Lobbyists as Gatekeepers: Theory and Evidence[*]

Alexander V. Hirsch[†]   Karam Kang[‡]   B. Pablo Montagnes[§]

Hye Young You[¶]

Abstract

Lobbyists play a crucial role in the lobbying process, but the value that they bring to both clients and politicians remains poorly understood. We develop a model in which a lobbyist's value derives from his ability to selectively screen *which* clients he brings to a politician, thereby earning the politician's trust and preferential treatment for his clients. Lobbyists face a dilemma, as their ability to screen also increases their value to special interests, and the prices they can charge. A lobbyist's profit motive undermines his ability to solve this dilemma, but an interest in policy outcomes—due either to a political ideology or a personal connection—enhances it, which paradoxically increases his profits. Using a unique dataset from reports mandated by the Foreign Agents Registration Act, we find that lobbyists become more selective when they are more ideologically aligned with politicians, consistent with our prediction.

[†]Department of Humanities and Social Sciences, California Institute of Technology. avhirsch@hss.caltech.edu

[‡]Tepper School of Business, Carnegie Mellon University. kangk@andrew.cmu.edu

[§]Department of Political Science, Emory University. pablo.montagnes@emory.edu

[¶]Wilf Family Department of Politics, New York University. hyou@nyu.edu

1 Introduction

> "If a firm had a client with demands which went against your philosophy, do you feel you could still work hard for that client?"
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> "I couldn't do it for all the money in the world."
>
> "Then as far as I'm concerned, you're hired!"
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> – *Capitol Punishment*, by Jack Abramoff (Abramoff, 2011)

Since at least the mid-18th century, professional lobbyists have been a constant and much vilified feature of the American political landscape. Walt Whitman colorfully described them as "crawling, serpentine men" (Allard, 2008); echoing this common view, former President Obama decried "the lobbyists... and special interests who've turned our government into a game that only they can afford to play."[1] This view of lobbyists, however, fails to answer a fundamental question: Why are politicians willing to provide access to lobbyists that lobbyists are, in turn, able to sell so profitably?

We develop a model to answer this question, and provide empirical evidence consistent with the model using a unique dataset on lobbying contacts from the reports mandated by the Foreign Agents Registration Act (FARA). Our starting point is that it is costly for a politician to confidently determine whether fulfilling a special interest group (SIG)'s policy request is in her political or ideological interests (Hall and Wayman, 1990; Cotton, 2016). Given this, a lobbyist can provide a service where he vets a SIG's policy request, and then *only* offers his representation if fulfilling it would be sufficiently in the politician's interests. In other words, what the lobbyist sells to the SIG is his *certification* of the request's merits to the politician. For this certification service to be valuable, the politician must trust the lobbyist. However, the more the lobbyist is trusted by the politician, the more he can charge for his certification, especially to a client whose request does not actually merit it. For this reason, a lobbyist who is motivated only by profit cannot, ironically, make profits. On the other hand, if the lobbyist also considers the consequences of accepting or rejecting the SIG's request as an ally of the politician—possibly due to his personal or political ties with her or based on his own ideological beliefs—then his certification

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[1] Remarks by the President on the Economy in Osawatomie, Kansas, December 06, 2011 (http://www.whitehouse.gov/the-press-office/2011/12/06/remarks-president-economy-osawatomie-kansas.) (accessed June 21, 2019)

service can be profitable.[2] An important model implication is that a lobbyist aligned with a politician turns away some SIG's for the politician, which is the focus of our empirical analyses.

Our paper makes two main contributions. Theoretically, we provide a model of lobbying where lobbyists are independent intermediaries between politicians and SIGs, and the provision and value of lobbyists' intermediary services are endogenously determined. We explain the equilibrium mechanism through which lobbyists obtain access to politicians and sell it to interest groups. In doing so, we present new predictions on the relationship between (i) the extent to which a lobbyist is aligned with a politician, (ii) the lobbyist's representation of a SIG to that politician, and (iii) the lobbying fees and profits. The model allows lobbyists to establish their credibility with politicians without relying on repeated interactions. This feature is closely related to existing empirical results that emphasize the importance of lobbyists' ideologies, policy expertise, and connections to politicians in generating revenues (Eggers, 2010; Blanes i Vidal, Draca, and Fons-Rosen, 2012; Bertrand, Bombardini, and Trebbi, 2014).[3]

To our knowledge, we provide the first systematic empirical evidence on the allocation of politicians' access using a large database of contact records. Although studying access has been a central issue in the literature on lobbying (e.g., Langbein (1986); de Figueiredo and Richter (2014); Schnakenberg (2017)), the dearth of contact data has been an important empirical challenge, and existing studies have relied on interviews with lobbyists (Wright, 1990; Hojnacki and Kimball, 1998) to measure access. We address the challenge by building a lobbyist-politician level database on contacts from the FARA reports and augmenting it with information on lobbyists' career histories, party affiliations, and campaign contributions from various sources. A unique advantage of our dataset is that we study not only which lobbyist has access to which politician, but also the extent to which lobbyists with access utilize it. We document that greater ideological alignment between a lobbyist and a politician predicts that the pair will have contact during the period of study (2007–2010); but conditional on having any contact, the more ideologically aligned the pair is, the fewer

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[2]Koger and Victor (2009) show that lobbyists' donation patterns are highly ideological, and we also find similar patterns for the lobbyists in our data (Figure A2 in the Appendix). Fox and Rothenberg (2011) provide a model where donors give money only to politicians that share their policy preferences.

[3]See Martin and Peskowitz (2018) for similar work using campaign consultants.

contacts and the smaller the number of clients.

A Theory of Lobbying as Certification In our model, a SIG seeks a policy favor from a politician, and it can lobby the politician directly at a cost or pay a lobbyist for his representation if he is available. The favor's political merit to the politician is summarized by a state of the world, $\omega \in (0, \overline{\omega})$. In particular, it is in the politician's interests to grant the favor only if ω is greater than the politician's threshold (or the favor request is "worthy"). The lobbyist benefits from lobbying fees net of representation costs; he also cares about the consequences of the politician's granting the favor, depending on his ideology and connection with the politician as well as ω. The value of ω is known to both the SIG and the lobbyist, but not to the politician. She can learn the value by conducting her own costly investigation, but she can also make an inference based on the lobbying behaviors of the informed parties. Specifically, given the value of ω, the lobbyist offers the SIG an endogenously determined fee, and the SIG faces three options: to accept the fee and have the lobbyist represent it, to lobby the politician directly, or to do nothing. Upon observing whether there was any lobbying and, if so, by whom, the politician decides whether to grant the favor with or without her own investigation.

In equilibrium, the lobbyist will represent the SIG only if (1) his and the politician's preferences are aligned enough, and (2) the value of ω is greater than an endogenous threshold that takes into consideration both his policy preferences, and the profits to be made from representation. The higher is the lobbyist's representation threshold, the more frequently the politician grants the favor absent her own investigation of the lobbyist's client (i.e., she *trusts* him more). If the lobbyist is purely profit-motivated, then he has a low representation threshold and the politician does not trust him any more than a SIG who lobbies directly. However, if he is motivated by policy preferences that are more aligned with the politician and less aligned with the SIG, then he represents an unworthy SIG less often, charges higher prices, and makes greater expected monetary profits than a purely profit-motivated lobbyist. The model thus predicts, somewhat counterintuitively, that increased alignment in policy preferences between the lobbyist and the politician will lead the lobbyist to become more *selective* (i.e., less likely to represent a client).

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Empirical Evidence   We find that the model predictions of lobbyists' representation are supported by the observed contact patterns from our dataset of more than 5,000 lobbying contacts made to members of Congress and their staffers by 219 unique lobbyists on behalf of foreign governments during the 110th–111th Congresses. In bringing theory to data, we assume that the following three measures are negatively correlated with the extent to which the policy preferences of a lobbyist and a politician are aligned: differences in their party affiliations, CF scores based on campaign contributions (Bonica, 2016), and DW NOMINATE scores (for politicians- or staffers-turned-lobbyists), respectively. We find that the more aligned is a lobbyist-politician pair, the *more* likely that pair has at least one contact (or is active) during the period of study. Specifically, controlling for politician fixed effects, the lobbyist's government experience, and various observed attributes of the lobbyist's firm, we find that a one standard deviation decrease in the CF score difference between a lobbyist and a politician leads to an increase in the probability of the pair being active by 1.5 percentage points - which is larger than half of the fraction of active pairs among all possible pairs in the data (2.3%).

Focusing on active lobbyist-politician pairs only, we find that the more aligned is a pair, the *less* clients the lobbyist bring to the politician. Specifically, we find that a decrease in the CF score difference between a lobbyist and a politician is associated with a decrease in the number of clients for whom the lobbyist makes a phone call to or has a meeting with the politician or her staffer (conditioning on politician fixed effects and lobbying firm attributes). We also document that if a politician maintains an active relationship with two observationally similar lobbyists, except that one previously worked for Congress or the executive branch and the other did not, the former tends to represent fewer clients and to contact her less frequently. These novel findings run counter to the popular notion of lobbyists as "hired guns" who use their access while it lasts. Our theory, on the other hand, provides a coherent explanation why the "coveted" lobbyists—who have access to a politician, share similar political preferences, and enjoy a high market premium for their services—can be more restrained than other lobbyists.

Existing Literature   Although lobbyists often intermediate between interest groups and politicians (Milbrath, 1963; Leech, 2013), the majority of the existing literature does not provide a clear explanation for why lobbyists exist and what role they play in

the lobbying process. One explanation is that lobbyists simply facilitate the exchange of policy concessions for a SIG and campaign donations to a politician. This view, however, fails to explain why politicians and SIGs do not simply cut out lobbyists and deal directly with each other. Indeed, formal models capturing this *quid pro quo* behavior (Snyder, 1991; Grossman and Helpman, 1994) do not model a lobbyist as an independent player. More importantly, this view fails to account for the fact that vastly greater sums of money are spent on paying lobbyists and funding their activities, than on the "purchases" of policy favors (via campaign donations) that they supposedly mediate.

