

Endogenous Trade Associations in Regulatory Politics

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Abstract

We develop a model in which firms can pool resources to lobby through a trade association. Our model departs from previous accounts stressing productive efficiencies of collective political action (e.g., sharing fixed administrative costs). Instead, we treat associational lobbying as a means by which firms can credibly convey information to politicians about how much political leverage they and their allies *would* have under a given regulatory regime. We document an “inverse free-rider” problem in the case of anti-regulatory associations: in expectation, a regulatory mandate will be more stringent given the existence of an association than in its absence, but some firms may nonetheless find it advantageous to create such an association, and others will feel compelled to contribute to one should it exist. The regulatory mandate will, in expectation, also be more stringent given the existence of a pro-regulatory association. We find, further, even holding dues fixed, membership in an exclusive anti-regulatory association carries with it implicit selective benefits, whereas membership in a pro-regulatory association carries with it implicit selective costs.

1 Introduction

A common feature of the landscape of politics in the United States is entry into the political arena by corporations in externality-producing industries with the intended purpose of reducing the scope of regulation. At the same time, numerous examples also exist of businesses seeking to *expand* the scope of regulation – in the form of price, quantity, and entry restrictions, or of other regulatory requirements. Both varieties of political action often take the form of lobbying and campaign expenditures. In any given industry, however, firms sometimes pursue their deregulatory and regulatory goals separately, and at other times collectively in the form of trade associations, alliances, and ad hoc coalitions. What explains the extent of individual versus “associational” political activity over time and across industries?

The benefits to firms of “going it alone” (Hojnacki 1997) are straightforward: with respect to the individual firm, political activity may provide private benefits, for example in the form of a legislator’s intervention on its behalf with the bureaucracy to obtain a favorable exemption, or a variance or exemption from a general rule. Moreover, corporations are pre-existing, legally recognized entities. As such, they have effectively solved collective action problems that might plague coalitions of firms.

By contrast, and even setting aside the collective action problem, the benefits of collective lobbying within an industry are more ambiguous. First, the motives of firms may be mixed: regulation affecting an entire industry may raise costs for different firms by different amounts; to the extent that profit-maximizing firms seek not only to lower their own costs but also to raise those of their rivals (Salop and Scheffman 1983; Bartel and Thomas 1987), different firms may have very different induced preferences over the appropriate scope of regulation. Second, insofar as many firms maintain their own political presence (through an employee-financed political action committee, in-house lobbyists, or representation by a lobbying firm), it is not clear what benefit comes from funding a trade association if that entails subsidizing the political goals of rivals; in other words, any money spent funding an association’s political activities is money not spent funding those of the firm.

In this paper, we consider the conditions under which firms will or will not find it advantageous to pool their resources and lobby collectively in a trade association.¹ In our model, associational lobbying serves as a means for sufficiently like-minded firms to convey information to policy makers, *prior* to the enactment of a new regulatory mandate, about the balance of political forces that is likely to prevail within an industry *after* its enactment. After enactment, some firms will find it in their interest to spend money in the political arena to obtain firm-specific regulatory forbearance in regulatory enforcement by bureaucrats. In our earlier work (Gordon and Hafer 2005, 2007), we suggest a mechanism through which this forbearance may be obtained: political expenditures can serve to signal the magnitude of a firm’s compliance costs to regulators; if regulators anticipate costly fights from firms with high compliance costs, they will respond by reducing their scrutiny of those firms. This signaling mechanism also serves as a (sequentially rational) means for firms to credibly commit to retaliating against legislators who would enact an extensive mandate, with the most leverage afforded to the firms who can be expected to spend most *ex post* – that is, those with high compliance costs. Thus, if legislators believe that the compliance costs of the typical firm are high, they will respond by restricting the scope of the mandate.

Before the enactment of a mandate, individual firms typically do not wish to reveal their own specific compliance costs, as doing so would eliminate their need to signal those costs via *ex post* political expenditures – thereby eliminating the source of their leverage over the legislature. By funding the lobbying activity of trade associations, firms can shape the beliefs of legislators about the distribution of costs within an industry without revealing too much specific information about themselves when doing so would be disadvantageous. In particular, costly political activity by associations with an anti-regulatory agenda is aimed at convincing legislators that the compliance costs of the *typical* firm are high, while activity by associations with pro-regulatory objectives is intended to convince legislators that those costs are low.

¹While we will use the term “association,” our model applies just as easily to industry groups calling themselves, *inter alia*, alliances, councils, committees, institutes, and coalitions.

The model implies that, contrary to received wisdom, the regulatory mandate will be higher in expectation in the presence of an *anti-regulatory* association than in its absence. Nonetheless, if membership fees are not exorbitant, some firms with anti-regulatory preferences will contribute to an association with likeminded goals if it does exist, while a subset of “entrepreneurial” firms will establish an association if it does not. These features of anti-regulatory associations combine to form what we refer to as an “inverse free-rider” problem. In canonical models of collective action (e.g., Olson 1965), individuals prefer that an organization representing their interests exist, but would not contribute to it if it did; in our model, firms prefer that an organization representing their interests *not* exist, but will contribute to it if it does. Interestingly, pro-regulatory associations do not suffer from an analogous problem: those firms that favor increased regulation benefit in expectation from a pro-regulation association’s existence, and all firms that would contribute to such an association if it did exist would benefit from establishing one if it did not.

The model also suggests an asymmetry in the ability of different types of associations to provide excludable benefits to members. Specifically, if an association is “exclusive,” allowing membership only to contributors and publicizing its membership roster, then membership in an anti-regulatory association gives a firm an implicit “discount” on its ex post firm-specific political activities. By contrast, membership in a pro-regulatory association can offer no such discount; moreover, the existence of such an association gives an implicit discount to non-members. Thus, exclusive anti-regulatory associations can create selective incentives to join, whereas exclusive pro-regulatory associations can create selective *disincentives* to join.

In what follows, we first provide a brief description of trade associations in U.S. politics, and review previous research on the subject. Next, we sketch a generalization of our “regulatory mandate” model (Gordon and Hafer 2007) that allows for multiple firms that are heterogeneous in their preferences about the scope of regulation. We then expand the model to allow firms the opportunity to create and/or join anti- and pro-regulatory associations. Finally, we discuss some implications of our work for understanding interest group politics

more generally.

