

NONMARKET STRATEGY PERFORMANCE: EVIDENCE FROM U.S. ELECTRIC UTILITIES

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This paper develops and tests a theory of the performance determinants of a firm's nonmarket strategy in shaping public policy outcomes. Building on the concept of political market attractiveness, we argue that nonmarket performance is influenced by both the characteristics of a firm's regulatory and political environment, especially rivalry among interest groups or politicians, and by internal capabilities that enable a firm to mitigate political transaction costs. Using data on regulatory filings for rate increases made by U.S. electric utilities over a 13-year period, we find empirical support for our approach.

Although the last decade has witnessed increased interest in the design and implementation of firms' nonmarket strategies—defined as the coordinated actions firms undertake in public policy arenas (Baron, 2003; Baysinger, 1984; Hillman, Schuler, & Keim, 2004; Shaffer, 1995)—extant research has remained relatively silent regarding the actual performance of such strategies. By *performance*, we mean the ability of firms to effect favorable public policy decisions. For instance, firms may seek legislative or regulatory support for specific environmental emissions standards, import tariff policies, antitrust decisions, or regulated rates. Relative to a given status quo policy, performance measures the ability of a firm to either achieve policy closer to its preferred position or block proposals that move policy further from that position. Considerable attention has been paid to firms' decisions regarding investments in, and the structure of, nonmarket strategies (Bonardi, 2004; de Figueiredo & Tiller, 2001; Grier, Munger, & Roberts, 1994; Hillman & Hitt, 1999; Holburn & Vanden Bergh, 2002, 2004; Keim & Zeithaml, 1986; Lenway

& Rehbein, 1991; Schuler, 1996; Schuler, Rehbein, & Cramer, 2002). Despite these studies, however, little analysis has directly examined the determinants of actual performance (Keim & Baysinger, 1988). As Getz noted in a survey of extant work in this stream, "If political action is ever to be fully integrated with strategic planning and organizational behavior (intellectually or practically), much more empirical work on effectiveness will need to be done" (1997: 64). Our objective in this paper is thus to extend the current literature by exploring, both theoretically and empirically, nonmarket strategy performance.

A natural question is why the academic literature has produced so little investigation into the issue of performance. After all, this is a critical managerial issue. We advance two explanations. At a theoretical level, the field has until recently lacked a unifying conceptual framework that analyzes the determinants of nonmarket strategy performance (Lord, 2000). Recent scholarship, however, has proposed a framework of "political markets" in which interactions of demanders (firms, consumers, unions, activists, etc.) and suppliers (elected politicians, regulatory agents, and courts) shape public policies (Bonardi, Hillman, & Keim, 2005). In this view, suppliers such as legislators implicitly trade votes on legislative bills for electorally valuable resources such as campaign contributions. In a spirit similar to Porter's structural industry analysis (Porter, 1980), the framework assesses the inherent attractiveness of operating in different types of political markets. Structural characteristics, such as rivalry among demanders or suppliers, make

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political markets more or less attractive from a firm's perspective, thereby influencing the firm's decision to engage in nonmarket strategies.

Here, we use and build on the political markets framework to develop theoretically grounded predictions regarding the performance of firm nonmarket strategy. In particular, we extend the framework to incorporate other institutional suppliers of public policies: regulatory agencies, which have responsibility for designing and implementing policies (Weidenbaum, 2003). Since agency objectives are not necessarily aligned with those of elected politicians, firms may need to adapt their nonmarket strategies when interacting mainly with regulatory agencies.

We expand the political markets approach also by exploring how firm-specific capabilities affect nonmarket performance. Several authors, building on the resource-based view, have suggested that nonmarket capabilities that draw on firms' internal processes, resources, and knowledge related to political activities are unevenly distributed among firms and that firms with such nonmarket capabilities should be more effective in influencing public policies (Baron, 2003; Dean & Brown, 1995; Hillman et al., 2004; Keim & Baysinger, 1988). Here, we build on this general proposition in the context of the political markets framework and develop specific hypotheses relating nonmarket capabilities to performance.

The second reason for the paucity of work on nonmarket strategy performance, we speculate, stems from the difficulty of obtaining data on both the structure of firms' nonmarket strategies and their performance impact on a particular policy issue. Existing studies have investigated the impact of nonmarket activities using highly aggregated measures of firms' performance, such as corporate financial profitability (Hillman, Zardkoohi, & Bierman, 1999; Shaffer, Quasney, & Grimm, 2000). Here, we overcome the resulting identification and measurement challenges by using rich information on U.S. electric utilities' nonmarket strategies. We constructed a panel data set that includes specific measures of the performance of a firm's nonmarket strategy—in this case, regulatory agency decisions on the financial rate of return that a U.S. electric utility may earn—and a precise identification of a firm's decision to implement a nonmarket strategy: a utility's decision to file a formal request with the regulatory agency to change its rates. Using this novel data set, we find support for the validity of the political markets framework, including firm-specific capabilities, in determining the performance of firms' nonmarket strategies.

THEORETICAL BACKGROUND

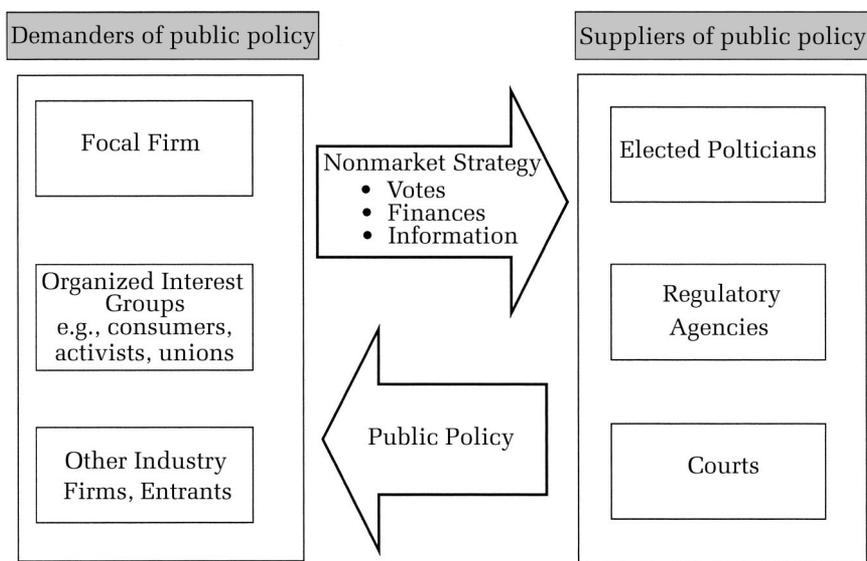
In seeking understanding of the factors that drive nonmarket strategy performance, we find it helpful to draw an analogy with the competitive strategy literature. Scholars have argued that a firm's performance is correlated either with industry attractiveness (McGahan & Porter, 1997; Porter, 1980) or with the firm's distinctive capabilities (Barney, 1991; Rumelt, 1991; Wernerfelt, 1984). Here, we draw a similar distinction between external and internal drivers of performance, which we now discuss in turn.

Political Markets and Firms' Nonmarket Performance

Researchers in economics and political science have argued that a firm's political environment can be characterized as a marketplace in which demanders and suppliers transact over public policies. Originally developed in the 1960s, the political markets approach challenged an axiom common in the economics literature that government institutions adopt and implement public policies in the "public interest" (Buchanan & Tullock, 1962; Stigler, 1971). Instead, politicians exchange policy favors for resources from organized interest groups to maximize their electoral prospects. Valuable resources include votes from supporting interest groups, financial resources, and information, all of which can influence election outcomes (Mueller, 2003). Since most voters remain rationally ignorant about policy details because of the costs of becoming fully informed, politicians have some scope to trade policies that deviate from the "public interest" (Aranson, 1990). The implication is that firms, through the appropriate implementation of nonmarket strategies, can influence policy makers' decisions. Figure 1 represents a political market involving a focal firm that wishes to influence a particular public policy.

The objectives of the suppliers—such as election for politicians in democracies—shape the types of resources that are valuable in a political marketplace (Hillman & Keim, 1995). In democratic institutional systems, for example, politicians value votes and the resources that generate votes. Demanders, including firms, who can provide these resources have an opportunity to gain favorable policy decisions. Firms design nonmarket strategies, either individually or in concert with other firms or groups, to effectively participate in political markets, providing votes through, for instance, constituency building; financial support, such as campaign contributions; and information regarding

FIGURE 1
Demand and Supply Components of a Political Market



policy consequences and alternatives (Hillman & Hitt, 1999). Bonardi, Hillman, and Keim (2005) examined the conditions under which the demand and supply sides of the political market for a specific issue are attractive from a firm's perspective. This approach provides an overall framework within which to study the factors that drive the performance of firms' nonmarket strategies.