Theories that model lobbying as the transmission of policy-relevant information also typically ignore the lobbyist entirely—modeling only the interaction between a SIG and a politician (Hansen, 1991; Potters and van Winden, 1992; Austen-Smith, 1995; Cotton, 2012; Cotton and Dellis, 2016; Schnakenberg, 2017)—or treat him as a disinterested and anonymous repository for "burnt money" that increases the credibility of a SIG's "signal" (Lohmann, 1995; Gordon and Hafer, 2005).

Hall and Deadorff (2006) theorize that lobbyists "subsidize" an aligned politician by providing "policy information, political intelligence, and legislative labor" and hence reduce her costs of promoting the SIG's desired policies (see also Ellis and Groll (2018)). A well-known example of such a subsidy is that a lobbyist often helps draft legislation (Baumgartner et al., 2009). However, theories of lobbying as legislative subsidy take as given the very "trust" that our theory aims to explain. For example, what stops the lobbyist from inserting an obscure provision into the legislation to help his client at the politician's expense?

Finally, a small and emerging literature to which we contribute studies the role and incentives of lobbyists (Groll and Ellis, 2014, 2017; Ellis and Groll, 2019). A distinct feature of our paper is that we emphasize the personal characteristics of lobbyists—in particular, their preexisting policy preferences—and study how they relate to lobbyists' representational behavior, lobbying fees, and profits. With this approach, we rationalize both our new empirical findings, and existing empirical results showing that connections between politicians and lobbyists are associated with greater revenues, where connections are measured both by past employment relationships (Eggers, 2010; Blanes i Vidal, Draca, and Fons-Rosen, 2012) and/or campaign contributions (Bertrand, Bombardini, and Trebbi, 2014).

2 A Theory of Lobbying as Certification

2.1 The Model

There are three players: a politician P ("she"), a special interest group (SIG) S ("it"), and a lobbyist L ("he"). The SIG seeks a policy favor from the politician, whose final action A may be either to grant the favor ($A = G$) or not to ($A = NG$). In the game, the SIG will have the opportunity to either solicit the politician for the favor directly or transmit its request through the lobbyist on a fee-for-service basis.

Should the favor be granted, the SIG earns a fixed and commonly known benefit π. However, the exact payoff consequences of granting the policy favor for the politician and the lobbyist depend on a state of the world $\omega \in R$ that is initially unknown to the politician. She will, however, have the capacity to *investigate* at some cost and learn the state's true value, a property to which we later return.

Intuitively, ω captures the extent to which granting the favor to the SIG also benefits the politician. For example, the favor may be a subsidy, and a higher ω means that the SIG will use the subsidy more efficiently to produce economic output in the politician's district. Or, the favor may be an intervention with a regulator to prevent an environmental rule affecting the SIG's production, with ω capturing the number of district jobs that will be lost if the rule is implemented. The state may also reflect the *political* consequences of granting the favor; for example, the favor may be a public statement of support for the SIG, with ω capturing how favorably the politician's constituency will respond.

Preferences of the Politician The politician is assumed to care about "policy" outcomes (with the understanding that ω may also capture political consequences). Her utility $U_P(A; \omega)$ over actions and states takes the form,

$$U_P(A; \omega) = \begin{cases} \frac{\omega - P}{2} & \text{if grant,} \\ \frac{P - \omega}{2} & \text{if not grant.} \end{cases}$$

The higher the state is, the better off is the politician granting the favor, and (in an abuse of notation) P denotes her *threshold* for preferring to do so. We term a SIG whose case is above the politician's threshold ($\omega \geq P$) as *worthy*, and one whose case is below the politician's threshold ($\omega < P$) as *unworthy.*

The politician's net benefit for making the "correct" policy decision (that is, granting the favor to a worthy SIG and declining the favor to an unworthy one) is $|P - \omega|$. Thus, the further the state is from her threshold, the more she benefits from choosing correctly. Lower values of the threshold P imply that the politician is more *permissive* of the SIG – in the sense that ω does not need to be as high for her to be willing to grant the favor – while higher values of P imply that she is more *demanding*. As P increases, the politician becomes less inclined ex-ante to grant the favor to the SIG.

Preferences of the Lobbyist The lobbyist values profit, which consists of the payment he receives to lobby net of the cost of access, denoted by t. Crucially, however, he may also be *policy-motivated*, in the sense that he cares about the impact of his representation on the politician's policy choice; this portion of his utility is denoted $U_L(A; \omega)$, and takes the same form as $U_P(\cdot)$ except that he may have a different threshold $L \neq P$ for preferring the favor to be granted. The lobbyist's overall utility from both profit and policy is $\delta U_L(A; \omega) + t$, where $\delta \geq 0$ reflects the strength of his policy motivations. A lobbyist with $\delta = 0$ is purely profit-motivated.

We conceptualize a lobbyist's policy-motivations as arising from two potentially distinct sources. The first source is a *personal connection* to the politician, which leads the lobbyist to care (at least in part) that policy outcomes serve the politician's interests. A lobbyist whose policy motivations derive purely from a personal connection may be modeled as having an identical threshold as the politician ($L = P$), and the strength of his policy-motivations δ can be interpreted as the strength of his connection. The second source is a *political ideology*, which also leads the lobbyist to care about policy outcomes, but apply a potentially distinct threshold $L \neq P$ from the politician's for preferring that the favor be granted. Whether this threshold will be more demanding of the SIG ($L > P$) or more permissive ($L < P$) will depend on the relative alignment of his political ideology and the SIG's interests.

For theoretical exposition we discuss results for only these two polar interpretations of policy motivations. In reality, however, a policy-motivated lobbyist's preferences likely arise from a mixture of personal connections and political ideology, and we extend the model to consider this in the empirical analysis.

2.1.1 Sequence of Play

At the start of the game, nature chooses whether the lobbyist is "open for business"—that is, available to work with the SIG—with some exogenous probability $\lambda \in (0, 1)$. Nature next draws ω from a uniform distribution over $[0, \overline{\omega}]$ where $\overline{\omega} \geq 1$, and reveals it to the SIG and the lobbyist, but not the politician. The assumption that both the lobbyist and SIG are informed about the state is made to abstract away from all other aspects of the lobbyist's services—such as information provision to the SIG—other than "screening for hire." We further assume that the ex-ante *expected value* of the state, $\frac{\overline{\omega}}{2}$, is below the politician's threshold P for granting the favor, which implies that the politician will prefer to deny the favor based on her priors alone. The game then proceeds in two stages.

Representation Stage At the start of the representation stage, the lobbyist posts a fee $F \geq 0$ to lobby on behalf of the SIG. The posted fee represents a take-it-or-leave-it offer; if the SIG accepts it then the lobbyist is obligated to represent the SIG, and if the SIG declines then the lobbyist is obligated not to. If the contract is accepted, the lobbyist pays an exogenous *access cost* k to contact the politician. Should the SIG decline representation or if the lobbyist was closed for business, the SIG may lobby the politician directly (also at cost k), or do nothing. Note that the cost of access is assumed to be common between the SIG and the lobbyist, again to abstract away other aspects of the lobbyist's services than "screening for hire."

Decision Stage At the decision stage, the politician decides both whether to conduct her own investigation into the SIG's case and learn the true value of the state, and whether to grant the policy favor or not. At the time the politician makes both decisions she observes whether or not she was lobbied and by whom, but not the details of the representation contract offered and potentially accepted. The politician's cost of conducting her own investigation c_P is uniformly distributed over $[0, \overline{c}_P]$. This cost is revealed to P when she decides whether to investigate, but is unknown to the other players. Whether or not the politician conducts an investigation, she then makes a final decision $A \in \{G, NG\}$ over whether to grant the policy favor and the game ends.

2.2 Form of Equilibrium

Since the full strategy space is complex, we first describe the simplified form of equilibrium strategies that we consider.

Remark 1. *We restrict attention to strategies described by (1) a posture α_P^c and review threshold ϕ_P^c for each $c \in \{\ell, d, \emptyset\}$ for the politician, (2) a type-dependent willingness to pay for representation F^T with $T \in \{U, W\}$ and a direct-lobbying threshold $\underline{\omega}_d \in (0, \bar{\omega})$ for the SIG, and (3) a representation threshold $\underline{\omega}_\ell \in [0, \bar{\omega}]$ for the lobbyist.*

1. *The politician sees if she was contacted by the lobbyist ($c = \ell$), lobbied directly ($c = d$), or not lobbied at all ($c = \emptyset$). After observing this **channel of contact** c she investigates the SIG's case if $c_P \leq \phi_P^c$, and otherwise grants the favor outright with probability α_P^c.*

2. *The SIG accepts an offer of representation with price up to F^U if it is unworthy ($\omega < P$) and up to F^W if it is worthy ($\omega \geq P$). If it declines representation, it lobbies directly if and only if $\omega > \underline{\omega}_d$.*

3. *The lobbyist charges the SIG's (type-contingent) willingness to pay (which is accepted) if and only if $\omega > \underline{\omega}_\ell$, and some strictly higher price otherwise (which is rejected).*

The form of the strategies we consider is depicted in Figure 1. The x-axis depicts the state ω. The y-axis describes whether the politician is available (with probability λ) or busy (with probability $1 - \lambda$). For the purpose of visualization, the y-axis can be thought of as depicting the realization of a random variable uniformly distributed on $[0, 1]$ that determines whether the lobbyist is available (if it is below λ) or busy (if it is above λ). The area of the rectangle where a given sequence of events occurs thus visually depicts the probability of that event. We now proceed to describe each of its components in turn.