2 Background: Trade Associations in U.S. Politics

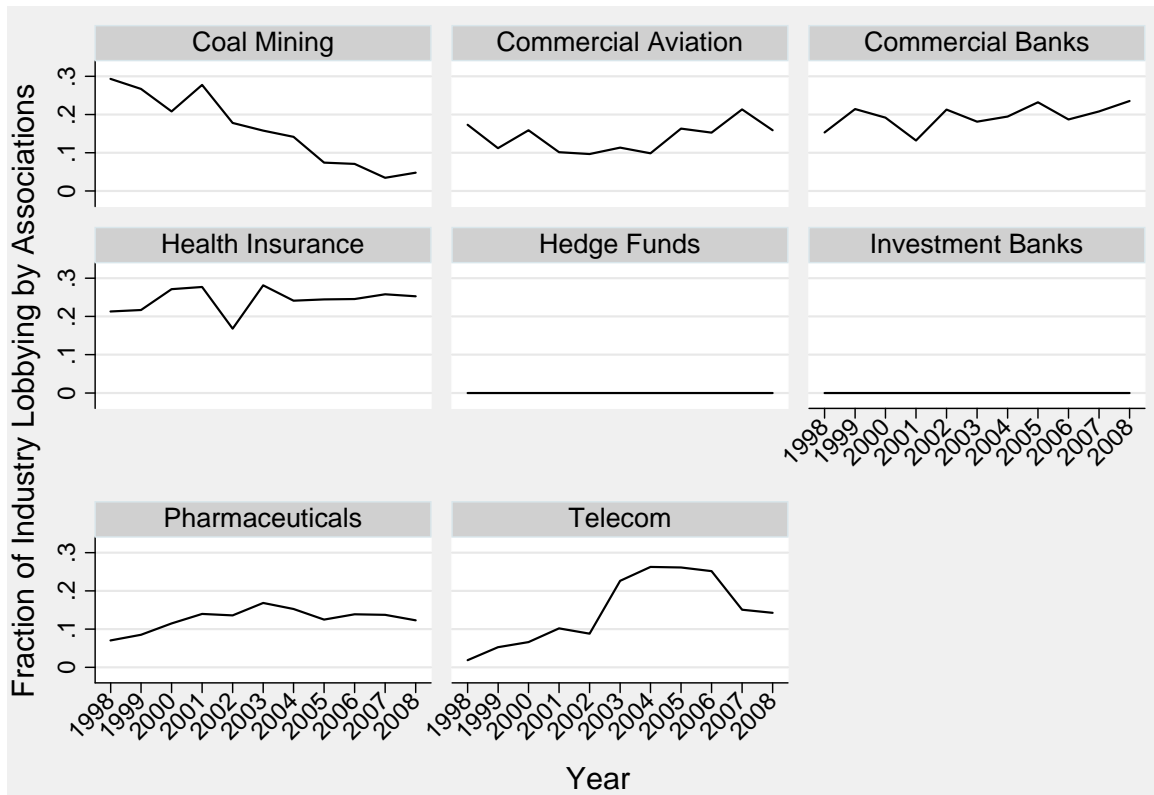
The landscape of political activity varies markedly from industry to industry, both in the amount of money spent and in the extent to which that landscape is dominated by individual firms or trade associations. Moreover, in some industries, a single trade association appears dominant; while in others, multiple associations reflecting different interests within the industry exist.

To get a sense of the variation among industries, we examined lobbying disclosure data compiled by the Center for Responsive Politics for eight industries from 1998 to 2008: coal mining, commercial banks, investment banks, hedge funds, health insurance provision, pharmaceutical manufacturing, commercial aviation, and telecommunications.² In 2008 alone, total industry lobbying ranged from a low of \$7.1 million (Hedge Funds, with 14 different organizations engaged in lobbying activities) to \$158.1 million (Pharmaceuticals, with 146 organizations lobbying).

Figure 1 displays the fraction of total lobbying expenditures within an industry made by associations rather than individual firms or other organizations (e.g., professional societies or groups specifically engaged in protesting the industry). Two of the included industries – hedge funds and investment banks – did not have a trade association engaged in lobbying during this period, so the fraction is zero. In the other six industries, we see several interesting patterns: over this time period, the fraction of associational lobbying in the coal industry fell dramatically – largely because of substantial increases in expenditures by Peabody Energy (which, by 2008, was spending \$8.4 million on lobbying, compared to \$490,000 by the Bituminous Coal Operators Association). By contrast, associational expenditures as a fraction of the total increased dramatically in the telecommunications industry, just around the time that Congress was considering amendments to the landmark 1996 Telecommunications

²Full disclosure: this is not a random sample.

Figure 1: Fraction of Total Industry Lobbying Conducted by Associations, 1998-2008

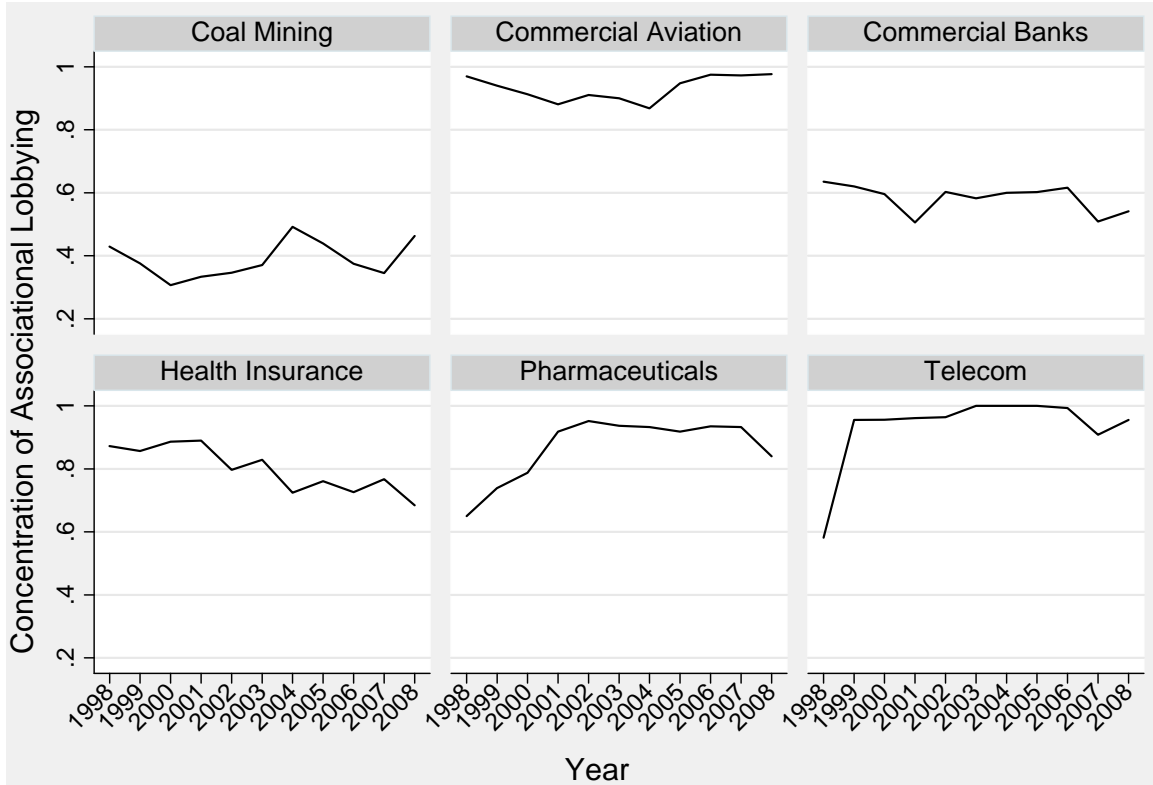


Act.

