. *Bribe* is coded as a dichotomous variable, equaling one if firms' bribes to sales exceeds

[4] See Batra Batra G, Kaufmann D, Stone AHW. 2003. *Investment Climate Around the World: Voices of the Firms from the and Governance Findings of the World Business Environment Survey*. World Bank Institute: Washington, DC. for greater discussion of these sampling targets around the predecessor to the Enterprise Survey—the World Business Environment Survey.

zero percent and zero otherwise. Table 1 provides more detailed description of the dependent variables.

Independent Variables

Several independent variables are created from the Enterprise Survey, as well as other country-level databases. At the firm level, the size of the firm represents our main variable of interest. *Firm Size* is a continuous variable representing the natural log of the average number of permanent workers in the reporting firm one year prior. As firm-specific (political) resources and capabilities might impact firms' nonmarket strategy approaches (Bonardi, 2011; Hillman *et al.*, 2004), several firm-level controls are included. As older firms are more likely to have nonmarket strategies in place and are more likely adept at garnering policymaking influence via experiential advantages, *Firm Age* is a continuous variable of the natural log of years since the firm commenced operations in the host country. As firms with a greater scope of country-level operations are more likely to have more political connections (Faccio, 2006; Fisman, 2001) and political capital (Siegel, 2007), *Facilities* is a continuous variable of the natural log of the number of distinct operating facilities of the reporting firm. As proximity to the capital likely influences whether firms attempt to influence policymaking, *Capital* is a dichotomous measure of whether the reporting firm is located in the country capital. As firms often utilize trade associations for political activities, *Business Association* is a dichotomous measure of whether the reporting firm belongs to a business association or chamber of commerce. As nonmarket strategy and policymaking influence depend in part on the effectiveness of management (Oliver *et al.*, 2008), *Multinational* is a dichotomous measure of whether the reporting firm has operations in other countries and *Exporter* is a dichotomous measure of whether the reporting firm exports to other countries. Other factors, such as government revenue or policy dependency (Hillman *et al.*, 1999a), issue or political saliency (Bonardi *et al.*, 2005b) and ownership considerations (Hansen *et al.*, 2000), might have similar effects on firms' nonmarket strategy approaches. Continuous measures are therefore used for the percentage of foreign ownership (*Foreign-Owned*) and the percentage of government ownership (*Government-Owned*) of the reporting firm.

At the industry level, the structure of the market in which firms compete represents a main variable of interest. The Enterprise Survey asks firms directly what would happen in their main product or service line(s) if they raised prices by ten percent above their current level in the

domestic market while their rivals maintained current prices. Survey respondents indicate whether their customers would: (1) continue to buy in the same quantities; (2) continue to buy in slightly lower quantities; (3) continue to buy in much lower quantities; or (4) not continue to buy. We utilize this question as a measure of the extent of competition in the market environment. *Market Environment* is thus an ordered categorical variable that ranges from one (1) to four (4), with higher numbers indicating greater competition. The Enterprise Survey also queries firms as to whether government officials' interpretations of regulations are "consistent and predictable." We utilize this as a measure of uncertainty in the regulatory environment (e.g., industry, country). Regulatory Environment is thus an ordered categorical variable, and ranges from one (1) to six (6) with higher numbers suggestive of greater regulatory stability. We also include sector indicator variables (i.e., *Textiles*, *Garments*, *Food*, *Construction*, etc.) to control for remaining unobserved industry-level heterogeneity. As a robustness test of the regulatory environment, we include a measure of government transparency termed the HRV Index (Hollyer *et al.*, 2014). The HRV Index measures transparency as a function of the disclosure of policy-relevant information (i.e., credible aggregate economic data) by the government to the public. We suggest that the HRV Index thus represents a proxy for whether the regulatory environment is considered predictable and consistent, and examine whether this is the case in the empirical analysis. Our analysis is constrained somewhat, however, from the loss of observations due to more limited country overlap in the HRV Index database and the WBES.

At the country level, we incorporate several control variables that may affect firms' nonmarket strategy approaches toward policymaking influence. As national income or population might impact the quality of government (La Porta *et al.*, 1999), we include logged values of *GDP* and *Population*. As economic openness might affect domestic and foreign firm investment (Rajan *et al.*, 2003), we include logged *Trade/GDP* (a standard measure of openness).[5] As the structure of the political institution environment might influence how firms attempt to achieve policymaking influence, we utilize Henisz's (2000a) measure of political constraints (*POLCON*). This quantitative measure first identifies the number of independent government branches with veto power over policy change and over time,[6] and then derives

[5] *GDP/Capita* and *Trade/GDP* measures are drawn from the World Bank Development Indicators (WBDI) 1999 database.

[6] The independent branches of government include the executive, lower and upper legislative chambers, and the judiciary.

political constraints using a simple spatial model of political institution interaction taking into account political party composition and preference heterogeneity. *POLCON* ranges from zero (limited constraints) to one (substantial constraints). We finally include country indicator variables to control for remaining unobserved country-level heterogeneity. Table 1 provides a detailed description of the independent and control variables.

--- Insert Table 1 about here ---

Descriptive Statistics

Table 2 provides summary statistics of the dependent, independent and control variables. A relatively small percentage of firms indicate that they engage in lobbying, while a larger percentage of firms indicate that "a typical firm like yours" engage in bribery regarding the content of new laws, rules and regulations. The sample shows substantial respondent variation, however, by firm size, by the extent of competition in the market environment, and by the stability and predictability of the regulatory environment.

Table 3 provides correlation statistics of the variables highlighting in bold pair-wise correlations that are statistically significant. *Lobby* is positively correlated with *Firm Size*, and negatively correlated with the *Market Environment* and the *Regulatory Environment*. The bribery variables are negatively correlated with *Firm Size*, positively correlated with the *Market Environment*, and negatively correlated with the *Regulatory Environment*. The two corporate political activity variables are also positively correlated with each other. The remaining pair-wise correlations are relatively moderate.

--- Insert Tables 2 and 3 about here ---

Survey Biases and limitations

The World Bank Enterprise Survey utilized a standardized survey instrument, uniform stratified sampling methodology, and parallel sample parameters across the firms, industries and countries surveyed. We examine, discuss and test for several biases that survey data are susceptible to, as well as devote attention to the implications for statistical inference with non-random samples. Lack of generalizability is of limited concern, given the large number and heterogeneous composition of Enterprise Survey respondents. We confirm survey respondent anonymity,

suggesting social desirability bias is not present, but note that predictor and criterion variables were obtained from the same rater (Podsakoff *et al.*, 2003). We confirm high survey response rates (Batra *et al.*, 2003), but cannot confirm non-response bias (i.e., late versus early respondents) is not present. We suggest common method variance is not a concern for the following reasons. First, some independent variables (i.e., those at the country-level) are not derived from the Enterprise Survey. Second, several independent variables are interactions that are less subject to common method variance (Aiken *et al.*, 1991).[7] Third, a post-hoc Harman's single-factor test indicates several factors with eigenvalues greater than one, with no single factor representing more than 40 percent of the variance.

While the Enterprise Survey offers a unique and novel dataset to examine firms' nonmarket activities, it does present some potential limitations. One concern is whether firms' perceptions accurately reflect reality, as surveys are sometimes deemed poor predictive indicators. We believe that this concern is mitigated for the following reasons. First, the Enterprise Survey focuses on perceptions and does not predict economic agents' behavioral responses to particular stimuli. Second, the Enterprise Survey protects respondent anonymity and therefore reduces evaluation apprehension. Third, the Enterprise Survey offers no respondent benefits and therefore limits incentives to 'game' answers. A second and related concern is directly related to bribery. In particular, are firms that report bribery actually implicating themselves or instead implicating "a typical firm" like themselves. While it is difficult if not impossible to state with certainty, survey administrators do suggest that it is most commonly understand that this question is with respect to the reporting firm itself [cite]. A third concern is the error structures that arise in estimation using non-random sampling. Certain Enterprise Survey subgroups (i.e., large firms) were over-sampled, while other subgroups (i.e., each particular country) had targeted sample sizes. The empirical estimations used are un-weighted, and thus present statistical inference implications: first, the views of small firms carry the same weight as large firms in a given country (holding intra-country subsample size constant); and second, the views of firms in "minor" countries carry the same importance as firms in a "major" countries (holding inter-country subsample size constant). Given the above discussion and bias tests, we suggest that this

[7] Aiken and West Aiken LS, West SG. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Sage Publications: Thousand Oaks, CA. indicate respondents rarely make or consider interaction-based arguments toward survey answers that could systematically bias responses.

survey offers plausible measures of firms' political activities in comparison to the more indirect measures that have been used in the extant literature.

