NBER WORKING PAPER SERIES

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Working Paper 7726
http://www.nber.org/papers/w7726

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
June 2000

The authors would like to thank a large number of officials at the Federal Communications Commission and various telecommunications trade associations and lobbying groups for their time and insight. In addition, we wish to acknowledge Rui J. de Figueiredo, Jr., Gregory Rosston, Howard Shelanski, James M. Snyder, Thomas Spavins, Pablo Spiller, Larry Strickling, Oliver Williamson, and participants at the Conference on Positive Political Theories of Business Strategy, University of Texas, University of Georgia, and the American Political Science Association Annual Meetings for their time and comments. de Figueiredo acknowledges the generous financial support of the Sloan Foundation through its grant to the Industrial Performance Center at MIT. The views expressed herein are those of the authors and not necessarily those of the National Bureau of Economic Research.

The Structure and Conduct of Corporate Lobbying: How Firms Lobby the Federal Communications Commission

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NBER Working Paper No. 7726
June 2000
JEL No. K2, L5

ABSTRACT

This paper examines the amount and organization of lobbying (internal organization vs. trade association) by firms in administrative agencies. It explores the power and limitations of the collective action theories and transaction cost theories in explaining lobbying. It introduces a dataset of over 900 lobbying contacts cover 101 issues at the Federal Communications Commission (FCC) in early 1998. We find that the structure and conduct of large firm lobbying at the FCC is consistent with the predictions of theories of transaction costs and the main results of theories of collective action. However, large firms do not change their behavior drastically as structures arise to remedy the free rider problem. Small firms show no sensitivity to collective action issues or transaction cost issues in the organization or amount of their lobbying, but they do lobby less when having to reveal proprietary information. In sum, large firms behave largely consistent with theoretical predictions, while small firms do not.

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1. INTRODUCTION

Firms engage in both market and "nonmarket" strategies to create shareholder value (Spulber 1994; Baron 1996). Whereas market strategies involve decisions such as product positioning and pricing, nonmarket strategies are actions taken by the firm in its political, regulatory and social environments for the purpose of increasing firm value (Baron 1997, 1999). Nonmarket behavior includes such company activities as lobbying a legislator or regulator, litigating a case in court, and making campaign contributions. Two aspects to understanding nonmarket activity are (1) "how much" nonmarket behavior firms are likely to undertake, and (2) whether nonmarket activity will be done individually or collectively within the industry. These questions are important as they relate to both firm strategy and the boundaries of the firm. We apply these questions to the lobbying of the Federal Communications Commission (FCC) by firms. In particular, we examine the number of FCC lobbying contacts by firms and in what organizational forms (trade associations v. individual firm) the lobbying occurs.

The current theory on lobbying tends to be focused on the amount of lobbying that occurs, and has largely omitted the options firms have to organize their lobbying. Since the seminal work of Olson (1965), the literature has focused on the ability of individuals and groups to overcome the free-rider problem in creating collective action (Bendor and Mookherjee 1987, Sandler 1992, Sandler and Tschirhart 1980). While the collective action literature has much to say about the amount of lobbying that occurs, it is less informative when it comes to the organization of lobbying. The theories articulating the free-rider problem do not address whether firms will choose to internalize the lobbying function, or choose to do it through a common body. The only conclusion that

can be made from the literature is that less lobbying occurs when there are collective action problems.

The empirical literature on the subject has been no more informative. Because of the difficulty in obtaining data on lobbying activities, most empirical studies that examine the amount and organization of corporate political activity have focused on political action committee (PAC) contributions to legislators (Strattman 1992, Kroszner and Strattman 1998, Snyder 1990, Grier, Munger and Roberts 1994, Pittman 1976). This literature has found evidence consistent with the collective action theories in the amount of contributions PACs give to legislators. They have also found evidence that support the theories of production economics, such as economies of scale, in the amount of PAC contributions made. That is, empirical studies have shown that larger firms do give more to legislators (Grier et al 1994, Schuler 1999). Those handful of published studies which have examined lobbying have not examined lobbying directly or have only conducted descriptive (yet valuable) case studies (e.g. Hansen 1991, Schlozman and Tierney 1986, Coleman 1988, Walker 1991, Maitland 1985).

In this paper, we address these shortcomings by examining the power of the collective action theories and transaction cost economics theory to predict both the quantity and organization of lobbying, while controlling for other explanations. We build hypotheses based on the predictions of these two theories, and then we test them using a data set of "ex parte" lobbying presentations at the Federal Communications Commission in early 1998. This data set contains over 900 instances of lobbying on over 100 different issues before the FCC. We find that both collective action and transaction cost

economics theories help to explain the amount and organization of lobbying by larger firms, but that there are limits to these theories, especially with respect to small firms.

This article extends the study of corporate lobbying in a number of ways. First, it is the first paper to examine lobbying at the transactional or contact level. Second, using multivariate statistical techniques we examine how both collective action problems and transactional hazards affect the quantity and organization of lobbying. Third, we study lobbying of regulators instead of Congress, as has been done by every other large sample empirical study. Finally, rather than use PAC proxies for lobbying, we measure the actual quantity and organization of the lobbying effort, making this one of the first studies to examine actual lobbying events statistically.

II. THEORY

The collective action and the transaction costs theories are alternative, although not mutually exclusive, approaches for understanding organizational issues. Each has implications for both the quantity and organizational form of lobbying of federal regulators. In the remainder of the paper we will define quantity of lobbying as the number of contacts an individual firm or trade association makes with the FCC. By the term individual firms, we include those contacts made by either in-house or outside counsel or lobbyists to make contacts. By trade associations, we mean the multi-member industry organization to which firms from the industry contribute money and support for the greater benefit of the industry as a whole. Examples of such include the National Association of Broadcasters, the American Cable Association, and the United States Telephone Association.

A. Collective Action Theory

Collective action theory emphasizes the barriers to group action and how they are overcome (Olson 1965). A requirement to achieve group action is for there to be common interests amongst firms. Divergent interests amongst firms generally means that a regulatory policy will differentially impact their businesses. We can think of rules regarding unbundling of network elements as an example. The effect of unbundling the elements and charging for them separately will differentially affect companies that have heavy investments in modern switching equipment, companies that maintain legacy systems in rural areas, and competitive local exchange carriers who wish to offer local service. Indeed, each company may have its own view on what is a network element and how unbundled it has to be. Such conflict over policy outcomes will have two effects: one, multiple viewpoints will be expressed to regulators; and two, the likelihood of acting collectively (through a trade association) is reduced because members are not motivated to work together for each other's goals. This leads to the following proposition.

Hypothesis 1. If the policy goals of individual firms are not consistent on an issue, then:

(a) firms tend to lobby individually, and thus favor internal organization, and

(b) the amount of lobbying on an issue increases (due to the multiple viewpoints from multiple actors)

While divergent interests has received some attention in the collective action literature, the mainstay of the literature concerns the free-riding problem. For a given level of interest convergence, collective action will be difficult because individuals will attempt to free ride on the group effort. When the cost to lobbying is high, and the benefits are cannot be localized, no one will have the incentive to engage in political activity, and thus little lobbying will occur. Individuals will not lobby on their own, either because the cost is too high relative to the benefit or because they believe another firm will do the bidding for them. In equilibrium, no lobbying occurs because of this free-riding behavior. Note that the literature does not make a prediction how the ability to free ride affects the organization of lobbying. This then leads to the following theoretical prediction that has been carried through the literature:

> Hypothesis 2: The greater the potential for free-riding, the less lobbying that will occur.

There may be issues, however, where the solution to the free-riding problem may be supported by the organization chosen. We examine two possibilities in this paper. First, if the benefits conferred by the trade association (such as information, studies, special lobbying and policy benefits) can be allocated solely to the participating members of the association, then individual firms have an incentive to participate in group action, thereby overcoming the free-riding problem. If individual firms defect, they would not get the benefits of the collective body. Second, if selective benefits can be obtained by

lobbying individually, individual firms may engage in lobbying individually. These two possibilities can occur separately or together.