Political Markets and the Role of Regulatory Agencies

Although the political markets approach has spurred research in both the economics and strategic management literatures (Bonardi et al., 2005; de Figueiredo & Silverman, 2006), a shortcoming to date has been the relative neglect of the supply side and especially of the role played by regulatory agencies. Much of the existing literature examines how firms or organized interest groups design campaign contribution strategies aimed at securing the support of elected legislators in the legislative process for proposing, modifying, or vetoing legislative bills. In many industries, however, expert agencies have primary responsibility for designing and implementing public policies through administrative regulations. They are also prohibited from accepting financial resources from the firms they regulate. Furthermore, agency motivations are typically not dictated by the ballot box, since executives or legislatures usually appoint agency heads. Such factors suggest that agency decisions can have important consequences for many firms and that agencies may behave differently from elected political insti-

tutions. From a firm's perspective, then, designing nonmarket strategies to interface with regulatory agencies presents different challenges from those posed by strategies targeted at elected politicians (Baron, 2001). One contribution of this article, therefore, will be to better integrate agencies into the political markets framework and to develop hypotheses regarding how agencies affect the performance of a firm's nonmarket strategy.

Political Markets and Firms' Nonmarket Capabilities

Another limitation of the political markets framework as developed to date relates to the existence of distinctive nonmarket capabilities within firms. Many studies, especially empirical studies, have excluded nonmarket capabilities, implicitly treating firms as homogeneous entities (Hillman et al., 2004). Following the resource-based view of the firm, however, several researchers have argued that an important component of nonmarket strategies and of their performance lies in firms' internal nonmarket capabilities (Baron, 2003; Dean & Brown, 1995; Hillman & Hitt, 1999; Vietor, 1994). Nonmarket capabilities consist of tacit and nontacit knowledge and skills that enable the firms to manage the public policy process and to achieve favorable legislative, executive, administrative, and judicial policy outcomes.

The significance of nonmarket capabilities as a determinant of nonmarket performance has also not been clearly articulated. Here, we argue that nonmarket capabilities are particularly important

in explaining heterogeneity among firms' nonmarket performance since political markets exhibit high transaction costs, or factors that impede the specification, monitoring, or enforcement of transactions (Dixit, 1996). As North commented, "Political markets are characterized by imperfect information, subjective models and high transaction costs. . . . The political market has been, and continues to be, one in which the actors have an imperfect understanding of the issues affecting them and equally in which the high costs of transacting prevent the achievement of efficient solutions" (1990: 357). Given the prohibition on explicit contracts between special interest groups and politicians—and hence on judicial enforcement—the risks of opportunism and market failure are high (Dixit, 1996: 53). It is in this context that nonmarket capabilities play a key role. Firms that develop the ability to sustain "trade" in political markets, especially by developing credible reputations (Eggertson, 1993), can overcome these intrinsic barriers and successfully implement nonmarket strategies.

HYPOTHESIS DEVELOPMENT

We now build on the political markets framework presented above to develop hypotheses on the determinants of a firm's nonmarket strategy performance. We focus our arguments around four key factors: the degree of rivalry among demanders, the degree of rivalry among politicians, the resource base of a focal regulatory authority, and finally, the nonmarket capabilities of a focal firm.

Demand Side: Interest Groups

Mueller argued that "politics in the modern democratic state is not a confrontation between two polarized economic classes, but rather a struggle among a plethora of groups with divergent interests" (2003: 472). Firms, in developing nonmarket strategies, may face opposition from several types of demanders in the market for public policies (Mahon, 1993). First, other firms, either market rivals or others within the broader structure of a focal firm's industry, may be disadvantaged, either absolutely or relatively, by the regulatory changes proposed by the focal firm. Competing firms that are politically organized either individually or in industry associations can generate high levels of rivalry (Stigler, 1971). As an example, during 2005 Wal-Mart proposed an increase to the minimum wage. This policy change would have asymmetrically affected rivals in the retail industry, as Wal-Mart's average wage paid to employees was significantly higher than the current minimum wage, but

their rivals' average wage was much closer to the extant minimum wage. This asymmetry generated significant lobbying pressures by rivals against Wal-Mart's proposal.¹

Second, consumers of a firm's products or services can also pose a threat by demanding public policies that lower rates or increase costs through new quality, environmental, safety, or other standards. Although the costs of collective action are typically substantial for individual consumers, consumers that are sufficiently large or that can obtain public funds can organize against the firm in policy arenas (Holburn & Vanden Bergh, 2006; Olson, 1965). A third type of nonmarket competition stems from interest groups such as unions and environmental activists. Recent scholarship has shown that these actors can be tough opponents for firms since a common strategy has been to mobilize the media, a practice that, by providing new information to otherwise uninformed voters, enables alteration of public perceptions of policy issues (Bonardi & Keim, 2005). By making issues more politically salient, these interest groups can exert powerful pressure on politicians and appointed bureaucrats. Again, Wal-Mart is an interesting example, as many activists and unions have, sometimes successfully, pushed communities to oppose or stall the opening of Wal-Mart superstores throughout the United States.

As opposed interest groups compete more vigorously against a firm for their preferred policies, policy makers' bargaining positions improve, enabling them to demand more in return for policy favors—greater electoral campaign contributions or grassroots mobilization, for example (Keim & Baysinger, 1988). The performance or effectiveness of firms' nonmarket expenditures in achieving favorable policy outcomes will thus be reduced in such environments. This leads to our first hypothesis:

Hypothesis 1. Rivalry from competing interest groups is negatively related to the performance of a firm's nonmarket strategy.

Supply Side: Elected Politicians

Competitive rivalry for public policies exists not only on the demand side but also on the supply side of the marketplace. Recent research suggests that elected politicians are more receptive to interest group demands for regulatory favors when electoral competition or rivalry is

¹ See "Trouble in Wal-Mart's America," the *Washington Post*, October 26, 2005.

strong (Ansolabehere, de Figueiredo, & Snyder, 2003). Greater rivalry between electoral candidates or party coalitions makes candidates more willing to “trade” policy favors for campaign contributions or other valuable support that maximizes their chances of election (Baron, 2001). U.S. steel producers, for instance, substantially increased their lobbying of the Bush presidential administration in 2002 in search of a tariff on steel imports. One factor that strengthened their bargaining power was the existence of extremely tight competition between Republican and Democrat candidates for House seats in several states with steel or related industries. Ultimately, in the months before the election, Bush implemented a 30 percent tariff.² Naturally, this willingness to trade policy favors is conditioned by the broader public saliency of the relevant policies: trading policy with organized interests can come at the expense of electoral votes if an issue is of particular concern to voters (Bonardi & Keim, 2005). For less salient policies, firms may press for policy support in the form of new legislation (or amendments to existing chamber bills) or in the oversight of regulatory agencies.

On the other hand, when a political party or coalition has a powerful hold on office through a large and sustained electoral majority—and hence has little need for additional support from special interests—firms are less able to sway policy outcomes from an incumbent party’s preferred position. Firms, which tend to be better politically organized than other interest groups (Stigler, 1971), will thus experience a more favorable policy environment when political rivalry is high.

Hypothesis 2. Rivalry between politicians is positively related to the performance of a firm’s nonmarket strategy.

Supply Side: Regulatory Agencies

Although elected politicians decide the broad characteristics of public policies, specific details, day-to-day implementation, monitoring, and enforcement activities are delegated to regulatory agencies in most jurisdictions. Specifying and implementing detailed policies typically requires a high degree of information, and agencies are one organizational mechanism for developing sustained policy expertise. From a firm’s perspective, regulatory agencies, rather than legisla-

tures or executives, are thus often the central point of contact for responding to the requirements of public policies that regulate their businesses (Holburn & Vanden Bergh, 2004).

We argue here that the environmental conditions that enable firms to successfully gain the support of regulatory agencies are quite different from those in the legislative and executive arenas. The distinction stems from the different incentives and constraints that the two types of institutions operate within. Regulators are typically appointed rather than elected, so they do not face the election constraint that can motivate elected politicians’ behaviors. Existing research suggests that regulators’ objective functions are especially multidimensional: regulators may try to maximize the budgets of their offices (Niskanen, 1971), expand the numbers of personnel employed, or enhance their career prospects or political reputations (Mueller, 2003; Niskanen, 1971; Weatherby, 1971; Weber, 1947). Since achieving these objectives depends on the legitimacy that regulators hold within the institutional system, a meta-objective of regulators is to preserve or increase their legitimacy (Majone, 1996). To do so, regulators adhere to the procedural constraints that govern their decision making and that are designed to ensure that regulators implement policies in accordance with the broad wishes of the enabling legislators (McCubbins & Schwartz, 1984; Weingast & Moran, 1983). Procedural requirements relate to the *informational* basis of regulatory decisions: agencies generally must obtain information from affected parties, base their final decisions on the evidence presented, and publicly announce, along with their rationales, proposed policy changes (McCubbins, Noll, & Weingast, 1987, 1989).

Although such informational requirements enable legislative committees and executives to monitor agency behavior and to prevent arbitrary decisions, they also create a resource dependency relationship between an agency and the firms it regulates (Pfeffer, 1981, 1992; Pfeffer & Salancik, 1978). In particular, regulators depend on firms and other interested parties to provide valuable information during regulatory hearings (Mueller, 2003). A regulatory agency uses this information as evidence in support of its proposals. Without substantiation of its policy rulings, an agency risks the rulings being overturned by the courts, generating an important loss of legitimacy. The European Commission, for example, suffered such a loss in 2002, when three of its decisions against the mergers of private companies were voided by the European Court of Justice. The Court found that the economic analyses of the mergers’ anticompetitive

² See *The Politics of Steel*, BBC News, <http://news.bbc.co.uk>, March 6, 2002.

effects were based on insufficient evidence. These decisions questioned the authority of the Commission and of its head, Mario Monti, and led to its reform in 2003.³ Agencies with larger budgets and greater expertise are thus better positioned to independently obtain their own information, assess firms' arguments, and counter firms' policy proposals (Oliver, 1991). Less well endowed agencies, on the other hand, will be more dependent on the information provided by firms in formulating their decisions, lending a natural bias toward the firms. It follows that the greater a regulatory authority's resources, the less dependent it is on firms and the more difficult or costly it becomes for firms to obtain favorable agency decisions. Hence:

Hypothesis 3. The resource base of a relevant regulatory agency is negatively related to the performance of a firm's nonmarket strategy.