Politician   When called to play, the politician bases her decisions on her own realized costs of review c_P (intuitively, how busy she is at that moment), and on whether she observed lobbying mediated by the lobbyist, direct lobbying, or no lobbying at all. We refer to these as the three possible *channels of contact*, and denote them as

Figure 1: Form of Equilibrium Strategies
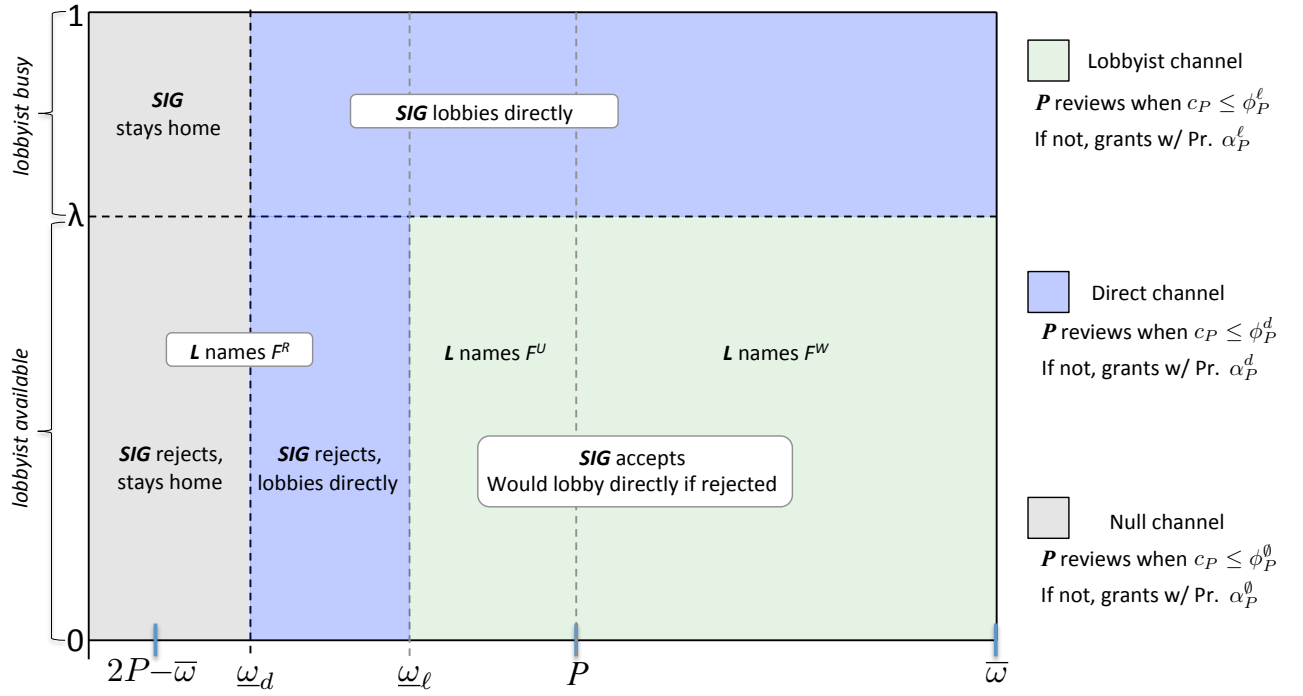
$c \in \{\ell, d, \emptyset\}$ respectively. (We sometimes call no lobbying the *null channel*.) For each potential channel of contact and realized cost of review c_P, the politician makes two decisions – first, whether to review to learn the true value ω, and second, whether to grant the policy favor (based on the true value of ω if she reviewed it, and on her inference from the contact channel if she did not).

In equilibrium, the probability that the politician grants the favor on each channel c *if* she does not review does not depend on c_P. We thus drop the dependence of this probability $\alpha_P^c \in [0, 1]$ on c_P and term it the politician's *posture* toward channel c. If $\alpha_P^c = 1$ (she will grant the favor absent a review) we call her posture *fully favorable* toward channel c. If $\alpha_P^c \in (0, 1)$ (she will sometimes grant the favor absent a review) we call it *somewhat favorable*. If $\alpha_P^c = 0$ (she will deny the favor absent a review), we call it *adversarial*. Intuitively, the politician's posture toward a channel reflects how likely she believes that a SIG who contacted her on that channel has a worthy request.

Next, the politician's initial review decisions on each channel c are described by a threshold ϕ_P^c; the politician reviews, learns the true value of ω, and decides

accordingly if and only if her realized costs c_P are below this threshold. From the perspective of the other players (who do not know how busy the politician is), the *probability* the politician will conduct her own review of a request on channel c is $\frac{\phi_P^c}{\bar{c}_P}$. The equilibrium value of these thresholds reflects the politician's *uncertainty* about whether her default posture is actually correct; the more uncertain she is, the greater is the benefit to actually learning the state.

SIG   When called to play, the SIG either finds the lobbyist available or too busy to take its case. If the lobbyist is available and names a price F, the SIG must decide whether to accept the offer; if it declines, it must also decide whether to instead lobby directly or not ("stay home"). Alternatively, if the SIG found the lobbyist initially unavailable, then it must only decide whether to lobby directly.

The politician's review and posture strategies (ϕ_P^c, α_P^c), combined with whether the SIG's case is worthy ($\omega \geq P$) or unworthy ($\omega < P$), jointly determine the probability that pursuing each channel will yield the favor, and hence each channel's value. The value of the lobbyist's representation is thus the *difference* between the value of the lobbyist channel, and the maximum value of the direct channel and null channel. Because the lobbyist makes a take-it-or-leave-it offer, equilibrium requires the SIG to accept any offer weakly below its value. For an unworthy SIG, we denote this value F^U – that is, an unworthy SIG will accept any offer up to this price – and for a worthy SIG we denote it F^W. Lastly, should the SIG find itself without representation (either because it rejected the lobbyist's offer, or because the lobbyist was too busy), it will lobby directly if and only if $\omega \geq \underline{\omega}_d$, and otherwise stay home.

Lobbyist   When called to play the lobbyist names a price F to represent the SIG as a function of the true state ω. Because the lobbyist makes a take-it-or-leave-it offer, the price he charges any SIG who is represented in equilibrium must exactly equal the SIG's maximum (type-dependent) willingness to pay (F^W, F^U). We further consider equilibria in which the set of SIGs represented by the lobbyist is described by a representation threshold $\underline{\omega}_\ell$. That is, when the SIG's case is above this representation threshold the lobbyist will charge its maximum willingness to pay (which is accepted), and when it is below this threshold the lobbyist will charge some strictly higher price that is rejected.

The representation threshold $\underline{\omega}_\ell$ captures the lobbyist's *selectivity* when deciding

whether to represent the SIG; a higher $\underline{\omega}_\ell$ implies a more selective lobbyist. The lobbyist's selectivity, in turn, determines his *credibility* with the politician. Specifically, it determines how strongly his representation signals that the client is worthy, which in turn both improves the politician's posture α_P^ℓ toward his client (how likely she is to grant the favor outright absent a review) and decreases the probability $\frac{\phi_P^l}{\bar{c}_P}$ the politician will subject the client to review. These quantities then determine how likely the lobbyist is to secure the favor for the client, and thus the value of his services, $\left(F^W, F^U\right)$.

Assumptions The strategy profiles we consider have three properties that are not without loss of generality. The first is that whether or not the SIG lobbies directly absent representation does not depend on exactly *how* it found itself without representation – that is, whether it found the lobbyist unavailable or the lobbyist named too high a price. This assumption eliminates equilibria in which lobbyist representation (or its absence) is artificially sustained by manipulating the SIG's off-path direct lobbying strategy. The second is that the SIG's direct lobbying strategy is described by a threshold $\underline{\omega}_d$ – the justification is that the SIG is assumed to have state-independent preferences for simplicity, but were it to place any weight on ω its strategy would indeed take this form. The third is that the lobbyist's representation strategy is also described by a threshold $\underline{\omega}_\ell$ – the justification is that this property holds in any equilibrium where the lobbyist's representation strictly increases the probability that a SIG who would otherwise lobby directly acquires the favor. Details for these claims and additional analysis are contained the Appendix.

2.3 Profit-Motivated Lobbyists

We first discuss equilibrium when the lobbyist is purely profit-motivated ($\delta = 0$).

Proposition 1. *With a purely profit-motivated lobbyist,*

- $\underline{\omega}_\ell = \underline{\omega}_d = 2P - \bar{\omega}$,

- $\phi_P^\emptyset = \alpha_P^\emptyset = 0$, $\phi_P^d = \phi_P^\ell = \frac{\bar{\omega} - P}{4}$ *and* $\alpha_P^\ell = \alpha_P^d = \left(\frac{k}{\pi}\right) \Big/ \left(1 - \frac{\bar{\omega} - P}{4\bar{c}_P}\right)$,

- $F^U = F^W = k$.

In equilibrium, the lobbyist and the SIG use identical thresholds, which are below the politician's own threshold P to grant the favor, to decide whether to contact the politician. The absence of lobbying is thus a perfect signal that the favor should be rejected, and the politician neither reviews nor grants it. When lobbied, the politician's review behavior and posture are identical regardless of *how* she is lobbied, so there is no value to the lobbyist's representation. Thus, when the lobbyist represents a client in equilibrium, he only charges the cost of lobbying k and makes no profit. Two key properties of the model drive this equilibrium.

The first is that a version of the game *without* the lobbyist is a standard costly signaling game. Thus, direct lobbying can communicate information even without the lobbyist's help, but it cannot be *too* effective at securing the favor. Equilibrium specifically requires that an unworthy SIG ($\omega < P$) be *indifferent* between lobbying directly and staying home, which allows such types to partially separate. This is accomplished by having an unrepresented SIG lobby directly if and only if $\underline{\omega}_d \geq 2P - \bar{\omega}$. Such behavior yields a value of review after direct lobbying equal to $\frac{\bar{\omega} - P}{4}$, which reflects the politician's benefit of discovering the SIG is actually unworthy. It also makes the politician *indifferent* between granting and denying the favor absent review, which allows her to adjust her posture α_P^d to be just favorable enough to make an unworthy SIG indifferent between lobbying directly and staying home.