Variation also exists in the character of the associational landscape. For example, in the aviation industry, there are two major trade associations: the Air Transport Association (ATA), which represents major (as well as some minor) national airlines, and the Air Carrier Association of America (ACAA), which represents discount carriers Spirit, AirTran, and Frontier. The lobbying expenditures of the former, however, dwarf those of the latter: ATA spent \$5.8 million lobbying in 2008, while ACAA spent just \$70 thousand. By contrast there is no fully dominant trade association in the banking industry: the largest trade group, the American Bankers Association, spent \$8.7 million on lobbying in 2008, while the Independent Community Bankers of America, which represents locally operated banking institutions, spent \$4.2 million.

To get a sense of the extent of concentration of lobbying expenditures across trade as-

Figure 2: Concentration of Associational Lobbying by Industry, 1998-2008



sociations within a given industry, we calculated a Herfindahl-type concentration index for each industry from 1998 to 2008. The results are displayed in Figure 2; higher values indicate greater concentration, with a value of 1 implying all expenditures by a single association. As is evident from the figure, the coal mining industry – which has been represented by four or five associations over the period for which we have data – historically has had the lowest concentration of lobbying. Interestingly, two industries have experienced substantial change in the extent of associational concentration over time: pharmaceuticals and telecommunications, which are currently represented by one dominant association (the Pharmaceutical Research and Manufacturers of America and the US Telecom Association, respectively).

In the United States, trade associations are classified as 501(c)6 organizations under the Internal Revenue Code (Business leagues, chambers of commerce, and real estate boards). Although they must report total membership dues and total political and lobbying expen-

ditures on IRS form 990, 501(c)6 organizations are not required to disclose the individual member contributions to political efforts.³ This latter feature will prove relevant in our analysis below.

2.1 Previous Accounts of Collective Lobbying

The organizational forms within which collective political activity by firms takes place is a subject that has preoccupied scholars of interest groups for decades. In *Politics, Pressures, and the Tariff* (1935), Schattschneider notes that economic groups have strong incentives to exaggerate unanimity within their membership and to de-emphasize disagreement, but that the internal politics of groups he studied were often oligarchic, characterized by “centers of agitation and areas of indifference” (226). An extreme consequence was that individual members would employ the association as a means to mask their own political actions. Schattschneider maintains that such activity could hold explicitly negative consequences for an association’s less-active membership, and were in fact a perversion of representation.

Berry (1984) suggests a tension between collective and individual lobbying. Whereas collective lobbying may prove successful in the policy arena (for example, by suggesting unified opposition or coordinating an industry’s political activities), by submitting to a collective strategy individual firms forego the opportunity to cultivate independent political reputations that could prove valuable in obtaining selective benefits. Based on a survey of lobbyists in several industry sectors, Hula (2000) concludes that individual groups are more likely to participate in coalitions when attempting to influence general laws, as opposed to more specific regulations. In a finding related to Schattschneider’s, he also observes that coalitions tend to gel based on the exchange of benefits of a core of founding members (77).

A rational choice framework for assessing the choice between individual and collective lobbying is provided by De Figueiredo and Tiller (2001). Following Olson (1965), they argue

³Thus, for example, if a single member firm assigned staff employees to the association for its political activities, this expenditure would not be specifically disclosed by either the individual firm or the association. For a criticism of the role of trade associations in politics, see Center for Political Accountability (CPA), *Hidden Rivers* (2006).

that collective lobbying is conditioned by the commonality of interests of the participants but may be plagued by free-riding problems. Free-riding may be diminished if the benefits of membership in industry groups are excludable (for example, industry statistics to which only members have access). They also argue that a downside of lobbying collectively is the threat that other members will appropriate a firm's proprietary information. Using data on lobbying contacts with the Federal Communications Commission and interviews with regulators, company and trade association representatives, and industry lawyers, the authors find that large firms behave consistently with their theoretical expectations.

Finally, in a recent paper, Bombardini and Trebbi (2009) find that firms in more competitive markets are more likely to lobby collectively through trade associations than firms in industries with high degrees of concentration and more differentiated products. In the former type of market, product-specific protection measures that apply only to one firm would reduce its profits via substitution by consumers to the products of other firms; in such cases, firms have an interest in lobbying collectively for industry-wide protection. By contrast, in the latter type of market product-specific protection measures can increase profits. In a related paper, Bombardini (2008) demonstrates that given a fixed administrative cost of lobbying, it is efficient for the largest firms in a sector to seek protection for the sector.

The model of costly informational lobbying that we describe is related to Lohmann (1993). In the model described in that paper, a leader takes an action based on the total number of individuals in a society undertaking costly political action with respect to an issue. In both that model and ours, the policy maker observes aggregate political action rather than the specific actions of individuals. The causal mechanism we articulate here is quite different, however: unlike in that paper all firms in expectation would prefer that the legislature's beliefs about the industry be more extreme than is truly the case. Moreover, that model assumes that policy makers can observe aggregate but not individual political action, whereas in our model aggregation emerges endogenously given the incentives of the players.

3 Preliminaries: The Firm-Level Politics of Regulation

To motivate our model of trade association lobbying and its consequences for legislative policy making, it is important first to consider what happens *after* the legislature sets policy. To do so, we generalize several key results from the “regulatory mandate” model introduced in our earlier work (Gordon and Hafer 2007) by allowing for (a) multiple firms and (b) heterogeneity in their induced preferences over the extent of an industry’s regulation. For a more detailed description and derivation, we refer the reader to our earlier paper.

The interaction consists of the current majority party in the legislature L (referred to simply as “the legislature” when there is no ambiguity), a regulatory agency A , and n firms, indexed by $i = 1, \dots, n$. The legislature delegates regulatory authority to the agency. Next, each firm determines a level of political expenditure and its allocation between the majority and minority legislative parties. Finally, the agency observes firm expenditures and decides the intensity with which to monitor each firm.

The Legislature. Let $\Omega \in \mathbb{R}_{++}$ denote the total magnitude of an industry’s externalities, and $\omega(\cdot) \in [0, \Omega]$ the scope of the legislated mandate to a regulatory agency to internalize those externalities. Let $c_i \in \mathbb{R}_+$ represent firm i ’s political expenditures following the mandate, and $g_i \in [0, 1]$ the fraction of firm those expenditures going to the legislative majority party as opposed to its opponents. We ultimately refer to c_i as a firm’s *ex post* political expenditures to distinguish them from the *ex ante* expenditures we consider late in the paper.