Hypothesis 3A: If the benefits from trade association lobbying (collective action) can be allocated solely to the participating members of the association, then:

(1) lobbying by a trade association will be favored,

(2) there will be an increase in the amount of lobbying because the free rider problem is mitigated

Hypothesis 3B: If firms can obtain unique and selective benefits by lobbying individually, then:

(1) lobbying by individual firms will be favored

(2) there will be an increase in the amount of lobbying because the free rider problem is mitigated

B. Transaction Cost Theory

The transaction cost approach to organizational issues is more comparative in its analysis, emphasizing the benefits of alternative organizational choices. In its more standard economic applications, this approach addresses the "make or buy" decision -- that is, the decision of the firm to either internalize production or purchase goods and services on the market. This perspective suggests that in an effort to promote efficiency in firm governance, the objective for the firm is to match organizational forms (ranging from market to hierarchy) with any transaction “hazards” facing the firm in making

agreements, or contracts, with others. The contracting hazards are many, some related to maladaptation in the presence of specific assets (Klein, Crawford and Alchian 1978; Williamson 1985, 1996), some related to the appropriation of property rights (Teece 1986, Oxley 1997), and still others related to measurement of performance (Holmstrom and Milgrom 1991). These factors often call for the internalization of a particular transaction (or lobbying activities in our case). The hazard particular to our analysis is the appropriation of proprietary information by a party to the lobbying transaction -- that is, appropriation of proprietary information by other members of a trade association. When, the revelation of proprietary information is required for effective lobbying, the trade association may become less attractive as an organizational choice. The information dissemination and disclosure mechanisms within the trade association would increase the probability that proprietary competitive information of the firm (e.g., future pricing strategies or new market entries) necessary for effective lobbying would be divulged, or "leaked," to other members of the trade association -- the firm's competitors. An individual firm would find it difficult to depend upon trade association agents to prevent leakage because the agents have multiple principles (industry competitors). Thus, if competitive proprietary information is involved in the lobbying process, the trade association is a poor governance vehicle.[1]

While internal governance or “gun for hire” may be better able to protect internal information, it has an additional attractive feature: better incentive properties than trade associations. Contracting out the lobbying effort is particularly attractive because the profits (for work done efficiently) or the inflated returns from contingent fees (for work

[1] We could see a similar finding with specialization, and the role of specific information in lobbying affecting the organization of the lobbying.

done successfully in the case of lawyering) accrue to the agent, thus creating the incentive for the agent to perform more efficiently.[2] The incentive to specialize is higher in repeated transactions than in one-shot transactions. While the incentives to operate in an integrated firm are not as high as in a contractual relationship, they are still higher than that of a trade association. There is a single principal monitoring effort and there is a unified goal to the company. Incentives for the trade association as an agent for individual firms, by contrast, will tend to be muted as each member tugs at the trade association to become a lobbying arm for its own interests.

This is not to say that the trade association is a lost cause. It conveys many advantages. When acting individually, the firm incurs organizational costs that are relatively high, as they must maintain a legal or government affairs department and its associated administrative costs. If the use of lawyers and lobbyists is infrequent, the costs of internalizing these functions are most likely too burdensome to take on. The trade association, by comparison, is able to distribute costs across members and avoid these problems. Moreover, it is able to carry significant political weight because it has large amounts of geographical coverage in its political coalition. These all mean that the trade association can act as a cost effective mechanism for lobbying, and indeed, will often be the default case. We summarize this discussion in Table 1.

Transaction cost theory, then, predicts the organizational form of lobbying in the following way.

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[2] The firm may encounter other principal-agent problems when the lawyers work on contingency, such as settling when it is in the best interest of the firm to litigate (Dana and Spier 1993).

Hypothesis 4: For a given level of cost and convergent interest, when there is proprietary information at risk, lobbying in the integrated form will be favored over a trade association form.

Finally, we consider the direct effect of proprietary information. Firms are generally reticent to lobby at all when there is proprietary information at stake, because there is fear that despite the usual protections to safeguard this information, the secrets will either intentionally or unintentionally leak out from the agency (Demski, Lewis, Yao, and Yildirim 1999, de Figueiredo and Teece 1996). Thus, no matter which form of organization is chosen we can hypothesize:

Hypothesis 5: The more proprietary information at risk, the less lobbying that will occur.

C. *Extensions and Summary*

Although the collective action theory and transaction cost theories are treated as independent phenomenon in this section, there is a strong possibility that they may be interrelated. That is, the choice of organization may affect the amount of lobbying that occurs. When firms choose to use a trade association as the vehicle to communicate with regulators, they may no longer each need to mobilize lobbying efforts individually to make their position known. Instead, the collective body made up of many organizations can lobby on the group's behalf. Conversely, if each firm made a decision to lobby internally, it would then increase the amount of lobbying that would occur. Given this

potential link between the organization of lobbying and the amount of lobbying, we propose:

Hypothesis 6: The more firms choose trade association lobbying, the less lobbying that will occur; the more firms choose internal organization lobbying, the more lobbying which will occur.

In Figure 1, we explain the expected results that will occur. Note that each variable has an effect on organization, and that each variable affects the amount of lobbying in two ways. First, indirectly through the organization, the variable affects the amount of lobbying (trade association lobbying produces fewer total contacts than multiple individual lobbying). Second, it affects the amount of lobbying directly. In some cases the direct and indirect effects of the variables affect lobbying in opposite directions, and it is an empirical question to determine the net effect.

A final comment must be made regarding large and small firms. First, theoretically, one would predict there would be differences in the two samples. Small firms might be severely budget constrained in their ability to hire full time lobbyists and may not have the sufficient economies of scale required to support an internal lobbyist. Thus, they may not have organizational choice. For them, it may be the trade association or nothing. Second, smaller firms might also behave in less sophisticated ways than their more experienced and larger counterparts. Without the frequent experience and learning that accompanies continual and active federal regulation, small firms might not behave as

theoretically expected. Because of this, the difference between large and small firms has been highlighted in the empirical exposition that follows.

III. EMPIRICAL EVIDENCE ON THE ORGANIZATION OF LOBBYING

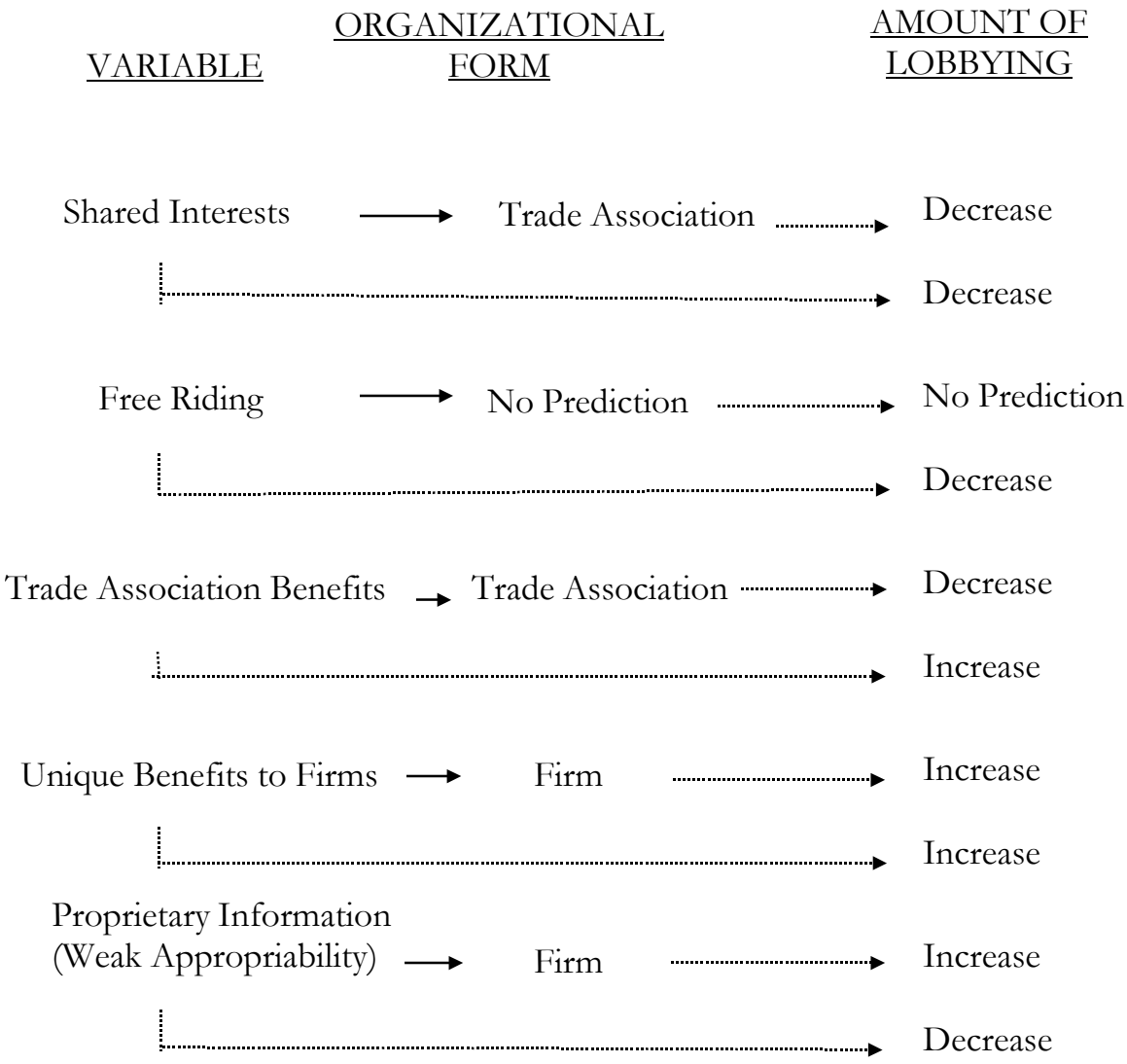
A. Lobbying at the FCC

The empirical setting for the paper is lobbying of the Federal Communications Commission (FCC). The FCC is charged with regulating the telecommunications sector[3] and has actively promulgated rules and regulations governing market actions of companies.[4] Before the FCC renders a decision on a docket, there is a formal and informal comment procedure for the parties potentially affected. The Code of Federal Regulations and FCC Guidelines establish a set of formal procedures that must be followed to comment on, or challenge, an FCC ruling. The informal procedure is a bit more opaque. Parties are permitted to make *ex parte* presentation*s* to the FCC. These written or oral presentations can be to any official within the FCC, from the commissioners who make the final rulings, to the industry-level bureau officials, who are

[3] There are actually many industries within telecommunications, such as wireless telecommunications, long distance provision, local service, broadcast television, radio services, and so on.

