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Influence through Intimidation: Evidence from Business Lobbying and the Regulatory Process*

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JEL Codes: D72, D73, D78

Abstract

Interest group influence in the policy process is often assumed to occur through a mechanism of exchange, persuasion, or subsidy. Here, we explore how business groups may also exert influence by intimidating policymakers—a form of persuasion, but one based not on the provision of policy information but of *political* information. We develop a theory where a business firm lobbies a regulator to communicate political information about its capacity to commit to future influence-seeking activities that would sanction the regulator. The regulator assesses the credibility of this message by evaluating the firm’s commitment to lobbying. Guided by our theory, we present evidence consistent with expectations that intimidation can shape regulatory outcomes to the advantage of certain firms, both through a chilling effect, where lobbying derails nascent regulatory plans, as well as a retreating effect, where opposition to published proposals leads to their withdrawal.

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Information, it is often said, is the lifeblood of regulatory policy (Coglianese et al 2004; Stephenson 2010). This sentiment draws attention to the central role that policy information plays in the regulatory process. Regulators seek to apply regulations in complex economic and technological settings where their ability to acquire and analyze policy information is central to their success (McCarty 2017). What is missing from this perspective, however, is that regulators also seek *political* information—that is, information about interest groups affected by policies they propose, especially groups that may oppose their proposals. Regulators particularly need to know which groups hold influence in the larger political environment and would likely succeed in mounting a resistance to a proposed policy change if they appealed to actors that oversee the regulator. Political information allows regulators to assess which groups might “use their weapons”—to borrow a phrase from Justice Stephen Breyer (1982)—and challenge regulatory proposals they oppose.

Although policy information facilitates the development of substantive options, it is political information that allows decision-makers to weigh those options and set priorities. In this respect, the value of political information is not unique to regulatory policymaking. For regulators, though, their vulnerability to oversight by Congress and the White House gives them distinctive reasons to avoid decisions likely to “produce divided or hostile constituencies” (Wilson 1991, p.191). Hostility can generate political scrutiny and potentially impose further political constraints on their day-to-day operations. To minimize resistance and backlash, regulators try to anticipate any outside opposition to their plans and, if needed, make accommodations up front, ideally before things get messy enough to draw attention. Of course, the possession of political information can hardly guarantee regulators a positive outcome. In the eyes of some observers, regulators are cursed with “the ever-present prospect of legal and political challenges,” creating an atmosphere of heightened caution such that “it is often unclear when a decision can be made” (Kagan 2003, p.198).

The idea that cautious regulators, concerned about interest group pushback, will recognize the value of both policy and political information has certainly not gone unacknowledged (e.g., Yackee 2012). But strikingly, theories of interest group influence have typically either ignored or downplayed the value of communicating political information as a means of influencing public policy (cf. Gordon and Hafer 2005). Instead, these theories tend to focus on groups’ ability to provide policy information, either to subsidize the development of policy options (Hall and Deardorff 2006) or to persuade policymakers to make a more informed decision (Austen-Smith and Wright 1994; Cotton and Déllis 2016; Cotton and Li 2018). Other theories treat interest group influence in more transactional terms, with groups relying on quid pro quo arrangements for leverage, such that something of value can be offered to a regulator in exchange for a desired policy outcome (e.g., Grossman and Helpman 2002; Bennesen and Feldmann 2006). Although each of these theories provides important insights about group influence over policymaking, they tend to give little regard to the ways in which interest groups’ transmission of political information may also provide a notable source of influence.

In this paper, we develop a theory of group influence that focuses on just such transmission. Specifically, we consider how the extent of a group’s lobbying expenditure directed at a regulator can, with little more, signal the group’s ability to challenge an action the regulator might undertake. Our theory builds from the idea that groups make costly political expenditures

in part to convey their ability to impose costs on their opponents—a form of “muscle flexing” (Gordon and Hafer 2005)—or what we call “intimidation.” In the context of regulatory policymaking, active lobbying by an interest group can convey to a regulator a credible prospect that the group would be able to block the regulator, such as by elevating a potential conflict with the agency to other arenas such as Congress, the White House, or the judiciary (McGarity 2012).

Groups generally have an incentive to establish this credibility early in the regulatory process, before an agency adopts a proposal they oppose. If an unwanted proposal is nevertheless issued, perhaps without advance knowledge by interest groups opposed to the proposal, these groups can use active lobbying to convey their strength and seek to convince the agency to retreat. When affected interest groups are successful, either in staving off proposed regulations in the first place or in convincing regulators to withdraw regulatory proposals, these organizations exert influence over regulatory policymaking without taking further action, thus forestalling the need to pull a “fire alarm” alerting Congress or the White House (Hall and Miler 2008, Haeder and Yackee 2015), invest in shaping public opinion (Hall and Reynolds 2012), or take legal action against the policies they oppose (Kagan 2003, Mashaw 1994). By simply expending resources to lobby over a regulatory proposal and thereby communicating a credible ability to appeal to the agency’s overseers, an interest group can establish a “footprint”—a signal of political power that can itself be influential (Gordon and Hafer 2007).

In the context of this signaling strategy, consider the massive expenditures that firms incur in lobbying regulators. Roughly half of all lobbying activity is directed toward influencing agencies (You 2017; Boehmke, Gailmard, and Patty 2013). Regulatory agencies are regularly deluged with phone calls, visits, letters, and other expressions of interest from businesses and other organizations. Such informal contacts have been described as the “bread and butter” of the rulemaking process (*HBO v. FCC*, 1977). For most decisions that agencies make in initiating rules not otherwise mandated by statute, “influence over such decisions is generally confined to economic interests that communicate with agencies on a regular basis” (West and Raso 2012, p. 516). Amid the overall cacophony of such communications, the active, even persistent, lobbying by an interest group can give a regulator a credible signal of that group’s likely ability to challenge the agency in other venues. Precisely because lobbying is costly, the expenditure of lobbying efforts on its own—wholly independent of the substantive content or policy information provided by a lobbyist—can be informative about a firm’s commitment to devoting resources to mobilizing the agency’s overseers and impeding the agency from implementing a regulatory proposal. This result can be expected even if the substance of a lobbying exchange is not tangibly threatening—and seldom is it, at least not in the sense that the term “intimidation” might be colloquially understood. Meetings between lobbyists and regulators are often cordial and facilitate the exchange of ideas and the building of relationships. Lobbyists reportedly “spend a lot of time maintaining contact...listening, talking, monitoring” (Baumgartner et al. 2009, p.154)—activities that, even when they do not convey much policy information, can nonetheless communicate important political information to regulators.

Some fragmentary evidence already suggests that persistent lobbying can be intimidating to regulators, resulting in favorable treatment to active groups. For example, after the software company Microsoft was sued by the Department of Justice (DOJ) for anti-competitive practices, it significantly increased its lobbying expenditures, not just to influence the specific outcome of

DOJ's case but also, as was reported at the time, to send a broader message of intimidation (Morgan and Eilperin 1999).¹ Microsoft has not been under the same regulatory pressure since, perhaps in part because the firm's annual lobbying expenditures have consistently been more than seven times higher than what they were in 1996, the year before DOJ filed suit. More systematically, empirical evidence indicates that firms represented by active lobbyists are less likely to be investigated for fraud by regulators such as the Securities and Exchange Commission (SEC) and the Internal Revenue Service (IRS) (Yu and Yu 2011). Such firms also appear to enjoy lower effective tax rates (Richter, Samphantharak, and Timmons 2009).

Our theory of lobbying is built around a simple two-player signaling model where an agency weighs whether to change the policy status quo and a firm decides whether to pay to lobby the agency. We assume that both the agency and the firm are perfectly informed about the linkage between policies and outcomes (i.e., both are experts), but that the agency is imperfectly informed about the firm's preferences and, still more importantly, about its capacity to challenge the agency's proposal by appealing to an overseer. One of our key results is intuitive: the firm can make an upfront lobbying expenditure to strengthen the credibility of an implicit threat to appeal the agency's proposal. To the advantage of a firm that makes such an expenditure, this upfront effort can result in two effects. First, it can deter the agency from proposing a change to the status quo in the first place (a "chilling" effect). Second, when the agency does initiate a proposed regulation, opposition expressed by a firm that actively lobbies the agency can become compelling enough to lead the agency to withdraw or abandon its proposal (a "retreating" effect).