The majority party in the legislature wishes to maximize the probability that it remains in power. This probability is increasing in the scope of the enacted regulatory mandate (under the assumption that compelling firms to internalize production externalities is politically popular), and in the proportion of corporate contributions flowing to the party (as opposed to the opposition). When the total amount of money in politics is expected to be large, the weight attached to maximizing the party’s share of it is also large. The legislative party’s

utility function, then, is given by

$$u^L(\omega|\cdot) = \gamma \sum_{i=1}^n c_i g_i + \left(1 - \gamma \sum_{i=1}^n c_i\right) \frac{\omega}{\Omega},$$

where γ captures the sensitivity of the political process to corporate political expenditures.⁴

Firms. Firms vary in their costs of complying with regulation, with firm i 's own marginal cost, $\tau_i \in [\tau_\ell, \tau_h]$, being its own private information. Each firm's type is an independent draw from a common-knowledge prior density of firm types, $\pi(\tau)$. Firms experience disutility not only from the cost of complying with regulation but also from their chosen political expenditures. Let $m_i \in [0, 1]$ represent the intensity of monitoring of firm i by the agency. Firm i 's utility function is given by

$$u^i(c_i, m_i; \tau_i, \omega(\cdot), \tilde{\tau}) = -c_i - (m_i \tau_i - \psi)\omega. \quad (1)$$

Firm utility differs from that described in our earlier paper in its introduction of the exogenous technological parameter ψ , which is intended to capture the degree of substitutability of products within an industry. In industries with $\psi > 0$, firms with low compliance costs may have induced preferences for a higher regulatory mandate, as it will hurt their competitors more than themselves. We will henceforth refer to firms (and, below, to associations) that seek to decrease the magnitude of the mandate as *anti-regulatory*, and to firms (and associations) that seek to increase it as *pro-regulatory*.

Finally, note firms are non-ideological: the proportion of ex post expenditures going to the majority party in the legislature, g_i , does not enter directly into their utility functions.

The Agency. The implementing agency's personnel are policy-motivated – in particular, they enjoy the benefits of detecting and remediating regulatory violations. However, the rewards of regulating decrease with the prospective intensity that a fight with an intransigent

⁴For simplicity, we depart somewhat from the earlier model by not scaling the political benefit of the policy by the agency's monitoring choice. This amounts to assuming that it is possible to claim credit for a strong mandate weakly enforced.

firm might entail. Other things being equal, a firm for which compliance is more costly can be expected to fight the agency harder, thus lowering its rewards. Let $r(\tau)$ be a function representing those rewards. Let $a(m_i)$ capture the average cost of monitoring firm i at level m_i per unit of infraction, with $\partial a/\partial m_i > 0$. The agency's choice over monitoring allocations is given by the vector \mathbf{m} , and its utility function by

$$u^A(\mathbf{m}; r(\tau), a(\cdot), b, \omega) = \sum_{i=1}^n (r(\tau_i)m_i\omega - a(m_i)m_i\omega),$$

To keep the analysis as simple as possible, we assume the agency has sufficient resources to monitor all firms.

Analysis. The solution concept we employ is weak Perfect Bayesian equilibrium. This requires (a) each player's choices be sequentially rational given her beliefs at the time of choice and other players' strategies; and (b) beliefs about other players' types be consistent with prior beliefs, equilibrium strategies, and Bayes' Rule on the path of play.

Once the regulatory mandate $\omega(\cdot)$ is in place, the political environment is effectively "every firm for itself" – even firms that would prefer a higher mandate act so as to minimize their own compliance costs. If the agency's reward function $r(\tau)$ is decreasing in τ , then a separating equilibrium exists in which firms with higher compliance costs make larger *ex post* political expenditures and are monitored with less intensity by the agency – not because the agency is bought off or "captured," but because, *ceteris paribus*, it would prefer avoiding fights with those firms.

After the legislature has moved, firms are indifferent with respect to which party controls the legislature. This indifference permits the firm to commit *ex ante* to an allocation g_i of its *ex post* political expenditures that rewards the incumbent party for reducing the scope of the regulatory mandate if it is anti-regulatory, and for increasing the scope if it is pro-regulatory. Therefore, the fact that firms remain politically active *ex post* to signal the bureaucracy gives them leverage *ex ante* over the legislature. We label the critical value of τ that would make a firm exactly indifferent between increasing and decreasing the regulatory mandate $\tilde{\tau}$. Firms

with type $\tau < \tilde{\tau}$ will be pro-regulatory, and firms with type $\tau > \tilde{\tau}$ anti-regulatory.

The following proposition summarizes the most important results concerning the interaction between the legislature and the individual firm:

Proposition 1 (Firm-Level Regulatory Politics) *In equilibrium, in the interaction among the legislature, individual firms, and the regulatory agency:*

- (a) *The magnitude of the firm's total compliance cost and of its ex post political expenditures are proportional to the regulatory mandate and increasing in the firm's type τ_i . Further, the magnitude of the firm's political expenditure is decreasing in the lower bound on the distribution of firm types.*
- (b) *The legislature's optimal regulatory mandate, $\omega^*(\cdot)$, is a positive, decreasing, convex function of its expectation of firm types within an industry.*
- (c) *If there exists an opportunity for firms to make political expenditures before the passage of the regulatory mandate, there exists no equilibrium in which a firm's ex ante expenditures fully reveal its type.*

Proof. Proofs of all formal results are in the Appendix. ■

The first part of this result consists of features of the signaling game between firms and the agency. A higher regulatory mandate and a higher firm type correspond to larger compliance costs to a firm. An increase in either of these makes lowering the intensity of inspection more valuable to firms, so a firm of higher type τ_i is willing to make larger ex post expenditures, to allow it to differentiate itself from firms with lower types in equilibrium.

At the time the legislature sets the mandate, it has not yet observed ex post expenditures. Rather, it will set the mandate in anticipation of how much pro- and anti-regulatory money will flow into politics as a consequence of the mandate's enactment. The higher the expected firm type, $E[\tau]$, the more leverage anti-regulatory firms will have ex post and the more the legislature will cater to them in the form of a reduced mandate in order to receive

their expenditures. Owing to the concavity of the legislature’s utility function, however, there are diminishing returns to catering to anti-regulatory firms; thus the convexity in the relationship between the equilibrium mandate and the legislature’s expectations. The equilibrium mandate must always be positive: if it were zero, firms would have no incentive to make ex post political expenditures to signal the bureaucracy, and the legislature will have foregone the electoral benefits of both the popular policy and the corporate expenditures.

To understand the intuition behind the final part of the proposition, note that if an individual anti-regulatory firm revealed its type before the enactment of the mandate, it would have no (prospective) incentive to make ex post political expenditures to signal the bureaucracy. But then the legislature could respond by moving the mandate to a more popular level (i.e., closer to Ω), to the firm’s detriment. At the same time, if pro-regulatory firms revealed their types ex ante, they would be ceding all of their ex ante leverage over the legislature to anti-regulatory firms.