[4] For example, between 1990 and 1993, the FCC handed down an average of over 1000 regulatory decisions per year. See the FCC Record for the text of those decisions. Also see Greenstein, McMaster, and Spiller 1995, for an example of the impact of regulatory decisions in the telecommunications sector.

Figure 1: Predictions of the Theory



industry experts who help craft the ruling for the Commission. Ex parte contacts by the telecommunications industry constitute the lobbying activities we examine here.

Ex parte contacts, as a measure of lobbying, have several attractive properties for empirical research of this type. First, because all contacts are required by federal regulation to be reported, there is not a sample selection bias problem. Second, the Secretary of the FCC provides uniform and consistent information on each ex parte presentation, minimizing the problem of missing and temporally inconsistent data. Finally, all contacts relate to a particular regulatory issue before the FCC and are reported as such. This allows us to investigate each and every instance of this primary form of lobbying.

We have collected data on every ex parte presentation made to an FCC official and reported to the Secretary's Office in January and February 1998. This includes presentations made by parties spanning from December 1997 to February 1998. (There is roughly a 15-day delay from lobbying contact to public disclosure by the FCC.) These lobbying contacts cover 111 individual dockets facing the FCC. Ten dockets have been eliminated because of incomplete information, yielding 101 distinct issues over which the FCC was lobbied. The issue is the unit of observation.

In this data set, there are 930 lobbying contacts made during the time period. We record a contact as the following: each *party, i*, that contacts *regulator, j*, about *issue, k*, on *date, t*, receives a count in the data set (each (*i,j,k,t*) quadruplet represents a count). Because we are concerned about business lobbying, we have eliminated observations that involve lobbying by federal, state or local government representatives. We have also eliminated 12 cases where information is incomplete. The remaining number of contacts

is 823. We supplemented this database with interviews of over thirty regulators, companies, lawyers, and trade associations in the telecommunications industry, to derive the key variables of interests.

To create and check some of the variables, we recruited three individuals: one former FCC regulator, one current FCC regulator, and one lawyer who represented companies on many of these issues. For each of the docket numbers, we asked two of the officials to rate the variables on a Likert Scale (1 to 5). High ratings mean that the experts strongly agreed with the characterization of the variable in the questionnaire; low numbers indicate a strong disagreement. We used the average of the two experts' results to determine the values of the variables. The raw data had a reasonably high degree of consistency, with 81% of answers within one rating point and 95% of answers within two rating points. The questions used in this study from the original questionnaire are found in Appendix 1. We then asked the remaining official to take a version of the questionnaire with the same, but a smaller number of questions. We then checked his answers with the results from the previous two individuals to insure consistency with the answers. Again, the results were similar.

B. The Data on the Organization of Lobbying

The unit of observation is the issue docket (n=101). The dependent variable in this section is the percentage of individual firm contacts of the total contacts on a given issue, and is defined as (number of individual firm contacts/number of total contacts).

There are three sets of independent variables. The first set of variables, derived from the questionnaire in Appendix 1, relates to measuring how collective action issues and their remedies affect the organization of lobbying. Collective action itself has two main components, the degree of shared interests, and the degree of free-riding. We measure both. The first variable, SHARED INTERESTS, measures the degree of shared interests between firms on a given issue. We expect that as SHARED INTERESTS increase, *ceteris paribus*, firms are more likely to engage in collective action, and thus companies move toward a trade association form of organization (Hypothesis 1). The second component, free-riding, is measured by the variable, FREE RIDING. While the theory has no prediction on how free-riding will affect the organization of lobbying (Hypothesis 2), we include a FREE RIDING variable in the regression for completeness. FREE RIDING examines the ability of non-contributors to enjoy the fruits of lobbying by others. Although opportunities for free-riding may not favor one organizational form over another, remedies of the free-riding problem – nonmember exclusion and unique benefits -- may. To account for this, we introduce the two remedy variables. NONMEMBER EXCLUSION represents whether it is possible for a group, like a trade association, to exclude members from benefits of its lobbying efforts, and thus overcome the free-riding problem. If trade associations are able to exclude nonmembers from the benefits of their lobbying effort, firms are more likely to join the trade association and rely on its lobbying efforts (Hypothesis 3A). Thus we expect a negative coefficient on NONMEMBER EXCLUSION. UNIQUE BENEFITS measures the ability of firms to obtain selective benefits on this issue from their own lobbying efforts (Hypothesis 3B). We expect a positive coefficient on UNIQUE BENEFITS because a firm could obtain

unique benefits through lobbying on its own.[5] Note that the two remedies are not mutually exclusive and a firm could use both a trade association to obtain industry-wide benefits (when nonmember exclusion is possible) and an internal organization form of lobbying to obtain selective benefits.

The second set of independent variables focuses on proprietary information; in particular, the difficulty of protecting information when lobbying. In measuring this transactional hazard, we asked the experts to assess whether lobbying on each of the issues is likely to lead to leakage of proprietary information during lobbying, outside of FCC safeguards that protect proprietary information. WEAK APPROPRIABILITY measures the likelihood that lobbying through a trade association will result in proprietary information revelation, with high values indicating a high probability of proprietary information leakage. The transactional theory argues that we should see the trade association form of organization disfavored when there is a transactional hazard of proprietary information leakage in the lobbying (Hypothesis 5). If this were true, we would expect to see a positive coefficient on WEAK APPROPRIABILITY, as firms that face higher transactional hazards tend to shy away from trade association forms of lobbying. We do include a second variable FIRM LEAKAGE to measure whether firms, in lobbying internally, would have to reveal proprietary information anyway. Thus, if a firm feels its proprietary information will leak out to its competitors anyway, it will be more likely to use the trade association, *ceteris paribus*, over an internal organization form of lobbying to take advantage of the least cost option available.

[5] Note that unique benefits does not necessarily mean divergent interests.

The third set of variables is control variables. The first three variables – LARGE FIRM COST OF ACTION, SMALL FIRM COST OF ACTION, and COST OF ORGANIZING -- control for the cost of acting collectively. In particular, LARGE FIRM COST OF ACTION and SMALL FIRM COST OF ACTION measure if a large or small firm, respectively, would find it cost-beneficial to lobby individually in the absence of a trade association. COST OF ORGANIZING measures how the costs increase in the trade association form as a function of the number of members of the trade association. As costs to the trade association form of organizing increase, and the costs of organizing internally decrease, the firm should move toward an internal form of organization. LARGE FIRMS and SMALL FIRMS measure the number of large and small firms affected, respectively, and are designed to control for issues before the Commission that disproportionately affect either large or small firms. FIRM PROFITS measures the impact of an issue on firm profits; larger values of this variable indicate the larger the effect of this issue on firm profits (and arguably should increase lobbying due to importance of issue). YEAR represents the number of years the docket has been before the Commission. This is a measure of where in the docket life cycle the issue is, and is meant to control for any organizational effects that might be attendant to that particular phase. Finally, we include control variables that are not on the questionnaire. First, we control for docket (or industry) effects fixed effects. COMMON CARRIER, ENGINEERING AND TECHNOLOGY, MASS MEDIA, WIRELESS, and CABLE SERVICES refer to the docket designation of the issue, and control for these types of industry effects, relative to miscellaneous agency issues (which includes international, public mobile radio, compliance, and other minor bureaus), the omitted category.

We provide three tables regarding the data. Table 2 has a list of the variable names, and what they measure. Table 3 contains the descriptive statistics. Table 4 is the correlation matrix.