We use our model as a framework for analyzing and explaining patterns of regulatory policymaking at federal agencies. Drawing on data from agencies' published regulatory agendas as well as a new collection of data on agency withdrawals of proposed rules, our empirical analysis indicates that business lobbying exhibits the types of intimidation dynamics anticipated by our model.² Specifically, we find that, in terms of the chilling effect, agencies subjected to more business lobbying are less likely to propose new regulations and that those regulations they do propose tend to involve relatively minor adjustments to the status quo. We document these patterns both in terms of the number of proposals issued by agencies as well as the number of announced plans for proposed rules that they later abandon before issuing any proposal. Our model suggests a straightforward explanation for these findings: active lobbying by business groups leads an agency to put greater weight on the possibility of adverse political consequences, which manifests in less frequent and less stringent regulatory activity.

We also observe evidence of a retreating effect consistent with our theory of intimidation. After publishing a new proposal, an agency is more likely, *ceteris paribus*, to withdraw the proposal when the agency receives opposing comments from business interests that have actively lobbied the agency in a recent period. In our sample, the magnitude of the association between active lobbying and the withdrawal of a proposed rule is substantial. If at least one business group expresses opposition to a regulatory proposal during the public comment period for the proposal,

¹ The American Antitrust Institute referred to Microsoft's lobbying effort as an attempt to "leverage its position through intimidation" (Foer 1999).

² Following other studies, we focus on business because it represents the most active, and potentially most influential, set of groups participating in the regulatory process, and where we therefore might expect to observe these intimidation effects. The theory could in principle apply to other types of interests as well.

the likelihood that the agency withdraws its proposal is about 30 percent. But if that opposing business group is one that not only submits a comment in opposition but also simultaneously lobbies the agency, we find the withdrawal probability increases to as high as 80 percent.

Active lobbying can, of course, result in the transmission of policy information, but strikingly we find no indication that longer comments (with presumably more policy information) affect the likelihood of a retreating effect. Furthermore, the chilling effect we observe occurs early in the process—even before agencies propose rules—when groups will necessarily have less ready knowledge of the agency’s specific intentions and less ability to know what policy information is likely to be of value to the agency. Yet, as highlighted in our model, this early time during the rulemaking process—when the regulator must weigh whether to invest in developing and pursuing a regulatory proposal—appears to be one when political information matters.

Together, our theory and empirical evidence emphasize the importance of active interest group lobbying as a form of political information—and of implicit intimidation—as a key mechanism of influence by interest groups opposed to policy change. The evidence presented here also reveals a scope of business influence over regulation that is both clearer and broader than existing empirical studies of the regulatory process have tended to show. Business influence through intimidation—via the transmission of political information—appears both more extensive than has been understood and more influential in shaping regulatory agencies’ agendas.

1 Business Groups and Regulatory Politics

It is well-documented that businesses are the most prevalent participants in regulatory policymaking, as evidenced by behavior such as the formal submission of comments on proposed rules (Coglianese 1996; Croley 2007; Yackee 2006). But with only a few exceptions (e.g., Haeder and Yackee 2015; Yackee 2006), existing empirical research on notice-and-commenting rulemaking has been relatively “inconclusive” about whether business groups actually get the regulatory outcomes they want (Croley 2007, p.142; see also Kerwin, Furlong, and West 2010; Kraft and Kamieniecki 2007).

A common strategy for detecting business influence in the regulatory process has been to start with a small sample of final regulations, taken essentially at random, and then to identify changes appearing in these final rules compared with their corresponding proposed rules. The comments received on the proposed rules are then compared with the changes appearing in the final rule to see how frequently they match. Some studies show that business comments are more frequently associated with changes tending to make rules less stringent (Yackee 2006a, 2006b; Yackee and Yackee 2006), while other earlier work finds little if any meaningful change associated with comments from business (West 2004; Golden 1998).

But substantive changes appearing in final rules are not the only, nor perhaps even the most significant, outcomes for businesses that seek to influence regulatory policy. Consider how businesses responded when the Minerals Management Service (MMS) of the Department of Interior proposed a regulation on offshore drilling about a decade prior to the Deepwater Horizon oil spill in the Gulf of Mexico. Critics of MMS had long charged the agency with a close

relationship with the energy extraction industry it regulated, a charge made so persuasively after the Deepwater Horizon spill in 2010 that Congress reorganized MMS and changed its name (Carrigan 2013).

Yet long before the Gulf oil spill, in 2001, MMS published a notice of proposed rulemaking (NPRM) titled “Procedures for Dealing With Sustained Casing Pressure.” This proposed rule would have converted otherwise voluntary industry safety standards for offshore drilling into mandatory government rules. The NPRM announced that MMS would take public comments on the proposal over the course of three months, through early in 2002. But once that comment period was over, rather than releasing a final rule, MMS instead formally withdrew its proposal in 2003. Although the agency did not explicitly mention business opposition as the basis for its withdrawal—at least in those precise terms—it is notable that 33 of the 34 comments submitted on the 2001 proposal came from oil and gas companies or their representatives—including large firms such as Exxon Mobil, BP, Shell, Chevron, and the American Petroleum Institute (API), the major industry trade group. All of these written comments expressed opposition to the proposal.

An industry group called the Offshore Operators Committee (OOC) wrote the lengthiest comment, which most firms signed onto and referenced in their own individual comments. OOC called for the withdrawal of the proposal and recommended an industry-led strategy for dealing with casing pressure as an alternative to new regulation. The other comments were significantly shorter in length, typically between one and three pages, and provided little additional information except to inform the agency of the commenting organization’s support for OOC’s position. For example, BP, the British-based oil and gas conglomerate that would later find itself at the center of the Deepwater Horizon spill, wrote a one-page comment letter supporting OOC’s comments as “a more effective method for reducing risk and improving safety.”

MMS’s withdrawn proposal offers at least three relevant insights about business influence on the regulatory process. First, it shows that business opposition during the comment period can lead regulators not merely to make changes in the content of a final rule, but sometimes to make a full withdrawal of a proposed rule—a retreat. This kind of influence—revealed by MMS’s own announcement in withdrawing the proposed casing rule—remains inherently undetectable in existing research focused on changes to the content of proposed rules that eventually become final. That is because, with influence that leads to the retreating effect, there is no final rule for researchers to study.

Second, the MMS example shows how firms can use the public comment process not just to provide an agency with policy-relevant information about the substance of a rule, but also to plant a flag in opposition to the agency’s proposal. The short letters submitted by BP and other corporations in support of OOC’s comments provided the agency with little more than a political signal of these firms’ opposition to the agency should it decide to go forward with its proposal. Such political signals matter to officials in agencies who must navigate an institutional environment in which they confront multiple principals. Moreover, political information may matter more than policy information for regulators who, after all, possess their own policy expertise (Epstein and O’Halloran 1999, cf. McCarty 2017). Regulators also have an ability to acquire new policy information on their own (Gailmard and Patty 2012), such as via networks of other federal and even state regulators (Yackee 2012), in-house experts (Sunstein 2016), or

through the use of surveys, commissioned studies, public hearings, and related methods (Coglianese, Zeckhauser, and Parson 2004). Even when a regulatory agency might benefit from policy information, firms may well be unable to communicate such information with much credibility, given that they often have goals that differ from the agency's (Breyer 1982, ch.5).

Finally, once we see that an agency can retreat in the face of business opposition by withdrawing an already published regulatory proposal, the possibility emerges of a logically prior outcome in the face of business opposition: an agency might never publish some proposed rules in the first place—a chilling effect. Admittedly, discerning a chilling effect will be hard for anyone outside an agency to study because researchers rarely, if ever, observe the menu of potential proposed rules that a regulator could have pursued but never did. Just as obviously, this chilling effect, like the retreating effect, cannot be observed by studying final rules.

And yet, such hidden influence—a “second face” of power in the regulatory process (Bachrach and Baratz 1962; Bachrach and Baratz 1963)—could be quite consequential. If the prospect of business opposition has a large enough chilling effect on the production of regulatory proposals, then the final rules that have been at the center of past studies might well tend to be ones that already are more likely to be at least somewhat acceptable to business groups, notwithstanding whatever changes such groups might eventually secure in the content of the final rule. The upshot is that any influence that has been observed in studies focused on final rules could be only part, and perhaps even only a small part, of the overall influence that business groups exert over regulatory policy.

2 Theory and Hypotheses

Our theory of business influence through intimidation can be stated straightforwardly: Business groups choose to approach a regulatory agency to signal their willingness and ability to appeal the agency's regulatory decisions to one or more of the agency's principals, and the agency then chooses how to respond to the signal it observes. So stated, this concise formulation of our theory raises the question of whether (or when) the agency will choose to respond to business pressure by withdrawing a regulatory proposal, as MMS did in our example above, or by eschewing regulation altogether, succumbing to the chilling effect alluded to above. In this section, we develop a theory of influence through intimidation that offers answers to this question in the form of a signaling model, which we elaborate in formal terms in Appendix A. We then use our model to develop hypotheses for how intimidation should reveal itself empirically.