EMPIRICAL ESTIMATION

The sample and correlation statistics presented above are suggestive, but neither identify specific relationships nor convey statistical or economic significance. We accordingly turn to more systematic analyses of the determinants of firms' nonmarket strategies and political activities.

Model Specification

The Enterprise Survey reports firms' formal and informal approaches toward influencing new laws, rules and regulations. Lobbying is a dichotomous measure, suggesting probit or logit estimation is appropriate. Bribery is expressed as a percentage (i.e., zero to 100) of expenses relative to firm revenue, suggesting count model estimation is appropriate. As the variable ranges and estimation approaches for these distinct dependent variables create interpretation difficulties, we recast the reported *Bribes to Sales* percentage as a dichotomous variable: *Bribe* equals one if firms' bribes to sales percentage exceeds zero, and is zero otherwise.

We present the results of two empirical estimation approaches to facilitate interpretation and demonstrate robustness. Our first approach estimates separate univariate probit models: one for whether the reporting firm engages in lobbying, and one for whether the reporting firm "engages" in bribery. This estimation approach assumes firms' lobbying and bribery decisions are unrelated. This estimation approach controls for unobserved industry-sector and country-level heterogeneity via fixed effects using maximum likelihood estimation. This model takes the general form:

$$LB_{ij}^{*} = \beta + F_{ij}'\gamma + I_{ij}'\delta + C_j'\theta + X_{ij}'\tau + \xi_j + \varepsilon_{ij} \qquad [1]$$

where LB^{*} is an unobserved (latent) variable for lobby or bribe, F represents firm-level determinants, I represents industry-level determinants, C represents country-level determinants, X represents interaction terms, and ξ represents industry sector and country fixed effects. The error term ε_{ij} is assumed distributed as standard normal.

Our second approach estimates a bivariate probit model, recognizing that these political activity decisions are potentially correlated. This estimation approach also controls for

unobserved industry-sector and country-level heterogeneity via fixed effects using maximum likelihood estimation. This model takes the general form:

$$L_{ij}^{*} = \beta + F_{ij}'\gamma + I_{ij}'\delta + C_j'\theta + X_{ij}'\tau + \xi_j + \varepsilon_{ij} \qquad [2]$$

$$B_{ij}^{*} = \beta + F_{ij}'\gamma + I_{ij}'\delta + C_j'\theta + X_{ij}'\tau + \xi_j + \varepsilon_{ij} \qquad [3]$$

where L^* is an unobserved (latent) variable for lobby and $B*$ is an unobserved (latent) variable for bribe. The error terms in equations [2] and [3] are distributed as bivariate normal, with an additional parameter (ρ) that represents the correlation in error terms across these equations.

Empirical Results

Table 4 presents the univariate and bivariate probit results in an identical format for each dependent variable: Model 1 (univariate probit) and Model 3 (bivariate probit) provides a baseline using the independent and control variables; and Model 2 (univariate probit) and Model 4 (bivariate probit) add the interaction terms to Models 1 and 3, respectively. Standard errors are robust adjusted in all models for clustering by country. Likelihood-ratio statistics reject zero slope coefficient hypotheses in all models (.01 *p*-values). The inclusion of industry sector and country fixed effects adds significant explanatory power. Comparisons of the Model 3 and 4 coefficient estimates are generally consistent in magnitude, sign, and statistical significance. The ρ term in the Models 3 and 4, however, indicate a positive and statistically significant ($p<0.01$) correlation in error structure between the lobby and bribe equations. The null hypothesis of decision independence between these political activity decisions is therefore rejected. Because this association is by construction through the error structure, no causality can be inferred and no inferences can be made regarding the substitutability or complementarity of these nonmarket strategies (Miravete, 2010). We therefore focus our discussion on the Model 4 results for each dependent variable.

The empirical results suggest the inclusion of several control variables is warranted. At the firm level, older firms (*Firm Age*) are found more likely to lobby ($p<0.01$) and less likely to bribe ($p<0.01$). Firms with more establishments operating within the host country (*Firm Scope*) are found more likely to lobby ($p<0.01$). Firms that are members of a trade or business association are found more likely to lobby ($p<0.01$) and more likely to bribe ($p<0.01$). Ownership also shapes firms' political activities: *Foreign-Owned* firms are found less likely to bribe ($p<0.05$), while *Government-Owned* firms are found more likely to lobby ($p<0.01$) and less

likely to bribe (p<0.01). Finally, strategic orientation influences firms' nonmarket strategies. Firms that export (*Exporter*) are found less likely to lobby (p<0.01) and less likely to bribe (p<0.01). At the country level, firms headquartered within the country *Capital* are found more likely to lobby (p<0.10) and more likely to bribe (p<0.10). Finally, national income reduces firms' corporate political activity engagement. Firms operating in wealthier countries (*GDP/Capita*) are found less likely to lobby (p<0.01) and less likely to bribe (p<0.01).

We next examine the direct effects of our main variables of interest. *Firm Size* has a positive effect on firms' use of lobbying (p<0.01) and a negative effect on firms' use of bribery (p<0.01). Large firms therefore use more formal channels, while their smaller counterparts use more informal channels in attempts to shape policymaking. The different environments in which firms find themselves also influence firms' CPA approaches. Firms in more competitive *Market Environments* are less likely to lobby (p<0.01) but more likely to bribe—a somewhat surprising result. Competition perhaps limits the policymaking influence returns from lobbying, given a more crowded marketplace (Macher *et al.*, 2016). Firms in more consistent and predictable *Regulatory Environments* are less likely to bribe (p<0.01). Greater uncertainty in how regulation is conducted and/or carried out within an industry or country potentially increases the policymaking influence returns from bribery.

--- Insert Table 4 about here ---

We next examine the interaction effects between our main variables of interest. We report coefficients and standard errors following standard practice, but caution against determining statistical or economic significance for two reasons. First, the reported coefficients do not represent marginal effects (Hoetker, 2007; Zelner, 2009), and reported standard errors do not convey direct information about the statistical significance of these effects because of model nonlinearity (Ai *et al.*, 2003; Huang *et al.*, 2000). Second, the interaction terms do not represent cross-partial derivatives (Hoetker, 2007), and do not indicate the economic significance of the conditional effects of interest. It is thus not possible to determine direction, statistical significance, or economic significance by simply examining the magnitude and standard error of a single coefficient when interaction effects are included in nonlinear models. We instead employ marginal effects analyses, and show the results graphically to demonstrate statistical and economic significance as well as to facilitate intuition.

The accompanying figures calculate predicted values for firms' reported political activities by varying the main variables of interest across their distinct ranges and holding the control variables at their respective means. Predictions and 95 percent confidence intervals demonstrate how the use of these formal and informal channels of influence varies statistically and economically by small firms (i.e., those in 10th percentile of *Firm Size*) and large firms (i.e., those in the 90th percentile of *Firm Size*) under different market and regulatory environments.[8]

Figures 1 and 2 respectively examine firms' formal and informal approaches to influencing policymaking across the market environment. Figure 1 indicates that large firms lobby to a substantially greater extent than their smaller counterparts across the entire market environment range—from industries characterized as monopolies to industries characterized as highly fragmented. The "lobbying gap" between large and small firms grows, moreover, as the market environment becomes increasingly competitive: large firms slightly increase their lobbying efforts, while small firms decrease their use of this formal approach toward achieving policymaking influence. Figure 2, by contrast, indicates that large firms bribe to a lesser extent than their smaller counterparts across the entire range of the market environment. The "bribery gap" between small and large firms grows, however, as the market environment becomes more competitive: both firms increase their use of this informal policymaking approach, but small firms substantially more so.

--- Insert Figures 1 and 2 about here ---

Figures 3 and 4 respectively examine firms' formal and informal policymaking influence approaches across the regulatory environment. Figure 3 indicates that large firms lobby to a substantially greater extent than their smaller counterparts across the entire regulatory environment range—from regulatory environments considered inconsistent and unpredictable to those considered consistent and predictable. The "lobbying gap" between large and small firms shrinks somewhat as the regulatory environment becomes more consistent and predictable: large firms reduce their lobbying efforts, while small firms maintain their minimal usage of this formal channel of influence. Figure 4 indicates that large firms bribe to a lesser extent than small firms across the entire regulatory environment range. This "bribery gap" shrinks substantially,

[8] No substantial statistically or economically significant differences obtain via robustness tests around the small firm and large firm definitions by ten percent.

moreover, as the regulatory environment becomes increasingly consistent and predictable: both large and small firms decrease their use of bribery, but small firms substantially more so.