C. Empirical Method and Specification

In order to estimate the equation, we use four methods. The first is a standard tobit regression, assuming normal error distribution. We use the tobit formulation because the dependent variable includes those situations in which there is lobbying, but no large firm has taken part. In 27 of the 101 observations, there is no lobbying by large firms.[6] This means there is a large probability mass at 0, which could result in biased estimates in the standard OLS formulation. The normal tobit formulation allows us to account for a distribution that is censored from the left, and allows us to generate unbiased parameter estimates. Sigma is positive and statistically significant at the 99% level in the tobit formulation, suggesting biased estimators in OLS. We also consider a censored logistic regression, which assumes a logistic error distribution.

A second concern that might arise is that there is censoring from the right as well. Twenty-four of the 101 observations are equal to one. That is, in 24 cases, only large firms lobby with internal organization, which creates a large probability mass at 1. To account for this, we consider a two-sided tobit, which allows for censoring at 0 and at 1. Finally, we provide the ordinary least squares estimation as a basis for comparison, with Newey-West AR-4/heteroskedastic consistent errors.

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[6] In these cases, large firms might wish to lobby, but the costs to doing so outweigh benefits.

We have also bifurcated the sample into a small and large firm sample. The large firm sample includes all Fortune 1000 firm contacts and all trade association contacts in which large firms are participants. The small firm sample includes all Fortune 1000 firms and all trade associations in which small firms are participants. We have done this for four reasons. First, theoretically, one would predict there would be differences in the two samples. Small firms might be severely capital constrained in their ability to hire lobbyists and not have the sufficient economies of scale required to support an internal lobbyist. Second, smaller firms might also behave in less sophisticated ways than their more experienced and larger counterparts. Third, our interviews tend to confirm that, when compared to large firms, smaller firms are more often concerned about the social and trust aspects to their relationships with trade associations, rather than a merely calculative strategy. Finally, we have determined that there is a statistical difference in the two samples. We have examined a unified model's explanatory power using interactive variables for the theoretical variables of interest versus no interactive variables on the variables of interest, and we can reject with a simple F-test that the models have similar explanatory power at the 99% level of confidence.

Finally, we have also examined the variables for multicollinearity. While a concern, it does not seem to be a large problem. Table 3 indicates that the highest correlation between two variables is .81, most variables have bivariate correlations in the .30 range or lower.

D. Organizational Results

1. Large Firms

We first look at large firms. In Table 5 we provide six models. Model 1 is the base model, without the collective action or transactional hazard variables, using a simple one-sided tobit. Model 2 includes the collective action variables of interest. Model 3 includes all the variables of interest. Model 4 presents the results with a two-sided tobit. Model 5, considers a one-sided censored logistic regression. Model 6 provides the OLS estimation for comparison. The coefficients estimates are presented with their standard errors in parenthesis below. The statistical significance of the coefficients is noted at the 10% and 5% level using two-sided t-tests. A positive coefficient means that an increase in the variable will cause the lobbying to tend toward internal organization; a negative coefficient means that an increase in the variable will result in a more trade association form of organization. We focus on Model 3 as it has all the variables included and highest likelihood. Note, however, that the signs of the coefficients are the same in nearly every model, no matter which error distribution assumption or specification is preferred.

Consider first the collective action variables. SHARED INTERESTS, as predicted, has a negative coefficient and is statistically significant, which suggests that as interests converge, firms are more likely to move into a trade association form of organization (Hypothesis 1). The coefficient on FREE RIDING is negative and statistically significant, meaning that the greater the possibility of free-riding on a docket outcome, the more likely the firm is to use the trade association. The theory did not pose a prediction on this variable. The coefficient on NONMEMBER EXCLUSION, also negative and statistically significant, suggests that as trade associations are increasingly

able to block nonmembers from their benefits, firms respond by joining the trade association and having the trade association lobby on its behalf, consistent with the theory (Hypothesis 3A). The coefficient on UNIQUE BENEFITS is not statistically different from zero at the conventional levels of significance. The theory had predicted this coefficient would be positive – that is, unique benefits would produce a tendency for firms to lobby themselves to obtain those benefits (Hypothesis 3B).

Consider the transaction cost variables next. The coefficient on WEAK APPROPRIABILITY, which is the key measure of the transaction cost variable, is positive, as predicted, and statistically significant at the 90% level of confidence (Hypothesis 4). Though not an overwhelming level of significance for large firms, the coefficient is positive and statistically significant at either the 90% or 95% level of confidence in every model presented. The coefficient suggests that firms will organize internally or through their own agents, rather than use a trade association, the more proprietary information is at stake. FIRM LEAKAGE has a negative coefficient that is statistically significant at the 90% level. When firms who would lobby individually are unable to keep the proprietary information from regulators, they are likely to rely on a trade association form of lobbying, consistent with theory

Table 6 lists the magnitude of the effects a one-standard-deviation move in the theoretical variables has on the probability of lobbying internally. A one-standard deviation move in shared interests, free-riding, and nonmember exclusion results in a 14%, 28%, and 16% greater probability of organizing the lobbying through a trade association form, respectively. Consistent with transaction cost theory, a one-standard deviation move in proprietary information revelation increases the probability of

organizing internally or through an own-hired agent by 16% for large firms. If it is not possible to keep the information proprietary no matter what the organizational form, firms prefer to lobby through a trade association with a 22% higher probability.

A number of control variables are also of interest. The coefficient on LARGE FIRMS is positive and significant. The more large firms affected by the issue, the more likely they are to organize internally. The coefficient on YEAR is also positive and statistically relevant. The later in the life cycle of the docket, the more likely firms are to organize their lobbying internally. The Common Carrier Bureau and the Wireless Telecommunications Bureau also encounter more integrated lobbying from large firms. Note that the impact of the docket on firm profits (FIRM PROFITS) does not favor one type of organization over another.

2. Small Firms

Now consider small firms. Again, in Table 7 we present six models (Models 7-12), that follow Table 5. SIGMA is statistically significant for small firms as well suggesting a Tobit formulation. A log-likelihood ratio test does not allow us to reject the hypothesis that all the tobit models have similar explanatory power at the 95% level of confidence. That is, Model 7 has similar explanatory power to Models 8-9. From a modeling perspective, this suggests that jointly the theoretical variables have little explanatory power of small firm behavior. Different models have similar results, but those results seem to be fraught with problems. For example, the coefficient on NONMEMBER EXCLUSION is positive and statistically significant, suggesting that the more benefits trade associations offer, the less likely smaller firms are to join. FREE

RIDING among small firms has a positive and also statistically significant coefficient, suggesting small firms, in the presence of free-riding, tend to organize internally. To the extent that collinearity might be a problem, it should have plagued the large firm analysis as well as the small firm analysis. However, the large firm analysis seems to perform well. Given this outcome, the discussion of individual coefficients and variables, and how they affect the organization of lobbying, must be interpreted carefully because jointly they add little to our understanding of the organization of small firms. The reason underlying this could be that there is so much unobserved heterogeneity in the behavior of small firms, that it completely swamps the theoretical effects, and thus generates nonsense results. These results are also consistent with the view that small firms do indeed behave differently than large firms. It could be that they may be limited in their choices of organization, or that they are maximizing a utility function that does not include these variables.

IV. EMPIRICAL EVIDENCE ON THE QUANTITY OF LOBBYING

A. Data

The dependent variable measuring the quantity of lobbying occurring is the number of lobbying contacts made by firms and trade associations, as defined in Section IIIA. The range of the number of lobbying contacts is 1 to 114. The independent variables are as defined in the previous section, with two exceptions. The first is that we have omitted the cost variables that refer to the cost of organization, because they are not

expected to have an impact on the amount of lobbying.[7] Second, we have added variables that measure the organization. That is we have included in the dependent variables from the previous equations as independent variables in this equation (like a recursive model) to examine Hypothesis 6.

B. Method and Specification

To estimate these equations, we begin with the assumption that the count variables are Poisson distributed. Unfortunately, two different specification tests (Wooldridge 1996, and Cameron and Trivedi 1994) indicate there is overdispersion in the data. Thus we rely on a negative binomial assumption to estimate the model. We also provide the results using a quasi-maximum likelihood estimator. This estimation technique has the advantage of producing consistent estimates of the parameters of a correctly specified conditional mean, even if the distribution is incorrectly specified. Finally, we provide the estimates from a simple ordinary-least-squares estimator with Newey-West corrected standard errors, which provide a basis for comparison.

A second specification concern is whether error terms are correlated across the organizational model and the count model. We have examined the error correlation structure across specifications and can reject the hypothesis of error correlation. Moreover, a two-stage least-squares specification imposes a linearity assumption on the two equations, which may not be appropriate for the count data here. Nevertheless, in estimates not reported here, we have run the regression using instrumental variables techniques, and the signs of the theoretical coefficients of interest do not change.

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[7] These will serve as instruments in the two stage least squares estimation described below.