The second is that the lobbyist cannot lobby more selectively on behalf of the SIG than the SIG lobbies on its own behalf. If he did, then an unworthy SIG would be strictly more likely to receive the favor via the lobbyist, and the lobbyist would generate strictly positive profits representing unworthy clients. But if this were so, then the lobbyist—being purely profit motivated—would be unable to resist the temptation to *always* represent the client regardless of how unworthy it is, and his ability to be selective would collapse. Equilibrium thus requires that he make *no profit* representing unworthy clients, which further implies that he cannot lobby more selectively than the SIG, he is no more likely to secure the favor for the SIG than the SIG is on its own, and he cannot charge above cost for his services.

2.4 Policy-Motivated Lobbyists

We next present equilibrium when the lobbyist is policy-motivated ($\delta > 0$).

Proposition 2. *Suppose $\delta > 0$. If $L \notin \left[2P - \bar{\omega}, \bar{\omega} + \frac{\pi}{\delta}\right]$, the lobbyist never represents the SIG. Otherwise, $\underline{\omega}_\ell = \max\left\{L - \frac{\pi}{\delta}, 2P - \bar{\omega}\right\}$. Remaining strategies are as follows.*

1. $\underline{\omega}_d = P - \sqrt{(1 - \lambda)(\bar{\omega} - P)^2 + \lambda(P - \underline{\omega}_\ell)^2}$, which is $\in [2P - \bar{\omega}, P)$.

2. $\phi_P^\emptyset = 0$, $\phi_P^\ell = \frac{(\max\{P - \underline{\omega}_\ell, 0\})^2}{2(\bar{\omega} - \underline{\omega}_\ell)}$ and $\phi_P^d = \frac{\lambda(\max\{\underline{\omega}_\ell - P\}, 0)^2 + (1 - \lambda)(\bar{\omega} - P)^2}{2(\lambda(\underline{\omega}_\ell - \underline{\omega}_d) + (1 - \lambda)(\bar{\omega} - \underline{\omega}_d))}$.

3. $\alpha_P^\emptyset = 0$, $\alpha_P^\ell = \min\left\{\frac{k}{\delta \max\left\{(2P - \bar{\omega}) - \left(L - \frac{\pi}{\delta}\right), 0\right\}} \middle/ \left(1 - \frac{\phi_P^\ell}{\bar{c}_P}\right), 1\right\}$, and $\alpha_P^d = \left(\frac{k}{\pi}\right) \middle/ \left(1 - \frac{\phi_P^d}{\bar{c}_P}\right)$.

4. $F_U = \alpha_P^\ell \left(1 - \frac{\phi_P^\ell}{\bar{c}_P}\right) \pi$ and $F_W = \alpha_P^\ell \left(1 - \frac{\phi_P^d}{\bar{c}_P}\right) \pi$.

2.4.1 Representation Decisions

Our empirical analysis focuses on which lobbyists contact which politicians, and how frequently they do so. We therefore devote considerable attention to discussing both the "extensive margin" and "intensive margin" of representation. "Extensive margin" refers to whether a lobbyist operates effectively as an intermediary by *sometimes* offering representation, rather than exiting the relationship. When this is the case, we say that the lobbyist is *active*. The extensive margin provides insight into which pairs of lobbyists and politicians should be expected to communicate. "Intensive margin" refers to the likelihood of representation conditional on the lobbyist being active. The intensive margin provides insight into how often the lobbyist will communicate with a particular politician when they have an active relationship.

The "Extensive Margin" Proposition 2 provides a simple prediction about the extensive margin – the lobbyist will be active if and only if $L \in \left[2P - \bar{\omega}, \bar{\omega} + \frac{\pi}{\delta}\right]$.

An immediate implication is that a connected lobbyist ($L = P$, $\delta > 0$) is always active.[4] In contrast, for an ideological lobbyist ($L \neq P$, $\delta > 0$) to be active requires that his ideology be sufficiently aligned with the politician. If he is too ideologically opposed to the SIG relative to the politician ($L > \bar{\omega} + \frac{\pi}{\delta} > P$), then he is unwilling to help the SIG on ideological grounds even if he can extract the favor's full value and the SIG's case is very favorable. If he is too aligned with the SIG on ideological grounds relative to the politician ($L < 2P - \bar{\omega} < P$), his recommendations are insufficiently credible to carry any weight.

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[4]Note, however, that this result partially depends on the assumption that the lobbyist and SIG have equal access costs. When the lobbyist has a cost advantage, his temptation to profit from it may cause the lobbying relationship to break down if he is insufficiently connected.

The "Intensive Margin" The intensive margin is determined by the threshold $\underline{\omega}_\ell$ that the lobbyist uses for representation when he is active – the higher is $\underline{\omega}_\ell$, the more selective is the lobbyist, and the lower is the probability that he will represent the SIG to the politician.

The lobbyist's calculus when deciding whether to represent the SIG is potentially complex – it depends on the SIG's case ω, the influence of his recommendation with the politician, the politician's treatment of a SIG that lobbies directly, and what the SIG will do absent representation. Despite this complexity, in equilibrium an active lobbyist's representation threshold is just equal to $\underline{\omega}_\ell = \max\left\{L - \frac{\pi}{\delta}, 2P - \bar{\omega}\right\}$. The reason is as follows. In equilibrium, the lobbyist's impact on the likelihood that the SIG receives the favor has a proportional effect on both the *price* he can charge and the *policy benefits* (or costs) he experiences.[5] Thus, to the lobbyist it is *as if* his representation is *pivotal* for whether the SIG secures the favor. He thus calculates the profit from representation as π (the full value of the favor) and the net policy benefit as $\delta(\omega - L)$, his utility change when the politician goes from denying to granting the favor. He will therefore offer an acceptable contract to the SIG if and only if $\pi + \delta(\omega - L) \geq 0$, which yields the indifference point $L - \frac{\pi}{\delta}$. Equilibrium further requires that $\underline{\omega}_\ell \geq 2P - \omega$; otherwise, the politician will have an adversarial posture towards the lobbyist's client, and it will never secure the favor if it is unworthy. Thus, if the lobbyist is active ($L \geq 2P - \bar{\omega}$) but $L - \frac{\pi}{\delta} < 2P - \bar{\omega}$, he must use the representation threshold $\underline{\omega}_\ell = 2P - \omega$, and the politician's posture α_P^ℓ toward the client must become less favorable to maintain the lobbyist's willingness to turn away some unworthy clients.

Figures 2(a) and 2(b) depict the lobbyist's representation threshold (or *selectivity*), $\underline{\omega}_\ell$. The left panel depicts a connected lobbyist ($L = P$) and varies the strength of his policy-motivations δ, which is equivalently interpreted as the strength of his connection. The right panel depicts an ideological lobbyist ($L \neq P$) and varies his ideological threshold L. The equilibrium exhibits several interesting patterns.

First, greater policy motivations (higher δ) make the lobbyist more selective, regardless of the source of those motivations. The model thus predicts somewhat counterintuitively that a stronger connection between a lobbyist and a politician will lead

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[5]This simplification depends on the fact that the lobbyist and SIG have identical costs of access. Absent this assumption, the basic construction would remain the same, but the derivation of equilibrium quantities would be more complex.

Figure 2: Lobbyist's Selectivity ($\underline{\omega}_\ell$) as a Function of (δ, L)

(a) Connected Lobbyist ($L = P$)

(b) Ideological Lobbyist ($\delta > 0$)
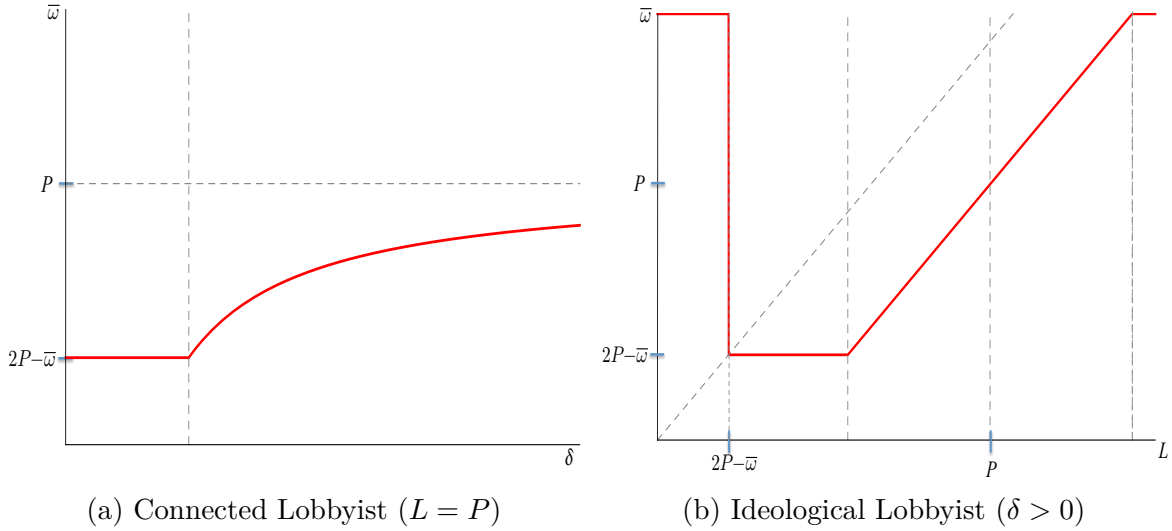
him to bring *fewer* clients. It similarly predicts that a more ideologically-motivated lobbyist will bring fewer clients. The logic is as follows. Because the lobbyist profits from representation, the *marginal* client (that is, the one with a case exactly at $\underline{\omega}_\ell$) is one whom the lobbyist finds distasteful on policy grounds, but who provides just enough money for the lobbyist to be willing to represent it. Making the lobbyist weigh policy more (regardless of his particular threshold) thus induces him to reject this distasteful client and be more selective.

Second, an ideological lobbyist becomes more selective as he becomes more ideologically opposed to the SIG (higher L). Without additional assumptions, the model does not generate a straightforward prediction about whether lobbyists who are more ideologically distant from the *politician* will be more or less selective; the answer depends on whether the ideological distance is due to the lobbyist being more predisposed toward the SIG, or less. However, to the extent that ω captures the consequences of granting the favor *to the politician*, it may be supposed that lobbyists who are less ideologically aligned with the politician in a left-right sense will be less concerned about these consequences, and therefore less selective ceteris paribus. We return to this assumption in the empirical analysis.