--- Insert Figures 3 and 4 about here ---

Robustness Results

As one test of empirical robustness, we replace the *Regulatory Environment* measure with the *HRV Index*—a measure of country-level transparency via the disclosure of policy-relevant information by government to the public. This estimation controls for unobserved industry-sector and country-level heterogeneity via fixed effects using maximum likelihood estimation, adjusting standard errors for robustness and clustering by country. All of the control variables are included, except for those at the country-level due to the more limited country overlap between the HRV Index database and the WBES. Table 5 provides the empirical results and Figures 4 and 5 examine the economic and statistical significance.

Table 5 indicates that large firms are more likely to lobby and especially in more competitive environments, and less likely to bribe especially in more transparent countries. The *HRV Index* is negative and statistically significant, indicating that the greater disclosure of policy-relevant information by the government to the public is associated with lower levels of lobbying and bribery. Figures 5 and 6 respectively examine firms' formal and informal policymaking influence approaches across different country-level transparency environments. Figure 5 indicates that large firms lobby to a greater extent than their smaller counterparts across the entire transparency range, although statistically significant differences obtain only after moderate levels (i.e., greater than three) of transparency. The "lobbying gap" between large and small firms shrinks as governments become more transparent: large firms increase and then decrease their lobbying efforts with greater transparency; small firms generally reduce their lobbying efforts with greater transparency. Figure 6 indicates that large firms bribe to a lesser extent than small firms across the entire transparency range. Both small and large firms increase their bribery in less transparent countries, and then decrease their bribery in more transparent countries. This "bribery gap" shrinks substantially as the as governments become more transparent: both large and small firms decrease their use of bribery, but small firms do so to a greater extent. These results are strongly similar to the regulatory environment.

Discussion

Our empirical setting provides a comprehensive and geographically diverse analysis of firms' formal and informal approaches to influencing policymaking. Our empirical results offer implications that are important to nonmarket strategy research, managerial practice, and public policy. For researchers, our results suggest that firms' policymaking influence approaches are determined by multiple and interrelated factors. More competitive market environments encourage firms to implement more informal channels toward policymaking influence in comparison to formal channels, but this result is markedly conditioned by firm size. Large firms slightly increase their relatively higher level of lobbying and significantly increase their relatively lower level of bribery in more competitive market environments, while small firms marginally reduce their relatively lower level of lobbying and significantly increase their relatively higher bribery activities in these environments. By contrast, more predictable regulatory environments discourage firms from implementing more informal policymaking influence approaches in comparison to formal approaches. Small firms maintain their relatively lower level of lobbying but significantly decrease their relatively higher level of bribery in more consistent and predictable regulatory environments, while large firms marginally decrease their relatively higher level of lobbying and significantly decrease their relatively lower level of bribery in these environments. Similar results obtain when using an index of government transparency in place of the regulatory environment index. These results indicate that the "lobbying gap" between large and small firms grows in more competitive market environments and shrinks in more predictable or more transparent regulatory environments. At the same time, the "bribery gap" between small and large firms grows in more competitive environments and shrinks in more predictable or more transparent regulatory environments. The combined results suggest that firms alter their political activities as a function of their own size as well as the environments in which they are placed. Finally, these results suggest a substantial size advantage. Large firms more likely possess the scale, resources, and relationships required in formal approaches toward influencing policymaking, while small firms face particular limitations and difficulties and instead must rely on more informal approaches.

For industry practitioners, our results suggest a more refined and comprehensive picture of how firm size interacts with market and regulatory environments to shape nonmarket strategy in general and policymaking influence approaches in particular. Our results indicate that small

firms lag large firms in their use of formal policymaking influence approaches—an admittedly unsurprising result. But our results also suggest that small firms lead large firms in their use of informal policymaking influence approaches—a more surprising result. How these firm types react to different environmental settings is also interesting. Given the resources required, small firms are less likely to lobby and more likely to bribe, but especially in more competitive market environments and more unpredictable or less transparent regulatory environments. Given the resources in place, large firms are more likely to lobby across the different market and regulatory environments. But large firms increase their lobbying efforts in more competitive market environments and decrease their bribery efforts in more predictable and transparent regulatory environments. These results nevertheless suggest that large firms possess particular advantages in navigating varied environments when it comes to influencing policymaking. At the very least, our results suggest industry practitioners seeking policymaking favors recognize and consider divergent nonmarket strategy approaches based on firm size and market and regulatory environment conditions. We suggest that these factors and their interrelationships are correlated with success and failure related to firms' nonmarket strategies.

For public policy, our results suggest that different environments in which firms face strongly condition firms' use of formal versus informal channels of policymaking influence. More competitive market environments often bring lower prices, higher quality and better customer service—all of which make consumers better off. But our results also suggest that these environments are associated with increased lobbying by large firms and increased bribery by all firms—both of which likely undermine these beneficial economic outcomes. More predictable and more transparent regulatory environments likely allow firms to better navigate the requirements within a particular industry sector or country. And our results suggest that these regulatory environments are associated with decreased lobbying by large firms and decreased bribery by all firms. Policymakers that seek to establish more competitive market environments therefore face an inherent trade-off: consumers are likely made better off but firms increasingly attempt to undermine this process. By contrast, policymakers that seek to establish more predictable and transparent regulatory environments face no such trade-off: firms are likely made better off and are unlikely to undermine this process.

This paper is not without limitations. While the World Bank Enterprise Survey is comprehensive and global, the use of survey-based data has some limitations and potential

biases. We address several of these directly, but acknowledge several others. We recognize that one dependent variable (i.e., bribery) is based on a survey question around firms' perceptions of similar firms, but treat this measure as if it was firms' actual reported bribery levels. We examine policymaking influence approaches based on firms' individual efforts as opposed to the collective efforts that might accrue via business or trade association participation. The benefits and costs related to individual firm efforts versus business or trade association influence efforts is an important question. While we control for firms' business or trade association participation, we table this discussion for future research. We understand that different types of firms pursue different political activities that depend in part on their market and nonmarket positions, as well as their own political resources and capabilities. While we control for several factors, we recognize that other factors that we do not consider also affect firms' policymaking influence approaches. We assume that intra-industry market competition drives intra-industry political competition, but the permeability of industry boundaries and firms' own interactions across multiple political and industrial dimensions suggest inter-industry political competition might also play an important role. Given limited data disaggregation, we treat countries as homogeneous and ignore differences that might exist across federal systems (e.g., India) or regions (e.g., China). We cannot eliminate the potential that developed relationships between firms and government branches improve firms' public policymaking influence, rather than the firm- and industry-level factors that we suggest. While we attempt to control for these factors, it might be the case that politically powerful firms become larger and subsequently alter industry structure over time. Finally, our use of panel data with cross-sectional variation at the country level might be susceptible to inferential errors from unobserved confounding influences. Our empirical estimations using industry sector and country fixed effects methods help to address the unobserved heterogeneity present, but potentially not entirely.

CONCLUSION

The propensity of firms' attempts to influence policymaking in the establishment of laws, rules and regulations is well documented. The exact process by which firms engage in particular nonmarket strategies and political activities—and the determinants of these approaches—is relatively less well understood. This paper examines firms' formal and informal channels toward influencing policymaking. It provides theoretical motivation and then undertakes an empirical

investigation of firm- and industry-level factors—and their interrelationships—shape firms' policymaking influence approaches using a large and global dataset of firms.

The empirical results indicate that large firms are more likely to use formal channels (i.e., lobbying) while small firms are more likely to use informal channels (i.e., bribery) for policymaking influence. Beyond this perhaps unsurprising finding, the empirical results also indicate that the market environment and the regulatory environment differentially shape these firm types' political activities. Large firms moderately increase their lobbying efforts in more competitive market environments and decrease their lobbying efforts in more consistent and transparent regulatory environments. Small firms are less likely to use lobbying for policymaking influence, but moderately decrease this formal channel of influence in more competitive market environments. By contrast, small and large firms increase their use of bribery in more competitive market environments and decrease their use of bribery in more consistent and transparent regulatory environments. These findings suggest that the heterogeneity in firm type and heterogeneity in the different environments in which firms are placed shape firms' nonmarket approaches. These findings provide insights important to academic research and to industry practitioners related to nonmarket strategy in general and policymaking influence in particular.