4 A Model of Associational Lobbying

4.1 Primitives

If individual firms have either no desire or no ability to fully reveal their types to the legislature via firm-level political expenditures ex ante, and the legislature adjusts the regulatory mandate to its beliefs about the industry, then trade associations can play a potentially useful role as mechanisms of *partial separation*: that is, institutions that can credibly convey general information about the industry as a whole to the legislature while obscuring firm-specific information.

Before proceeding with our analysis of associations, it is convenient to adopt a reduced form for the game starting with the mandate’s enactment as described in the previous section. First, because total firm costs are proportional to the mandate ω and are a monotone function of the firm’s type τ_i , we can substitute $t_i \equiv \hat{c}(\tau_i) + m(\tau_i)\tau_i$, where $\hat{c}(\tau) = c(\tau)/\omega$. Further,

recall that $\tilde{\tau}$ represents the type of the firm whose induced preferences make it exactly indifferent between a smaller and larger mandate. We can then represent the parameter $\psi = \hat{c}(\tilde{\tau}) + m(\tilde{\tau})\tilde{\tau} \equiv \tilde{t}$. Substituting into equation (1), the firm's utility in the firm-level subgame is simply $-(t_i - \tilde{t})\omega$. As a shorthand, we will henceforth refer to t_i as firm i 's type. We label the p.d.f. of t_i $p(t)$ and the c.d.f. $P(t)$. Second, because t is a monotone increasing function of τ , there is no loss in referring to the equilibrium regulatory mandate $\omega(\cdot)$ as a decreasing, convex function of $E[t_i]$ instead of $E[\tau_i]$. To economize on notation, we will assume that $t_i \in [0, 1]$. Finally, it is immediate that if $t_i > \tilde{t}$, the firm will be anti-regulatory, preferring a lower mandate. Likewise, if $t_i < \tilde{t}$, the firm will be pro-regulatory, preferring a higher mandate.⁵ To focus on the most interesting situations, we will consider only the case in which $\tilde{t} \in (0, 1)$, so there is a positive probability that both pro- and anti-regulatory firms exist.

The individual firm wishes to minimize the fees they pay for membership in an association and their regulatory compliance costs, which are proportional to the size of the enacted regulatory mandate. As discussed above, however, in some industries firms may also enjoy a benefit from an increased mandate, in that it will raise the costs of *other* firms in an industry. Let y_i represent the decision of firm i to contribute to a trade association with membership fee φ . The firm's utility in the game with associations is given by

$$u_i(y_i; \tau, \omega(\cdot), \varphi) = -y_i\varphi - (t_i - \tilde{t})\omega, \quad (2)$$

The responsiveness of the legislature's optimal mandate to its expectations about firm types suggests that it would benefit anti-regulatory firms within an industry to convince the legislature that the typical firm suffers from high compliance costs. Likewise, it would benefit pro-regulatory firms to convince the legislature that typical costs are low.

If a trade association does not exist, some entrepreneurial firm or firms may decide to create one. Creating an association amounts to nothing more than "hanging a shingle on the

⁵Because t_i is drawn from a continuum, $t_i = \tilde{t}$ is a measure-zero event.

door” associated with a particular position. To focus on incentives for group formation other than the question of who will incur the direct costs of entrepreneurship (and the resulting free rider problem), we will assume that forming an association has zero direct cost.

The sequence of events as follows: if an association already exists, firms decide simultaneously whether or not to contribute to it, and the legislature then sets the regulatory mandate. If an association does not exist, an entrepreneurial firm or group of firms may create one. If an association is not created, the game ends with the legislature setting the mandate and the firm-level politics game playing out. If an association is created, firms decide simultaneously whether or not to contribute to it. The legislature then observes the association’s total lobbying expenditure, $k\varphi$ (from which it can infer k), and sets the mandate, under which the firm-level politics game plays out.

4.2 Inclusive Anti-Regulatory Associations

We now consider a simple institutional arrangement for trade associations, which we call *inclusive*, defined as follows:

Definition 1 (Inclusive Association) *An **inclusive association** (IA) is one in which (a) contributions are voluntary, but all n firms in an industry belong; and (b) the roster of contributors is the association’s private information.*

Thus, if an association is inclusive, the legislature, knowing φ , can immediately infer from its lobbying expenditures that k firms contributed to it, but does not know *which* firms did so. (In an extension below, we consider the ramifications of *exclusive* associations, in which the identity of contributors to an association is observed.)

We focus first on *anti-regulatory* associations. The expected utilities to firm i of contributing and not contributing to an inclusive anti-regulatory association are given, respec-

tively, by

$$\begin{aligned} E[u^i(y_i = 1|\varphi, t_i, \omega(\cdot), \tilde{t})] &= -\varphi - (t_i - \tilde{t})E_{k_{-i}}[\omega(E_t[t|k_{-i} + 1, \varphi])] \\ E[u^i(y_i = 0|\varphi, t_i, \omega(\cdot), \tilde{t})] &= -(t_i - \tilde{t})E_{k_{-i}}[\omega(E_t[t|k_{-i}, \varphi])], \end{aligned}$$

where k_{-i} refers to the number of *other* firms contributing to the association. Comparing these two expressions, firm i will then pay the voluntary fee if and only if

$$t_i \geq \tilde{t} + \frac{\varphi}{E_{k_{-i}}[\omega(E_t[t|k_{-i}, \varphi])] - E_{k_{-i}}[\omega(E_t[t|k_{-i} + 1, \varphi])]} \quad (3)$$

It is immediate from inequality (3) that the firm's decision to contribute to an inclusive association is monotonically increasing in type: given the willingness of a firm with type t' to pay the association's fee φ , all firms with type $t'' > t'$ will also be willing to pay the fee. Intuitively, a firm will contribute to an inclusive association if its type is sufficiently high. Monotonicity permits us to focus much of our analysis on the type of firm exactly indifferent between paying and not paying the fee (i.e. the type for which (3) holds at equality). For an anti-regulatory inclusive association, We label this firm type $\hat{t}^{IA}(\cdot)$.

The threshold for contribution $\hat{t}^{IA}(\cdot)$ depends on several factors: the first is the magnitude of the fee. Higher fees, not surprisingly, make contribution less attractive. The second is the incremental benefit of a contribution as realized through its effect on legislative expectations, and given the anticipated contributions of other firms in the industry. A larger incremental benefit lowers $\hat{t}^{IA}(\cdot)$. (Note that the incremental benefit must be conditioned on the firm's expectations about how many other firms will themselves contribute.) In any equilibrium that permits nonzero contributions, this incremental benefit must be positive – otherwise, no anti-regulatory firm would want to contribute.