2.1 Model structure

Our signaling model comprises a two-player game, played between a regulatory agency (the Agency) and a firm (the Firm) over a sequence that broadly tracks the federal notice-and-comment rulemaking process. The Agency has the formal authority to set policy by choosing between the status quo, l , and two alternative policies m and h , where m is a moderate regulation and h is a relatively “extreme” regulation that is the furthest from the status quo. We can think of the status quo as the “low” regulation policy, with the Agency contemplating alternative regulations that would increase the stringency or burden relative to the status quo. The Agency's

ability to set its agenda reflects both the fact that agencies possess a high degree of discretion over their own regulatory agendas (West and Raso 2013) and the fact that the relevant principals (e.g., Congress, the White House Office of Information and Regulatory Affairs, and the courts) typically limit themselves to playing a reactive role vis-à-vis the Agency.³ In terms of the Agency's preferences, we focus our analysis on the case where the Agency prefers the alternatives m and h to the status quo.

We assume that both actors—the Agency and the Firm—operate under some uncertainty about the other's preferences. The Firm is uncertain about whether the Agency prefers m or h , and the Agency is uncertain about whether the Firm prefers l or m . (We assume that the Firm is never extreme in its preferences, so that l or m is always preferable to h , which reflects a tendency for firms to prefer incremental policy change, if any change at all.) We refer to the type of Firm that prefers l as a *low-regulation* firm and the type of Firm that prefers m as a *moderate-regulation* firm. Likewise, we refer to the type of Agency that prefers m as a *moderate-regulation* agency and the type of Agency that prefers h as a *high-regulation* agency. The prior probability that the Firm is a moderate-regulation type is π , and the prior probability that the Agency is a high-regulation type is α . Thus, the probability that the Firm and Agency have the same preferences over regulation is $\pi(1 - \alpha)$.

The Firm has three tools at its disposal that it can use to shape the outcome the Agency adopts: (i) *comment* on a proposed regulation by the Agency, should it issue one; (ii) *lobby* the Agency; and (iii) *appeal* the Agency's proposal and spark an intervention from the Agency's principals. The comment tool is *explicit* in that it is the way that the Firm communicates a message of either support or opposition to the Agency's proposal. It is, though, a "cheap talk" message as it is free to send. By contrast, the lobbying tool does not communicate any support or opposition to any alternative, but it is an expenditure of resources and thus is an *implicit* form of communication (Austen-Smith and Banks 2000). The appeal tool is the lever of influence because a successful appeal can override the Agency's outcome.

Based on a number of recent studies, we assume that an appeal from interest groups could lead to a reaction from Congress (Hall and Miler 2008; Ritchie and You 2019), the White House (Haeder and Yackee 2015), the courts (McGarity 2012), or some combination of the three. In our model, an appeal has the effect of blocking the Agency's proposal, imposing a reputational cost on the Agency, and reverting the policy back to the status quo.

³ As a general rule, the courts step in only after an agency has acted and can either block those actions or remand them to the agency. Similarly with the OIRA review process, the White House can delay or block, but generally OIRA does not initiate, regulations (West and Raso 2013, p.511). Likewise, once an agency possesses authority to regulate, Congress is largely limited to increasing oversight hearings or decreasing agency budgets (Acs 2019). We do recognize, of course, that sometimes courts can interpret statutes to compel agencies to issue new regulations and that Presidents can issue executive orders to prompt agencies to initiate rulemaking proceedings. The general structure of the federal regulatory process, though, means that, on a day-to-day basis, oversight institutions such as courts, Congress, and the White House find themselves in a reactive posture responding to agencies' initiatives.

In addition to uncertainty about the Firm's preferences, the Agency is also uncertain about the Firm's cost to mount a successful appeal, which can be either low or high ("low-cost" or "high-cost"). The Agency's prior belief is that the Firm's appeal cost is low with probability θ and high with probability $1 - \theta$. This additional uncertainty about the Firm's appeal cost, when combined with the uncertainty about the Firm's preferences, yields a total of four types of firms: a low-regulation, low-cost firm; a low-regulation, high-cost firm; a moderate-regulation, low-cost firm; and a moderate-regulation, high-cost firm. Each type has a prior probability of $\pi\theta$, $\pi(1 - \theta)$, $(1 - \pi)\theta$, and $(1 - \pi)(1 - \theta)$, respectively.

We focus our analysis on a set of parameter values according to which the four firm types vary in their willingness to pay for an appeal. The low-regulation, low-cost firm will appeal if the Agency proposes *any* change to the status quo (either m or h); the low-regulation, high-cost firm will only appeal if the Agency proposes h ; the moderate-regulation, low-cost firm will also appeal only if the Agency proposes h ; and, finally, the moderate-regulation, high-cost firm will never appeal.

The sequence of the game closely follows the notice-and-comment rulemaking process. We allow the Firm to make the first move, prior to the Agency issuing a proposal, which takes the form of a decision about whether to pay c to lobby the Agency. We refer to a lobbying expenditure at this point as *early* lobbying. After observing the Firm's lobbying decision, the Agency updates its beliefs about the Firm's type and weighs whether to pay s to propose a change to the status quo. If the Agency does propose such a change (e.g., by issuing a notice of proposed rulemaking), the Firm then submits a comment on the Agency's proposal that is either supportive or oppositional. It also sends an additional message, which consists of its decision about whether to expend resources on lobbying at this point in the game (what we refer to as *post-proposal* lobbying). The Agency can then keep or withdraw the proposal, or, if the Agency initially proposed h , revise it by changing h to m . And finally, if the Agency keeps the proposal and goes forward toward finalizing it, the Firm can pay the cost to appeal and block the proposal.

Given our set-up, we have limited the Firm's influence over the Agency to a mechanism that depends largely on political intimidation (Gordon and Hafer 2005; Dal Bo and Di Tella 2003). In doing so, we assume that the Firm has no option available to use policy information to influence the Agency. We make this assumption not because we think that policy information does not matter but instead because we aim to investigate another modality of influence, notably what we have earlier called political information. In the model, the Firm provides political information either explicitly by submitting a comment supportive or oppositional to the Agency's proposal or by lobbying either before an agency decides whether to issue a proposal or after it issues one.

To focus even more explicitly on the role that political information may have in regulatory policymaking, we make two additional assumptions. The first assumption, as alluded to already, is that the Firm cannot send any message about its policy preferences until the Agency makes its proposal and the Firm then submits a comment. This assumption reflects the reality that outside groups that have not yet seen the specifics of a regulator's proposal will necessarily be limited in what they can communicate about the proposal's details. Furthermore, this assumption allows us to explore whether business groups can be influential even when they rely solely on implicit communication of political information. Business groups may be able to convey such

information to regulators even when their expenditures for lobbying purchase little more than opportunities for “maintaining contact” with an agency (Baumgartner et al. 2009, p.154)

As a second additional assumption, we limit the Firm to a single investment decision in lobbying either *before* the proposal is public (i.e., early lobbying) or *after* it is announced (i.e., post-proposal lobbying). Although this assumption has little impact on the results that follow, it allows us to focus on the tradeoff between lobbying the Agency early, to stave off or chill regulatory plans, versus waiting to learn exactly what the Agency will propose before attempting to influence the Agency, such as by convincing it to retreat.

2.2 Implications

Before turning to our analysis of the full model, we introduce its basic structure by assuming complete information on the part of both players, the Firm and the Agency. We then turn to an explication of the model in full, in which play occurs under incomplete information, and present our hypotheses that follow from the model.

2.2.1 Complete information benchmark

We consider first a simple benchmark case where the Agency, whether a high-regulation or moderate-regulation type, knows the exact type of Firm it is playing against. With perfect knowledge about the Firm’s type, the Agency will simply respond according to the type of Firm it confronts, proposing a policy as close to its ideal policy as it can without triggering an appeal.

To illustrate, imagine a case where the Agency is a high-regulation type. If it confronts a Firm of the low-regulation, low-cost type, the Agency knows that it is facing a potentially threatening Firm—one that would appeal any change to the status quo. Consequently, the Agency will not propose a new policy.

On the other hand, if the Agency confronts a Firm of the low-regulation, high-cost type, the Agency will not choose its most preferred policy, h , but instead will choose policy m . Choosing m will forestall an appeal because, as discussed, the low-regulation, low-cost firm’s cost of appealing outweighs the benefit it would get from changing m to l .

Similarly, the Agency will also choose m when it confronts a Firm of the moderate-regulation, low-cost type, as m is the policy that would forestall an appeal from this type of firm. But if the Agency confronts a moderate-regulation, high-cost firm, the Agency will choose h , its ideal policy, since the Agency knows that this type of firm’s cost of appeal outweighs the benefit it would get from changing h to l .