Nonmarket Capabilities

As argued earlier, the political market framework provides one explanation for why nonmarket capabilities are particularly important in explaining firm nonmarket performance. Political markets typically suffer from higher transaction costs than do economic markets, a difference that, we argue, creates a critical advantage for firms that have developed capabilities to mitigate these costs. Transaction costs in political markets arise, in large part, from the potential opportunism of demanders and suppliers. Parties may strike an agreement, yet the impossibility of or uncertainty surrounding judicial enforcement makes it difficult for the parties to credibly commit to deals (Dixit, 1996; North, 1990; Russo, 1992).

The existence of transaction costs does not mean, however, that all firms are affected similarly. We argue that firms that repeatedly interact with government policy makers gain an advantage in sustaining trade in political markets in two ways. First, existing research shows that the development of mutual trust, reputation, and cooperation is central to solving commitment problems (Dyer, 1997; Fukuyama, 1996; Hill, 1990; Jones, 1995). Such attributes come from repeated interactions among demanders and suppliers (Williamson, 1994). Firms that frequently engage with the government thus have a chance to build trustworthy reputations. Second, an important by-product of repeated interactions is the opportunity for firms to learn from experience and to develop specific capabilities

that improve their performance in these types of environments (Dean & Brown, 1995). Direct experiences with politicians and regulators enable firms to better understand the patterns of behavior and preferences of policy makers (Holburn & Vanden Bergh, 2002; Ring, Lenway, & Govekar, 1990). Some of these capabilities become embedded within managers and employees who are able to leverage their individual experiences. Others become embedded within firms' operating routines; firms establish codified and uncodified practices that reflect prior managerial approaches to resolving these issues (Boddeyn & Brewer, 1994; Keim & Baysinger, 1988). Such capabilities enable firms to alleviate transaction costs and to more effectively implement nonmarket strategies. Hence:

Hypothesis 4. A firm's experience in dealing with government policy makers is positively related to the performance of its nonmarket strategy.

Another important dimension of transaction costs in political markets is low transaction frequency (Kaufman, Englander, & Marcus, 1993). Policy issues affecting a particular firm typically come onto the political agenda only rarely (Kingdon, 1984). This temporal element implies that political markets are often discontinuous: interactions among demanders and suppliers are intense for a time and then disappear for a longer period. In such a context, mitigating transaction costs through intensive and repeated interaction is often not an available option.

However, we argue here that this characteristic renders important another way by which firms can develop transaction cost-mitigating capabilities: by learning from other firms' experience in similar nonmarket settings. Studies on technological innovation and geographic expansion strategies, for example, have shown that firms learn from other firms in the same industry (Baum, Li, & Usher, 2000; Jacobson, 1992; Macher & Henisz, 2004). A similar mechanism may enable firms to develop transaction cost-mitigating capabilities in political markets. Some of the heterogeneity among firms' nonmarket performance is therefore likely to stem from whether they have been able to learn from others' experiences. Thus:

Hypothesis 5. A firm's opportunity to learn from other firms' interactions with government policy makers is positively related to the performance of its nonmarket strategy.

³ See for instance "Mario Monti's Parallel Universe," *Financial Times*, November 6, 2002.

EMPIRICAL INVESTIGATION

Industry Setting

Before discussing our empirical approach, we briefly outline the regulatory and political environment of our selected industry and some of the reasons why it provided a good setting for examining nonmarket strategy. To test our hypotheses, we focused on the case of nonmarket strategy in the U.S. electric utility sector. State agencies regulate the profit levels of utilities under a financial rate-of-return regime; utilities can improve their financial performance by achieving—through appropriate nonmarket strategies—higher rates of return. State regulatory agencies (public utility commissions, hereafter, “PUCs”) determine the rate of return a utility is allowed to earn, and hence the final rates charged to consumers, through an administrative process, commonly termed a “rate review.” A utility can file for a rate review whenever it wishes. Upon initiation of a rate review, a series of public hearings is held in which the utility and competing interest groups present arguments and information supporting their positions about justifiable rates of return and rate levels. At the end of this process, PUC commissioners make a final decision on the rate of return for the utility and the rates that final consumers pay.

The rate review process is characterized by an intense informational exchange between policy makers, the utility involved, and other interest groups (Hyman, 2000). Since providing information regarding policy consequences and alternatives is a central characteristic of nonmarket strategy (Hillman & Hitt, 1999), a utility’s initiation of a rate review is a clear indication of the implementation of such a strategy. At the same time, a utility is likely to engage in other nonmarket activities that complement its regulatory filing with the agency, such as gaining the support of the state governor and legislature (through lobbying, grassroots mobilization, coalition building, and financial campaign contributions).⁴

This industry context afforded a number of advantages for our empirical investigation. First, we were able to identify when firms engaged in a concerted nonmarket strategy by observing when utilities filed formal regulatory requests for rate reviews. By using regulatory filings, we adopted the approach of other nonmarket strategy studies. Lenway and Rehbein (1991) and Schuler (1996), for instance, considered

firms’ decisions to file with the U.S. International Trade Commission to obtain trade protection.

Another advantage of using electric utility rate reviews for our empirical setting was that they provide a good measure of the performance of a firm’s nonmarket strategy (our dependent variable). As noted earlier, the lack of sufficiently detailed data has hindered management researchers in empirically studying the performance aspect of nonmarket strategies. As part of their final rate review rulings, PUCs determine the financial rate of return on equity (hereafter, the ROR) that a utility may earn and that determines allowed rate levels. Since, all else being equal, higher RORs lead to higher profits, utilities prefer higher RORs. Although PUCs have a statutory duty to set rates that are “just and reasonable,” in practice they have considerable discretion to set rates and RORs within some implicit range.⁵ Utilities that design effective nonmarket strategies may thus achieve higher RORs than other utilities. We therefore used the rate of return as the basis for our measure of a utility’s nonmarket performance. This measure is also firm-specific: each ROR applies to a single utility. This fact allowed us to overcome another common empirical problem for research on nonmarket strategy: since regulations often apply to all firms in an industry, it can be difficult to empirically assess the effectiveness of a firm’s individual strategy.

Third, the rate review process affords the opportunity for both the demand and supply sides of a political market to have an influence on final policy outcomes. On the demand side, organized interest groups that are opposed to a utility’s requests—large or industrial consumers, residential consumer advocates, or environmentalists, for example—have a right to participate in review hearings, to scrutinize utility expenditures, and to argue against rate increases. Since PUCs must base their decisions on presented evidence, credible arguments from these groups can affect allowed RORs. On the supply side, multiple regulatory and political institutions have a potential role in rate reviews. Final decisions are under the jurisdiction of state PUCs. However, these commissions are overseen by state legislatures, which determine their budgets, can conduct hearings on specific decisions, and can ultimately overturn PUCs through new legislation. Further, state governors typically appoint PUC commissioners, appointments of

⁴ Data on state-level electoral campaign contributions from www.followthemoney.org demonstrate that electric utilities are important donors in political campaigns.

⁵ Allowed RORs have historically differed significantly over utilities, states, and time. For instance, the highest ROR a state PUC allowed during 1980 was 16.80 percent, and the lowest was 12.50 percent.

fering another lever with which state politicians can exert pressure on PUC decisions. The attractiveness of the political market for a utility is thus likely to be shaped by elected state politicians as well as by the regulatory agency.

Sample

After obtaining information on the outcomes of all rate reviews initiated by the population of 190 investor-owned electric utilities during the period 1980–92,⁶ we had a potential sample of 2,470 utility-year observations. After eliminating observations for which data were missing, we were left with 1,720 utility-year observations.⁷ The sample included 491 rate reviews initiated by utilities.

Methodology

To test our hypotheses, we used a regression model of ROR decisions. However, since rate reviews are not generated randomly, there is a potential sample selection problem in using observed rate review information. Specifically, utilities will not initiate rate reviews if they expect PUCs to rule unfavorably. If a utility initiated a rate review in a given period, then we did not observe the underlying regulatory environment. Normal ordinary least squares (OLS) regression techniques using only observed rate review data would thus yield biased estimates of the impact of our explanatory variables on ROR decisions. To produce unbiased estimates, in the second part of our analysis we therefore

estimated the following sample selection model, which incorporates a utility's decision to initiate a rate review (Greene, 2003; Heckman, 1979).