The third factor on which the threshold for contribution depends is \tilde{t} , the lowest type of anti-regulatory firm. Inspection of inequality (3) and the foregoing discussion reveals a useful property of $\hat{t}^{IA}(\cdot)$, which we encapsulate in the following remark:

Remark 1 (Free-Riding) *In expectation, some anti-regulatory firms will not contribute to an extant inclusive, anti-regulatory trade association ($\hat{t}^{IA}(\cdot) > \tilde{t}$).*

If the contribution fee is sufficiently large relative to the incremental benefit of contribution, then $\hat{t}^{IA}(\cdot) \geq 1$, in which case no firms will contribute – a situation functionally equivalent to no association existing. The most interesting case arises when $\tilde{t} < \hat{t}^{IA}(\cdot) < 1$, in which case a proper subset of firms will, in expectation, free-ride on the association’s activities.

We pause here to characterize the legislature’s posterior beliefs in this case. Based on the above, we have

$$E[t|k, \varphi; \cdot] = \frac{k}{n} E[t|t > \hat{t}^{IA}(\cdot)] + \frac{n-k}{n} E[t|t \leq \hat{t}^{IA}(\cdot)]. \quad (4)$$

In other words, the legislature’s posterior mean on t is a weighted average of the expected contributor and non-contributor types, with the weight a linear function of the fraction (and, therefore, number) of firms that actually contribute. When $\hat{t}^{IA}(\cdot) \geq 1$, $k = 0$ and $E[t|k = 0, \varphi; \cdot] = E[t]$. Beliefs corresponding to $k > 0$ in this case are entirely off the path of play.

We next consider the *ex ante* welfare consequences of an inclusive association’s existence.

Proposition 2 (Mandates and Inclusive Anti-Regulatory Associations) *In expectation, the equilibrium regulatory mandate is weakly higher in the game with an inclusive, anti-regulatory association than in its absence, and strictly higher if $\hat{t}^{IA}(\cdot) < 1$. Consequently, anti-regulatory firms within an industry are weakly worse off in expectation given the existence of an association than in its absence, and strictly worse off if $\hat{t}^{IA}(\cdot) < 1$; at the same time, pro-regulatory firms are weakly better off (strictly if $\hat{t}^{IA}(\cdot) < 1$) in expectation from the anti-regulatory association’s existence.*

If $\hat{t}^{IA}(\cdot) \geq 1$, legislator expectations about t are the same in the presence or absence of an association. When $\hat{t}^{IA}(\cdot) < 1$, the three parts of the proposition holding strictly. The first part of the proposition emerges because of the nature of the legislature’s best response

correspondence. Recall that $\omega^*(\cdot)$ is a decreasing, convex function of the expected firm type t . Suppose an association does not exist. Then the legislature will calibrate $\omega^*(\cdot)$ to the prior mean of the distribution of firm types, $E[t]$. Next, suppose the association does exist and that \hat{t}^A is between \tilde{t} and 1. In that case, the posterior mean of firm types depends on the number of contributors to the association k (as well as φ). *Ex Ante*, however, k is a random variable. Taking expectations over the equilibrium distribution of k , the ex ante expected posterior mean firm type is equal to the prior mean. But the expected regulatory mandate over the distribution of k must exceed the regulatory mandate evaluated at the prior mean, by the definition of convexity.

The second and third parts of the proposition emerge because, in addition to the harm from an inclusive association from a higher regulatory mandate in expectation, anti-regulatory firms will also pay a fee with positive probability. Pro-regulatory firms, by contrast, will never pay to join an anti-regulatory association, and will, in expectation enjoy the benefits of the weakly higher mandate.

Proposition 2 concerns the welfare of firms behind a veil of ignorance – that is, before they know their specific types. Suppose instead that a firm’s management knows its own type, but not the types of other firms in the industry. In the absence of an anti-regulatory association, it *may* be in its interest of such a firm to establish one, as our next result indicates:

Proposition 3 (Inclusive Anti-Regulatory Entrepreneurship) *Suppose there is no pre-existing association. Then a necessary condition for there to exist at least one firm that would prefer to create an association is that $E_{k-i}[\omega(E_t[t|k_{-i} + 1, \varphi]) < \omega(E[t])$ and*

$$\omega(E[t]) - E_{k-i}[\omega(E_t[\tau|k_{-i} + 1, \varphi])] > \frac{\varphi}{1 - \tilde{t}} \quad (5)$$

This condition is also sufficient if there exists at least one firm i such that

$$t_i \geq \tilde{t} + \frac{\varphi}{\omega(E[t]) - E_{k_{-i}}[\omega(E_t[t|k_{-i} + 1, \varphi])]} \quad (6)$$

The intuition for this proposition is as follows: from Proposition 2, an anti-regulatory firm that did not know its specific type would be, in expectation, worse off given the existence of an association. If the firm knew its type, however, then it would also know whether it would be willing to contribute to an association if it *did* exist. Thus, firms with $t_i > \hat{t}^{IA}(\cdot)$ know that in the presence of an association, *at least one firm* would contribute. (By contrast, firms for which $t_i < \hat{t}^{IA}(\cdot)$ know that at least one firm would not contribute). If the expected mandate in the presence of an association given the knowledge of at least one contributor is smaller than the expected mandate in the absence of an association, then there will exist a positive benefit from creating an association, which is necessary for any firm to prefer creating one. Inequality (5) gives a necessary condition for a firm to exist for which those benefits outweigh the costs.

Note, however, that $t_i > \hat{t}^{IA}(\cdot)$, while necessary, is not sufficient for entrepreneurship: from Proposition 2, we know that the mandate in the absence of an association is lower in expectation than in its presence: $\omega(E[t]) < E_k[\omega(E_t[t|k, \varphi])]$. Moreover, we know that the expected mandate in the presence of a trade association in which at least one firm is *not* contributing is higher than the expected mandate in which types are not yet known and any firm might contribute: $E_k[\omega(E_t[t|k, \varphi])] < E_{k_i}[\omega(E_t[t|k_i, \varphi])]$. Hence, $\omega(E[t]) < E_{k_i}[\omega(E_t[t|k_i, \varphi])]$, which implies the right side of inequality (6) is higher than the right side of inequality (3). In other words, the set of firm types that would give rise to entrepreneurial behavior is a proper subset of the set of firm types that contribute given the association's existence.

If the benefit to creating an association is positive, from inequality (6) it is immediate that entrepreneurship is monotone in type, with only the highest types willing to create an association in its absence. The firm that would be exactly indifferent between creating and

not creating an association is given when (6) at equality, and is labeled $\hat{t}^{IA}(\cdot)$. Given the above discussion, $\hat{t}^{IA}(\cdot) > \hat{t}^{IA}(\cdot)$. Note that while we assume that there are no administrative “start-up costs” to creating an association, introducing a fixed start-up cost parameter to the model would simply shift $\hat{t}^{IA}(\cdot)$ upward.

The fact that firms that would be unwilling to contribute to an association prefer that it not exist is not surprising. Likewise, the fact that firms that would be willing to contribute to an association prefer that one did exist is also unsurprising. What is more worthy of note is the implication of the result that $\hat{t}^{IA}(\cdot) < \hat{t}^{IA}(\cdot)$, which gives rise to a phenomenon we refer to as an “inverse free-riding.”