We can see that, in the first of these scenarios, the Agency succumbs to what could be considered a chilling effect. When it knows that the Firm is a low-regulation, low-cost type, the Agency simply does not even propose any change to the status quo. In the next two scenarios, although the Agency will propose m , which falls short of its ideal policy, there is technically no retreating effect. That is because the Agency knows the Firm’s type and thus has no incentive to float a trial balloon by proposing a policy from which it later backs away.

Note also that, under complete information, the Firm—no matter its type—has no incentive to lobby the Agency because the Agency adapts or chooses its policy based on its knowledge of the Firm’s type. We next turn to relaxing the assumption of complete information to show how the Agency’s uncertainty about the Firm’s type is what gives the Firm an incentive to lobby. The Agency gathers information about the Firm’s type based on the decisions it observes the Firm to make.

2.2.2 Full model (i.e., with incomplete information)

Turning now to the full model, we bring back in the assumption that the Agency does not know at the outset the type of Firm it confronts. We find that, under uncertainty, the Firm can induce both a chilling effect and a retreating effect. Precisely when these effects occur will depend on two key parameters of the model, π and θ . Figure 1 plots where we expect to see the two effects as a function of these parameters, based on the formal explication of the model in Appendix A. We begin by explaining the chilling effect equilibria and drawing empirical implications, then we turn to do the same with respect to the retreating effect.

In the chilling effect equilibria, which are located in the region below the curve in Figure 1, only the low-regulation firms—whether high-cost or low-cost—lobby the Agency early, and the Agency declines to regulate when it sees this happen. The moderate-regulation firms do not lobby early and the Agency, when it observes no early lobbying, proposes a new policy, m or h , depending on its preferences. (The top panel of Figure 1 depicts the Firm’s equilibrium strategies with respect to the use of lobbying, while the lower panel depicts its equilibrium strategies for commenting.)

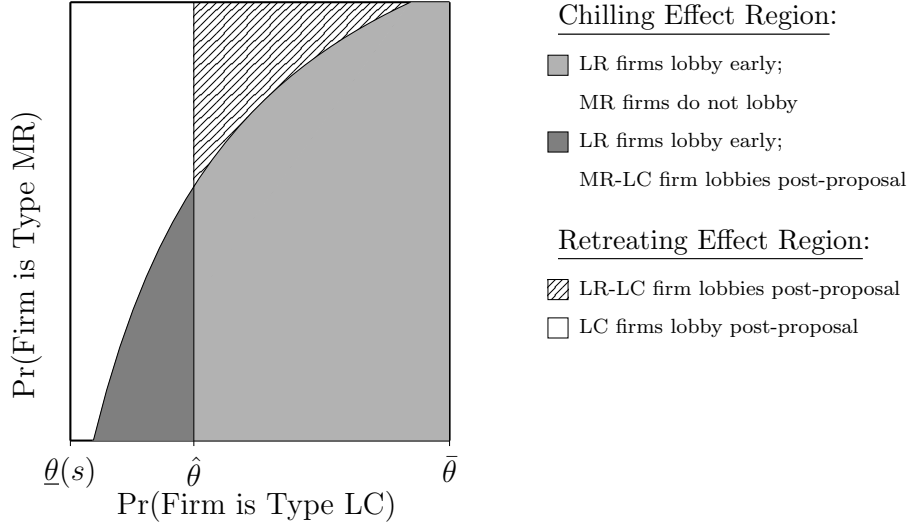
Critical to the chilling effect is the unique incentive that the low-regulation firms have to lobby early.⁴ By selecting the lobby-early strategy, both types of firm have more leverage to block the Agency’s proposal than they would have if they waited until the Agency developed its proposal. This is intuitive given that the Agency must pay s to develop its proposal, but it can, for free, either revise the proposal (i.e., change it from h to m) or withdraw it altogether.

One question that emerges is why, in the chilling effect region, the Agency eschews regulating after observing early lobbying, given that not all types of firms that lobby early are actually threatening. After all, as we see in the complete information version of the model, only the low-regulation, low-cost firm will appeal when the Agency chooses m . Here, with incomplete information, the Agency’s cautious behavior is sustained by its prior belief that the Firm is likely to be threatening, as determined by π and θ . This belief, which is common knowledge, encourages both types of low-regulation firms to pool and play the same strategy. Because the Agency cannot distinguish between the two types of firms, the Agency capitulates and behaves as though any early lobbying brings with it the same threat of appeal.

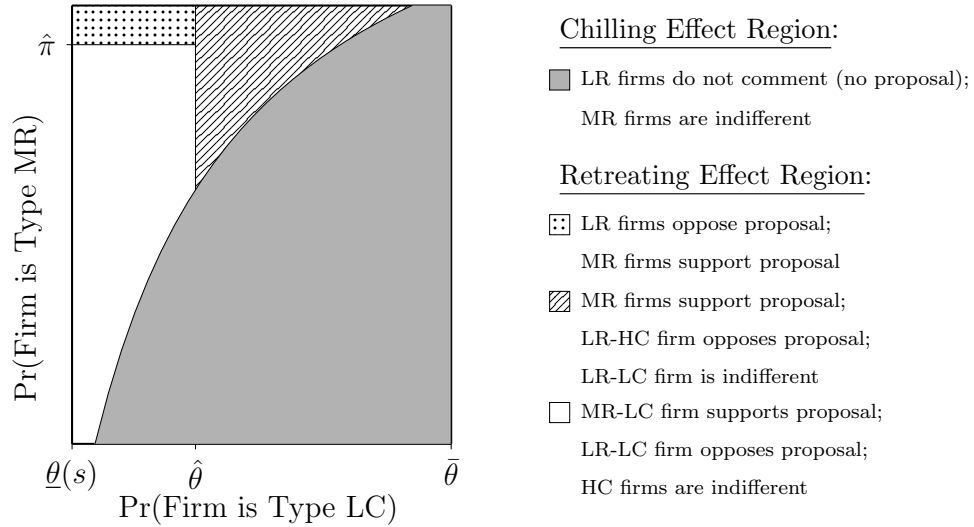
⁴ Unlike the low-regulation firms, which always oppose the Agency’s preferred policy (m or h), the moderate-regulation firms face a tradeoff if they lobby early: with probability $1 - \alpha$ the Agency prefers the same policy that they do (that is, policy m), in which case spending resources to lobby the Agency is wasteful. We provide a further analysis of these tradeoffs in Appendix A.

Figure 1: Equilibrium Regions

A. The Firm's Lobbying Strategy



B. The Firm's Commenting Strategy



Note: We use the notation LR and MR in both the top and bottom panels to refer to the low- and moderate-regulation firms and the notation LC and HC to refer to low- and high-appeal cost firms. The bottom panel, which focuses on the case where the Agency is a high-regulation type and has initially proposed h , indicates that the Firm is “indifferent” about sending a comment when the Firm could in equilibrium send either a supportive or oppositional comment.

The chilling effect equilibria—the region within which the Agency is most susceptible to intimidation from early lobbying—is shaped by several key parameters. Chilling occurs where the probability of the low-regulation firm is sufficiently high (when π is relatively small) and where the probability of the low-cost firm is also sufficiently high (when θ is relatively large). Furthermore, the scope of the chilling effect is shaped by the Agency’s cost of developing a proposal, s , which determines the low-regulation firms’ incentive to lobby early (as opposed to lobbying later). This is reflected in Figure 1 by the interval from $\underline{\theta}(s)$ to $\bar{\theta}$.⁵ As s increases, the size of the interval increases, and as s moves to zero the size of the interval shrinks to zero (i.e., $\underline{\theta}(s) = \bar{\theta}$ when $s = 0$), eliminating at that point any advantage from early lobbying.

The chilling effect forms the basis of our first hypothesis. Regulatory agencies that are subjected to early business lobbying should issue fewer proposals, especially those proposals that have a large startup cost.

Hypothesis 1 (H1) *Early business lobbying at an agency is associated with fewer subsequent regulatory proposals, especially those proposals that require a large upfront investment by the Agency.*

The chilling effect is clearly an ideal situation for low-regulation firms since, regardless of their cost of appeal (low-cost or high-cost), they prefer that the Agency not regulate at all. If they can chill the Agency, they keep it from issuing any proposal to change the status quo.

For moderate-regulation firms, however, this is not the case since they would like the Agency to change the status quo, albeit only to the moderate policy, m . Under certain conditions, the moderate-regulation types would have an incentive to undermine the chilling effect by also threatening to lobby early—a prospect that would limit the extent to which early lobbying is informative about the Firm’s type. Indeed, the more types of Firms that lobby early, the less informative early lobbying is for the Agency.