REFERENCES

Ai CR, Norton EC. 2003. Interaction Terms in Logit and Probit Models. *Economic Letters* **90**(1): 123-129.

Aiken LS, West SG. 1991. *Multiple Regression: Testing and Interpreting Interactions*. Sage Publications: Thousand Oaks, CA.

Barnett ML. 2006. Finding a Working Balance between Competitive and Communal Strategies. *Journal of Management Studies* **43**: 1753-1773.

Baron DP. 1995. Integrated strategy: Market and Nonmarket Components. *California Management Review* **37**(2): 47-65.

Batra G, Kaufmann D, Stone AHW. 2003. *Investment Climate Around the World: Voices of the Firms from the and Governance Findings of the World Business Environment Survey*. World Bank Institute: Washington, DC.

Baysinger BD. 1984. Domain Maintenance as an Objective of Business Political Activity: An Expanded Typology. *Academy of Management Review* **9**(2): 248-258.

Bennedsen M, S.E. Feldmann and D. Dreyer. 2011. Lobbying and Bribes - A Survey-Based Analysis of the Demand for Influence and Corruption *CESifo Working Paper Series*(No. 3496): 1-35.

Bhagwati NJ. 1982. Directly Unproductive, Profit-seeking (DUP) Activities. *Journal of Political Economy* **90**(5): 988-1002.

Boddewyn JJ, Brewer TL. 1994. International-business political behavior: New theoretical directions. *Academy of Management Review* **19**(1): 119-144.

Bombardini M. 2008. Firm Heterogeneity and Lobby Participation. *Journal of InternationalEconomics* **75**(2): 329–348.

Bonardi JP. 2011. Corporate Political Resources and the Resource-Based View of the Firm. *Strategic Organization* **9**(3): 247-255.

Bonardi JP, Hillman AJ, Keim GD. 2005a. The attractiveness of political markets: Implications for firm strategy. *Academy of Management Review* **30**(2): 397-413.

Bonardi JP, Holburn GLF, Vanden Bergh RG. 2006. Nonmarket strategy performance: Evidence from US electric utilities. *Academy of Management Journal* **49**(6): 1209-1228.

Bonardi JP, Keim GD. 2005b. Corporate Political Strategies for Widely Salient Issues. *Academy of Management Review* **30**(3): 555-576.

Chong A, Gradstein M. 2010. Firm-Level Determinants of Political Influence. *Economics & Politics* **22**(3): 233-256.

Cuervo-Cazurra A. 2006. Who Cares About Corruption? *Journal of International Business Studies* **37**: 807-822.

de Figueiredo JM. 2009. Integrated Political Strategy. In *Advances in Strategic Management - Economic Institutions of Strategy*. Nickerson JAaBSS (ed.), Emerald Group Publishing Ltd.

Faccio M. 2006. Politically Connected Firms. *American Economic Review* **96**(1): 369-386.

Fisman R. 2001. Estimating the Value of Political Connections. *American Economic Review* **91**(4): 1095-1102.

Fremeth A, Holburn GLF. 2010. Information Asymmetries and Regulatory Decision Costs: An Analysis of U.S. Electric Utility Rate Changes, 1980-2000. *Journal of Law, Economics and Organization* **27**: forthcoming.

Getz K. 1997. Research in Corporate Political Action: Integration and Assessment. *Business & Society* **36**: 32-77.

Grier KB, Munger MC, Roberts BE. 1994. The Determinants of Industry Political Activity, 1978-1986. *American Political Science Review* **88**(4): 911-926.

Hansen W, Mitchell N. 2000. Disaggregating and Explaining Corporate Political Activity: Domestic and Foreign Corporations in National Politics. *American Political Science Review* **94**: 891-903.

Harstad B, Svensson J. 2011. Bribes, Lobby and Development. *American Political Science Review* **105**(1): 46-63.

Henisz WJ. 2000a. The Institutional Environment for Economic Growth. *Economics and Politics* **12**(1): 1-31.

Henisz WJ. 2000b. The Institutional Environment for Multinational Investment. *Journal of Law, Economics, and Organization* **16**(2): 334-364.

Hillman A. 2003. Determinants of Political Strategies in US Multinationals. *Business & Society* **42**: 455-484.

Hillman A, G. Keim. . 1995. International Variation in the Business-Government Interface: Institutional and Organizational Considerations. *Academy of Management Review* **20**(1): 193–214.

Hillman A, Hitt M. 1999a. Corporate Political Strategy Formulation: A Model of Approach, Participation and Strategy Decisions. *Academy of Management Review* **24**: 825-842.

Hillman A, Zardkoohi A, Bierman L. 1999b. Corporate Political Strategies and Firm Performance: Indications of Firm-Specific Benefits From Personal Service in the U.S. Government. *Strategic Management Journal* **20**: 67-81.

Hillman AJ, Keim GD, Schuler D. 2004. Corporate political activity: A review and research agenda. *Journal of Management* **30**(6): 837-857.

Hoetker G. 2007. The use of logit and probit models in strategic management research: Critical issues. *Strategic Management Journal* **28**(4): 331-343.

Holburn GLF, Vanden Bergh RG. 2006. Consumer capture of regulatory institutions: The creation of public utility consumer advocates in the United States. *Public Choice* **126**(1-2): 45-73.

Holburn GLF, Vanden Bergh RG. 2008. Making friends in hostile environments: Political strategy in regulated industries. *Academy of Management Review* **33**(2): 521-540.

Holburn GLF, Zelner BA. 2010. Political Capabilities, Policy Risk, and International Investment Strategy: Evidence from the Global Electric Power Generation Industry. *Strategic Management Journal* **31**(12): 1290-1315.

Hollyer JR, Rosendorff BP, Vreeland JR. 2014. Measuring Transparency. *Political Analysis* **22**(1): 413-434.

Huang C, Shields TG. 2000. Interpretation of Interaction Effects in Logit and Probit Analyses: Reconsidering the Relationship Between Registration Laws, Education and Voter Turnout. *American Politics Quarterly* **28**(1): 80-95.

Keefer P, Knack S. 1997. Why Don't Poor Countries Catch Up? A Cross-National Test of an Institutional Explanation. *Economic Inquiry* **35**: 590-602.

Kerr WR, W.F. Lincoln and P. Mishra. 2014. The Dynamics of Firm Lobbying. *American Economic Journal: Economic Policy* **6**(4): 343–379.

La Porta R, Lopez-De-Silanes F, Shleifer A, Vishny R. 1999. The quality of government. *Journal of Law Economics & Organization* **15**(1): 222-279.

Lenway SA, Rehbein K. 1991. Leaders, Followers, and Free Riders - an Empirical-Test of Variation in Corporate Political Involvement. *Academy of Management Journal* **34**(4): 893-905.

Macher JT, Mayo JW. 2012. The World of Regulatory Influence. *Journal of Regulatory Economics* **41**(1): 59-79.

Macher JT, Mayo JW. 2016. Influencing Public Policymaking: Firm-, Industry- and Country-Level Determinants. *Strategic Management Journal* **36**(13): 2021-2036.

Macher JT, Mayo JW, Schiffer M. 2011. The Influence of Firms on Governments. *The B.E. Journal of Economic Analysis & Policy* **11**(1): Article 1.

Masters M, Keim G. 1985. Determinants of PAC Participation Among Large Corporations. *Journal of Politics* **47**: 1158-1173.

Meznar M, Nigh D. 1995. Buffer or Bridge? Environmental and Organizational Determinants of Public Affairs Activities in American Firms. *Academy of Management Journal* **38**: 975-966.

Miravete EJaJCP. 2010. Testing for Complementarity When Strategies are Dichotomous. *Economics Letters* **106**: 28-31.

North D. 1991. Institutions. *Journal of Economic Perspectives* **5**(Winter): 97-112.

North DC. 1990. *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press: New York.

Okhmatovskiy I. 2010. Performance Implications of Ties to the Government and SOEs: A Political Embeddedness Perspective. *Journal of Management Studies* **47**(6): 1020-1047.

Oliver C, Holzinger I. 2008. The Effectiveness of Strategic Political Management: A Dynamic Capabilities Framework. *Academy of Management Review* **33**(2): 496-520.