A third specification concern is related to the differences between small and large firms. For the same reasons elucidated in Section IIIC, we might be concerned about the differences in lobbying by large and small firms. Thus, we have conducted specification tests to examine whether there should be a split in the sample. We can reject at the 95% level that these two groups behavior similarly, and thus we present results here of the two separate regressions, one for large firms and one for small firms.

A fourth specification concern relates to outlyers. Given the skewness of the dependent variable, a small number of outlyers may bias the results substantially. To account for this, we ran the regressions at various cutoff points in the data, and the results are nearly identical to the results presented here.

Finally, we considered using the predicted values on organization from the previous equation on the right hand side of these count equations. We think that this is not a prudent course to follow because we have no reason to believe that the actual values of these variables would be correlated with the error term of these equations, yet they would introduce measurement error into the equation. Nevertheless, we have run the regressions with the predicted values and results are roughly the same, with slightly stronger results for the organizational effects.

C. Results

1. Large Firms

Table 8 presents the results for large firms. Model 13 presents the base model with only the control variables. Model 14 adds the collective action variables. Model 15 also includes the appropriability variable and leakage variable. Model 16 presents the same variables, under a quasi-maximum likelihood estimator. Model 17 presents an OLS estimation.

A log-likelihood ratio test shows that Model 14 performs better than Model 13 at the 95% level of confidence, and that Model 15 performs better than Model 14 at the 90% level of confidence. The QML does not improve explanatory power, and the OLS estimation offers results similar to the nonlinear models. For the purposes of the foregoing discussion, we will focus on the full negative binomial model, Model 15. A positive coefficient on the variable means that there is more lobbying; a negative coefficient means less lobbying, and the standard errors are below the coefficient estimates, with the significance of the coefficient estimates noted.

The signs of the coefficients are remarkably stable across the models, suggesting some robustness to the results presented. We begin by focusing our attention on the organization variable, PERCENT INTEGRATED LARGE (Hypothesis 6). In all of the specifications, the coefficient on the percentage of large firms is positive as predicted, indicating that a shift in organizational form toward an internal or "for-hire" structure does result in more lobbying. Unfortunately, the coefficients never reach the standard levels of statistical significance, calling into question the organizational hypotheses presented here.

Next we examine the direct effect of the transactional and collective action variables on the quantity of lobbying. The coefficient on WEAK APPROPRIABILITY is negative, as predicted, and statistically significant at the 90% level (Hypothesis 5). A one standard deviation move in the variable results in 40% less lobbying, holding the remaining variables at their mean values. The coefficients on all of the collective action variables are negative. SHARED INTERESTS seems to have little statistically significant direct effect on the amount of lobbying. The theory predicted a negative coefficient (Hypothesis 1). FREE RIDING does negatively impact the amount of lobbying that occurs. This is consistent with a large body of literature emanating from political economy that suggests that free-riding problems will result in less lobbying (Hypothesis 2). A one standard deviation increase in FREE RIDING results in 35% less lobbying. Opportunities to correct the free-riding problem through NONMEMBER EXCLUSION and UNIQUE BENEFITS do not show statistically significant direct effects as hypothesized (Hypotheses 3A and 3B). Two reasons may underlie this result. First, remedies to the collective action problem may not be as effective as has been suggested in the literature. Second, large firms while concerned about collective action do not consider remedies in designing the nonmarket organization.

The results also indicate that the more large firms are impacted by an issue, the more lobbying that will occur. More importantly, and perhaps consistent with intuition, the coefficient on FIRM PROFITS is positive and statistically significant. A one-standard deviation increase in the impact the issue has on firm profits will result in 51% more lobbying. Finally, the Common Carrier dockets receive the most attention from the lobbyists.

2. Small Firms

In Table 9, Models 18 through 22 mirror the results for large firms. The coefficients are remarkably stable across error distributional assumptions, and Model 20 possesses the most explanatory power, so the discussion will focus on this model. The results for the amount of small firm lobbying are somewhat better than the results for the organization of small firm lobbying, however, it does seem in this case that the large amounts of unobserved heterogeneity persist, causing many results to be insignificant. Below, we discuss the statistical results in more detail.

As with large firms, the coefficient on the organizational variable, PERCENT INTEGRATED SMALL, is positive across all specifications, but does not reach statistical significance in any specification. Thus, like in the case of large firms, we can reject the hypothesis that organizational form has an impact on the amount of lobbying, as hypothesized in the theory section, at the 95% level of confidence. In the direct effects of the variables, all the coefficients on the theoretical variables of interest are negative in all (but one) specifications, but none of the collective action variables are statistically significant. Although this suggests that free-riding may not be an important consideration for smaller firms, it may be due to the other considerations facing small firms, which were discussed earlier in the paper.

The only statistically significant coefficient of theoretical interest is the negative coefficient on WEAK APPROPRIABILITY. Its sign suggests that small firms are reticent to lobby if they must reveal proprietary and sensitive information in the process.

A one standard deviation increase in the independent variable results in 65% less lobbying.

The estimation does find positive and statistically significant effects for small firms with issues emanating from the Common Carrier Bureau, the Cable Services Bureau, and the Wireless Telecommunications Bureau. In addition, issues that have large impacts on the profitability of small firms will receive more lobbying. The coefficient on FIRM PROFITS is positive and statistically significant, as with large firms. A one standard deviation increase in FIRM PROFITS results in 86% more lobbying contacts.

V. DISCUSSION

This paper takes lobbying data at the level of the lobbying contact, and analyzes the determinants of organizational form that lobbying takes and the amount of lobbying that occurs. It statistically examines administrative agency lobbying using actual lobbying contacts. How firms structure their lobbying of the FCC is important because it may not only determine the strategies they pursue, but it may also determine the effectiveness of those strategies and the potential for externalities.

We introduced a dataset of ex parte presentations at the FCC, and examine the pattern in the organization of corporate lobbying efforts. We show that large firms, which are systematically different from the small firms, act in ways that collective action theories and transaction cost theories predict in organizing their lobbying effort, with limitations. Consistent with the collective action theory, large firms will tend to organize through trade associations when there is shared interests and when the trade association offers benefits to members. Consistent with transaction cost economics, they will attempt

to protect information by lobbying internally or through their own agents when there is a possibility that sensitive information will leak out through the trade association form of lobbying. Small firms, however, show little systematic behavior; the data provide no statistical support to the traditional collective action or transaction cost theories of organization. This may be because the small firms are constrained in their options for organization, because of resource constraints and economies of scale considerations. It could also be because smaller firms do not have as sophisticated lobbying strategies as large firms. It may also be due to extreme amounts of unobserved heterogeneity in the small firm behavior which make the results difficult to interpret. We believe it is a combination of all three factors, and, as such, a question is worthy of future research.

The second part of this paper turns to the quantity of lobbying. Again, the key results for large firms are broadly consistent with the conventional theories: large firms lobby less in the presence of free-riding. They also lobby less the higher the probability of proprietary information leaking out in the process. The statistical analysis here shows that remedies such as nonmember exclusion and selective benefits to the free-riding problem seem to be ineffective for large firms. This suggests that there may be limitations to the literature on clubs and collective bodies as remedies to the free rider problem as they apply to the political realm. Small firms, however, are not responsive to the free-riding problem, as the theory has predicted. They show no increase or decrease in tendencies to lobby by the intensity of the free-riding problem, and remedies to the free-riding problem do not have a statistically discernible effect on the amount of lobbying which occurs by small firms. Small firms are responsive to the potential leakage of their proprietary information, and will lobby less if their proprietary

information is at risk. We must, however, consider these small firm results, especially the collective action results, carefully in light of the small firm caveats noted above.

We hypothesized that the choice of organizational form would have an impact on the amount of lobbying that occurred. The more a trade association form of organization was favored, the less lobbying that would result. In both the large and small firm case, the coefficient on the relevant variables was signed as predicted, but never reach statistical significance, calling into question this hypothesis.

Taken together, the results suggest that the structure and conduct of large firm lobbying at the FCC is consistent with the predictions of theories of transaction costs and the main results of theories of collective action. However, it suggests that the large firms do not change their behavior drastically as structures arise to remedy the free rider problem. Small firms seem to be insensitive to these issues. On the organizational front, they show no sensitivity to collective action issues or transaction cost issues. On the rate of lobbying, they show little sensitivity to collective action issues, but do lobby less if the have to reveal proprietary information. In sum, small firms seem to face a "lobby, don't lobby" decision, while large firms choose both the organization and amount of their lobbying effort when they do lobby.

The paper also points to future research as well. For example, we lack a good understanding of the nature and governance structure of trade associations where small and large firm interests are both represented. In addition, opening up the black box of executive-branch agencies, to study how and to whom lobbying is most effective is a question that is still unanswered. Also, understanding the relationship between PAC-giving and lobbying would help us to understand the relationship between these two

forms of political influence.[8] Finally, integrating the market aspects of regulatory decision-making with the nonmarket lobbying strategy would seem to be a useful area to examine. This paper, integrating political science theories of lobbying with economics and strategic management theories of organization, has attempted to begin to tackle this agenda.