What happens, however, is that the moderate-regulation firms never actually have to act on a threat to lobby early. The credibility of the threat is sufficient to undermine the chilling effect equilibria. In its place, a new set of equilibria emerge where the Agency always proposes a change to the status quo and the only lobbying that occurs happens later, post-proposal. These new equilibria make up the retreating effect region that sits above the curve in the top panel of Figure 1.

In this retreating effect region, the two types of low-regulation firms always separate and play different strategies. Of the two, only the low-regulation, low-cost type will choose to lobby.⁶ Since this type is willing to pay to appeal any change to the status quo, the Agency always withdraws its proposal when it learns that it is playing against this type. On this point, the Firm’s opportunity to comment and thereby explicitly communicate its preferences can become important. In two of the equilibria that we consider here, the low-regulation, low-cost firm must

⁵ In the region to the left of $\underline{\theta}$ and to the right of $\bar{\theta}$ the low-regulation firms are indifferent about when they lobby. We discuss this further in Appendix A.

⁶ The incentive here is to lobby at all, whether early or post-proposal. As developed in Appendix A, the low-cost firm in the retreating equilibrium would be indifferent as to the timing of its lobbying.

send an oppositional comment to distinguish itself from the *moderate*-regulation, low-cost firm, which also has an incentive to lobby. These equilibria occur where $\theta < \hat{\theta}$ in each panel of Figure 1. The oppositional information conveyed in the comment, combined with lobbying, intimidates the Agency and leads to a retreating effect, which forms the basis of our second hypothesis.

Hypothesis 2 (H2) *When a firm explicitly communicates opposition to a proposal in a comment, whether the regulator responds to the comment by withdrawing its proposal will be positively associated with the lobbying expenditures of the firm.*

Together, H1 and H2 reflect an expectation that firms can influence by intimidation. That is, simply by sending political signals—namely, the mere expenditure on lobbying or the combination of this expenditure and the filing of a comment staking out opposition—firms can either forestall or turn back regulatory proposals, irrespective of the communication of any policy information. According to H1, the expectation is that agencies will succumb to the chilling effect in the face of businesses' early lobbying and will issue fewer regulations, especially fewer significant regulations. Under H2, the expectation is that an increase in lobbying expenditures is associated with the retreating effect in the form of the withdrawal of proposed rules. We now turn to our empirical effort to assess these expectations.

3 Empirical Strategy

Using data generated by the notice-and-comment rulemaking process, as well as the lobbying expenditures of business groups—including firms, trade associations, and their hired lobbyists—we evaluate the implications of our model empirically.

We start with the acknowledgement that business opposition to regulatory activity is not the only factor shaping regulatory decision-making. Critically, policy outcomes that may appear to be driven by pressure from business, in part because it serves their interests, may instead be shaped by the political environment (Carpenter 2013). For this reason, we divide the periods we study into distinct political regimes in which the partisan environment is largely constant—periods during which there was no change in party control of either chamber of Congress or the White House. Restricting our analysis in this way allows us to factor out regulatory changes that might have been prompted or sanctioned by shifting electoral politics and the partisanship of those overseeing the regulator (O'Connell 2011). Within each stable regime, we limit our analysis to those regulatory proposals that were initiated and withdrawn (or finalized) within the same regime.

The first part of our empirical strategy—namely, investigating H1—uses aggregate data across the universe of regulatory activity to identify the relationship between lobbying and the publication of proposed rules. The second part looks to agency announcements withdrawing proposed rules to investigate H2. Because within-regime withdrawals are infrequent, this second part of our empirical strategy uses a case-control approach, a methodology for studying rare events that are likely to be missed in a random sample of events (King and Zeng 2001). Our research design in this part selects on the dependent variables by comparing the universe of proposals that were withdrawn ($W_i = 1$) to a random sample of proposals that were not withdrawn ($W_i = 0$) but were otherwise similar on a number of key characteristics, including

the partisan environment in which they were initiated. For each proposal i , we collect the public comments submitted by business interests and identify whether they express opposition to the proposal.

Throughout, we focus on lobbying expenditures that target specific agencies. In our analysis of the chilling effect, we look specifically at lobbying that occurs before the publication of a given proposal—that is, before the content of the proposal is made public. These “lagged” expenditures are consistent with the equilibrium in our theoretical model and thus can provide a window into the intimidation-based mechanism of influence. Finally, we make use of a variety of fixed effect specifications to account for additional variation, notably across agencies, time, and the matched groups that we use in our case-control analysis.

3.1 Data

We rely on data on the following three phenomena:

Regulatory proposals and regimes. We track proposals using data from the *Federal Register* and the semi-annual Unified Agenda of Federal Regulatory and Deregulatory Actions. For the reasons noted above, we limit our analysis to three regimes: (i) the 110th Congress; (ii) the 111th Congress; and (iii) the 112th to 113th Congress. We aggregate activity to the agency-quarter level, where an agency is the smallest organizational unit we can identify in both the Agenda and the lobbying data (described next).⁷ See Appendix B for details and a list of all the proposals used in our case-control analysis.

Lobbying and other political expenditures. We linked each business group that comments to its federal lobbying activity, as given by the federal disclosure reports collected by the Center for Responsive Politics (CRP). For consistency with the regulatory data, we aggregate the reports at the quarterly level (since 2008 they have been filed quarterly). For each report, we identify the entities lobbied (e.g., the agencies) and split the total expenditure evenly across each entity. Appendix B includes further details, including a discussion of alternative approaches, such as using information only about the number of reports filed by a business group instead of each report’s listed expenditure. In Appendix C, we replicated our results using different measures for the lobbying data, including the total amount on each report and the number of reports.

Public comments. We collected the public comments from business groups associated with each proposal in our case-control study and coded them for whether a commenter expressed complete opposition to the proposal, such as asking for it to be withdrawn. Appendix B provides more detail on the coding decisions, including examples.

3.2 Analysis

Our empirical analysis proceeds in two parts. We look first for evidence of a chilling effect associated with early lobbying (H1), that is, influence-seeking efforts that occur before a

⁷ Our analysis starts in 2008, because this is first year in which interest groups filed quarterly lobbying reports.

proposed rule is published. Then we look for evidence of retreating effects, where lobbying combined with a stated opposition to a proposed rule leads to the proposal’s withdrawal (H2).

3.2.1 Chilling Effects

H1 states that early lobbying should be associated with fewer regulatory proposals. To investigate, we constructed a balanced panel of regulatory activity and lobbying activity across 69 agencies and 7 years, from 2008 to 2014, using only the within-regime regulatory proposals, as defined above. Our first dependent variable, Y_{at} , is the number of proposals issued (i.e., published notices of proposed rulemakings, or NPRMs, in the *Federal Register*) by agency a in quarter t . Our main explanatory variable is the amount of lobbying activity at agency a in the quarters leading up to quarter t , i.e., $t - 1$, $t - 2$, etc. We measure the business lobbying activity by aggregating all of the reported expenditures in the lobbying reports that mention agency a for each of these time periods. When prior lobbying increases, such as in quarter $t - 1$, we expect agency a to issue fewer proposals in quarter t , and any proposals that are issued should require a smaller upfront investment, i.e., they should be easier for the agency to develop, as hypothesized in H1. We explore these dynamics using an overdispersed Poisson model.

[TABLE 1 ABOUT HERE]

The results are shown in the first four columns of Table 1. Overall, the results are consistent with our theory of intimidation and our expectation that lobbying should chill (rather than stimulate) the amount of regulatory activity. Column 4, for example, suggests that a standard deviation increase in the lobbying expenditure at an agency in quarter $t - 1$ is associated with over a 25 percent decrease in the number of proposals published at quarter t . We find an attenuated effect for earlier lobbying ($t - 2$, and earlier), which is intuitive on the assumption that more recent lobbying sends a stronger signal to the agency.⁸

We also find that this chilling effect extends to agencies avoiding proposals that, all else equal, require a more substantial upfront investment, as suggested by H1. We lack a perfect measure of the investment agencies need to develop proposals, although we can identify those proposals that agencies list in the Unified Agenda as “economically significant” or “significant” (as opposed to “substantive, but not significant”).⁹ If these significant proposals are more complex policies, as their longer page lengths suggest, they should require a larger upfront investment by the agency to develop. We denote the number of such proposals as \tilde{Y}_{at} , where $\tilde{Y}_{at} \leq Y_{at}$. Columns 5 and 6 show that an increase in lobbying in quarter $t - 1$ is associated with agencies issuing fewer significant—i.e., “high-investment”—proposals in quarter t . Column 5 shows that the total number of such high-investment proposals decreases with prior lobbying, and column 6 shows that the proportion of proposals that are high-investment decreases with prior lobbying, i.e., that $\frac{\tilde{Y}_{at}}{Y_{at}}$ decreases when Y_{at} is used as an offset in the model.