Remark 2 (Inverse Free-Rider Effect) *Suppose $\hat{t}^{IA}(\cdot) < 1$. Then in expectation there will exist firms that prefer an association not exist but that will nonetheless contribute to a preexisting association or to one created by an associational entrepreneur.*

The inverse free-rider effect represents what might be the most significant departure from canonical models of collective political action. In such models, firms could benefit from the existence of a group effort, but, owing to the free-rider problem, would not contribute to one. In our model, firms could suffer from the existence of a collective lobbying effort, but would contribute to one if it exists.

4.3 Pro-Regulatory Associations

In this section, we consider a second kind of inclusive trade association, consisting of pro-regulatory firms (for which $t_i < \tilde{t}$). Unlike anti-regulatory firms, pro-regulatory firms have a collective interest in signaling to the legislature that the typical firm type is *low*.

Let z_i be an indicator variable equal to one if firm i contributes to an inclusive, pro-regulatory association, and zero otherwise. The expected utility to a firm of contributing

and not contributing are given, respectively, by

$$\begin{aligned} E[u^i(z_i = 1|\varphi, t_i, \omega(\cdot)\tilde{t})] &= -\varphi + (\tilde{t} - t_i)E_{h_{-i}}[\omega(E_t[t|h_{-i} + 1, \varphi])] \\ E[u^i(z_i = 0|\varphi, t_i, \omega(\cdot), \tilde{t})] &= (\tilde{t} - t_i)E_{h_{-i}}[\omega(E_t[t|h_{-i}, \varphi])], \end{aligned}$$

where h_{-i} denotes the number of other firms contributing to the association. The pro-regulatory firm will then contribute if and only if

$$t_i \leq \tilde{t} - \frac{\varphi}{E_{h_{-i}}[\omega(E_t[t|h_{-i} + 1, \varphi])] - E_{h_{-i}}[\omega(E_t[\tau|h_{-i}, \varphi])]} \quad (7)$$

The pro-regulatory firm's best correspondence as represented by inequality (7) mirrors its anti-regulatory analog in a number of respects. First, any equilibrium with contributions to a pro-regulatory association requires that the the regulatory mandate increase with the number of such contributions; otherwise, pro-regulatory firms would prefer not contributing. Second, contributions are monotone in type: if a pro-regulatory firm of type t'_i is contributes, then any firm with $t''_i < t'_i$ will also contribute. Third, let $\check{t}^{IA}(\cdot)$ represent the value of t_i such that (7) holds at equality. It is immediate that $\check{t}^{IA}(\cdot) < \tilde{t}$, so there will exist pro-regulatory firms that do not contribute to an extant association; in other words, Remark 1 applies in the pro- as well as the anti-regulatory case. Finally, if $\check{t}^{IA}(\cdot) < 0$, then no firm will contribute to the pro-regulatory association.

If $0 < \check{t}^{IA}(\cdot) < \tilde{t}$, the legislature's posterior mean on firm types will be given by

$$E[t|h, \varphi; \cdot] = \frac{h}{n}E[t|t < \check{t}^{IA}] + \frac{n-h}{n}E[\tau|t \geq \check{t}^{IA}] \quad (8)$$

As in the case of the anti-regulatory association, the legislature's posterior mean on firm types is again a weighted average of the expected types of contributing and non-contributing firms. However, the posterior mean is now a *decreasing* linear function of of contributors to the pro-regulatory association, h .

Given the results in the previous section, one might suspect that pro-regulatory firms are harmed, in expectation by the existence of an pro-regulatory association. As the following proposition indicates, however, this is not the case:

Proposition 4 (Mandates and Inclusive Pro-Regulatory Association) *In expectation, the equilibrium regulatory mandate is weakly higher in the game with an inclusive pro-regulatory association than in its absence, and strictly higher if $\check{t}^{IA} > 0$. Consequently, pro-regulatory firms within an industry are weakly better off in expectation given the existence of an association than in its absence, and strictly better off if $\check{t}^{IA} > 0$; at the same time, anti-regulatory firms are weakly worse off (strictly if $\check{t}^{IA} > 0$) in expectation from the pro-regulatory association's existence.*

These results are driven by the same logic as that underlying Proposition 2, albeit with different consequences: In the absence of a pro-regulatory association, the equilibrium regulatory mandate corresponds to the legislature's best response evaluated at the prior mean of the type distribution. In the presence of a pro-regulatory association, the expected mandate is a weighted average of different possible mandates, with the weights determined by the equilibrium probability distribution of h , the number of firms contributing to the association. The convexity of the legislature's best response correspondence implies that this latter quantity must lie above the former.

Irrespective of their willingness to contribute, all pro-regulatory firms are made better off by the association's existence – if they find the fee to onerous they will simply not pay it and free-ride off of other contributors. Finally, because the mandate is higher in expectation given the association's presence, all anti-regulatory firms are worse off from this form of collective action. Thus, a comparison of the results contained in Propositions 2 and 4 reveal a significant organizational advantage afforded to pro-regulatory forces within an industry relative to anti-regulatory forces. We return to this advantage in the Discussion below.

We next consider associational entrepreneurship in the pro-regulatory case:

Proposition 5 (Inclusive Pro-Regulatory Entrepreneurship) *Suppose $0 < \check{t}^{IA}(\cdot) < \tilde{t}$. Then all firms that would be willing to contribute to a pro-regulatory association would also be willing to create one.*

The intuition behind this result is simple: from Proposition 4, pro-regulatory firms are better off *ex ante* given the association's existence in expectation. For firms that are willing to contribute to such an association, the expected benefits of doing so outweigh the expected costs. Further, such firms have knowledge that at least one firm will contribute to the association; for those firms, the expected regulatory mandate is still higher than the expected regulatory mandate in the absence of this knowledge.

Adding a fixed administrative cost to establishing the association would drive a wedge between the highest type of pro-regulatory firm willing to contribute to an association ($\check{t}^{IA}(\cdot)$) and the highest type willing to establish one ($\check{\check{t}}^{IA}(\cdot)$) by driving the latter below the former (so that $\check{\check{t}}^{IA}(\cdot) < \check{t}^{IA}(\cdot)$); therefore, in the presence of such a cost, there would be two types of free-riders: firms with type $t_i \in (\check{t}^{IA}, \tilde{t})$, who free ride on the efforts of others to establish an association and contribute to it; and firms with type $t_i \in (\check{\check{t}}^{IA}(\cdot), \check{t}^{IA}(\cdot))$, who will contribute to the association but free-ride on the efforts of others to establish it.

4.4 Exclusive Associations and Selective Incentives

Up until this point, our analysis has restricted its attention to associations that obscure their membership rolls. This is an important baseline case, insofar as it permits us to isolate the effects of associations on the beliefs of policy makers about the industry as a whole, rather than on the beliefs of policy makers about specific firms.