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Figure 3: Partial equilibrium effect of $\underline{\omega}_\ell$ on $\underline{\omega}_d$
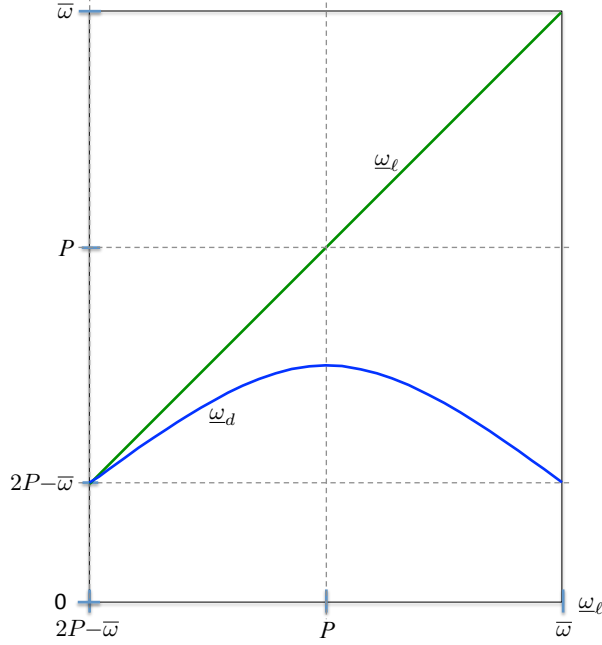
2.4.2 Direct Lobbying Behavior

In the model, the lobbyist's representation behavior $\underline{\omega}_\ell$ also influences the direct lobbying threshold $\underline{\omega}_d$ that an unrepresented SIG uses. The reason is as follows. As in the profit-motivated case, equilibrium requires that an unrepresented SIG partially separate between lobbying directly and staying home, which then implies that it must use a threshold $\underline{\omega}_d$ that makes the politician *indifferent* between granting and denying the favor to a SIG who lobbies directly. But the lobbyist's representation behavior directly determines how strongly the *lack* of lobbyist representation signals that the SIG is unworthy, which in turn determines how selective an unrepresented SIG must be when lobbying directly to credibly signal that it is worthy (In Figure 1 unrepresented SIGs are the union of the gray and blue regions.)

To build intuition for how the remaining equilibrium quantities are determined, Figure 3 depicts the *partial equilibrium* effect of the lobbyist's threshold $\underline{\omega}_\ell$ on the SIG direct lobbying decision (the lobbyist's traits (L, δ) then determine $\underline{\omega}_d$ through their influence on $\underline{\omega}_\ell$). Three features are noteworthy. First, the SIG's direct lobbying threshold is always strictly less than the politician's threshold P – thus, all unrepresented worthy SIGs lobby directly, alongside some unworthy unrepresented

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SIGs as well. Second, the SIG's direct lobbying threshold is $\underline{\omega}_d$ *also* strictly less than the lobbyist's representation threshold $\underline{\omega}_\ell$ unless the lobbyist is representing the maximal set of clients consistent with an active relationship ($\underline{\omega}_\ell = 2P - \bar{\omega}$). Thus, from the lobbyist's perspective, the *marginal* client is always one who would pursue direct lobbying absent his representation, which constrains the price that he is able to charge. Finally, the more *accurately* the lobbyist's representation reflects the politician's threshold (i.e., the closer is $\underline{\omega}_\ell$ to P) the more selective is the SIG in deciding to lobby directly (higher $\underline{\omega}_d$). Thus, a lobbyist who screens inaccurately *either* by accepting many unworthy SIGs *or* by rejecting many worthy SIGs induces an unrepresented SIG to lobby directly more.

2.4.3 Prices

By determining both the lobbyist's representation threshold $\underline{\omega}_\ell$ and the direct lobbying threshold $\underline{\omega}_d$, the lobbyist's characteristics (L, δ) determine the politician's treatment (α_P^c, ϕ_P^c) of a SIG that contacts him on each channel $c \in \{\ell, d, \emptyset\}$ and by implication the prices $\left(F^U, F^W\right)$ charged to each type of represented SIG. We discuss these predictions to illustrate the implications of our theory for the profit-earning potential of a lobbyist as gatekeeper.

Figures 4(a) and 4(b) depict the price that an unworthy (worthy) SIG pays with the red (green) line when the lobbyist is ideological. The left panel considers a lobbyist who is more ideologically opposed to the SIG than the politician ($L > P$), and varies the strength of his policy-motivations δ; the right panel varies the lobbyist's ideological threshold L.

Price for an Unworthy SIG The price that a represented unworthy SIG pays is $F^U = \alpha_P^\ell \left(1 - \frac{\phi_P^\ell}{\bar{c}_P}\right) \pi$. This is just the probability $\alpha_P^\ell \left(1 - \frac{\phi_P^\ell}{\bar{c}_P}\right)$ that an unworthy SIG secures the favor via the lobbyist—since it will only do so when the politician fails to review and still grants the favor—times the favor's value. Although the marginal unworthy SIG will lobby directly rather than stay home if it declines representation, its willingness to pay for representation nevertheless omits the value of direct lobbying because the *equilibrium* value of doing so is 0. Thus, it is *as if* an unworthy SIG has no alternative to hiring the lobbyist.

The price that an unworthy SIG pays thus obeys identical comparative statics in (δ, L) as the probability that an unworthy SIG secures the favor via the lobbyist.

Figure 4: Prices as a Function of (δ, L)

(a) Prices as a Function of δ $(L > P)$ (b) Prices as a Function of L $(\delta > 0)$
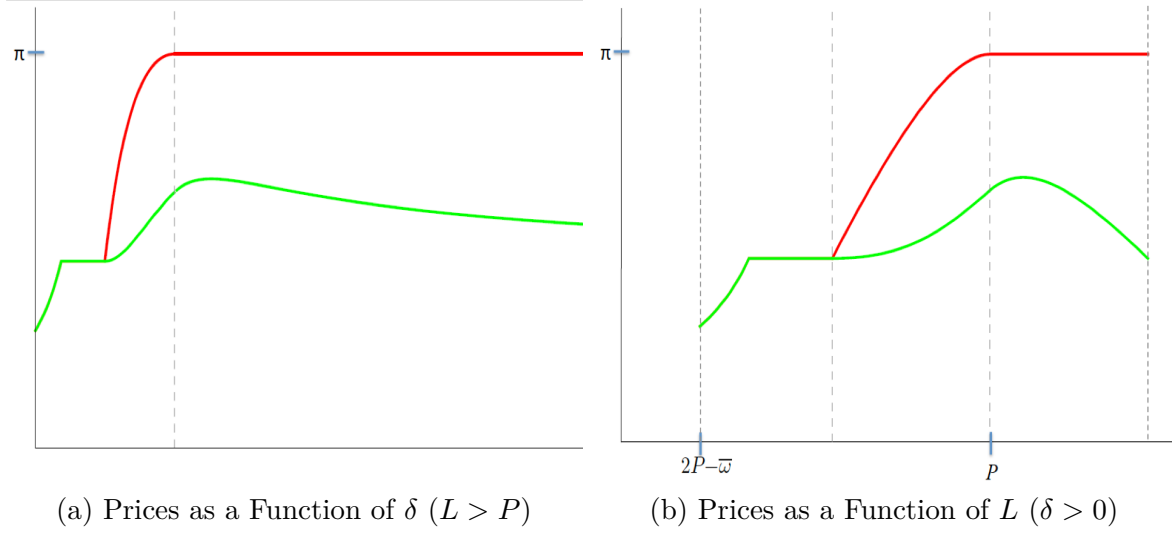
This probability, in turn, is strictly increasing in δ and L unless $\underline{\omega}_\ell = L - \frac{\pi}{\delta} > P$, in which case it is constant and equal to the full value of the favor π. The reason is that increasing *either* δ or L makes the lobbyist wish to be more selective, which in turn induces the politician to treat his client more favorably. This can happen in two possible ways. First, if the lobbyist is active $(L > 2P - \bar\omega)$ but $L - \frac{\pi}{\delta} < 2P - \bar\omega$, then he represents the maximum set of clients consistent with an active relationship $(\underline{\omega}_\ell = 2P - \bar\omega)$. In this case, increasing $L - \frac{\pi}{\delta}$ does not change the lobbyist's threshold $\underline{\omega}_\ell$ or the politician's review behavior ϕ_P^ℓ, but allows the politician to improve her posture α_P^ℓ towards the lobbyist's client without eliminating the lobbyist's ability to screen. Second, if the lobbyist is already sufficiently selective to turn away a client at $2P - \bar\omega$ (so $L - \frac{\pi}{\delta} = \underline{\omega}_\ell > 2P - \bar\omega$), then the politician holds a fully favorable posture $\left(\alpha_P^\ell = 1\right)$. Further increases in $L - \frac{\pi}{\delta}$ then make the lobbyist even more selective, which enhances how much representation signals worthiness, reduces the politician's review threshold ϕ_P^ℓ, and increases the probability an unworthy SIG will secure the favor because it escapes a review by the politician.

Price for a Worthy SIG The price that a represented worthy SIG pays is $F^W = \alpha_P^\ell \left(1 - \frac{\phi_P^d}{\bar{c}_P}\right) \pi$. This is subtly different than the price that an unworthy SIG pays because it is decreasing in the probability $\frac{\phi_P^d}{\bar{c}_P}$ the politician reviews a SIG who lobbies

directly, rather than the probability $\frac{\phi_P^\ell}{\bar{c}_P}$ she reviews a SIG represented by the lobbyist. The reason is that a review by the politician is *advantageous* for a worthy SIG, who in the course of a review would be discovered to be worthy and acquire the favor. A higher probability $\frac{\phi_P^d}{\bar{c}_P}$ that the politician reviews a SIG who lobbies directly thus *increases* the value of a worthy SIG's "outside option," which in turn *decreases* its willingness to pay the lobbyist for representation. (Recall that an unworthy SIG, in contrast, is indifferent in equilibrium between lobbying directly and staying home).