[8] Ansolabehere, Snyder, and Tripathi (2000) have begun to examine this question looking at lobbying expenditures and PAC-giving in Congress.

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TABLE 1: PROPERTIES OF ORGANIZATION FORMS
FOR LEGAL AND LOBBYING ACTIVITIES

	Trade Association	Contract Lobbyist Outside Counsel	In-house Legal Dept. or Government Affairs Dept.
Incentives	Low	High	Low-Moderate
Overcome Weak Appropriability	Low	Moderate	High
Cost	Low	Moderate	High

TABLE 2: VARIABLE DEFINITIONS

VARIABLE	SUMMARY DEFINITION
SHARED INTERESTS	Degree of Shared Interests Amongst Firms
FREE RIDING	Ability to Free Ride
NONMEMBER EXCLUSION	Degree of Trade Associations' Ability to Exclude Nonmembers from Benefits
UNIQUE BENEFITS	Ability of Firms to Extract Selective and Unique Benefits through Individual Lobbying
WEAK APPROPRIABILITY	Amount of Proprietary Information that is required to be divulged by a firm to a trade association
FIRM LEAKAGE	Amount of Proprietary Information that is required to be divulged by a firm to a regulator
LARGE FIRM COST OF ACTION	Cost of individual lobbying by large firms relative to trade association lobbying
SMALL FIRM COST OF ACTION	Cost of individual lobbying by small firms relative to trade association lobbying
COST OF ORGANIZING	Rate of increase in costs of lobbying
SMALL FIRMS	Percentage of Small Firms Affected by Issue
LARGE FIRMS	Percentage of Large Firms Affected by Issue
FIRM PROFITS	Impact on firm profitability
YEAR	Year of Docket Introduction
COMMON CARRIER	Common Carrier Bureau
MASS MEDIA	Mass Media Bureau
CABLE SERVICES	Cable Systems Bureau
WIRELESS TELECOM	Wireless Telecommunications Bureau
ENGINEERING AND TECH	Engineering and Technical Bureau
PERCENT INTEGRATED LARGE	Percentage of lobbying contacts through integrated form of organization for large firms
PERCENT INTEGRATED SMALL	Percentage of lobbying contacts through integrated form of organization for small firms
LARGE COUNT	Count of large firm lobbying contacts
SMALL COUNT	Count of small firm lobbying contacts

TABLE 3: DESCRIPTIVE STATISTICS

VARIABLE	MEAN	STD DEV
SHARED INTERESTS	3.08	.81
FREE RIDING	3.91	.75
NONMEMBER EXCLUSION	1.14	.38
UNIQUE BENEFITS	2.79	1.07
WEAK APPROPRIABILITY	2.18	.78
FIRM LEAKAGE	2.13	.80
LARGE FIRM COST OF ACTION	3.56	.77
SMALL FIRM COST OF ACTION	2.73	.63
COST OF ORGANIZING	3.06	.80
LARGE FIRMS	4.13	.94
SMALL FIRMS	3.60	1.10
FIRM PROFITS	2.31	.88
YEAR	1994.7	3.03
COMMON CARRIER	.485	.50
MASS MEDIA	.109	.31
CABLE SERVICES	.069	.26
WIRELESS TELECOM	.109	.31
ENGINEERING AND TECH	.079	.27
PERCENT INTEGRATED LARGE	.36	.43
PERCENT INTEGRATED SMALL	.34	.42
LARGE COUNT	5.65	12.20
SMALL COUNT	4.70	10.19

TABLE 4: CORRELATION MATRIX

1	SHARED INTERESTS	1.00																
2	FREE RIDING	0.24	1.00															
3	NONMEMBER EXCLUSION	-0.27	-0.60	1.00														
4	UNIQUE BENEFITS	-0.49	-0.65	0.40	1.00													
5	WEAK APPROPRIABILITY	-0.31	-0.45	0.58	0.44	1.00												
6	FIRM LEAKAGE	-0.22	-0.58	0.40	0.61	0.81	1.00											
7	LARGE FIRM COST OF ACTION	0.33	0.22	-0.13	0.06	0.02	0.10	1.00										
8	SMALL FIRM COST OF ACTION	0.07	0.21	0.10	-0.15	0.01	-0.20	0.12	1.00									
9	COST OF ORGANIZING	-0.01	0.29	-0.06	0.00	0.20	0.01	0.44	0.52	1.00								
10	SMALL FIRMS	0.54	0.24	-0.28	-0.27	-0.22	-0.07	0.58	0.12	0.22	1.00							
11	LARGE FIRMS	0.46	0.33	-0.10	-0.48	-0.30	-0.42	0.19	0.48	0.27	0.60	1.00						
12	FIRM PROFITS	-0.28	-0.35	0.37	0.52	0.56	0.60	0.22	0.14	0.24	0.00	-0.13	1.00					
13	YEAR	0.21	-0.04	0.03	0.10	0.03	0.10	0.16	-0.12	0.07	0.06	0.01	-0.11	1.00				
14	COMMON CARRIER	0.06	-0.26	0.35	0.14	0.42	0.45	0.11	-0.23	-0.22	0.14	-0.06	0.31	0.03	1.00			
15	MASS MEDIA	0.14	0.08	-0.14	-0.13	-0.16	-0.14	-0.01	-0.06	-0.03	-0.03	-0.05	-0.12	-0.18	-0.34	1.00		
16	CABLE SYSTEMS	0.19	0.14	-0.11	-0.31	-0.09	-0.17	0.05	0.18	0.17	0.11	0.15	-0.14	0.10	-0.26	-0.10	1.00	
17	WIRELESS TELECOM	-0.09	0.21	-0.09	-0.07	-0.12	-0.16	-0.03	0.07	0.15	-0.05	0.02	-0.16	0.19	-0.34	-0.12	-0.10	1.00
18	ENGINEERING AND TECH	-0.12	0.06	-0.07	0.09	-0.12	-0.12	-0.14	0.15	0.05	-0.20	-0.03	-0.15	0.07	-0.28	-0.10	-0.08	-0.10	1.00
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

TABLE 5: ESTIMATION OF THE ORGANIZATION OF LOBBYING BY LARGE FIRMS

Dependent Variable: PERCENTAGE INTEGRATED LARGE = non-trade association lobbying on a given issue divided by total lobbying on the issue

VARIABLE	MODEL 1 TOBIT	MODEL 2 TOBIT	MODEL 3 TOBIT	MODEL 4 TWO-SIDED TOBIT	MODEL 5 CENSORED LOGISTIC	MODEL 6 OLS
SHARED INTERESTS		-.21** (.09)	-.19** (.09)	-.28** (.13)	-.21** (.09)	-.16** (.08)
FREE RIDING		-.30** (.11)	-.36** (.12)	-.57** (.19)	-.34** (.11)	-.26** (.09)
NONMEMBER EXCLUSION		-.31* (.17)	-.48** (.19)	-.73** (.29)	-.50** (.21)	-.37** (.17)
UNIQUE BENEFITS		-.13 (.09)	-.08 (.09)	-.14 (.13)	-.06 (.09)	-.05 (.08)
WEAK APPROPRIABILITY			.24* (.14)	.43* (.22)	.27** (.14)	.19* (.10)
FIRM LEAKAGE			-.27* (.14)	-.46** (.22)	-.31** (.14)	-.22** (.11)
COST OF LARGE FIRM ACTION	-.06 (.09)	.03 (.09)	.04 (.09)	.06 (.14)	.05 (.09)	.01 (.08)
COST OF ORGANIZING	-.08 (.08)	-.04 (.08)	-.09 (.08)	-.13 (.13)	-.13 (.09)	-.06 (.07)
LARGE FIRMS	.13** (.07)	.16** (.07)	.19** (.08)	.24** (.11)	.21** (.07)	.15** (.05)
FIRM PROFITS	.08 (.07)	.04 (.07)	.07 (.08)	.09 (.11)	.07 (.08)	.06 (.07)
YEAR	.03* (.02)	.04** (.02)	.04** (.02)	.06** (.03)	.04** (.02)	.04** (.01)
COMMON CARRIER	.41** (.16)	.51** (.16)	.55** (.17)	.70** (.25)	.52** (.17)	.44** (.10)
MASS MEDIA	-.06 (.21)	.05 (.21)	.11 (.21)	.13 (.30)	.09 (.20)	.15 (.13)
CABLE SERVICES	.18 (.23)	.21 (.24)	.24 (.24)	.25 .34	.22 (.23)	.09 (.11)
WIRELESS TELECOM	.27 (.21)	.35* (.20)	.41** (.20)	.55* (.29)	.35* (.20)	.26** (.13)
ENGINEERING AND TECH	.13 (.24)	.24 (.22)	.29 (.22)	.37 (.32)	.13 (.22)	.23 (.15)
CONSTANT	-65.27* (36.32)	-81.01** (37.81)	-87.80** (37.20)	-121.10** (55.34)	-87.54** 37.54	-70.39** 18.00
N	101	101	101	101	101	101
Log Likelihood	-71.40	-65.56	-63.64	-87.79	-64.26	
R-Squared						.3387

** 95% confidence interval
* 90% confidence interval

TABLE 6: LARGE FIRM TENDENCY TO ORGANIZE LOBBYING

Variable	Shift in Probability Toward Internal Organization
Shared Interests	-14%**
Free Riding	-28%**
Nonmember Exclusion	-16%**
Unique Benefits	-9%
Weak Appropriability	+16%*
Firm Leakage	-22%*

Note: This table measures the effect a one standard deviation move in the independent variable will have on probability of organizing internally.