Frequently, however, participation within an association is common knowledge. For example, the membership roster of the Air Transport Association of America, the major trade association representing airlines, does not include Northwest, Spirit, or Frontier Airlines, while the smaller Air Carrier Association of America, which represents low-cost airlines, includes only AirTran, Frontier, and Spirit. Likewise, The U.S. Chamber of Commerce is

known to have recently experienced resignations by Exelon, PSE&G, PNM, and Apple. We refer to associations whose membership is observable as *exclusive*, defined as follows:

Definition 2 (Exclusive Association) *An **exclusive association** (XA) is one in which (a) contributions are voluntary, but only the firms that contribute belong; and (b) the membership roster of an association is publicly available information.*

As has been well-established in the literature on collective action, exclusive membership in an organization may be enhanced through the provision of selective material incentives to members (e.g., access to research on the industry and best practices, opportunities to network, etc.). Note, however, that in the context of the current model, the provision of such incentives could undermine the public good benefit of an association: for example, if an association provides a benefit $b > 0$ to its members, then the budget for lobbying will be $k(\varphi - b) < k\varphi$. In such a situation, more firms would be encouraged to join, but the signaling value of the lobbying and its effect on the regulatory mandate will be diminished.

Here, we consider selective incentives that emerge endogenously in the context of the model and given the presence of exclusive associations. Recall part (a) of Proposition 1, which states that the ex post political expenditures of firm i depend on the distribution of firm types only via the lower bound of that distribution. Holding constant a firm's type, the higher the lower bound, the smaller the firm's ex post political expenditures need to be in order to separate

In the absence of an association or in the presence of an inclusive association, $\tau_\ell = 0$ by assumption. Consider, however, an exclusive, anti-regulatory association with a positive probability of membership. The lower bound of the distribution of non-contributor types remains 0. However, the lower-bound of contributor types is now $\hat{t}^{XA}(\cdot)$, the lowest firm type that would be willing to contribute. Consequently, exclusive associations can provide a selective incentive for membership, in the form of a discount on ex post political expenditures. Now, consider an exclusive, pro-regulatory association. The lower bound of the distribution of contributors is 0, since all firms with type $t_i < \check{t}^{XA}(\cdot)$ contribute. The lower bound of

the distribution of non-contributors, however, is $\check{t}^{xA}(\cdot) > 0$. We therefore have the following remark:

Remark 3 (Selective Incentives) *An exclusive anti-regulatory association creates implicit selective incentives for membership to firms in the form of a reduction in the political expenditures members must make ex post. An exclusive pro-regulatory association creates implicit selective disincentives for membership to firms in the form of a reduction in the political expenditures non-members must make ex post.*

In other words, membership in an exclusive anti-regulatory association comes with an implicit “discount” on the political expenditures that firms will have to make individually. Membership in an exclusive pro-regulatory association does not come with such a discount; however, the existence of such an association provides a discount on ex post political expenditures for non-members; this has the effect of discouraging belonging to the association.

Two features of this result are particularly worthy of note. First, in the case of inclusive associations, pro-regulatory forces had a decided organizational advantage over anti-regulatory forces; in particular, the former were better off in expectation from the existence of an association to represent their interests, whereas the latter were worse off in expectation. In the case of exclusive associations, it is anti-regulatory forces that have an advantage, insofar as they may succeed in attracting members through the provision of selective incentives. Second, consider the implications of the selective disincentive for pro-regulatory associational entrepreneurs, which we describe in the following remark:

Remark 4 (Obscured Membership) *It is in the interest of pro-regulatory associational entrepreneurs to obscure the membership of their associations.*

If exclusivity actually undermines the goals of a pro-regulatory association, then such an association will benefit from obfuscating with respect to the identity of its members.

5 Discussion: “Representation of the One by the Many”

In his classic *Politics, Pressures, and the Tarrif*, Schattschneider (1935), echoing Michels (1915) documents a feature of interest group politics he refers to as “representation of the one by the many.” By this he means the tendency of a handful of individuals or firms within an association to pursue goals not in line with those of its broader membership, under the cover afforded by the apparent unanimity of the rank and file. For example, he cites the tendency of trade association officers, when testifying, to exaggerate what fraction of an industry their organization represents. The author calls this phenomenon a “political monstrosity” (271) and attributes its existence to to the desire of all groups to exaggerate their importance, and negligence on the part of Congress.

The idea of representation of the one (or few) by the many may be one of the more profound insights in Schattschneider’s extensive research on “pressure” politics. Moreover, the tendency of groups to exaggerate unanimity is surely not a tendency that has not abated since the time he was writing.⁶ Still, the concept begs a number of questions: first, why would any firm voluntarily contribute to an association that did not pursue its interests? And second, why would members of Congress be fooled by exaggerated claims of membership?

Our model of association formation and lobbying provides the answers to these questions. With respect to the first question, the “inverse free-rider problem” of anti-regulatory associations implies the existence of an inherent conflict between associational entrepreneurs and rank and file members of an association. The rank and file may prefer that an association not exist, as it will make them worse off in expectation. As we describe above, however, those same firms may yet feel compelled to contribute to the association’s maintenance if it does exist.

With respect to the second question, in our model, the legislature is not fooled: an association can claim as large a membership as it likes, but the legislature will make its inferences based on the resources the association is in a position to apply to a particular

⁶See, for example, McConnell 1966; Bauer, Poole, and Dexter ; and Ainsworth 1993

lobbying effort.

At the same time, our analysis provides additional insights regarding what kinds of associations will be subject to the pathology Schattschneider describes. In our model, associations composed of firms seeking *more* regulation as a means to acquire a competitive advantage by inducing rivals to raise costs above their own do not suffer from the problem. All firms that contribute to such an association's lobbying efforts favor its existence and its political agenda.

6 Conclusion

In this paper, we consider the role of trade associations as a mechanism to partially reveal to the legislature information about politically relevant features of an industry. This selective revelation of information through an association is potentially valuable because stages in the policy making process exist in which it would be either disadvantageous or impossible for individual firms to credibly reveal specific information about themselves.

Despite this potential value, the extent to which trade associations actually “benefit” their members is a somewhat subtle notion. We demonstrate that some contributors to an association seeking reduced regulation of an industry suffer in expectation from the association's existence. If an association does not exist, those firms may feel compelled to contribute to its maintenance if a rival firm creates one. This “inverse free-rider problem,” however, is not a common feature of all associations. In particular, pro-regulatory associations will not suffer from it.

We also consider the value to an association of publicizing its roster of contributors. For anti-regulatory associations, exclusivity amounts to a selective incentive to join: if policy-makers know a firm has contributed to an anti-regulatory association's lobbying effort, then the firm will need to spend less in the political arena to engage in costly signaling to obtain firm-specific regulatory forbearance. For pro-regulatory associations, however, we demonstrate that no such implicit discount exists. Further, the existence of a pro-regulatory associ-

ation that publicizes its contributor roster creates an implicit discount to *non*-contributors, thus undermining the incentives to contribute to such an association.

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