Olson M. 1965. *The logic of collective action: public goods and the theory of groups*. Harvard University Press: Cambridge, MA.

Olson M. 1996. Big Bills Left on the Sidewalk: Why Some Nations Are Rich And Others Poor. *Journal of Economic Perspectives* **10**: 3-24.

Ozer M, Lee SH. 2009. When Do Firms Prefer Individual Action to Collective Action in the Pursuit of Corporate Political Strategy? A New Perspective on Industry Concentration. *Business and Politics* **11**(1): 1-21.

Peltzman S. 1976. Toward a More General Theory of Regulation. *Journal of Law and Economics* **19**: 211-248.

Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP. 2003. Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology* **88**(5): 879-903.

Posner RA. 1974. Theories of Economic Regulation. *Bell Journal of Economics* **5**(2): 335-358.

Potters J, Sloof R. 1996. Interest Groups: A Survey of Empirical Models That Try to Assess Their Influence. *European Journal of Political Economy* **12**(3): 403-442.

Rajan RG, Zingales L. 2003. The great reversals: the politics of financial development in the twentieth century. *Journal of Financial Economics* **69**(1): 5-50.

Salamon LM, Siegfried JJ. 1977. Economic Power and Political Influence - Impact of Industry Structure on Public-Policy. *American Political Science Review* **71**(3): 1026-1043.

Schuler D. 1996. Corporate Political Strategy and Foreign Competition: The Case of the Steel Industry. *Academy of Management Journal* **39**: 720-737.

Schuler D, Rehbein K. 1997. The Filtering Role of the Firm in Corporate Political Involvement. *Business & Society* **36**: 116-139.

Schuler DA, Rehbein K, Cramer RD. 2002. Pursuing strategic advantage through political means: A multivariate approach. *Academy of Management Journal* **45**(4): 659-672.

Shaffer B, Quasney T, Grimm C. 2000. Firm-Level Performance Implications of Nomarket Actions. *Business & Society* **39**(2): 126-143.

Siegel J. 2007. Contingent Political Capital and International Alliances: Evidence from South Korea. *Administrative Science Quarterly* **52**: 621-666.

Stigler GJ. 1971. The Theory of Economic Regulation. *Bell Journal of Economic and Management Science* **2**: 3-21.

Weymouth S. 2012. Firm Lobbying and Influence in Developing Countries: A Multilevel Approach. *Business and Politics* **14**(4): 1-26.

Wilson GK. 1990. Corporate Political Strategies. *British Journal of Political Science* **20**: 281-288.

Zelner BA. 2009. Using Simulation to Interpret Results from Logit, Probit, and Other Nonlinear Models. *Strategic Management Journal* **30**(12): 1335-1348.

Table 1 – Variable Description

DEPENDENT	DESCRIPTION
Lobby (DV)	"Does your firm seek to lobby government or otherwise influence the content of laws or regulations affecting it?" Source: World Bank Enterprise Survey. Scale: 0/1.
Bribe to Sales (PCT)	"We've heard that establishments are sometimes required to make gifts or informal payments to public officials to 'get things done' with regard to customs, taxes, licenses, regulations, services, etc. On average, what percent of annual sales value would such expenses cost a typical firm like yours?" Source: World Bank Enterprise Survey. Scale: 0…100.
Bribe (DV)	Dichotomous variable based on recoding of *Bribes to Sales*. Scale: 0 (0); 1 (>0)
INDEPENDENT	**DESCRIPTION AND SOURCE**
Firm Size	"Average number of workers one year ago." Source: World Bank Enterprise Survey. Scale: Logged.
Market Environment	"If you were to raise your prices of your main product line or main line of services 10% above their current level in the domestic market which of the following would best describe the result assuming that your competitors maintained their current prices?" Source: World Bank Enterprise Survey. Scale: 0 (Customers continue to buy in same quantities); 1 (Customers continue to buy in slightly lower quantities); 2 (Customers continue to buy at much lower quantities); 3 (Customers stop buying).
Regulatory Environment	"In general, government officials' interpretations of regulations affecting my establishment are consistent and predictable." To what extent do you agree with this statement?" Source: World Bank Enterprise Survey Scale: 1 (Fully Disagree) to 6 (Fully Agree).
HRV Index	Measure of disclosure of policy-relevant information by the government to the public. Source: HRV Transparency Project database. Scale: -10 to 10.
CONTROL	**DESCRIPTION AND SOURCE**
Firm Age	"In what year did your firm begin operations in this country?" Source: World Bank Enterprise Survey. Scale: Logged value of 2007 - *Year*
Firm Scope	"How many establishments (separate operating facilities) does your firm have in this country?" Source: World Bank Enterprise Survey.
Business Association (DV)	"Is your establishment/firm a member of a business association or chamber of commerce?" Source: World Bank Enterprise Survey. Scale: 0/1.
Capital (DV)	"Is this establishment and your headquarters located in the capital city" Source: World Bank Enterprise Survey. Scale: 0/1.
Foreign-Owned (PCT)	"What percentage of your firm is foreign-owned?" Source: World Bank Enterprise Survey. Scale: 0…100.
Government-Owned (PCT)	"What percentage of your firm is government-owned?" Source: World Bank Enterprise Survey. Scale: 0…100.
Multinational (DV)	"Does your firm have holdings or operations in other countries?" Source: World Bank Enterprise Survey. Scale: 0/1.
Exporter (DV)	"Does your export to other countries?" Source: World Bank Enterprise Survey. Scale: 0/1.
LN(Population)	Total Population Source: World Bank Development Indicators.
LN(GDP)	Gross National Income Per Capita: World Bank Development Indicators.
Political Constraints	Number of institutional players (e.g., executive, upper and lower legislative bodies) and partisan alignment across political institutions. Higher values imply greater diversity of partisan alignments. Source: Henisz (2000) POLCON dataset.

Table 2 – Summary Statistics

DEPENDENT VARIABLES	MEAN	STD DEV	MIN	MAX
Lobby (DV)	0.15	0.36	0.00	1.00
Bribe (DV)	0.29	0.45	0.00	1.00
Bribe to Sales (PCT)	1.29	3.71	0.00	100.00
INDEPENDENT VARIABLES	**MEAN**	**STD DEV**	**MIN**	**MAX**
Firm Size	133.94	536.58	0.00	31664.00
Market Environment	2.59	1.10	1.00	4.00
Regulatory Environment	3.34	1.42	1.00	6.00
HRV Index	3.25	2.45	-1.01	9.96
CONTROL VARIABLES	**MEAN**	**STD DEV**	**MIN**	**MAX**
Firm Age	19.64	18.10	3.00	265.00
Firm Scope (LN)	0.88	0.52	0.00	7.60
Business Association (DV)	0.49	0.50	0.00	1.00
Capital (DV)	0.28	0.45	0.00	1.00
Foreign-Owned (PCT)	10.15	27.72	0.00	100.00
Government-Owned (PCT)	8.19	26.24	0.00	100.00
Multinational (DV)	0.09	0.28	0.00	1.00
Exporter (DV)	0.81	0.39	0.00	1.00
Population (LN)	16.78	1.45	14.03	20.97
GDP (LN)	7.85	1.34	5.20	10.44
Political Constraints	0.33	0.20	0.00	0.62