⁸ In column 4, we find a greater effect for recent lobbying in quarter $t - 1$ than contemporaneous lobbying in quarter t , which may simply reflect the fact that a measure of lobbying activity that takes place in the quarter within which the proposal is published will be a noisier measure of *early* lobbying.

⁹ Appendix B provides more detail on these categories.

In addition to investigating whether lobbying is associated with fewer new proposals, we also consider whether it is associated with agencies dropping planned regulatory proposals. We are able to discern which regulatory initiatives were planned, even before they were issued as published NPRMs, because agencies announce planned NPRMs in the Unified Agenda. Here, we look specifically at whether agencies are more likely to drop a planned NPRM when the intensity of early lobbying increases ($t - 1$ or before). We use the same lobbying data from the previous analysis, and we replace the dependent variable Y_{at} with a measure for the number of planned regulatory initiatives that were dropped or halted by each agency, R_{at} .¹⁰ Consistent with the chilling effect, the results shown in the last four columns of Table 1 demonstrate that prior lobbying is associated with an increase in these halted plans, where prior is defined as the previous two quarters, $t - 1$ and $t - 2$.

We also find that the association between lobbying and decreased regulatory activity declines with time. That is, when we include multiple lags of lobbying expenditures, only the most recent lag, lobbying in quarter $t - 1$, remains statistically significant. Again, this is not surprising given that a regulatory agency's agenda changes over time, so as time goes on, older lobbying by a firm presumably will reveal less information to the agency about the firm's present attitude toward items on the agency's current agenda. As in our theoretical model, lobbying can only be associated with a chilling effect if the Firm has some general expectation of what the Agency is planning at the time of lobbying. This assumption is defensible when we look at recent lobbying, but it grows harder to justify as the lag time between lobbying and regulatory activity increases.

3.2.2 Retreating Effects

We also find evidence of retreating effects, whereby business opposition to specific proposals is associated with their withdrawal and where these effects are most pronounced when the oppositional group also lobbies the relevant agency (see H2). We identify these effects using the case-control approach noted above, which we briefly elaborate here before turning to the results.

To set up the case control approach, we identified the universe of withdrawn proposals in our within-regime data and matched each withdrawal to a comparable sample of "control" proposals that were not withdrawn. For each withdrawn proposal, we randomly selected as many as three proposals that were identical to it in terms of four characteristics: (i) the agency making the proposal; (ii) the political regime in which the NPRM was published; (iii) the title of the U.S. Code that the proposal implements; and (iv) the degree of the proposal's significance as designated by the agency in the Unified Agenda.¹¹ We found at least one match for 20 of the withdrawals, resulting in a matched sample of 51 non-withdrawn proposals and a total sample size of 71 proposals. Based on our matching criteria, each proposal belongs to a *unit*, where all proposals within a unit are identical on each of the four factors just listed. In the analysis that follows, we use the unit indicators as fixed effects, which allows us to identify the factors associated with withdrawals based on within-unit variation.

¹⁰ In the Unified Agenda, these actions are listed as "withdrawals," even though an NPRM has not yet been published. However, we refer to them here as dropped or halted plans to distinguish them from the published NPRMs in the next section that are withdrawn.

¹¹ Appendix B includes a full list of the proposals used in the case-control study.

For each proposal in the analysis, we also collected and coded the relevant public comments from business organizations. Using a team of research assistants, we identified 386 business comments associated with the 71 proposals and used a binary coding scheme to classify each comment as either supporting or opposing the proposal.

Comment-level Analysis. We start with an analysis of the comment-level data, where comments are nested within proposals, which are in turn nested within units.¹² The relationship of interest is

$$\Pr(W_{ijk} = 1) = \text{Logit}^{-1}(\alpha_j + \beta_1 \text{Oppose}_{ijk} + \beta_2 \text{LobbyExp}_{jk} + \beta_3 \text{Oppose}_{ijk} \times \text{LobbyExp}_{jk} + \beta_4 X_k), \quad (2)$$

where i indexes each proposal, j indexes each unit and k indexes each commenter. (Note that the lobbying expenditure is indexed both to the group making the expenditure and the relevant agency in the unit). Here, LobbyExp_{jk} is the logged lobbying expenditure targeting the agency associated with unit g during the period in which proposal i was published as an NPRM.¹³ (We exclude t from LobbyExp_{jk} because t is implied by j , the unit.) The indicator Oppose_{ijk} takes a value of 1 if commenter k expressed opposition to i and a value of 0 otherwise. We control for the page length of each comment using the variable X_k .

The results from estimating Equation 2 are shown in Table 2.¹⁴ Across all four models, we find that an oppositional comment is positively associated with an increased withdrawal probability and that the magnitude of this effect increases with the commenter's prior lobbying (i.e., $\beta_1 + \beta_3 > 0$). The magnitude of this effect is also substantial. For example, the predicted probability that proposal i is withdrawn after an oppositional comment from a group that did not lobby is just under 0.13. But even a modest lobbying increase in lobbying (e.g., \$1,250) is associated with a withdrawal probability of nearly 1.0.¹⁵

[TABLE 2 ABOUT HERE]

The effect of lobbying, however, does not appear to be without limits. For one, the amount spent lobbying *other* agencies does not appear to matter. We find this in Model 2, which re-estimates Equation 1 controlling for the amount each commenter spent lobbying *all* regulatory agencies around the period in which the NPRM was issued (the quarter of its publication plus the following three quarters). The main results are unchanged and the aggregate expenditure has no association with the likelihood of withdrawal. In addition, previous lobbying appears to matter less than the lobbying that occurs around the time the proposal was issued. To demonstrate this, we re-estimated Equation 2 using the lobbying expenditures at the agency in the six quarters prior to the publication of the NPRM, which reveals that any effect of lobbying

¹² The comment-level data reduces our sample from 71 proposals to 50 since we lose cases where no business comments were filed.

¹³ The *period* is defined as the quarter in which the NPRM was published plus the subsequent three quarters. We show in Appendix C that shortening the period makes little difference in the results.

¹⁴ Appendix C includes further robustness checks, including using the number of lobbying reports, not the expenditure (no change), a conditional logit model (no change) and adding additional controls, such as whether a proposal was reviewed by OIRA (no change).

¹⁵ The predicted probabilities use a correction that is standard in case-control studies to estimate the intercept, as suggested by King and Zeng (2001). See Appendix C for details.

disappears (the effects are generally weaker when looking at expenditures further away from the publication date).

Our empirical setup can also be used to probe two alternative mechanisms of influence that might drive results. One is the possibility that a firm’s influence actually travels through Congress, so the only reason that lobbying an agency appears influential, as it does in Model 1, is because lobbying an agency is correlated with lobbying Congress. However, when we include a measure for how much each commenter spends lobbying Congress we find that it has no association with the likelihood of withdrawal (see Model 3).

Another possibility is that agency lobbying is correlated with making campaign contributions, and that a firm’s influence actually comes from purchasing favors from Congress (Grossman and Helpman 2002). However, when we include a measure for how much each commenter spent on campaign contributions in the most recent election cycle, we find no relationship to the probability of withdrawal (see Model 4).

Together, these results suggest that PAC contributions and lobbying Congress—while plausible signals of a firm’s commitment to influence-seeking activity (Gordon and Hafer 2005)—may communicate little information about a firm’s willingness and capacity to appeal a given regulatory proposal. This conclusion is broadly consistent with our theoretical model, where part of what makes lobbying informative (and consequently influential) is the fact that the Firm bases its lobbying decision on expectations about the Agency’s regulatory plans. Consequently, we should not expect all lobbying expenditures to have the same effect.

Proposal-level Analysis. Until now, we have treated the individual business group or firm as the unit of analysis. However, as would be expected—and as appeared in the MMS example in Section 1—firms may also form coalitions in their efforts to influence through intimidation. To investigate the effect such coalitional behavior may have on agencies’ behavior, we now turn to an analysis of how different alignments of business groups may be associated with the probability of withdrawal.

To do so, we constructed a dataset of proposals using the 71 proposals in our case-control study, preserving each unit j . Then, for each proposal i , we identified whether there was at least one business comment expressing opposition ($Oppose_{ij} = 1$) and at least one business comment expressing support ($Support_{ij} = 1$), with no-comment as the base category (21 of the proposals had no comments). We then constructed two new expenditure variables: $LobbyExp^o$ for the expenditure of the most active lobbyist opposing the proposal, and $LobbyExp^s$ for the expenditure of the most active lobbyist supporting the proposal, where “active” is measured by the amount spent lobbying the agency around the time the proposal was published.¹⁶ Our relationship of interest is then

$$\Pr(W_{ij} = 1) = \text{Logit}^{-1}(\alpha_j + \beta_1 Oppose_{ij} + \beta_2 Support_{ij} + \beta_3 LobbyExp^o \times Oppose_{ij} + \beta_4 LobbyExp^s \times Support_{ij}). \quad (3)$$

¹⁶ Here we define *period* to include the quarter the proposal was issued as well as the subsequent three months.