Utility rate review initiation decision:

$$\Delta\pi = \mathbf{X}_1\beta_1 + \varepsilon_1. \quad (1)$$

$$\text{Initiation} = 1 \quad \text{if } \Delta\pi > 0, = 0 \text{ otherwise.} \quad (2)$$

PUC return on equity decision:

$$(\Delta ROR | \text{initiation} = 1) = \mathbf{X}_2\beta_2 + \varepsilon_2. \quad (3)$$

$$\text{Correlation } (\varepsilon_1, \varepsilon_2) = \rho.$$

In Equation 1, $\Delta\pi$ represents the expected change in utility profits that would occur if a rate review were implemented. Since a utility's decision rule, as specified in Equation 2, is to initiate rate reviews only when $\Delta\pi$ is greater than 0, $\Delta\pi$ is a latent variable. \mathbf{X}_1 is a vector of variables including political, institutional, and socioeconomic factors that affect the attractiveness of the political market and thus capture a utility's expectation that a public utility commission will increase its rate of return. Equation 3 estimates the change in the PUC's allowed rate of return since the utility's last rate review, ΔROR , conditional on observing a rate review. \mathbf{X}_2 is also a vector of variables that includes measures of the political and regulatory environment and other factors that might affect the change in the allowed rate of return.

When the error terms of Equations 1 and 3 are correlated—that is, ρ is not 0—simple OLS estimation of Equation 3 results in biased coefficients. To correct for selection bias, we thus used the Heckman full-information maximum-likelihood estimation procedure from STATA. This procedure yields unbiased estimates of β_2 coefficients.

Data and Measures

Dependent variable. To measure nonmarket performance, we calculated the *change in allowed rate of return* (ΔROR) that had occurred since a utility's previous rate review. We used change in ROR rather than its absolute level since doing so allowed us to control for constant firm-level factors that might influence the absolute rate. We obtained the rate review data from a private firm, Regulatory Research Associates, that tracks PUC decisions and, to assess accuracy, we cross-checked a sample of rate review results with data available in annual volumes of the National Association of Regulatory Utility Commissions (NARUC).

⁶ These utilities comprise those operating in all U.S. states except Alaska and Nebraska. We concentrated on 1980–92, since utilities initiated rate reviews then in response to rising costs. After 1992, as costs began to decline, PUCs began to initiate rate reviews with the aim of reducing utility rates. Since our objective was to examine utility strategy, we thus focused on the prior period.

⁷ Specifically, to measure our dependent variable (change in allowed ROR), we needed a baseline measure of allowed ROR. Thus, we eliminated observations from the period before each utility's first rate review. We also eliminated observations if we were missing information on the allowed rate of return for a firm, since the absence of that information made it impossible to calculate the change in allowed ROR. The need for a baseline and the missing data on allowed ROR resulted in the exclusion of 311 observations. We also eliminated 384 observations lacking data for measuring an independent variable, utility revenue/PUC budget, and 22 observations lacking data on another independent variable, market share. Finally, a lack of data on three utilities resulted in 33 additional observations being eliminated.

Independent variables. Hypothesis 1 concerns interest group rivalry. We used three variables to capture different sources of potential demand-side competition from organized interest groups. *Consumer advocate* was a measure of the degree to which residential utility consumers in a state were organized. Thirty states have created consumer advocacy offices charged with the express purpose of representing residential utility consumer interests before state regulatory agencies and courts (Holburn & Vanden Bergh, 2006). Consumer advocates, which have public funding and statutory power to participate in rate review procedures, can provide strong opposition to utility requests for rate increases (Holburn & Spiller, 2002). The variable consumer advocate equaled 1 if a consumer advocacy office existed in a given state in a particular year and 0 otherwise. Rivalry can also come from industrial consumers who, because they have higher average levels of consumption than residential consumers, have stronger incentives to organize. *Industrial consumers*, a time-varying variable, was equal to the industrial percentage share of electricity consumption in a given state. Data on electricity consumption by consumer sector were obtained from the Energy Information Administration. Finally, we used *Sierra Club membership* to capture the extent to which a state population participated in environmental and other activist non-governmental organizations. The Sierra Club is the largest environmental NGO in the United States. Such groups have historically been particularly active against utilities regarding the siting of new power generation plants and the environmental impacts of existing facilities. To normalize membership levels across the states, we calculated Sierra Club membership as the total number of members divided by a state's population (in thousands). Annual information on state membership was provided directly to us by the Sierra Club.

Hypothesis 2 concerns political rivalry. We based two dummy variables on the margin of winning votes in the most recent state gubernatorial and legislative elections; these were proxies for the degree of rivalry among elected politicians. For the executive branch (governors), we considered rivalry intense if the margin of electoral victory between the winning and second-place candidates was less than 5 percent. In this case there is likely to be intense political competition during the next electoral cycle. For the legislative branch, given the importance of party control of legislatures, we considered rivalry intense if the margin of control by the majority party (measured by the number of seats in the combined upper and lower chambers) was less than 5 percent. Thus, *governor rivalry* and

legislature rivalry were coded 1 if rivalry was intense and 0 otherwise. We used dummy rather than continuous variables since the underlying distributions of governor vote and legislature party majorities were not normal but highly skewed. We collected this information from annual volumes of *The Book of the States*, published by the Council of State Governments.

Hypothesis 3 concerns regulatory agency resource bases; PUCs with greater resources are less dependent on information provided by utilities. Again, we used several measures. Our first, *PUC budget* per capita in a state, was a measure of financial resources. Second, we constructed a measure of PUC commissioner experience since experience may partially substitute for financial resources: *Average tenure of commissioners* was equal to the sum of each commissioner's tenure in years divided by the total number of commissioners on a focal PUC. We expected that more experienced commissioners would have better information and insights regarding utility rate review requests. We obtained annual information on PUC budgets and the identities of PUC commissioners from annual reports of the National Association of Regulatory Utility Commissioners, annual volumes of *The Book of the States*, and the Web sites of individual PUCs. Third, we allowed for PUC resources to vary relative to individual utilities as well as in an absolute sense; a PUC with a small budget is less dependent on the utility if the utility itself has minimal resources. Hence, *utility revenue/PUC budget* was the dollar value of utility electricity revenues within a state divided by the PUC budget in each year. Information on utility revenues was gathered from federal utility filings available through the Energy Information Administration.

To capture a utility's experience in dealing with policy makers, which Hypothesis 4 concerns, we relied on two related measures. In the selection equation, we created the variable *cumulative rate reviews by utility*, which is equal to the total number of rate reviews a utility has experienced at a given time. In the regression equation, we created *recent rate review*, a dummy variable set equal to 1 if a utility had experienced a rate review in the previous three years and 0 otherwise. We differentiated between the initiation of a rate review and performance in the review since we anticipated that total experience in a variety of regulatory settings would affect a utility's decision to initiate. Its performance in the rate review, however, would be more closely related to its recent experience, since the characteristics of the regulatory environment change over time.

To address Hypothesis 5, concerning other firms' experiences with policy makers, we used *other firms initiating reviews*, a dummy variable set equal to 1 if other utilities in the state initiated rate reviews with their PUC in the previous year and 0 otherwise. The variable captured potential utility learning from observing other utilities' experience with the commission.

Control Variables

We controlled for a number of factors that might affect a utility's performance in the rate review process as well as its decision to initiate a rate review. Interest rates on treasury securities enter into a PUC's decision on the allowed ROR since these are a benchmark for measuring the cost of capital. *Change in interest rate*, measured in percentage points, was the difference between the interest rate on ten-year Treasury bills at a given time minus the interest rate at the time of the last rate review. *Change in average fuel cost*, the percentage change in a utility's average fuel costs (on a per Btu basis) since its last rate review, was driven mainly by external market forces. Increases in the cost of utilities' fuel purchases, such as those that occurred during the early 1980s, directly reduce utility profits, thereby increasing the probability that utilities will initiate rate reviews.⁸ In the selection equation, we also controlled for the absolute level of fuel costs; since absolute costs are inversely related to profits, we expected a positive relationship between absolute costs and the probability that utilities initiated. We measured *average fuel cost* as the average price of fuel per Btu purchased by electric utilities within a state. Fuel cost data were from the Energy Information Administration. To control for varying economic conditions across the states, we included a measure of the *change in per capita income* (lagged one year), which was equal to the annual percentage change in per capita income in a state; voter pressure on utility rates may be inversely correlated with recent economic growth trends. We gathered these data from the Bureau of Economic Analysis.

We included additional political and institutional variables that might influence the weight that PUCs put on utility versus consumer interests

in their ROR decisions. *Elected PUC* was a dummy variable equal to 1 in states where PUC commissioners were elected and 0 otherwise. PUC commissioners were elected by the voting population in ten states and appointed by the governor in other states. Prior research suggests that elected PUCs place greater weight on consumer welfare (Besley & Coate, 2003). Details on commissioner selection were obtained from *The Book of the States*. Similarly, the variable *Republican governor and legislature* equaled 1 if there was unified Republican control of the branches of state government and 0 otherwise. Use of this variable captured the potential impact of ideological factors (as proxied by political party) on regulatory policy and utility strategy.

Finally, we also measured the *market share* for a utility as the total megawatt hours (MWh) of electricity it provided divided by the total MWh provided by all utilities in its state. If a utility is a major player within a public utility commission's jurisdiction, then that utility's information is likely to be more valuable to the PUC than information from smaller utilities. Market share thus measured the influence of a utility relative to other utilities.

Tables 1 and 2 give descriptive statistics and correlations for the variables. Table 1 provides statistics for variables included in the full sample of utility-year observations used in the rate review initiation (selection) model, and Table 2 provides statistics for variables included in the change in the allowed rate of return (regression) model.