Table 3 – Correlation Statistics

	(1) Lobby (DV)	*(2) Bribe (DV)*	*(3) Bribes to Sales (PCT)*	*(4) Firm Size*	*(5) Market Environment*	*(6) Regulatory Environment*	*(7) HRV Index*	*(8) Firm Age (LN)*	*(9) Firm Scope (LN)*	*(10) Business Association*	*(11) Capital (DV)*	*(12) Foreign-Owned (PCT)*	*(13) Government-Owned (PCT)*	*(14) Multinational (DV)*	*(15) Exporter (DV)*	*(16) Population (LN)*	*(17) GDP (LN)*	*(18) Political Constraints*
(1)	1.00																	
(2)	**0.02**	1.00																
(3)	0.01	**0.53**	1.00															
(4)	**0.12**	**-0.03**	**-0.03**	1.00														
(5)	**-0.04**	**0.03**	**0.02**	**-0.04**	1.00													
(6)	**-0.04**	**-0.12**	**-0.08**	**0.05**	**-0.05**	1.00												
(7)	**-0.04**	**-0.19**	**-0.14**	**-0.05**	**0.05**	**-0.10**	1.00											
(8)	**0.14**	**-0.10**	**-0.06**	**0.19**	-0.01	**0.04**	0.00	1.00										
(9)	**0.03**	**-0.02**	-0.01	**0.10**	-0.01	0.01	-0.01	**0.04**	1.00									
(10)	**0.17**	**-0.03**	**-0.04**	**0.11**	0.00	**0.04**	**-0.08**	**0.19**	**0.02**	1.00								
(11)	**0.06**	-0.01	0.00	**0.10**	**-0.02**	0.01	**-0.05**	**-0.03**	0.01	**0.10**	1.00							
(12)	**0.12**	**-0.06**	**-0.04**	**0.17**	**-0.11**	**0.07**	**-0.03**	**0.29**	**0.02**	**-0.01**	**-0.10**	1.00						
(13)	**0.09**	-0.01	0.00	**0.16**	**-0.03**	**0.01**	**-0.10**	**0.07**	**0.04**	**0.14**	**0.33**	**-0.02**	1.00					
(14)	**-0.11**	**0.03**	**0.03**	**-0.17**	**0.03**	**-0.01**	**0.04**	**-0.12**	**-0.02**	**-0.19**	**-0.24**	0.00	**-0.28**	1.00				
(15)	**0.06**	**0.04**	**0.05**	**0.02**	**-0.04**	-0.01	**-0.10**	**-0.02**	0.00	**0.02**	**0.11**	0.00	**0.10**	**-0.03**	1.00			
(16)	**-0.10**	**0.08**	0.01	**0.07**	0.00	**0.01**	**-0.11**	**0.02**	0.01	**0.07**	**-0.01**	**0.01**	**-0.02**	**0.04**	**-0.26**	1.00		
(17)	**-0.08**	**-0.25**	**-0.20**	**-0.03**	**0.07**	**0.07**	**0.68**	**0.05**	0.00	**0.16**	**-0.03**	**-0.07**	**-0.02**	0.00	**-0.12**	**-0.03**	1.00	
(18)	**0.03**	**-0.10**	**-0.03**	-0.01	**0.02**	0.00	**0.43**	**0.09**	**0.01**	**0.14**	0.01	**-0.03**	**0.04**	**-0.06**	**0.05**	**-0.35**	**0.40**	1.00

Bold indicates pair-wise significance at .05 *p-value.*

Table 4 – Empirical Estimations

Dependent Variable	LOBBY				BRIBE			
Estimation	**PROBIT**	**PROBIT**	**BIPROBIT**	**BIPROBIT**	**PROBIT**	**PROBIT**	**BIPROBIT**	**BIPROBIT**
Model	**MOD 1**	**MOD 2**	**MOD 3**	**MOD 4**	**MOD 1**	**MOD 2**	**MOD 3**	**MOD 4**
Firm Size (LN)	0.135*** (0.010)	0.100*** (0.032)	0.136*** (0.010)	0.100*** (0.033)	-0.044*** (0.014)	-0.062* (0.034)	-0.044*** (0.014)	-0.061* (0.034)
Market Environment	-0.017 (0.014)	-0.066** (0.031)	-0.017 (0.014)	-0.066** (0.031)	0.057*** (0.012)	0.045* (0.025)	0.058*** (0.012)	0.045* (0.025)
Regulatory Environment	-0.051*** (0.013)	-0.050* (0.030)	-0.051*** (0.013)	-0.050* (0.030)	-0.117*** (0.011)	-0.123*** (0.018)	-0.117*** (0.011)	-0.123*** (0.018)
Firm Size *X Market Environment*		0.014* (0.008)		0.014* (0.008)		0.004 (0.007)		0.004 (0.007)
Firm Size *X Regulatory Environment*		0.000 (0.007)		0.000 (0.007)		0.002 (0.004)		0.002 (0.004)
Firm Age (LN)	0.122*** (0.022)	0.121*** (0.023)	0.121*** (0.023)	0.121*** (0.023)	-0.110*** (0.030)	-0.110*** (0.030)	-0.110*** (0.030)	-0.110*** (0.030)
Firm Scope (LN)	0.050* (0.027)	0.049* (0.027)	0.050* (0.027)	0.049* (0.027)	0.033 (0.024)	0.032 (0.024)	0.032 (0.024)	0.032 (0.024)
Business Association (DV)	0.624*** (0.057)	0.624*** (0.057)	0.625*** (0.057)	0.624*** (0.057)	0.074** (0.032)	0.074** (0.032)	0.074** (0.032)	0.074** (0.032)
Capital (DV)	0.064* (0.039)	0.064* (0.039)	0.064* (0.039)	0.064* (0.039)	0.153*** (0.042)	0.153*** (0.042)	0.153*** (0.042)	0.153*** (0.042)
Foreign-Owned (PCT)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.000)	-0.001** (0.000)
Government-Owned (PCT)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.003*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)	-0.005*** (0.001)
Multinational (DV)	0.052 (0.054)	0.052 (0.054)	0.050 (0.054)	0.050 (0.054)	-0.036 (0.045)	-0.036 (0.045)	-0.037 (0.045)	-0.037 (0.045)
Exporter (DV)	-0.112** (0.044)	-0.112** (0.044)	-0.113** (0.044)	-0.113** (0.044)	-0.127*** (0.042)	-0.127*** (0.042)	-0.125*** (0.042)	-0.125*** (0.042)
Population (LN)	3.121 (4.488)	3.074 (4.495)	3.191 (4.473)	3.144 (4.479)	9.101 (8.797)	9.093 (8.798)	9.089 (8.796)	9.082 (8.796)
GDP (LN)	-0.623*** (0.112)	-0.621*** (0.112)	-0.623*** (0.112)	-0.621*** (0.112)	-0.579*** (0.174)	-0.579*** (0.174)	-0.579*** (0.174)	-0.578*** (0.174)
Political Constraints	-0.021 (0.189)	-0.023 (0.189)	-0.021 (0.189)	-0.023 (0.189)	-0.412 (0.429)	-0.412 (0.429)	-0.410 (0.429)	-0.410 (0.429)
Constant	-43.573 (67.508)	-42.749 (67.593)	-44.620 (67.280)	-43.806 (67.350)	-130.633 (131.735)	-130.478 (131.712)	-130.468 (131.717)	-130.308 (131.688)
Rho			0.089*** (0.020)	0.089*** (0.018)			0.089*** (0.020)	0.089*** (0.018)
Fixed Effects	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY
Observations	18141	18141	18141	18141	18141	18141	18141	18141
Wald Statistic (χ^2)	2704.4***	2708.7**	4803.9***	4804.5***	3066.3***	3066.9***	4803.9***	4804.5***
Pseudo-R^2	0.172	0.172			0.142	0.142		

Table 5 – Robustness Estimations

Dependent Variable	LOBBY		BRIBE	
Estimation	**BIPROBIT**	**BIPROBIT**	**BIPROBIT**	**BIPROBIT**
Model	**MOD 1**	**MOD 2**	**MOD 1**	**MOD 2**
Firm Size (LN)	0.134*** (0.012)	0.084** (0.042)	-0.046** (0.021)	-0.024 (0.058)
Market Environment	-0.005 (0.020)	-0.085 (0.059)	0.045*** (0.013)	0.020 (0.038)
HRV Index	-0.326*** (0.050)	-0.316*** (0.053)	-0.232*** (0.085)	-0.206** (0.085)
Firm Size X Market Environment		0.023* (0.014)		0.009 (0.012)
Firm Size X HRV Index		-0.002 (0.003)		-0.008*** (0.004)
Firm Age (LN)	0.137*** (0.030)	0.136*** (0.031)	-0.080** (0.033)	-0.078** (0.031)
Firm Scope (LN)	0.008 (0.036)	0.008 (0.037)	0.059 (0.040)	0.063 (0.040)
Business Association (DV)	0.511*** (0.055)	0.511*** (0.055)	0.053 (0.042)	0.057 (0.042)
Capital (DV)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)	0.000 (0.001)
Foreign-Owned (PCT)	0.003*** (0.001)	0.003*** (0.001)	-0.004*** (0.001)	-0.004*** (0.001)
Government-Owned (PCT)	0.114 (0.076)	0.116 (0.077)	-0.101* (0.060)	-0.103* (0.060)
Multinational (DV)	-0.098 (0.065)	-0.096 (0.066)	-0.132** (0.066)	-0.130** (0.067)
Exporter (DV)	0.034 (0.070)	0.035 (0.070)	0.172*** (0.056)	0.172*** (0.055)
Constant	-1.145*** (0.212)	-0.974*** (0.254)	0.883*** (0.193)	0.798*** (0.225)
Rho	0.100*** (0.025)	0.100*** (0.025)	0.100*** (0.025)	0.100*** (0.025)
Fixed Effects	IND; CTRY	IND; CTRY	IND; CTRY	IND; CTRY
Observations	9513	9513	9513	9513
Wald Statistic (χ^2)	2458.2***	4803.9***	2458.2***	4803.9***