Figure 2 shows the substantive results from estimating (3), in terms of changes in the probability of withdrawal as a function of the coalition type.¹⁷ As before, opposition is associated with an increase in the likelihood of withdrawal. This can clearly be seen by comparing Panel A, where there is at least one oppositional comment and no supportive comments, to the opposite case in Panel D, where the only comments are supportive ones. With only supportive comments, the withdrawal rate is nearly zero. And with only oppositional comments, the withdrawal rate ranges from about 0.2 to nearly 1.0, depending on the lobbying activity of the opposition—the more lobbying, the greater the probability the opposition succeeds at getting a withdrawal.

[FIGURE 2 ABOUT HERE]

Mixed coalitions are also associated with the probability of withdrawal. Panels B and C suggest that a supportive comment can have a neutralizing effect on an oppositional comment, although this appears to depend on how much lobbying the commenters engaged in. Panel B fixes the expenditure of the opposition and shows the withdrawal rate falling in association with a rise in the expenditures of the supportive commenter. Panel C shows the opposite case, where the expenditure of the supporter is fixed and the withdrawal rate increases in association with a rise in the opposition's expenditure, albeit slightly (a considerable contrast to Panel A). Although we did not explore this neutralizing effect in our theoretical model, we offer one intuitive interpretation, namely that appeals to agencies' principals will be less assured when the business community is divided. Indeed, Congress and the White House may resist intervening at all. As a result, a mixed coalition of business commenters can be expected to give the regulatory agency a degree of cover, or greater autonomy, from meddling by legislative and executive actors.

4 Discussion

Our analysis so far has shown that firms invest in lobbying as a way to intimidate regulators. This raises the question of why, if influence by intimidation can be so effective, we do not see all firms that stand in opposition to an agency's proposal deploy such a strategy. Then, for those oppositional groups that choose not to lobby, there arises a related question of what influence a group's comment alone can have on the policy decision taken by an agency. We address these questions in the first part of this discussion section. Then, we turn to some possible alternative explanations for our empirical results in light of several leading theories of interest group influence over policymaking, explaining why they do not appear to fit our data as well as our theory of influence by intimidation.

4.1 Lobbying versus commenting

The evidence showing that influence by intimidation can be successful might lead one to expect that business groups would always engage in early lobbying—or at least that, whenever an agency issues a proposed rule that firms oppose, they would then always lobby in an effort to influence the agency through intimidation. But we find that, on average, only 20 percent of commenters had lobbied the relevant agency in the prior quarter. Slightly less than that had lobbied the agency in the prior year (25 percent). Only 40 percent of commenters had lobbied

¹⁷ Appendix C includes a table of regression coefficients.

any federal agency in the prior year. Although these figures may be surprising, our theoretical model points to a number of explanations for why a group would decline to invest in lobbying, despite wanting to exert influence over a regulatory proposal.

Our model indicates that it will not always be in firms' interest to do more than file a comment. For example, the low-regulation, *high*-cost firm eschews lobbying in the retreating effect equilibrium, despite this firm's preference that the Agency not regulate. The reason for this type of firm's reluctance to lobby is, of course, strategic, not naïve. Its reluctance is driven by an understanding that, if this firm were to lobby and thus pool with the low-regulation, low-cost firm, it would not change the Agency's behavior. This is because the Agency holds beliefs in the retreating effect equilibrium such that when the Agency cannot discern which type of low-regulation firm it confronts, the Agency believes that the low-cost type is sufficiently unlikely such that it is preferable to stick with m as its alternative to the status quo. The Agency does this even though it knows that keeping m (*i.e.*, as its final rule) risks the possibility of an appeal by the low-regulation, *low*-cost firm, which is the only type that would appeal m . It is the Agency's willingness to keep m when both low-regulation firms pool—that is, the Agency's *unwillingness* to be intimidated—that keeps the high-cost type from lobbying in equilibrium.

In this example, the low-regulation, high-cost firm does nothing more than issue an oppositional comment in response to the Agency's proposal. This raises a broader question about what influence comments by themselves can have on a regulatory agency. Our model suggests that this influence might be minimal, despite the fact that a comment allows the Firm to communicate its preferences explicitly. Indeed, there are many instances across the equilibria that we consider where, even though the Firm files a comment, doing so is actually uninformative, unpersuasive, or both.

To provide greater intuition for why comments may have little influence over decisions at a regulatory agency, consider a scenario involving the chilling effect region in Figure 1 in which the Agency is a high-regulation type—which in reality may well often be the case. If the Agency observes no early lobbying, it infers correctly that the Firm is a moderate-regulation type. Already this very fact suggests that any comment filed at this point will not convey any information about the firm's preferences as between l and m . But the Agency also cares about the firm's willingness to appeal, that is, whether it is a low-cost or high-cost firm. Because the Agency is a high-regulation type (and it faces no costs for later revising its proposal), it will propose h and the Firm will try to convince the Agency to revise its proposal to m .

If the Agency believes that the Firm's appeal cost is likely to be low (which we define as when $\theta < \hat{\theta}$, as shown in Figure 1), the two types of firms will separate and the low-cost type will lobby to distinguish itself from the high-cost type.¹⁸ This provides sufficient information to the Agency to enable it to know which firm it is facing.

¹⁸ As elaborated in Appendix A, if the Agency believes it is likely that the Firm will be a low-cost type ($\theta > \hat{\theta}$), neither type lobbies, both will submit the same comment, and the Agency always revises its proposal to m .

We can be confident that the firms will separate because if the high-cost firm were also to lobby, the Agency would keep h because it cannot distinguish the firms based on their behavior and the Agency would fall back on its belief that the Firm is unlikely to be a low-cost firm and thus unlikely to pay for an appeal. In such a situation, the low-cost firm would appeal when the Agency selects h , but the high-cost firm would be stuck with both h and the cost it expended to lobby.

In equilibrium, when only the low-cost type lobbies, both types of firms are indifferent about whether to send a supportive comment or an oppositional comment—either would constitute an equilibrium—and the Agency decides whether to revise its proposal to m based entirely on whether it observes lobbying. Here, the Firm is influential because the Agency surmises that only a low-cost type would lobby at this stage. The comments, uncoupled from the lobbying, have no impact on the Agency’s decision about whether to revise its proposal from h to m .

Taken together, our model and empirical evidence indicate that lobbying and, by extension, intimidation really matter in the regulatory process. Commenting, by contrast, may be the most visible and widely studied influence-seeking behavior in the regulatory process, but it may not be the most influential. As discussed in Section 1, previous empirical studies have produced mixed evidence about whether, or the degree to which, comments themselves can influence regulators. In the end, what we find may be further indication that, as one seasoned lawyer with private-sector and agency experience has opined, commenting is more “theater” than substance, with most of the important action taking place offstage (Elliott 1991).

4.2 Alternative Theories

Several leading alternative theories of interest group influence have been developed that might plausibly explain what we observe in terms of chilling and retreating effects. We consider whether (or how) the core predictions of these alternative theories might fit with the empirical evidence we found.

One leading theory of interest group influence focuses on exchange or contract as the key mechanism of influence (e.g. Grossman and Helpman 2002; Stigler 1971). In this theory, groups are able to purchase the policies they want, such as by making campaign contributions to members of Congress that oversee a regulator of interest. From what we could determine by looking at the campaign contributions of those groups that lobbied regulators, we saw no evidence that giving more money to lawmakers increased firms’ leverage over regulatory outcomes. In other words, businesses do not appear to be purchasing the policies they want, at least from members of Congress.