RESULTS

We begin by discussing the results of the selection-corrected change in ROR regression model. Table 3 shows the results of our model estimated with state fixed effects. The statistically significant Mills ratio coefficient supports our empirical approach: we can reject the null hypothesis at the 1 percent level of confidence that there is no sample selection problem. With only one choice for utilities (initiate a rate review or not), the positive coefficient on the Mills ratio implies that a positive correlation exists between the decision to initiate—and therefore to engage in a nonmarket strategy to change an existing regulation—and the performance of a utility in the rate proceedings (Dolton & Makepeace, 1987). In other words, we found good evidence that utilities used the rate review initiation process strategically. Among control variables, it is also worth noting that the variables change in interest rate and change in per capita income were significant and positive. As expected, though not directly related to the political markets logic, changes in the cost of

⁸ Some states adopted automatic fuel adjustment clauses (FACs) during the 1980s, which allowed utilities to pass through fuel costs without formal rate review. However, since such clauses rarely allowed utilities to pass through 100 percent of the cost increases, fuel-cost-triggered rate reviews were not completely eliminated.

TABLE 1
Variables and Summary Statistics for Rate Review Initiation Estimation^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Rate review	0.29	0.45																	
2. Consumer advocate	0.59	0.49	-.01																
3. Industrial consumers	0.27	0.08	-.02	-.11															
4. Sierra Club membership	1.50	1.07	-.02	-.12	-.20														
5. Governor rivalry	0.22	0.41	.02	.06	-.05	.12													
6. Legislature rivalry	0.10	0.30	-.04	.10	.15	-.04	.16												
7. PUC budget	2.00	1.47	-.10	-.05	-.14	.12	.05	.07											
8. Elected PUC	0.14	0.35	-.10	-.27	-.07	-.28	-.05	-.01	.08										
9. Utility revenue/PUC budget	105.38	130.91	.05	.00	.14	-.05	-.06	-.06	-.31	.09									
10. Cumulative rate reviews	3.82	1.96	.16	.16	-.17	.18	.00	.07	.11	-.16	.07								
11. Market share	0.29	0.26	.03	-.05	.06	.00	-.06	-.03	.13	.25	.60	.14							
12. Change in interest rate	-1.33	1.89	.04	-.02	.00	.09	.02	.07	.00	-.10	.06	.22	.01						
13. Average tenure of commissioners	3.63	2.59	-.08	-.15	-.06	-.17	-.03	.00	.21	.45	.00	.06	.12	-.05					
14. Change in average fuel cost	-4.44	18.06	.06	-.11	.12	-.01	-.02	.01	.15	.05	.05	-.06	.07	-.36	-.07				
15. Average fuel cost	1.68	0.81	.09	-.03	-.07	.14	.16	-.15	-.27	-.07	.12	-.17	-.04	.11	-.04	.10			
16. Republican governor and legislature	0.10	0.30	-.02	-.11	.06	-.16	.11	.20	.00	.14	-.01	-.15	.05	-.06	-.04	.05	-.11		
17. Change in per capita income	0.06	0.03	.12	-.01	.00	-.09	.01	.00	-.13	.00	.05	-.21	.01	.11	-.02	.19	.15	.10	
18. Other firms initiating reviews	0.69	0.46	.14	.09	-.02	.01	.08	.03	-.20	-.25	-.12	-.04	-.31	.09	-.19	-.03	.11	-.03	.04

^a $n = 1,720$. "PUC" is "public utility commission."

TABLE 2
Variables and Summary Statistics, Change in Allowed Rate of Return Estimation^a

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. ΔROR	-0.47	1.34																	
2. Consumer advocate	0.58	0.49	-08																
3. Industrial consumers	0.27	0.08	.09	-13															
4. Sierra Club membership	1.46	1.00	-09	-15	-22														
5. Governor rivalry	0.23	0.42	-02	.05	-06	.08													
6. Legislature rivalry	0.08	0.27	.07	.16	.16	.03	.22												
7. PUC budget	1.78	1.23	-19	-11	-18	.16	-03	.01											
8. Elected PUC	0.09	0.28	-01	-15	-01	-21	-04	-01	.15										
9. Utility revenue/PUC budget	116.26	135.45	.04	-03	.20	-06	-05	-02	-33	.07									
10. Recent rate review	0.86	0.35	.46	.02	.02	-08	.01	.06	-19	-06	.02								
11. Market share	0.31	0.25	.00	-07	.10	.05	-15	.01	.16	.25	.59	-01							
12. Change in interest rate	-1.20	1.81	.55	.01	.03	.04	-04	.02	-12	-06	.02	.36	.00						
13. Average tenure of commissioners	3.32	2.60	-13	.04	-16	-12	.08	-06	.29	.36	-04	-09	.08	-13					
14. Change in average fuel cost	-2.63	16.60	.43	-18	.18	-11	-03	.03	.01	.13	.08	.20	.05	.43	-12				
15. Republican governor and legislature	0.09	0.29	.04	-10	.16	-14	.04	.27	-03	.03	-01	.03	-02	-11	-09	.01			
16. Change in per capita income	0.07	0.03	.43	-08	.01	-17	.13	.04	-17	.04	.08	.21	-02	.30	.01	.35	.15		
17. Other firms initiating reviews	0.79	0.40	.16	.01	.00	.00	.14	.02	-20	-15	-13	.27	-31	.12	-15	.04	.02		.05

^a $n = 491$. "ΔROR" is "change in allowed rate of return." "PUC" is "public utility commission."

TABLE 3
Results of Heckman Selection-Corrected
Regression Analysis for Change in Allowed
Return on Equity since Last Rate Review^a

Hypothesis and Variables	<i>b</i> (s.e.)
Hypothesis 1: Interest group rivalry	
Sierra Club membership	-0.38* (0.18)
Consumer advocate	0.29 (0.31)
Industrial consumers	-0.02 (2.68)
Hypothesis 2: Political rivalry	
Legislature rivalry	0.57* (0.28)
Governor rivalry	-0.09 (0.13)
Hypothesis 3: Regulatory agency resources	
PUC budget	-0.20 [†] (0.12)
Average tenure of commissioners	-0.08* (0.04)
Utility revenue/PUC budget	0.00 (0.00)
Hypothesis 4: Firm's experience	
Recent rate review	0.82** (0.16)
Hypothesis 5: Other firms' experience	
Other firms initiating reviews	-0.03 (0.15)
Control variables	
Change in per capita income	8.91** (2.01)
Change in interest rate	0.23** (0.04)
Change in average fuel cost	0.02** (0.00)
Market share	0.06 (0.26)
Republican governor and legislature	0.30 (0.25)
Elected PUC	-0.07 (0.95)
Constant	-1.37 (1.07)
Mills ratio	0.36** (0.13)
State dummies	Yes
<i>n</i>	491
Log pseudo-likelihood	-1,577.92

^a "PUC" is "public utility commission."

[†] $p < .10$

* $p < .05$

** $p < .01$

financing should have an impact on the change in ROR. Similarly, annual fluctuations in state economic conditions were positively correlated with increases in utilities' allowed rates of return.

Turning to our key variables, we found good statistical support overall for our hypotheses. First, regarding demand-side rivalry (Hypothesis 1), the coefficient on Sierra Club membership is negative and statistically significant at the 5 percent level, suggesting that lower levels of interest group rivalry (competition from organized interest groups) led to positive changes in the ROR for the utility. Note, however, that, because of the nonlinearity of

the selection effect, we could not interpret the coefficients as straight marginal effects. We have thus included Table 4 to present selection-corrected marginal effects for each of the statistically significant variables. A marginal decrease in demand-side rivalry, as measured by Sierra Club membership, was expected to increase the ROR by six basis points. The degree of rivalry generated by activists, then, appears to be an important factor in the ability of utilities to achieve favorable PUC decisions. This result is in line with previous research, which suggests that activists constitute a particularly difficult threat for firms to handle (Bonardi & Keim, 2005). Our other demand-side rivalry variables, however, did not display significant coefficients, perhaps owing to measurement challenges. The consumer advocate dummy variable, for instance, might have been too coarse to capture the strength of consumer opposition. Finer-grained data, such as the budgets of consumer advocate organizations, were unavailable. A potential explanation for the lack of significance of industrial consumers is that powerful industrial consumers, although present, did not in fact compete against utilities on ROR decisions—perhaps in return for utility support on other policy dimensions, such as the rate structure, where industrial consumers compete against residential consumers.

The results suggest also that rivalry among politicians shapes PUC decisions, which provides support for Hypothesis 2. The coefficient on legislature rivalry was positive and statistically significant at the 5 percent level when we included state fixed effects in the model. As for the effects of margin of

TABLE 4
Marginal Effects from Heckman
Selection-Corrected Regression Results for
Change in Allowed Return on Equity
since Last Rate Review

Statistically Significant Variable	Marginal Effects ^a
Sierra Club membership	-0.06
Legislature rivalry	0.18
PUC budget	-0.02
Average tenure of commissioners	-0.01
Recent rate review	0.22
Change in per capita income	0.37
Change in interest rate	0.08
Change in average fuel cost	0.002

^a Marginal effects were calculated at the mean of each continuous independent variable and for discrete changes in each dummy variable. We present the marginal effects for the model that includes state dummy variables. "PUC" is "public utility commission."

control by the majority party, we found that when rivalry in the legislature in a utility's state was intense, the utility could expect to benefit from an 18-basis-point increase in ROR. Interestingly, when we computed some robustness checks by using alternative constructions of the dummy variable with different cut-off points, we found that the impact of legislative rivalry was even larger (and significant) when narrowing down the cut-off point. With a 2 percent cut-off, for instance, the estimated coefficient in the regression doubled.⁹ On the other hand, with a cut-off of 20 percent, the coefficient was correctly signed but not significant. This check supported the idea that very strong levels of political rivalry generate especially positive situations for firms' nonmarket strategies.