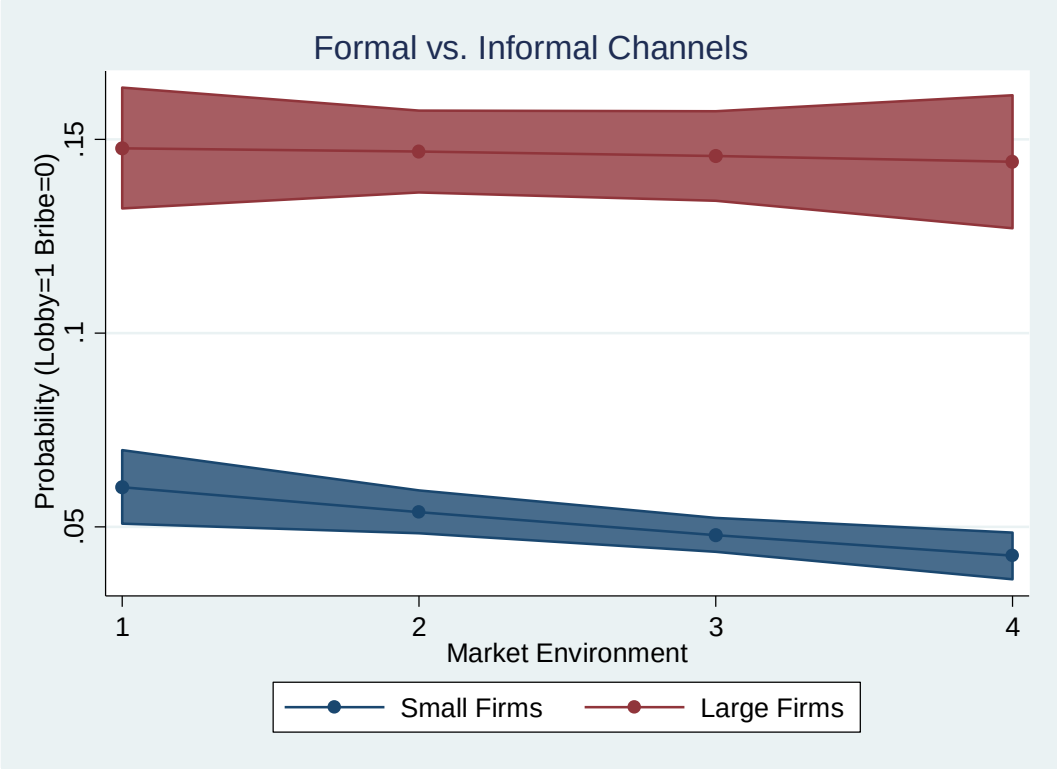

Figure 1 – Formal Channels (Firm Size x Market Environment)

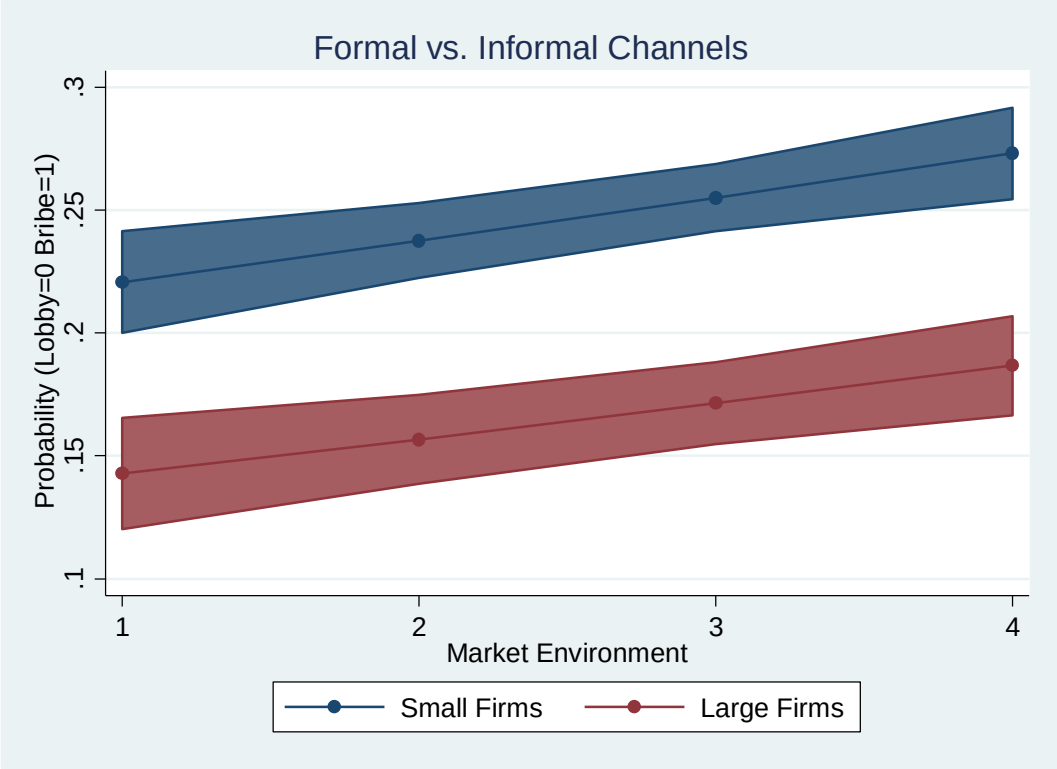

Figure 2 – Informal Channels (Firm Size x Market Environment)

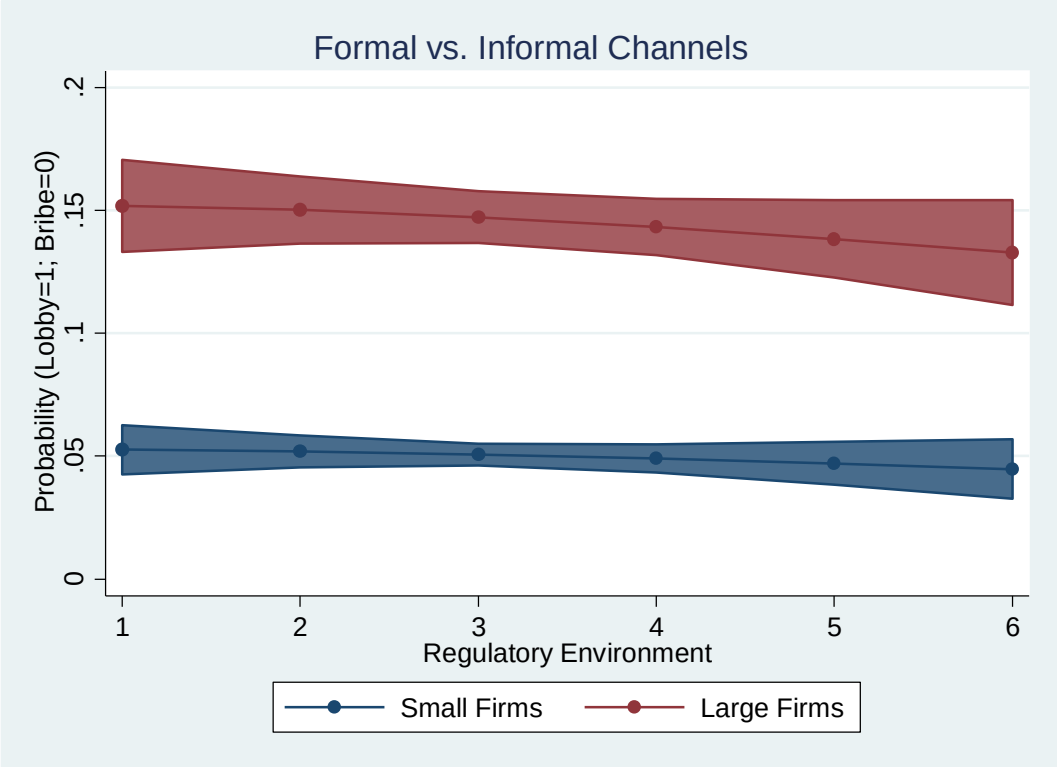

Figure 3 – Formal Channels (Firm Size x Regulatory Environment)