TABLE 7: ESTIMATION OF THE ORGANIZATION OF LOBBYING BY SMALL FIRMS

Dependent Variable: PERCENTAGE INTEGRATED SMALL = non-trade association lobbying on a given issue divided by total lobbying on the issue

VARIABLE	MODEL 7 TOBIT	MODEL 8 TOBIT	MODEL 9 TOBIT	MODEL 10 TWO-SIDED TOBIT	MODEL 11 CENSORED LOGISTIC	MODEL 12 OLS
SHARED INTERESTS		.07 (.08)	.04 (.09)	.04 (.13)	.02 (.09)	-.00 (.07)
FREE RIDING		.29** (.11)	.31** (.12)	.48** (.19)	.28** (.12)	.19** (.07)
NONMEMBER EXCLUSION		.32* (.18)	.47** (.21)	.69** (.32)	.41* (.23)	.33* (.17)
UNIQUE BENEFITS		.07 (.08)	.05 (.09)	.08 (.13)	.03 (.09)	.01 (.09)
WEAK APPROPRIABILITY			-.21 (.15)	-.26 (.23)	-.24 (.16)	-.11 (.11)
FIRM LEAKAGE			.17 (.16)	.21 (.24)	.18 (.16)	.07 (.09)
COST OF SMALL FIRM ACTION	-.02 (.11)	-.06 (.11)	-.04 (.11)	-.05 (.17)	-.06 (.12)	-.05 (.11)
COST OF ORGANIZING	-.06 (.08)	.00 (.08)	.04 (.09)	.06 (.14)	.05 (.10)	.03 (.08)
SMALL FIRMS	-.04 (.05)	-.06 (.06)	-.07 (.06)	-.11 (.10)	-.08 (.06)	-.05 (.04)
FIRM PROFITS	.07 (.07)	.09 (.08)	.09 (.08)	.11 (.12)	.10 (.08)	.09 (.07)
YEAR	-.01 (.02)	-.01 (.02)	-.01 (.02)	-.01 (.03)	-.00 (.02)	-.00 (.02)
COMMON CARRIER	-.10 (.15)	-.19 (.16)	-.18 (.17)	-.27 (.26)	-.16 (.19)	-.13 (.19)
MASS MEDIA	.40 (.19)	.33* (.20)	.32* (.20)	.52* (.31)	.41** (.20)	.29 (.21)
CABLE SERVICES	-.09 (.23)	-.09 (.24)	-.09 (.23)	-.13 (.35)	-.04 (.23)	-.18 (.21)
WIRELESS TELECOM	.25 (.20)	.16 (.20)	.14 (.20)	.11 (.30)	.17 (.21)	.12 (.17)
ENGINEERING AND TECH	.46** (.22)	.41* (.21)	.40* (.21)	.63* (.34)	.50** (.22)	.36* (.18)
CONSTANT	10.95 (35.70)	16.09 (37.73)	19.98 (37.59)	21.50 (57.76)	8.47 (42.13)	7.49 (38.98)
N	101	101	101	101	101	101
Log Likelihood	-71.68	-68.13	-67.20	-92.09	-68.16	
R-Squared						.2459

** 95% confidence interval
* 90% confidence interval

TABLE 8: ESTIMATION OF THE COUNT OF LOBBYING
BY LARGE FIRMS

Dependent Variable: LARGE COUNT = count of lobbying contacts on the issue

VARIABLE	MODEL 13 ML NEGATIVE BINOMIAL	MODEL 14 ML NEGATIVE BINOMIAL	MODEL 15 ML NEGATIVE BINOMIAL	MODEL 16 OLS	MODEL 17 QML NEGATIVE BINOMIAL
SHARED INTERESTS		-.12 (.26)	-.17 (.26)	-2.69 (2.07)	-.17 (.24)
FREE RIDING		-.80** (.30)	-.58* (.30)	-3.75 (3.46)	-.58** (.28)
NONMEMBER EXCLUSION		-1.62** (.60)	-1.16* (.63)	-2.38 (5.06)	-1.17** (.59)
UNIQUE BENEFITS		-.49** (.23)	-.55** (.23)	-2.92 (2.10)	-.54** .21
WEAK APPROPRIABILITY			-.65* (.35)	-5.91* (3.36)	-.64** (.33)
FIRM LEAKAGE	-.13 (.19)	-.23 (.27)	.32 (.38)	1.76 (2.34)	.30 (.36)
LARGE FIRMS	.73** (.17)	.67** (.21)	.57** (.21)	3.10** (1.46)	.57** (.20)
FIRM PROFITS	.16 (.21)	.48** (.22)	.47** (.22)	4.40 (2.82)	.48** (.20)
YEAR	-.02 (.07)	.06 (.07)	.03 (.08)	.47 (.56)	.04 (.07)
COMMON CARRIER	.96* (.52)	.95* (.56)	.97* (.53)	7.60* (3.91)	1.00** (.50)
MASS MEDIA	.49 (.63)	.00 (.65)	.07 (.63)	6.17 (5.37)	.14 (.59)
CABLE SERVICES	.96 (.67)	.53 .70	.75 (.69)	4.46 (3.81)	.77 (.64)
WIRELESS TELECOM	.40 (.65)	.27 (.65)	.25 (.63)	1.95 (4.07)	.26 (.59)
ENGINEERING AND TECH	-.22 (.71)	-.05 (.69)	-.08 (.68)	3.35 (3.65)	-.05 (.64)
PERCENTAGE INTEGRATED LARGE	.71 (.47)	.44 (.46)	.57 (.45)	.88 (2.35)	.54 (.42)
CONSTANT	39.86 (146.78)	-106.81 (148.76)	-61.48 (149.10)	-909.30 (1123.811)	-69.02 (137.45)
N Log Likelihood R-Squared	101 -245.50	101 -239.90	101 -238.29	101 .2381	101 -238.73

** 95% confidence interval
* 90% confidence interval

TABLE 9: ESTIMATION OF THE COUNT OF LOBBYING
BY SMALL FIRMS

Dependent Variable: SMALL COUNT = count of lobbying contacts on the issue

VARIABLE	MODEL 18 ML NEGATIVE BINOMIAL	MODEL 19 ML NEGATIVE BINOMIAL	MODEL 20 ML NEGATIVE BINOMIAL	MODEL 21 OLS	MODEL 22 QML NEGATIVE BINOMIAL
SHARED INTERESTS		.20 (.26)	-.03 (.26)	-.71 (1.05)	-.03 (.26)
FREE RIDER		-.45 (.30)	-.03 (.31)	-4.28 (4.21)	-.03 (.30)
NONMEMBER EXCLUSION		-1.56** (.54)	-.62 (.60)	-5.73 (4.28)	-.62 (.60)
UNIQUE BENEFITS		-.18 (.24)	-.27 (.23)	-1.90 (2.29)	-.27 (.23)
WEAK APPROPRIABILITY			-1.33** (.42)	-3.30 (2.05)	-1.33** (.41)
FIRM LEAKAGE	-.11 (.29)	-.35 (.31)	.75 (.45)	-.19 (2.10)	.74 (.44)
SMALL FIRMS	.12 (.20)	.07 (.20)	.06 (.19)	.27 .84	.06 (.18)
FIRM PROFITS	.38* (.22)	.67** (.24)	.71** (.23)	4.44** (2.24)	.71** (.23)
YEAR	-.02 (.07)	-.01 (.07)	-.06 (.07)	-.16 (.53)	-.06 (.07)
COMMON CARRIER	.76 (.49)	.79 (.52)	.90* (.48)	5.23 (3.26)	.90* (.48)
CABLE SERVICES	1.13* (.69)	.84 (.71)	1.25* (.68)	5.86* (3.24)	1.25* (.67)
ENGINEERING AND TECH	.40 (.70)	.54 (.68)	.76 (.64)	4.26 (3.14)	.76 (.64)
MASS MEDIA	1.24** (.62)	.66 (.65)	.84 (.61)	8.70 (5.86)	.84 (.61)
WIRELESS TELECOM	.90 (.64)	.93 (.62)	1.07* (.58)	8.19 (5.82)	1.07* (.58)
PERCENTAGE INTEGRATED SMALL	.65 (.52)	.87* (.49)	.60 (.45)	2.50 (1.92)	.60 (.45)
CONSTANT	46.03 (145.40)	23.55 (144.43)	127.46 (135.44)	338.17 (1076.18)	126.87 (134.13)
N Log Likelihood R-Squared	101 -248.70	101 -242.87	101 -238.10	101 .1842	101 -277.01

** 95% confidence interval
* 90% confidence interval

APPENDIX 1: QUESTIONS FOR EXPERTS

NonMarket Strategy in Telecommunications

For each issue in the attached spreadsheet, rate on a 1 to 5 scale each statement below for that issue. 1= strongly disagree; 5=strongly agree.