Rivalry among elected political candidates thus appears to create an opportunity for utilities, a particularly well organized interest group, to "purchase" regulatory policies (i.e., higher allowed RORs) through additional campaign contributions, grassroots mobilization, or other politically valuable resource transfers. Legislatures can induce PUCs to cooperate on rate review decisions by threatening budget cuts or by supporting legislative proposals that constrain PUC authority. We did not find any evidence, however, that rivalry among gubernatorial candidates (our variable governor rivalry) influenced PUC decisions. This absence of evidence may reflect the weaker ability of the appointments process, which is largely the preserve of governors, to immediately impact PUC commissioner decisions.

Going beyond rivalry factors, we observed that regulatory agency resource dependence affected the ability of firms to achieve preferred policy rulings. Measures of both financial and experiential PUC resources were important (Hypothesis 3). The negative and statistically significant coefficient on PUC budget indicated that utilities' RORs were negatively affected as regulators' financial resources increased. Similarly, the negative and statistically significant coefficient on the average tenure of commissioners supported the contention that greater PUC experience is detrimental to utility performance. The economic significance of these effects, however, appeared to be less important than those of rivalry. Marginally increasing PUC budget and the average tenure of commissioners reduced the ROR by 2 and 1 basis points, respectively.

Turning to firm experience with policy makers

(Hypothesis 4), we found a positive and statistically significant coefficient on recent rate review, which provided strong evidence that utilities with recent rate review experience tended to perform better in subsequent rate reviews. At the margin, increasing the value of recent rate review increased a utility's ROR by 22 basis points. On the other hand, we did not find support for Hypothesis 5, which argues that firms can learn by observing others' past nonmarket interactions.

Among the remaining control variables, the variables representing a Republican governor and legislature, an elected PUC, and market share were signed as expected but not significant. We experimented with other control variables that might have affected the ROR, such as utility operating efficiency and the concentration of utilities within a state, but did not find evidence of an impact.

Our empirical specification also generated insights into the reasons why firms proactively request a change in regulatory policy. Table 5 presents the selection results, in which the dependent

TABLE 5
Results of Heckman Selection-Corrected
Regression Analysis for
Utility Initiation of Rate Review^a

Variables	b (s.e.)
Sierra Club membership	-0.13** (0.04)
Consumer advocate	-0.24** (0.09)
Industrial consumers	-0.29 (0.46)
Legislature rivalry	-0.19 (0.13)
Governor rivalry	0.10 (0.09)
PUC budget	-0.09** (0.03)
Average tenure commissioners	-0.03* (0.02)
Utility revenue/PUC budget	-0.00 (0.00)
Cumulative rate reviews by utility	0.19** (0.02)
Other firms initiating rate reviews	0.44** (0.09)
Change in per capita income	6.49** (1.24)
Change in interest rate	-0.06** (0.02)
Change in average fuel cost	0.01** (0.00)
Market share	0.60** (0.23)
Republican governor and legislature	-0.02 (0.13)
Average fuel cost	0.14** (0.06)
Elected PUC	-0.28* (0.15)
Constant	-1.70** (0.30)
State dummies	Yes
Wald test of independent equations (χ^2_1)	9.05
n	1,720
Reviews correctly classified by model	73%

⁹ A Shapiro-Francia test on a continuous measure of the legislative rivalry variable also demonstrated that it was not normally distributed.

^a "PUC" is "public utility commission."

* $p < .05$

** $p < .01$

variable was whether or not a utility initiated a rate review. Table 6 presents the marginal effect of each statistically significant variable on the probability of initiation. The full model presented in Table 5 correctly classified 73 percent of the cases, suggesting this model performed well in capturing the initiation dimension of the utilities' nonmarket strategy.

In general, the results on individual initiation model variables displayed strong consistency with the pattern of results in the change in ROR model. Increased demand-side rivalry with other interest groups appeared to dampen the incentives of utilities to initiate rate proceedings with their state PUCs. As it was in the change in ROR model, Sierra Club membership was significant and negative in the individual initiation model, but this time consumer advocate displayed a similar result. At the margin, Sierra Club membership and the presence of a consumer advocate reduced the probability that a utility initiated by nearly 5 and 8 percent, respectively. Rivalry created by other demanders of public policy therefore seemed to be an important factor in a utility's analysis of its nonmarket environment and in its decision to implement a nonmarket strategy.

Likewise, the negative and statistically significant coefficients on PUC budget and the average tenure of commissioners both suggested that as a regulator's dependence on a firm for informational resources declines, the attractiveness of the political market for the utility also falls. At the margin, as PUC budget and the average tenure of commissioners increased, the probability of a utility initiating a rate review declined by about 3 and 1 percent, respectively. These results were consistent with Hypotheses 1 and 3. We did not obtain statistical significance, however, on the political rivalry variables (Hypothesis 2).

Firm-level variables also performed well in the rate review initiation model. As utilities accumulated knowledge and experience about the rate review process, as measured by cumulative rate reviews by a utility, the probability of initiating a review increased by 6 percent. Additionally, there was evidence of a spillover effect from other utilities: the variable for other firms initiating rate reviews, statistically significant at the 1 percent level, was estimated to increase the likelihood of a utility triggering a rate review by nearly 13 percent. This result is similar to that of Hersch and McDougall (2000), who found that in the U.S. automobile industry the major firms' levels of political activity were related to the political activities of their rivals.

Similarly, as market share increased, the probability that a utility had initiated a regulatory review

TABLE 6
Marginal Effects from Heckman Selection-Corrected Regression Results for Utility Initiation for Rate Review

Statistically Significant Variable	Marginal Effects ^a
Consumer advocate	-0.08
Sierra Club membership	-0.05
PUC budget	-0.03
Average tenure of commissioners	-0.01
Cumulative rate reviews by utility	0.06
Other firms initiating rate reviews	0.13
Elected PUC	-0.09
Market share	0.20
Change in interest rate	-0.02
Change in average fuel cost	0.002
Average fuel cost	0.05

^a Marginal effects were calculated at the mean of each continuous independent variable and for discrete changes in each dummy variable. We present the marginal effects for the model that includes state dummy variables. "PUC" is "public utility commission."

increased by nearly 20 percent. This result is consistent with previous studies showing that firm size is a determinant of the decision to engage in a nonmarket strategy (Masters & Keim, 1985; Munger, 1988; Schuler, 1996; Zardkoohi, 1985).

Finally, the control variables were generally significant and signed as expected.

DISCUSSION

In this study, we set out to develop and test a model of what determines the performance of a firm's nonmarket strategy in the context of a specific regulatory or political issue. Building on the political markets framework, according to which public policies arise from the interaction of demanders and suppliers of such policies, we argue that nonmarket performance is influenced both by the characteristics of a firm's regulatory-political environment and by the internal capabilities the firm has developed over time. More precisely, we hypothesized—and supported empirically, in the context of U.S. electric utilities—that the rivalry created by competing demanders of public policies (such as environmental activists), as well as the resources of the regulatory agency involved, had a negative impact on the firm's ability to obtain regulatory approval for higher profit levels. On the other hand, we found that the rivalry among elected politicians supervising policy implementation had a positive impact on regulatory rulings favorable toward the firm. Last, we found that the firm's previous experience with regulators through

making prior regulatory filings played an important role in explaining the performance of its nonmarket strategy.

We make several contributions to the existing literature on nonmarket strategies. First, we provide a general model of firms' nonmarket performance that integrates different aspects examined in previous studies, including the attractiveness of political markets and firms' nonmarket capabilities. The literature so far has remained scattered, offering little focus on nonmarket performance and disparate theoretical perspectives. Lord (2000), for instance, presented the results of an interesting survey of U.S. companies on the impact of various nonmarket activities (electoral campaign contributions, informational lobbying, advocacy advertising, and constituency building) but did not provide any insights about the factors that affected their performance. We believe that the concept of political markets has the potential to provide such an integrative framework. As argued in this article, elements from economics, from the resource-based view of the firm, and from resource dependence theory can be integrated into the framework to provide a comprehensive view of nonmarket performance, as well as a basis for future research. The framework, by delineating the conditions under which nonmarket strategies are likely to be effective, also provides guidelines for managers who are assessing whether to implement such strategies.

The second major contribution of our work is to provide unique empirical evidence supporting the theoretical validity of the political markets framework and its implications for nonmarket strategy performance. The data requirements for assessing performance are challenging. Researchers must obtain data relating to (1) an identifiable, specific political or regulatory issue, (2) the implementation of firms' nonmarket strategies, and (3) a measure of the policy outcome. Most existing studies of nonmarket strategy have used data on aspects 1 and 2 only, which precludes investigation of performance issues (e.g., Lenway & Rehbein, 1991; Schuler, 1996). Our data on electric utility rate reviews provide good information on both a specific political-regulatory issue, regulated levels of utility profitability, satisfying requirement 1, and good information on a policy outcome, regulatory decisions on rate of return, satisfying requirement 3. Our data satisfying requirement 2, which came from a dichotomous measure (presence or absence of a utility-filed formal request for policy review) is coarser-grained than the ideal measure of the implementation of a nonmarket strategy would be. Our measure indicates utility engagement in various nonmarket activities, such as providing infor-

mation to the regulatory agency and participating in public hearings, but it does not allow us to identify the extent of a utility's investment in these activities. Although we recognize that this is a shortcoming of our study, the positive findings in the empirical model of the utility's initiation decision suggest the dichotomous measure is nonetheless a reasonable strategy indicator.