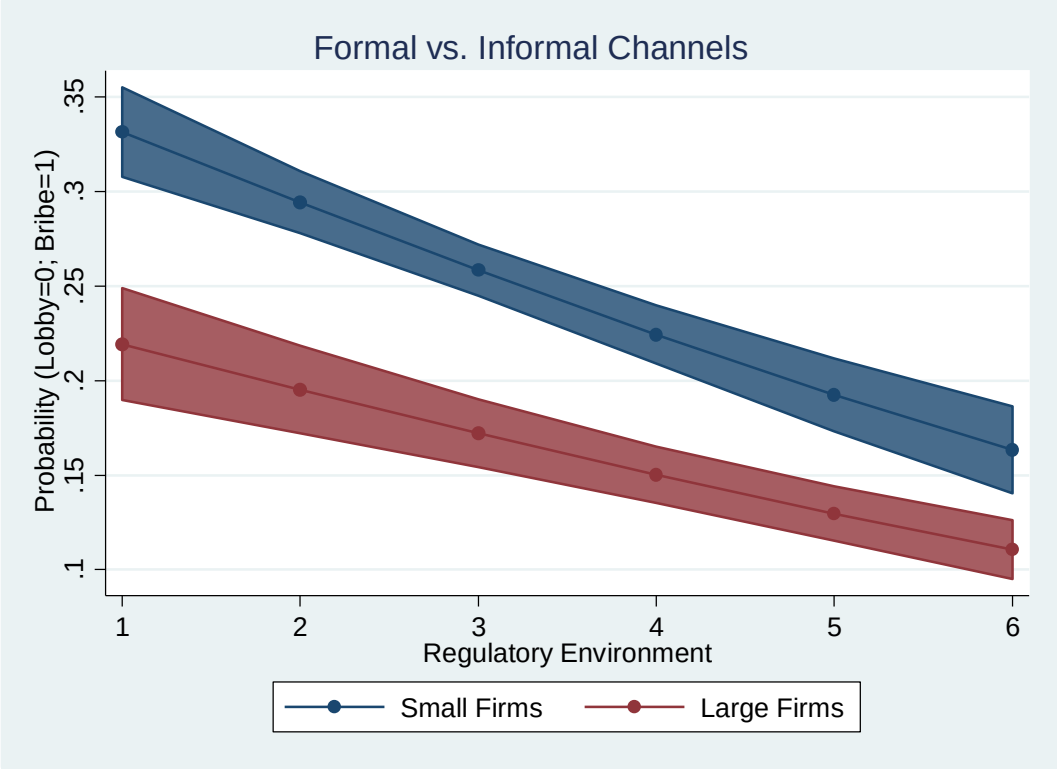

Figure 4 – Informal Channels (Firm Size x Regulatory Environment)

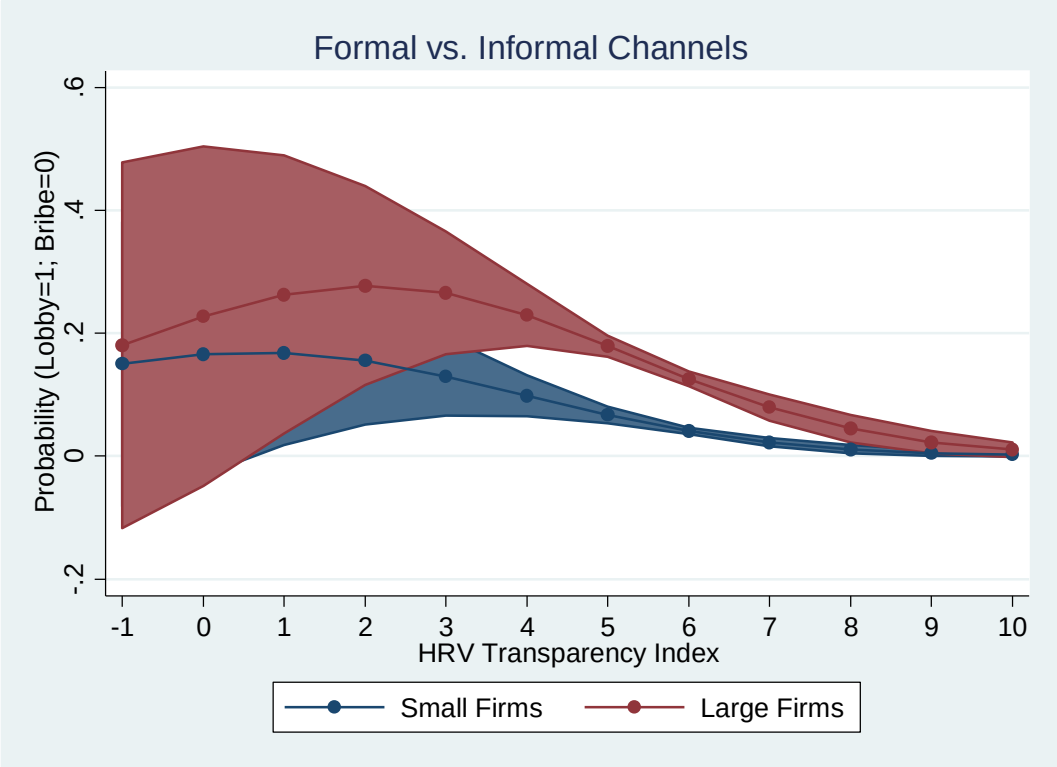

Figure 5 – Formal Channels (Firm Size x HRV Index)

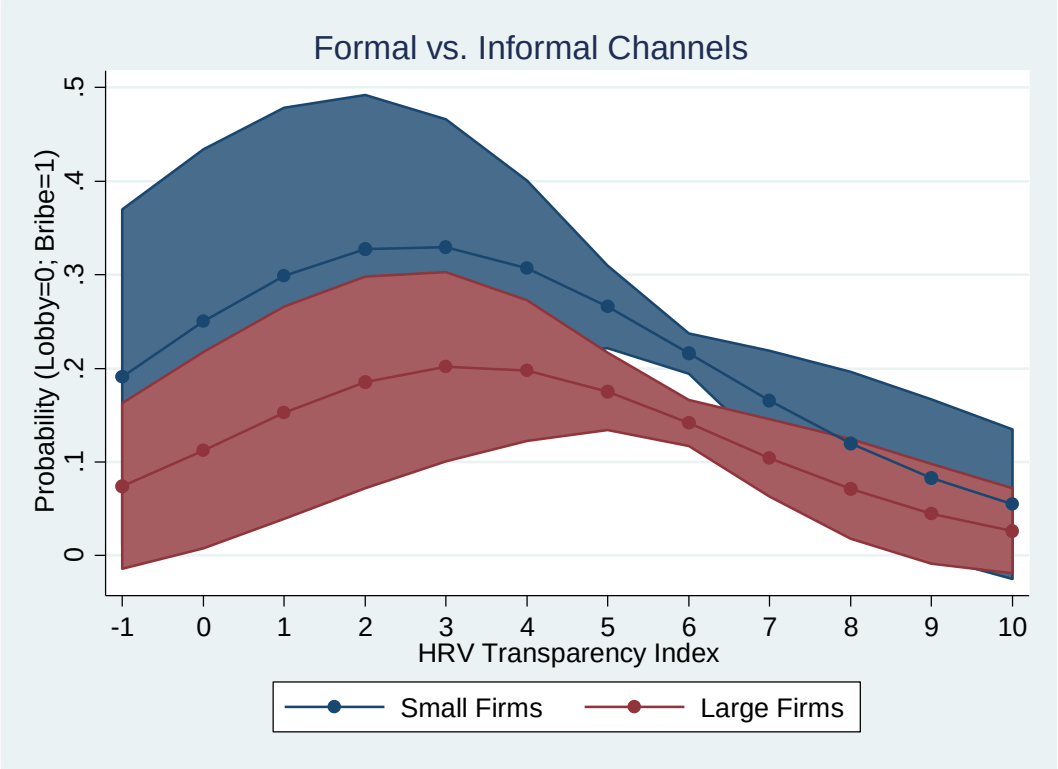

Figure 6 – Informal Channels (Firm Size x HRV Index)