THEORY:

1. **Shared Interests**: Large segments of the industry (a majority of firms) share the same interests or side of the issue.

2. **Free Riding:** If a trade association lobbied on this issue, the benefits of passage or defeat of this regulation(s) would be conveyed to large segments of the industry, irrespective of whether they were involved in the trade association or not. In other words, free-riding is possible because the trade association cannot localize the benefits to only its members.

3. **Nonmember Exclusion**: If a trade association lobbied on this issue, you should be a member of a trade association to be included in the benefits of passage or defeat of this regulation(s).

4. **Unique Benefits**: An individual firm can obtain unique benefits from passage or defeat of this regulation(s). (For example, it could realistically expect the Commission to specifically exclude it or small class of firms like it, from adhering to the regulation.)

5. **Weak Appropriability:** If the trade association lobbied on the firm's behalf, the firm would be required to divulge sensitive or proprietary information that might put it at a competitive disadvantage relative to other members of the trade association.

6. **Firm Leakage:** If the firm lobbied on its own behalf, the firm would be required to divulge sensitive or proprietary information at some point in the lobbying process that would become public, and that might put it at a competitive disadvantage relative to competitors.

CONTROL:

7. **Large Firms:** This issue relates to many large firms in the industries affected (1=<20%; 2=20-40%; 3=40-60%; 4=60-80%; 5=80%+)

8. **Small Firms**: This issue relates to many small firms in the industries affected (1=<20%; 2=20-40%; 3=40-60%; 4=60-80%; 5=80%+)

9. **Large Firm Cost of Action**: If there were no trade association, and each firm individually lobbied on this issue, the large firms would generally find the benefits from their lobbying to be higher than their costs of lobbying.

10. **Small Firm Cost of Action**: If there were no trade association, and each firm individually lobbied on this issue, the small firms would generally find their benefits from lobbying to be higher than their costs of lobbying.

11. Cost of Organizing: The total cost of organizing on this issue (through a trade association) increases, at an increasing rate, with the number of firms.

12. **Firm Profits**: The issue has a very large impact on the profitability of firm(s) and threatens survival of firm(s).

APPENDIX 2: ISSUES BEFORE FCC THAT REPORTED EX PARTE PRESENTATIONS JANUARY –FEBRUARY 1998

CC 80-286 Establishment of Joint Board
CC 85-166 Investigation of Special Access Tariffs of Local Exchange Carriers
CC 90-6 Cellular Service
CC 91-141 Expanded Interconnections
CC 91-281 Caller Identification Service
CC 91-35 Operator Service Access and Pay Telephone Compensation
CC 92-115 Public Mobile Services
CC 92-235 Private Land Mobile Radio Services
CC 92-237 North American Numbering Plan
CC 92-297 Local Multipoint Distribution Service
CC 92-77 Billed Party Preference
CC 94-1 Price Cap Performance
CC 94-102 Emergency Calling System
CC 94-129 Consumers Long Distance Carriers
CC 94-54 Commercial Mobile Radio Services
CC 94-97 Expanded Interconnection
CC 95-116 Telephone Number Portability
CC 95-155 Toll Free Service Access Codes
CC 95-182 Alascom, Inc.
CC 95-184 Telecommunications Services-Inside Wiring
CC 95-185 Interconnection between LECs and CMRS Providers
CC 96-115 Consumer Proprietary Network Information
CC 96-128 Pay Telephone Reclassification
CC 96-149 Implementation of Non-Accounting Safeguards
CC 96-150 Accounting Safeguards
CC 96-158 Southwestern Bell Telephone Co.
CC 96-160 Expanded Interconnection Offerings
CC 96-262 Access Charge Reform
CC 96-45 Universal Service
CC 96-61 Interstate, Interexchange Marketplace
CC 96-98 Local Competition Provisions
CC 97-11 Implementation of Section 402(b)(2)(a) of Telecom Act
CC 97-112 Commercial Mobile Radio Services
CC 97-121 In-Region, InterLATA Service in Oklahoma
CC 97-137 In-Region, InterLATA Service in Michigan
CC 97-146 Competitive Access Providers
CC 97-149 1997 Annual Access Tariff
CC 97-151 Pole Attachments
CC 97-158 Southwestern Bell Telephone Company
CC 97-160 Economic Cost Studies
CC 97-160 Universal Service -Forward Looking Mechanism for High Cost Support
CC 97-172 Ex Parte and Pleading Cycle Procedures Established
CC 97-208 InterLATA Service in South Carolina
CC 97-211 Special Authority To Transfer Control
CC 97-213 Communications Assistance for Law Enforcement Act
CC 97-219 Petition for Preemption-Discriminatory Ordinances, Fees and Right-of-Way Practices
CC 97-249 Beehive Telephone Company Beehive Telephone, Inc., Nevada
CC 97-250 Tariffs Implementing Access Charge Reform
CC 98-11 Petition of Bell Atlantic Corporation for Relief from Barriers to Deployment of Advance Telecommunications Services

CS 92-260 Cable TV-Cable Home Wiring
CS 95-184 Telecommunications Services Inside Wiring;Customer Premises Equipment
CS 96-83 Broadcast and Multichannel Multipoint Distribution Service
CS 97-151 Implementation of Section 703 (e)-Pole Attachments
CS 97-206 Technical Requirements To Enable Blocking of Video Programming
CS 97-248 Implementation of the Cable TV Consumer Protection and Competition Act of 1992
CS 97-55 TV Ratings System
ET 93-62 Radiofrequency Radiation
ET 94-124 New Radio Applications
ET 95-18 Mobile Satellite Service
ET 95-183 37.0-38.6 GHz and 38.6 - 40.0 GHz Bands
ET 95-19 Digital Devices
ET 97-214 Allocate the 455-456 and 459-460 MHz bands
ET 97-94 Amendments of Parts 2,15,18, et al.
ET 97-99 Digital Electronic Message Service
FO 91-171 Emergency Broadcast System
FO 91-301 Technical Improvements
GN 89-573 Regional Public Safety Plan; Philadelphia, PA
GN 90-7 Regional Public Safety Plan; Wash. DC
GN 93-252 Regulatory Treatment of Mobile Services
IB 95-59 Satellite Earth Stations
IB 96-111 Domestic and International Satellite Service
IB 96-220 Non-Geostationary Mobile Satellite Service
IB 96-261 International Settlement Rate Benchmark
IB 97-142 Rules and Policies on Foreign Participation
IB 97-95 Allocation and Designation of Spectrum
MD 96-186 Annual Regulatory Fees for Fiscal Year 1997
MM 87-268 Advanced TV Systems
MM 87-7 Television Satellite Station Policies
MM 91-221 TV Broadcasting
MM 92-264 Cable Ownership Limits, Cross- Ownership and Anti-Trafficking
MM 93-25 Direct Broadcast Satellite Service Obligations
MM 94-150 Attribution of Broadcast Interest
MM 95-176 Video Programming
MM 96-16 Broadcast EEO Rules and Policies
MM 96-222 Broadcast TV Ownership Rules
MM 97-138 Broadcast Television and Radio Stations
MM 97-182 Preemption of State and Local Zoning and Land Use Restrictions
PR 93-253 Private Land Mobile Radio Services
PR 89-552 Use of 220-222 MHz
PR 93-144 SMR Systems
WT 94-148 Terrestrial Microwave Fixed Radio Services
WT 95-157 Microwave Relocation
WT 96-6 Flexible Service Offerings
WT 96-86 Development of Operational, Technical, and Spectrum Requirements
WT 97-112 Commercial Mobile Radio Services
WT 97-153 Private Land Mobile Radio Services
WT 97-182 Preemption of State and Local Zoning and Land Use Restrictions
WT 97-192 Procedures for Reviewing Request for Relief from State and Local Regulations
WT 97-207 Calling Party Pays Service Option
WT 97-81 Multiple Address Systems
WT 97-82 Competitive Bidding