A related limitation is that we were unable to examine in more detail the design of utilities' nonmarket strategies outside regulatory settings (Hansen & Mitchell, 2000; Schuler et al., 2002); detailed data on utility campaign contributions, lobbying, and mobilization of grassroots support for legislators were unfortunately not available for our sample. We do know, however, from aggregate state-level campaign contribution data (available from www.followthemoney.org) that electric utilities are significant contributors to political candidates for state government offices. This suggests that future research incorporating multiple dimensions of firm nonmarket strategy is warranted.

Third, within the political markets framework we provide a better understanding of the impact on a firm's nonmarket performance of regulatory agencies responsible for policy implementation. Firms in a wide variety of industries, including agriculture, pharmaceuticals, and utilities, are subject to industry-specific agency rule making. Many other firms are subject to functional regulations that cross industry borders, concerning issues such as workplace safety, labor standards, and environmental impact. An important step in our hypothesis development was depicting regulatory agency decision making in general in the context of the broader institutional environment, which includes courts and legislatures that have the ability to reverse errant agency actions. Agencies operate under different incentives and constraints than elected politicians. We argue specifically that regulatory agencies are constrained in their decisions by procedural requirements: agencies need resources to obtain information and to justify their rulings in order to avoid judicial override. We find strong evidence that better funded, more experienced agencies are better positioned to counter the policy changes that firms claim are required.

Together with the results on political rivalry, our findings suggest that the ability of firms to gain favorable policy rulings in *regulatory* arenas—as compared to *legislative* arenas—is complex, requiring firms to operate in multiple institutional environments. To be successful in regulatory arenas, firms may additionally need to gain the support of the legislative and executive bodies that monitor the decisions of agencies and may subsequently

“punish” the agencies for errant decisions. Alternatively, firms may be able to use these political channels strategically to indirectly pressure agencies to implement favorable rulings (Holburn & Vanden Bergh, 2004).

Our fourth contribution is to provide new empirical results consistent with the notion that firms can develop internal capabilities that improve their nonmarket performance. Existing research shows that the prior experience of firms’ board members in political institutions is associated with better overall firm performance (Hillman et al., 1999). In extending the nonmarket capabilities literature, we argue that repeated interactions between firms and policy makers are likely to be an important mechanism for developing nonmarket capabilities, since they provide an opportunity for firms to learn from experience and to establish organizational routines. In addition—and critically—repeated interactions enable firms to establish a reputation for credibility with government actors, which is essential for overcoming the high transaction costs of exchange in political markets. Although we found that firms with greater experience in interacting with regulatory agencies through prior rate reviews did indeed achieve better policy outcomes, we did not find evidence that firms achieved similar results by observing the experiences of other firms, implying that nonmarket capabilities are not easily imitated (Keim & Baysinger, 1988). It is interesting to note, however, that utilities were more likely to initiate rate reviews when other utilities also initiated them. This finding is consistent with Oliver’s (1991) proposition that regulated firms can obtain a degree of legitimacy by conforming to institutional processes.

Other types of capabilities have been extensively studied elsewhere (Ethiraj, Kale, Krishnan, & Singh, 2005; Henderson & Cockburn, 1994; Makadok & Walker, 2000; Silverman, 1999), yet as far as we know, our study is one of the first empirical attempts to directly measure nonmarket capabilities. Our study also raises a related question: if firms learn from their own experiences in a particular institutional environment, can they redeploy these nonmarket capabilities to other institutional settings? We tentatively explored this issue using our data by considering parent company experience for those utilities that belonged to holding companies. Our initial results (unreported here) suggested that a holding company’s rate review experience in other states was correlated with improved rate review outcomes in a focal state, implying that firms may learn some *generic* lessons about interacting with policy makers through their experiences in different jurisdictions. We believe

this is a promising avenue for future research, as are broader questions related to the impact, and source, of firm capabilities in achieving favorable policy outcomes.

Limitations and Avenues for Future Research

Although we believe our results are encouraging, a number of other theoretical and empirical limitations in our analysis call for further research on the topic of nonmarket strategy performance. One potential shortcoming is that our hypotheses, albeit generic, were tested in the context of a single industry, raising questions about the generalizability of our findings to other settings. We might expect to find that the role of firm nonmarket capabilities, for instance, is less significant in industries that are less heavily regulated than the utilities sector, where firm-regulator interactions are relatively frequent. Utilities also have a unique ability to initiate policy change through the rate review process; without such rights, firms in other industries may find it more difficult to gain access to policy makers and to establish political markets, making political strategies less effective. A further characteristic of our research design is that we measured firm-level regulatory policy outcomes and firm-level strategies aiming for private benefits of regulation. Although we regard this measurement focus as a strength of our analysis in identifying performance drivers, it does mean that we did not explore collective action problems within an industry. If regulations provide public rather than private benefits to firms within an industry, the costs of organizing collective action could, all else being equal, reduce nonmarket strategy performance.

From a theoretical perspective, we did not distinguish between different types of nonmarket strategy in our hypotheses. Different types of strategy are likely to perform differently in various environments (Hillman & Hitt, 1999). For instance, the ways in which firms attempt to mitigate interest group competition will not be the same as the methods by which they gain the support of elected legislators. The incentives and objectives of these two groups vary, and firms will adapt their nonmarket tactics accordingly. There is thus scope for future work to consider a finer-grained measure of nonmarket strategy and to consider the demand-side and supply-side conditions in which each type will be more or less effective. Another potential route for developing the political markets framework is to examine the interactions between and within demand- and supply-side factors. Does interest group competition, for example, have a more powerful effect when political rivalry is also

strong? How does the impact of regulatory expertise depend on political rivalry? We believe that addressing these types of questions would provide important additional theoretical insights into the attractiveness of political markets.

Conclusion

Despite these and other limitations, our study offers new insights into the factors that affect the ability of firms to succeed when they engage in nonmarket strategies. In particular, we argue that both the external environment, which we conceptualize as a political market involving demanders and suppliers of public policies, and the internal characteristics of firms both matter significantly to nonmarket performance. Using data from U.S. electric utilities, we find good empirical support for this thesis, even though much work remains to be done.

REFERENCES

- Ansolabehere, S., de Figueiredo, J. M., & Snyder, J. M. 2003. Why is there so little money in U.S. politics? *Journal of Economic Perspectives*, 17: 105–30.
- Aranson, P. 1990. Theories of economic regulation: From clarity to confusion. *Journal of Law and Politics*, 6: 247–286.
- Barney, J. B. 1991. Firms resources and sustained competitive advantage. *Journal of Management*, 17: 99–120.
- Baron, D. 2001. Theories of strategic nonmarket participation: Majority-rule and executive institutions. *Journal of Economics and Management Strategy*, 10: 47–90.
- Baron, D. 2003. *Business and its environment*. Upper Saddle River, NJ: Prentice-Hall.
- Baum, J. A. C., Li, S. X., & Usher, J. M. 2000. Making the next move: How experiential and vicarious learning shape the locations of chains' acquisitions. *Administrative Science Quarterly*, 45: 766–801.
- Baysinger, B. 1984. Domain maintenance as an objective of business political activity: An expanded typology. *Academy of Management Review*, 9: 248–258.
- Besley, T., & Coate, S. 2003. *Elected versus appointed regulators: Theory and evidence*. Working paper, Department of Economics, London School of Economics.
- Boddewyn, J., & Brewer, T. 1994. International business political behavior: New theoretical directions. *Academy of Management Review*, 19: 119–143.
- Bonardi, J. P. 2004. Global and political strategies in deregulated industries: The asymmetric behaviors of former monopolies. *Strategic Management Journal*, 25: 101–120.
- Bonardi, J. P., Hillman, A., & Keim, G. 2005. The attractiveness of political markets: Implication for firm strategy. *Academy of Management Review*, 30: 397–413.
- Bonardi, J. P., & Keim, G. 2005. Corporate political strategies for widely salient issues. *Academy of Management Review*, 30: 555–576.
- Buchanan, J., & Tullock, G. 1962. *The calculus of consent: Logical foundations of constitutional democracy*. Ann Arbor: University of Michigan Press.
- Dean, T. J., & Brown, R. L. 1995. Pollution regulation as a barrier to new firms entry: Initial evidence and implications for future research. *Academy of Management Journal*, 38: 288–303.
- de Figueiredo, J. M., & Silverman, B. 2006. Academic earmarks and the returns to lobbying. *Journal of Law and Economics*, 49: 597–626.
- de Figueiredo, J. M., & Tiller, E. H. 2001. The structure and conduct of lobbying: An empirical analysis of corporate lobbying at the Federal Communications Commission. *Journal of Economics and Management Strategy*, 10: 91–122.
- Dixit, A. 1996. *The making of economic policy: A transaction-cost perspective*. Cambridge, MA: MIT Press.
- Dolton, P. J., & Makepeace, G. H. 1987. Interpreting sample selection effects. *Economics Letters*, 24: 373–379.
- Dyer, J. H. 1997. Effective interfirm collaboration: How firms minimize transaction costs and maximize transaction value. *Strategic Management Journal*, 18: 553–556.
- Eggertson, T. 1990. *Economic behavior and institutions*. New York: Cambridge University Press.
- Ethiraj, S., Kale, P., Krishnan, M. S., & Singh, J. V. 2005. Where do capabilities come from and how do they matter? A study in the software services industry. *Strategic Management Journal*, 26: 25–45.
- Fukuyama, F. 1996. *Trust: The social virtues and the creation of property*. New York: Free Press.
- Getz, K. 1997. Research in corporate political action: Integration and assessment. *Business and Society*, 36(1): 32–72.
- Greene, W. H. 2003. *Econometric analysis* (5th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Grier, K. B., Munger, M. C., & Roberts, B. E. 1994. The determinants of industry political activity, 1978–1986. *American Political Science Review*, 88: 911–926.
- Hansen, W. L., & Mitchell, N. J. 2000. Disaggregating and explaining corporate political activity: Domestic and foreign corporations in national politics. *American Political Science Review*, 94: 891–903.