Another leading theory of group influence is predicated on persuasion, whereby outsiders can influence a policymaker by providing compelling policy information. Although we cannot reject the possibility that the provision of policy information shaped at least some of the results in our analysis, we have suggestive evidence that the influence of this mechanism may be overstated. For one, we were unable to find any evidence that the length of a group’s comment, which is likely correlated with the amount of information it conveys, has any impact on a regulator’s

decision to withdraw a proposal (see Table 2 and, for a more detailed analysis, Appendix C).¹⁹ More subtly, we also find that regulatory agencies are highly responsive to *oppositional* firms, namely those that express a preference for blocking a regulator's proposal. The asymmetric responsiveness we observe would seem to stand at odds with the implications of most persuasion models, as persuasive communication is much more effective when the sender and receiver of information share common goals, e.g., a case where *both* the firm and regulator want to change the status quo (Potters and Winden 1992; Austen-Smith 1995).²⁰

A final theory, one we recognize was developed with Congress not regulators in mind, posits that lobbying by outside groups serves chiefly to subsidize policymakers, that is, to help them achieve their preferred policy goals (Hall and Deardorff 2006). If imported into the regulatory context, one implication of this theory would be that lobbying should be *positively* associated with the number of regulatory proposals developed, since lobbyists target their efforts where they support the development of policy change, and then they offer assistance by writing regulatory language or providing needed technical analysis. Our evidence, however, suggests just the opposite, namely that lobbying appears to chill the amount of regulatory activity—a pattern we find both at the aggregate level, looking across all agencies (see Table 1), as well as at the proposal level, where firms that lobby more appear are associated with agencies retreating from the proposals that the firms oppose (see Figure 2).

5 Conclusion

This paper makes a number of contributions both to our understanding of regulatory policymaking and to the ways that interest groups can influence the policy process. For one, we draw attention to an underappreciated mechanism of influence where business lobbying communicates political information, not just policy information, to shape policy outcomes to their advantage. When successful, this strategy of intimidation can reduce the scope of regulation, in part because the strategy rests on the implicit threat that groups can appeal the outcomes they oppose to a regulatory agency's principal.

Consistent with the implications of our model, we present empirical evidence that business lobbying is pervasively associated with chilling the production of regulatory activity and causing regulators to retreat from their intended course of action. Past empirical research has tended to overlook both the retreating and chilling effects of lobbying, as it has focused in isolation on the explicit communication sent by groups during the comment process without considering the inferences regulators can draw from general lobbying efforts. As a result, business groups appear to be more influential in shaping regulatory outcomes than has been previously appreciated—particularly by using lobbying to shape agencies' agendas and to influence what regulations are never developed.

¹⁹ This echoes a finding by Yackee and Yackee (2006, p.136) that the amount of policy information contained in a comment does not correlate with the likelihood that the regulator is responsive to the comment.

²⁰ These predictions can change if the lobbyist's information can be verified by the receiver, e.g., Austen-Smith and Wright (1994), although agencies typically face legal and practical obstacles to extracting information that firms will not voluntarily provide (Coglianese, Zeckhauser, and Parson 2004).

TABLES and FIGURES

Table 1: Chilling Effects (Overdispersed Poisson)

	All Proposals (Y_{at})				High-cost Proposals (\tilde{Y}_{at})		All Reversals (R_{at})			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lobby Exp _t	-0.189**			-0.048	0.152	0.162	0.264			-0.209
	(0.072)			(0.098)	(0.143)	(0.114)	(0.162)			(0.155)
Lobby Exp _{t-1}		-0.291**		-0.309**	-0.580**	-0.394**		0.974**		1.085**
		(0.079)		(0.117)	(0.176)	(0.132)		(0.221)		(0.262)
Lobby Exp _{t-2}			-0.118	0.093	0.232	0.136			0.511**	0.080
			(0.077)	(0.090)	(0.119)	(0.080)			(0.183)	(0.228)
Agency Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Offset						Yes				
Observations	1,932	1,863	1,794	1,794	1,794	1,794	1,932	1,863	1,794	1,794

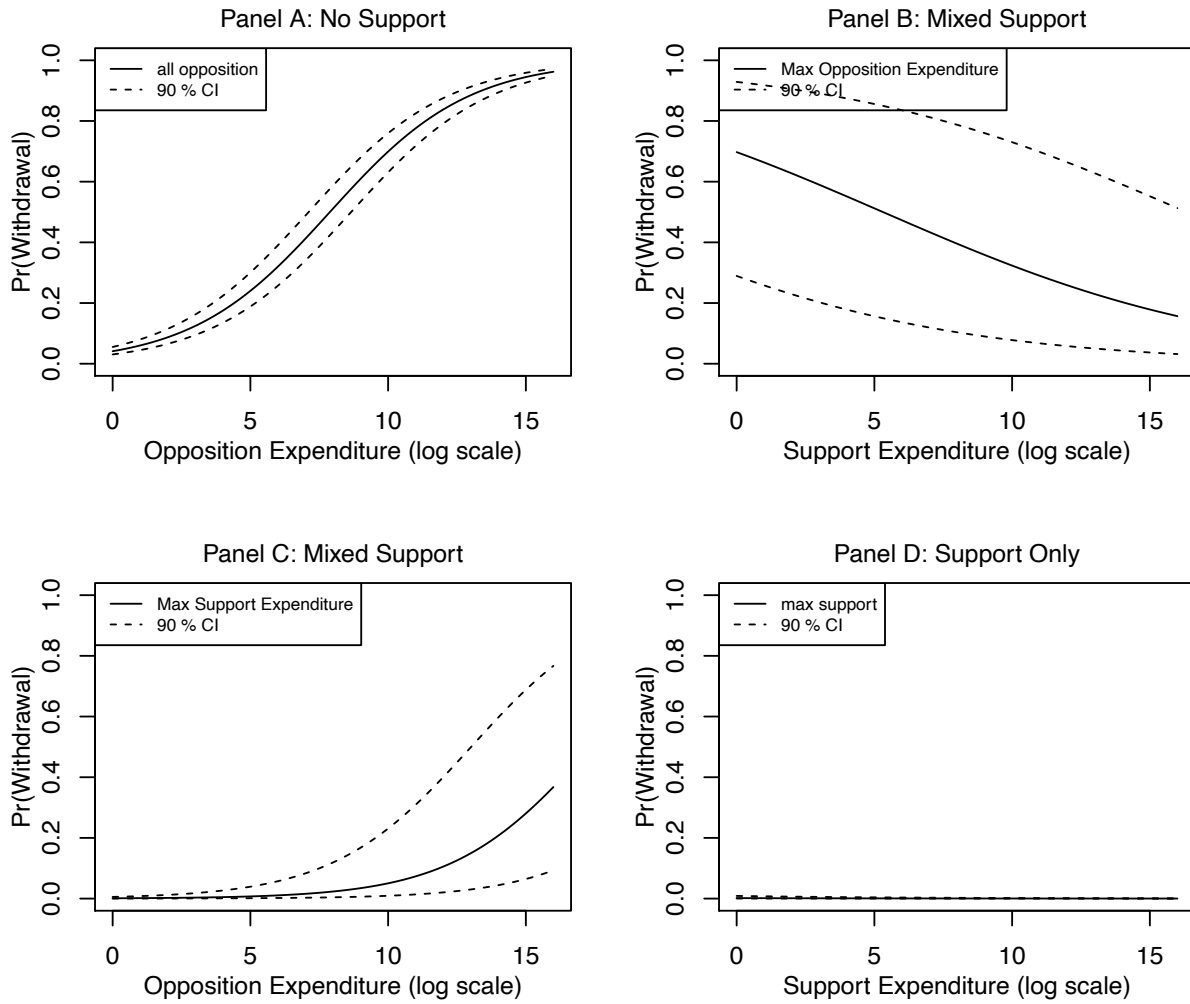
Notes: Robust standard errors clustered by proposal in parentheses. * p<0.05, **p<0.01.

Table 2: Retreating Effects (Comment-level Analysis, Logit Model)

	$Pr(Withdrawal_{ijk} = 1)$			
	(1)	(2)	(3)	(4)
Oppose	2.763** (0.609)	2.755** (0.683)	2.832** (0.658)	2.999** (0.672)
Lobby Exp. (Agency)	-0.036 (0.027)	-0.028 (0.038)	-0.048 (0.031)	-0.050 (0.031)
Comment Length (Pages)	0.429 (0.332)	0.436 (0.330)	0.428 (0.334)	0.451 (0.343)
Lobby Exp. (All Agencies)		-0.012 (0.031)		
Lobby Exp. (Congress)			0.017 (0.021)	
PAC Expenditure (Prev. cycle)				0.026 (0.024)
Oppose × Lobby Exp. (Agency)	0.930** (0.243)	0.952* (0.325)	0.948* (0.304)	1.110** (0.296)
Oppose × Lobby Exp. (All Agencies)		0.005 (0.060)		
Oppose × Lobby Exp. (Congress)			-0.018 (0.047)	
Oppose × PAC Expenditure (Prev. cycle)				-0.076 (0.052)
Unit Fixed Effects	Yes	Yes	Yes	Yes
Observations	386	386	386	386

Notes: Robust standard errors clustered by proposal in parentheses. * p<0.05, **p<0.01.

Figure 2: Withdrawal Probabilities by Coalition Type (Proposal-level Results)



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