The price obeys the following comparative statics. First, when the lobbyist is active but representing the maximal set of clients ($L \geq 2P - \bar{\omega}$ but $L - \frac{\delta}{\pi} < 2P - \bar{\omega}$; so $\underline{\omega}_\ell = 2P - \bar{\omega}$), he charges *identical* prices to worthy and unworthy clients. Because a worthy client acquires the favor in a review, he is more likely to secure the favor through either method of lobbying; but since the politician is equally likely to review after direct and lobbyist contact, this does not affect the lobbyist's value-added. The price thus obeys the previously-described comparative statics; increasing in δ and L.

When the lobbyist is active but sufficiently selective to turn away a client at $2P - \bar{\omega}$ ($L - \frac{\pi}{\delta} = \underline{\omega}_\ell > 2P - \bar{\omega}$), then he charges a strictly *lower* price to a worthy client than an unworthy one. The reason is that a worthy SIG has a relatively greater advantage when lobbying directly, since SIGs that lobby directly are reviewed more often than those who use the lobbyist. In this region, comparative statics in (δ, L) are straightforward if the lobbyist is connected ($L = P$) or ideological and biased toward the SIG ($L \in [2P - \bar{\omega}, P)$). In these cases, a lobbyist with greater policy motivations (higher δ) or bias against the SIG (higher L) screens more accurately ($\underline{\omega}_\ell$ closer to P), which makes the absence of his representation a stronger signal that the SIG is unworthy. This in turn reduces the politician's willingness to investigate a SIG who lobbies directly, thereby reducing the value of a worthy SIG's "outside option," and allowing the lobbyist to charge more. However, effects are more complex when the lobbyist is ideological and biased against the SIG ($L > P$), as depicted in Figure 4(a). In this case, higher δ or L first increases the price the lobbyist charges, and then decreases it. The reason is that eventually, the lobbyist becomes *too* selective and starts to discard SIGs that the politician would deem worthy. This makes the absence of the lobbyist's representation a weaker signal that the SIG is unworthy, which in turn increases the politician's willingness to review a SIG who lobbies directly, makes direct lobbying more effective for a worthy SIG, and reduces what the lobbyist can charge.

2.4.4 Profits

We last examine the lobbyist's expected profits from his relationship with the politician, which are equal to

$$\left(\frac{P - \min\{\underline{\omega}_\ell, P\}}{\bar{\omega}}\right)\left(F^U - k\right) + \left(\frac{\bar{\omega} - \max\{\underline{\omega}_\ell, P\}}{\bar{\omega}}\right)\left(F^W - k\right).$$

We first make an exceedingly simple observation – an active policy-motivated lobbyist ($\delta > 0$, $L \in \left(2P - \bar{\omega}, \bar{\omega} + \frac{\pi}{\delta}\right)$) *always* charges strictly higher prices and makes strictly higher profits, than a purely profit-motivated lobbyist ($\delta = 0$). His policy motivations partially protect him from the temptation to take all unworthy clients, which induces favorable treatment from the politician and increases the prices that he can charge. Also, observe that the prices charged to *both* types of clients unambiguously increase in L and δ when the lobbyist is connected ($L = P$) or ideological and biased toward the SIG ($L \in [2P - \bar{\omega}, P)$). Thus, a connected lobbyist makes strictly more than a profit-motivated one, and also charges higher prices the stronger his connection is. This finding rationalizes existing results in the empirical literature that uncover a financial benefit to connections within an informational framework in which a connection leads to better screening that optimally induces favorable treatment by the politician.

To examine the joint effect of δ and L on expected profits, Figure 5 depicts a contour plot of the expected profits of a policy-motivated lobbyist, with L on the x-axis and δ on the y-axis; the darkness of the shading indicates the level of profits.[6] The thick dark line depicts the boundary of the region within which the lobbyist is active; recall that an active lobbyist always makes strictly more than a profit-motivated one (who makes 0). Outside of this region the lobbyist exits and does not communicate on the SIG's behalf. Further recall that the lobbyist becomes more selective (higher $\underline{\omega}_\ell$) as he becomes more demanding (higher L) or more policy motivated (higher δ). The figure exhibits several patterns.

First, a more demanding ideology helps, and then harms, profits. Initially, a more demanding ideology allows the lobbyist to have sufficient credibility to enter the market. Beyond this, a more demanding ideology raises profits by increasing the lobbyist's selectivity and the credibility of the lobbyist's recommendations – but only

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[6]For the depicted parameters, the lobbyist's profits are single-peaked in $\underline{\omega}_\ell$. This requires that the lobbyist's availability λ is not too high, so that his behavior does not impact the "direct market" too much. Otherwise, the profit function may be ill-behaved.

Figure 5: Profits as Functions of (L, δ)
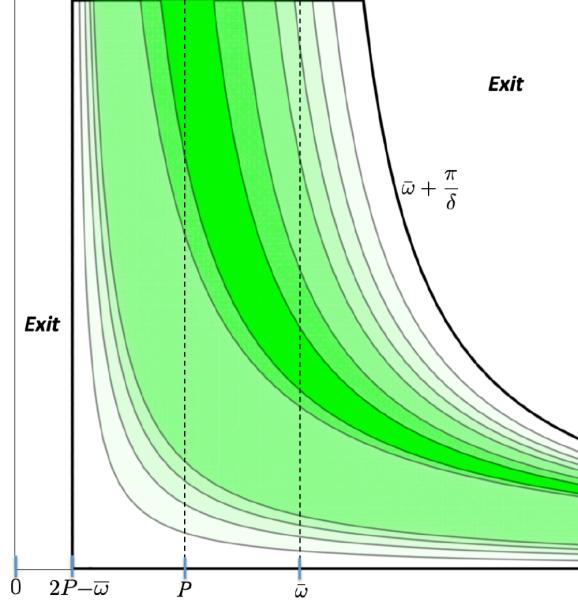
to a point. Beyond that point, the lobbyist's ideology becomes too demanding and causes him to trade insufficiently on his credibility. The ideological threshold that maximizes the lobbyist's profits may be both more demanding than the *politician* if the lobbyist is not too ideologically motivated (low δ), or less demanding if he is very ideologically motivated (high δ). Second, greater policy motivations δ may both increase or decrease the lobbyist's profits. If he is active in the market but relatively permissive (low L but $> 2P - \bar{\omega}$), then greater policy motivations will unambiguously improve his credibility and profits. However, if he is more ideologically demanding (higher L), then greater policy motivations increase his credibility and his prices, but cause him to turn away too many clients to maximize his profits.

3 Data

3.1 Institutional Background and Scope of Study

The Foreign Agents Registration Act (FARA) mandates that lobbyists who represent foreign interests, defined as "foreign agents," to be registered and to submit semiannual lobbying disclosure reports. The Justice Department has made FARA re-

ports public as online image files, and ProPublica and the Sunlight Foundation have transcribed some of the lobbying reports into text files. We transcribed additional lobbying reports to expand the period of study.[7] In doing so, we manually extracted all contact records from the image files of the FARA reports, and for each contact, we identified the contacted individuals and the lobbying issues based on the written description by the contact.

The reports under FARA list detailed information on lobbying contacts. Each contact record specifies (i) the name of the contacted individual, (ii) the method by which the individual was contacted (phone call, email, in-person meeting, etc.), and (iii) the issues discussed with the contact (see Figure A1 in the Appendix for an example of a lobbying report). This feature contrasts with the reporting requirements by the Lobbying Disclosure Act (LDA), a counterpart statute for domestic lobbying. The LDA requires that lobbyists disclose the names of the government bodies they contact, but it does not require them to specify any further details about their contacts.

We focus on lobbying firms' activities regarding legislative issues during 2007 through 2010, covering two Congresses (the 110th and the 111th Congresses), on behalf of their foreign government clients.[8] We focus on contacts via phone call or in-person meeting with a member of Congress or his/her staffer. We analyze all lobbying reports that include at least one such contact. Following these criteria, there are 429 reports of lobbying activities submitted by 93 lobbying firms on behalf of 70 foreign governments in the data. Frequent lobbying issues, as retrieved from the descriptions on each lobbying contact in the reports, included security or military-related issues, such as US military deployments and arms sales; trade issues, especially regarding a variety of tariff and trade pacts; and foreign aid.

Although we focus on foreign lobbying, the conclusions of our study could have general implications for the US lobbying industry. First, out of 93 unique lobbying

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[7]The lobbying reports can be found at `http://www.fara.gov`; the FARA data project by ProPublica and the Sunlight Foundation is currently discontinued. Initially, they transcribed the foreign lobbying reports from August 2007 through December 2010. We complemented their dataset by adding all reports submitted between January 2007 through July 2007 and some missing reports in the ProPublica-Sunlight Foundation dataset. We identified these missing reports by comparing them with the FARA website reports.

[8]After Congress passed the LDA in 1995, foreign businesses with subsidiaries in the US have been allowed to report their lobbying activities via the LDA, instead of through FARA. As a result, most of the foreign entities that submitted reports under FARA since 1995 are foreign governments.

firms that represented foreign governments in our data, a large fraction of them (61 firms) represented domestic clients in addition to their foreign clients (Table A1 in the Appendix). Second, out of the top 27 domestic lobbying firms that earned at least $10 million per year during the period in question, 12 had foreign government clients.

3.2 Lobbyists in Our Data

From the 429 reports in our data, we have identified 219 unique lobbyists who appeared in the records of the 5,520 contacts.[9] For each lobbyist, we collect information regarding his/her career history, ideology, lobbying firm, and lobbying contacts.[10] First, from Washington Representatives, a division of Columbia Books and Information Services, and our own internet search, we gather information on the government experience of each lobbyist as a member of Congress, a congressional staffer, or a bureaucrat in the executive branch. Second, we put together three measures of ideology for each lobbyist: (1) party affiliation information from the Washington Representatives dataset and our own internet search; (2) the CF scores based on the campaign contributions during the election cycles of 2006 and 2008 from the DIME database (Bonica, 2016); and (3) the DW-NOMINATE scores for politicians-turned-lobbyists and staffers-turned-lobbyists.[11] Third, we extract lobbying firm information from the FARA reports.