- Heckman, J. J. 1979. Sample selection bias as a specification error. *Econometrica*, 47: 153–161.
- Henderson, R., & Cockburn, I. 1994. Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal*, 15: 63–84.
- Hersch, P., & McDougall, G. 2000. Determinants of automobile PAC contributions to house incumbents: Own versus rival effects. *Public Choice*, 104(3–4): 329–343.
- Hill, C. W. 1990. Cooperation, opportunism and the invisible hand: Implications for transaction cost theory. *Academy of Management Review*, 15: 500–513.
- Hillman, A., & Hitt, M. 1999. Corporate political strategy formulation: A model of approach, participation and strategy decisions. *Academy of Management Review*, 20: 193–214.
- Hillman, A., & Keim, G. 1995. International variation in the business-government interface: Institutional and organizational considerations. *Academy of Management Review*, 20: 193–214.
- Hillman, A., Schuler, D., & Keim, G. 2004. Corporate political activity: A review and research agenda. *Journal of Management*, 30: 837–857.
- Hillman, A., Zardkoohi, A., & Bierman, L. 1999. 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.
- Holburn, G. L. F., & Vanden Bergh, R. G. 2002. Policy and process: A game-theoretic framework for the design of nonmarket strategy. *Advances in Strategic Management*, 19: 33–66.
- Holburn G. L. F., & Vanden Bergh, R. G. 2004. Influencing agencies through pivotal political institutions. *Journal of Law, Economics and Organization*, 20: 458–483.
- Holburn, G. L. F., & Vanden Bergh, R. G. 2006. Consumer capture of regulatory institutions: The diffusion of public utility consumer advocacy legislation in the United States. *Public Choice*, 126(1-2): 45–73.
- Holburn, G. L. F., & Spiller, P. T. 2002. *Interest group representation in administrative institutions: The impact of consumer advocates and elected commissioners on regulatory policy in the United States*. POWER Working Paper 002, University of California, Berkeley.
- Hyman, L. S. 2000. America's electric utilities: Past, present, and future (7th ed.). Vienna, VA: Public Utilities Reports.
- Jacobson, R. 1992. The "Austrian" school of strategy. *Academy of Management Review*, 17: 782–807.
- Jones, T. 1995. Instrumental stakeholder theory: A synthesis of ethics and economics. *Academy of Management Review*, 20: 404–442.
- Kaufman, A., Englander, E., & Marcus, A. 1993. Selecting and organizational structure for implementing issues management: A transaction costs and agency theory perspective. In B. Mitnick (Ed.), *Corporate political agency*: 148–168. London: Sage.
- Keim, G., & Baysinger, B. 1988. The efficacy of business political activity: Competitive considerations in a principal-agent context. *Journal of Management*, 14: 163–180.
- Keim, G., & Zeithaml, C. 1986. Corporate political strategies and legislative decision-making: A review and contingency approach. *Academy of Management Review*, 11: 828–843.
- Kingdon, J. 1984. *Agendas, alternatives and public policy*. Boston: Little, Brown.
- Lenway, S., & Rehbein, K. 1991. Leaders, followers and free riders: An empirical test of variation in corporate political involvement. *Academy of Management Journal*, 34: 893–905.
- Lord, M. 2000. Corporate political strategy and legislative decision making. *Business and Society*, 39(1): 76–93.
- Macher, J., & Henisz, V. 2004. Firm- and country-level trade-offs and contingencies in the evaluation of foreign investment: The semi-conductor industry 1994–2002. *Organization Science*, 15: 537–554.
- Mahon, J. 1993. Shaping issues/manufacturing agents: Corporate political sculpting. In B. Mitnick (Ed.), *Corporate political agency*: 187–212. London: Sage.
- Majone, G. 1996. The European Commission as a regulator. In G. Majone (Ed.), *Regulating Europe*: 61–79. New York: Routledge.
- Makadok, R., & Walker, G. 2000. Identifying a distinctive competence: Forecasting ability in the money fund industry. *Strategic Management Journal*, 21: 853–864.
- Masters, M., & Keim, G. 1985. Determinants of PAC participation among large corporations. *Journal of Politics*, 47: 1158–1173.
- McCubbins, M. D., Noll, R. G., & Weingast, B. R. 1987. Administrative procedures as instruments of political control. *Journal of Law, Economics and Organization*, 3: 243–277.
- McCubbins, M. D., Noll, R. G., & Weingast, B. R. 1989. Structure and process, politics and policy: Administrative arrangements and the political control of agencies. *Virginia Law Review*, 75: 431–508.
- McCubbins, M. D., & Schwartz, T. 1984. Congressional oversight overlooked: police patrols vs. fire alarms. *American Journal of Political Science*, 24: 165–179.
- McCahan, A. M., & Porter, M. E. 1997. How much does industry matter, really? *Strategic Management Journal*, 18: 15–30.
- Mueller, D. 2003. *Public choice III*. Cambridge, U.K.: Cambridge University Press.
- Munger, M. 1988. On the political participation of the

- firm in the electoral process: An update. *Public Choice*, 56: 295–298.
- Niskanen, W. 1971. *Bureaucracy and representative government*. Chicago: Aldine.
- Oliver, C. 1991. Strategic Responses to Institutional Processes. *Academy of Management Review*, 16: 145–179.
- Olson, M. 1965. *The logic of collective action*. Cambridge, U.K.: Cambridge University Press.
- North, D. C. 1990. A transaction cost theory of politics. *Journal of Theoretical Politics*, 2: 355–367.
- Pfeffer, J. 1981. *Power in organizations*. Marshfield, MA: Pitman.
- Pfeffer, J. 1992. *Managing with power: Politics and influence in organizations*. Cambridge, MA: Harvard University Press.
- Pfeffer, J., & Salancik, G. R. 1978. *The external control of organizations*. New York: Harper & Row.
- Porter, M. 1980. *Competitive strategy*. New York: Free Press.
- Ring, P. S., Lenway, S., & Govekar, M. 1990. Management of the political imperative in international business. *Strategic Management Journal*, 11: 141–151.
- Rumelt, R. P. 1991. How much does industry matter? *Strategic Management Journal*, 12: 167–185.
- Russo, M. 1992. Power plays: Regulation, diversification, and backward integration in the electric utility industry. *Strategic Management Journal*, 13: 13–27.
- 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., & Cramer, R. 2002. Pursuing strategic advantage through political means: A multivariate approach. *Academy of Management Journal*, 45: 659–672.
- Shaffer, B. 1995. Firm-level responses to government regulation: Theoretical and research approaches. *Journal of Management Studies*, 21: 495–514.
- Shaffer, B., Quasney, T., & Grimm, C. 2000. Firm-level performance implications of nonmarket actions. *Business and Society*, 39(2): 126–143.
- Silverman, B. 1999. Technological resources and the direction of corporate diversification: Toward an integration of the resource-based view and transaction cost economics. *Management Science*, 45: 1109–1124.
- Stigler, G. 1971. The theory of economic regulation. *Bell Journal of Economics and Management Science*, 2: 3–21.
- Vietor, R. 1994. *Contrived competition: Regulation and deregulation in America*. Boston: Harvard University Press.
- Weatherby, J. L. 1971. A note on administrative behavior and public policy. *Public Choice*, 11: 107–110.
- Weber, M. 1947/1922. *The theory of social and economic organization* [A. M. Henderson & T. Parsons, trans.] New York: Oxford University Press.
- Weidenbaum, M. L. 2003. *Business and government in the global marketplace*. Upper Saddle River, NJ: Pearson Education.
- Weingast, B. R., & Moran, M. J. 1983. Bureaucratic discretion or congressional control? Regulatory policy-making by the federal trade commission. *Journal of Political Economy*, 91: 765–800.
- Wernerfelt, B. 1984. A resource-view of the firm. *Strategic Management Journal*, 5: 171–180.
- Williamson, O. 1975. *Markets and hierarchies*. New York: Free Press.
- Zardkoobi, A. 1985. On the political participation of the firm in the electoral process. *Southern Economic Journal*, 51: 804–817.



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