Table 1 presents the summary statistics. Among the 181 lobbyists whose party affiliation was identified, 48% are Democrats. We find that the three measures of

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[9]In total, we retrieved 11,573 contacts made to members of Congress and their staffers from the 429 reports. Among these contacts, we identified the name of the lobbyist for 3,806 contact records directly from the records, and imputed the lobbyist names for 1,714 contact records whose lobbying firm employed a single registered lobbyist. We argue that there might not be a systematic difference between the contacts for which we were or were not able to identify their associated lobbyists. Based on the data, we find that the decision whether to provide the name of lobbyists for each contact tends to be at the firm level rather than at the contact level. Some firms always provide such information, while others consistently do not. Given that, we show in Table A2 in the Appendix that the firms that voluntarily provided the lobbyist-level contact information are similar to those that did not in terms of the firms' sizes and revenue levels, the composition of their lobbyists with various amounts of government experience, and the distribution of the political party of the contacted politicians.

[10]We define a lobbyist's identity by the last name, the first name, and the lobbying firm. Therefore, a lobbyist switching firms during the period of study is counted twice or more, and there are 14 such lobbyists in our data.

[11]For staffers-turned-lobbyists, we record the average DW-NOMINATE score of the lobbyists' ex-employers in Congress; for politicians-turned-lobbyists, we use the DW-NOMINATE score in their last term as a member of Congress.

Table 1: Lobbyists in the Data

	Obs.	Mean	SD.	Min.	Max.
Ideology					
Democrat	181	.48	.50	0	1
CF Score (DIME)	148	-.04	.76	-1.22	1.10
DW-NOMINATE Score	116	0.04	0.41	-0.59	0.84
Career History					
Member of Congress	219	.11	.31	0	1
Congressional Staffer	219	.43	.49	0	1
White House	219	.23	.42	0	1
Lobbying Contacts					
Number of Contacts	219	25.20	56.58	1	376
Number of Direct Contacts to Members	219	8.05	24.84	0	229
Number of Members with a Contact	219	12.80	24.28	1	201
Number of Members with a Direct Contact	219	5.95	19.49	0	166
Average Number of Clients with a Contact (per year)	219	1.18	0.45	1	4
Average Number of Clients with a Direct Contact (per year)	219	0.54	0.54	0	2
Lobbying Firm					
Year of FARA Registration	219	1967.7	12.63	1943	1995
Number of FARA Lobbyists	219	11.96	8.39	1	46

lobbyists' ideology are consistent with each other (Figure A2 in the Appendix), and this is notable because the CF scores are based on campaign contributions. A large fraction (68%) of the foreign agents in our data have government experience. On average, the lobbyists made 25.20 contacts to members and their staffers during the period of study, among which 8.05 contacts were made directly to members. The lobbyists maintained contacts to, on average, 12.80 distinct congressional offices, and 5.95 distinct members.

4 Empirical Findings

Our theory makes predictions on the conditions under which a lobbyist-politician pair has an active relationship (the extensive margin), the criteria for a lobbyist with an active relationship to a politician to represent a special interest group (the intensive margin), politicians' decisions to grant a favor, and lobbying fees and profits. In this section, we study whether the first two sets of theoretical predictions are consistent with contact patterns observed in our unique dataset.

4.1 Bridging Theory and Data

Connecting our model to the data presents several challenges that fall into two broad categories: (i) extracting testable theoretical predictions, and (ii) translating these predictions into empirical analogs. We discuss our treatment of each of these challenges in turn.

4.1.1 Extracting Theoretical Predictions

Extracting testable theoretical predictions presents two specific challenges.

First, real-world lobbyists likely have a mixture of personal connections and ideological preferences, whereas our baseline formulation of the theory only accommodates one or the other for expositional clarity. To address this, we augment the theory by supposing that a lobbyist's utility from the net sum of all costs and transfers t is equal to $\delta_C U_P(A; \omega) + \delta_I U_L(A; \omega) + t$. In this extended formulation, the lobbyist has both "connection preferences," $U_P(A; \omega)$, with weight $\delta_C \geq 0$ in which he cares about outcomes in the same manner as the politician; and "ideological preferences," $U_L(A; \omega)$ with weight $\delta_I \geq 0$ in which he cares about outcomes with his own ideal threshold L. Our results from the baseline model can be applied to this mixed model by observing that it is *as if* such a lobbyist places a total weight $\delta = \delta_C + \delta_I$ on policy outcomes, and has a single ideological threshold

$$\tilde{L} = \left(\frac{\delta_I}{\delta_I + \delta_C} \right) L + \left(\frac{\delta_C}{\delta_I + \delta_C} \right) P$$

that is a weighted average of his "true" ideological threshold L and the politician's threshold P.

Second, in the theoretical model, a lobbyist's ideology may diverge from a politician's both because she is more permissive toward the SIG ($L \leq P$) or more demanding ($L > P$). However, these distinct possibilities cannot be separately identified from the ideology measures of politicians and lobbyists only. To address this issue we simply assume outright that only the former prevails in our data. Our rationale is twofold. First, it conforms with the conventional wisdom. Second, this case generates novel predictions consistent with our model—screening increases with alignment—but inconsistent with popular notion of lobbyists as hired guns cashing in on political connections.

Applying the mixed preference formulation and assuming that $L \leq P$ yields four theoretical predictions that may be written in terms of the *difference* between the politician and lobbyist's ideological preferences, $P - L$.

Corollary 1. *The lobbyist-politician pair is active only when*

$$\left(\frac{\delta_I}{\delta_I + \delta_C} \right) (P - L) < \bar{\omega} - P$$

When active, the probability the lobbyist represents the SIG is $\frac{(P - \omega_\ell) + (\bar{\omega} - P)}{\bar{\omega}}$, where

$$P - \underline{\omega_\ell} = \min \left\{ \left(\frac{\delta_I}{\delta_I + \delta_C} \right) (P - L) + \frac{\pi}{\delta}, \bar{\omega} - P \right\}.$$

These jointly yield the following four theoretical predictions.

(T1) The lobbyist maintains an active relationship with the politician if his ideological preferences are sufficiently aligned with the politician ($P - L$ sufficiently small).

(T2) Conditional on an active relationship, the probability the lobbyist represents the SIG is nondecreasing in the ideological difference (larger $P - L$).

(T3) Conditional on an active relationship, the probability the lobbyist represents the SIG is nonincreasing in the lobbyist's connection to the politician (higher δ_C)

(T4) Conditional on an active relationship, the ideological difference $P - L$ has a smaller effect on the lobbyist's representation behavior when he has a stronger connection to the politician (higher δ_C).

4.1.2   Generating Empirical Hypotheses

Extracting empirical analogues for our theoretical predictions also presents two particular challenges. First, our theory generates predictions for a particular lobbyist-politician pair with respect to a *single* client. However, to test the theory we must connect these predictions to an empirical model that generates analogous predictions for a lobbyist-politician pair with respect to the entire universe of potential clients. Second, we do not directly observe the theoretical objects, such as ideological preferences or personal connections; instead we observe in the data variables that are related to them with additional maintained hypotheses.

To reformulate the theoretical predictions (T1)–(T4) in terms of an empirical model that studies the relationship between a particular lobbyist-politician pair with respect to the entire universe of potential special interest groups (or *clients*), we assume that each lobbyist-politician pair randomly draws a large number of clients, and that the actions of a lobbyist-politician pair do not affect other pairs. Under this assumption, we derive predictions regarding the number of clients during the four-year period of our study.

The key model primitives that characterize a lobbyist-politician pair in (T1)–(T4) are $P - L$ and δ_C. We do not observe them in the data. However, we observe variables related to them: (1) ideological differences between the lobbyist i and politician j measured by party affiliation, CF scores, or DW-NOMINATE scores (D_{ij}); (2) whether the lobbyist has prior government experience in Congress as a member or a staffer or in the executive branch as an official (W_i); and (3) the lobbyist's firm's attributes, such as the firm size in terms of the number of FARA-registered lobbyists and the year of the firm's registration in FARA ($\mathbf{X}_i$). We posit that the ideological difference (D_{ij}) is positively correlated with $P_j - L_i$, and that lobbyists with prior government experience ($W_i = 1$) tend to have higher $\delta_{C,ij}$. As for the latter, it is plausible that prior government experience is likely to embed the lobbyist in the same social network with politicians, and hence increase the extent to which the lobbyist takes the politician's preferences into account when representing a client.

Under these assumptions, we derive the following four testable predictions; see the Appendix (Corollary A.2) for the formal derivation and more detailed discussions.

(E1) The probability that a lobbyist-politician pair is active (i.e., the probability of at least one contact between the pair during the period of study) is decreasing in the ideological difference (D_{ij}),

(E2) Conditional on an active relationship, the expected number of clients is nondecreasing in D_{ij}.

(E3) Conditional on an active relationship, the expected number of clients is smaller for lobbyists with government experience ($W_i = 1$) than for those without ($W_i = 0$).

(E4) Conditional on an active relationship, the effects of D_{ij} on the expected number of clients are smaller for lobbyists with government experience than those

Figure 6: Ideological Differences and Access

(a) Distribution of CF Score Difference

(b) Probability of Any Contacts
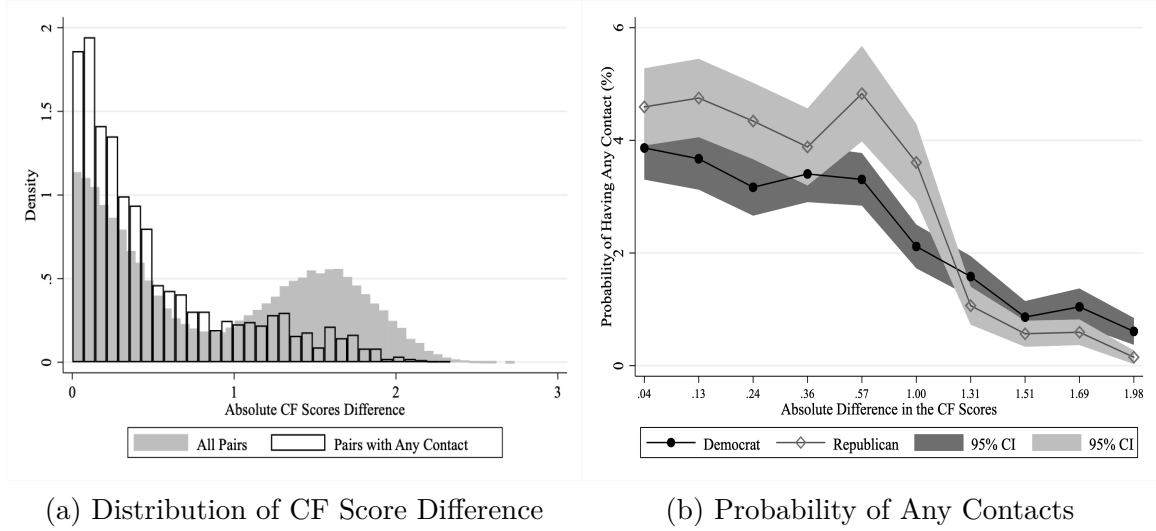
without.

4.2 Ideological Differences and Access

Figure 6(a) provides the distribution of the CF score differences for all possible lobbyist-politician pairs and for pairs with at least one contact, respectively. It shows that the CF score difference of a pair with any contact is smaller on average than that of a pair without. Figure 6(b) presents the fraction of the pairs with at least one contact by each decile of the CF score differences and the party of the member. As the difference in the CF scores between a lobbyist and a member increases, the probability of having any contact decreases and this pattern appears both for Democratic and Republican members.

We regress whether there is a contact between a politician and a lobbyist on the CF score differences (*CF Score Difference*), controlling for politician fixed effects, lobbyists' government experience (W_i), and the lobbyist's firm's attributes ($\mathbf{X}_i$), and present the results in Table 2. We find that the negative correlation manifest in Figure 6 persists. We also find that this result is robust to using the other two measures of ideological differences (party affiliation (*Party Difference*) and DW-NOMINATE scores (*DW Nominate Difference*)) and an alternative measure of access based on a *direct* contact to a member (*Direct*), as opposed to any contact to the member's

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Table 2: Regression Results: Ideological Differences and Access

Dependent Variable:	(1) Any	(2) Direct	(3) Any	(4) Direct	(5) Any	(6) Direct
CF Score Difference	-0.0217*** (0.0010)	-0.0086*** (0.0005)				
Party Difference			-0.0226*** (0.0012)	-0.0083*** (0.0006)		
DW-Nominate Diff.					-0.0328*** (0.0019)	-0.0139*** (0.0010)
Controls	✓	✓	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓	✓	✓
N	81,186	81,186	99,280	99,280	63,521	63,521
Adjusted R^2	0.030	0.016	0.023	0.014	0.028	0.021

Notes: The unit of observation is politician $\times$ lobbyist; standard errors clustered at the politician level are in parentheses. *** $p < 0.01$. Lobbying firm-level characteristics (number of lobbyists, (number of lobbyists)^2, and year of FARA registration) and individual lobbyist-level characteristics (ex-politician, ex-staffer, and ex-executive branch experience) are included as controls.

office (*Any*).[12] All results confirm that the data patterns are consistent with our prediction (E1), and the magnitude is relatively large. For example, the results of Column (1) in Table 2 indicates that one standard deviation increase in the CF score difference (0.6775) leads to a decrease in the probability of having any contact by $0.0217 \times 0.6775 = 0.0147$, which is larger than half of the fraction of pairs with at least one lobbying contact among all possible pairs in the data (2.34%). Similarly, based on the results in Column (3) of the table, if a lobbyist and a politician are affiliated with different parties, the probability of having any contact decreases by 0.0226.

4.3 Ideological Differences and Screening

To study the intensive margins as predicted by the model, we focus on the lobbyist-politician pairs with at least one contact during the period of the study.[13] Figure 7(a)

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[12]Among all possible pairs of the members of Congress and the lobbyists (120,022), only 2,804 of these pairs (2.34%) had at least one lobbying contact. When we restrict our attention to contacts made to the member as opposed to her staffer, the number of pairs with such contacts decreases to 1,058 (0.88%).

[13]We further narrow our sample by dropping the pairs whose CF score difference is too large with a cutoff at the 90th percentile of the CF score differences in the data (1.3). This is to ensure

Figure 7: Ideological Differences, Government Experience and Screening
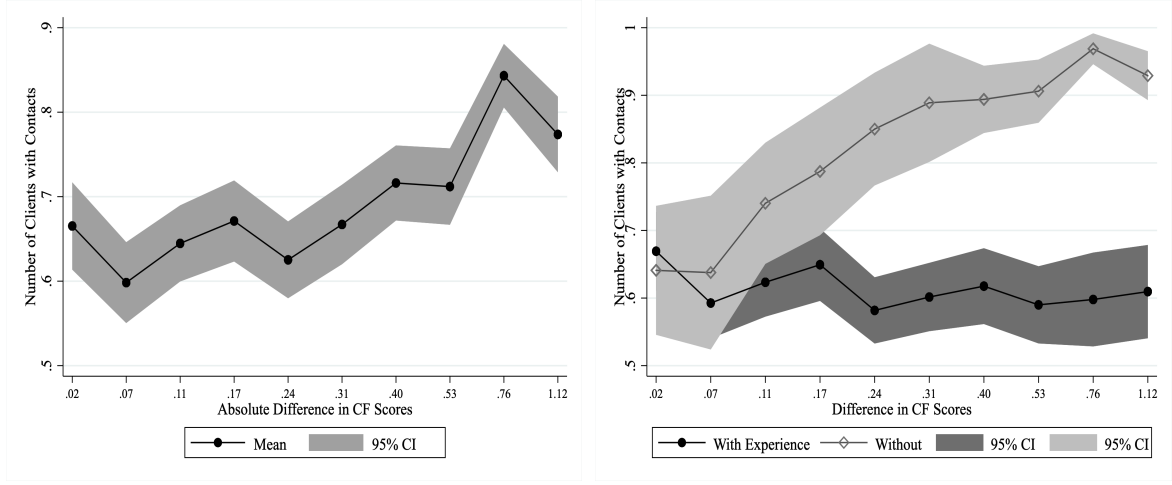
(a) All Active Lobbyist-Politician Pairs

(b) By Lobbyist's Government Experience

presents the average annual number of clients on behalf of whom a lobbyist contacted a politician conditional on the absolute CF differences, and we find the correlation is positive. It suggests that a lobbyist with a similar ideology to a politician becomes more *selective* when representing a client, consistent with prediction (E2).[14]

Table 3 shows that this pattern persists even after we control for politician fixed effects and lobbying firm attributes ($\mathbf{X}_i$). Column (1) presents the results where we regress the logarithm of the average annual number of clients on behalf of whom a lobbyist contacted a politician on the logarithm of the pair's CF score difference, as well as the lobbyist's firm attributes and politician fixed effects, focusing on the 1,846 pairs with at least one contact during the period of study. We find that a 1% increase in the CF score difference is associated with a 0.08% increase in the number of clients per year on average. This finding is robust to using alternative outcome variables: the logarithm of the average annual number of clients with a direct member contact (*# Dclients*), the average fraction of the number of clients with a (direct member) contact divided by the total number of clients of the lobbyist's firm per year (*Frac. Clients* and *Frac. Dclients*) and the logarithm of the average annual number of (direct

that our assumption of $P_j > L_i$ is satisfied, and the results are robust to a reasonable set of cutoff values.

[14]Figure A4 in the Appendix shows a similar pattern when we look at the *fraction* of the clients with a contact to a given politician among all active clients of the lobbyist's firm.

Table 3: Regression Results: Ideological Differences and Screening

Dependent Variable	(1) Log #Client	(2) Log # Dclients	(3) Frac. Clients	(4) Frac. Dclients	(5) Log Contacts	(6) Log Dcontacts
Log (CF Score Diff.)	0.0776***	0.0993***	0.0495***	0.0654***	0.0673***	0.0595
	(0.0146)	(0.0353)	(0.00947)	(0.0238)	(0.0217)	(0.0408)
Firm Attributes	✓	✓	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓	✓	✓
N	1,846	777	1,846	777	1,846	777
Adj. R^2	0.130	0.168	0.253	0.312	0.093	0.141

Notes: The unit of observation is politician × lobbyist; standard errors clustered at the politician level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. For regressions with the dependent variables related to direct contacts (columns (2), (4), and (6)), we only include the pairs with at least one direct contact during the period of study.

member) contacts (*Log Contacts* and *Log Dcontacts*).

4.4 Prior Government Experience and Screening

Figure 7(b) shows that lobbyists with government experience tend to represent a smaller number of clients than those without, consistent with (E3). It also shows that there is a positive correlation between ideological differences and the number of clients for lobbyists without government experience, while the corresponding correlation for those with government experience seems to be zero, consistent with (E4). Table A3 in the Appendix shows that the patterns in Figure 7(b) persist even after controlling for lobbying firm attributes ($\mathbf{X}_i$) and politician fixed effects.

5 Conclusion

In this paper, we present a theory and empirical evidence of lobbyists as gatekeepers, in which a lobbyist is paid to screen out interest groups whose requests are not in a politician's interest to fulfill. Our theory explains the existence of lobbyists as intermediaries in the lobbying process and our analysis highlights a dilemma faced by lobbyists who aim to credibly "certify" special interest groups seeking policy favors. As a solution to the dilemma, we suggest lobbyists' policy preferences, derived from connections to politicians or their own ideologies, as a means of generating credible commitment. Using a unique dataset on observed contacts between politicians and

lobbyists from lobbying reports mandated by the Foreign Agents Registration Act, we provide empirical evidence for the model's theoretical predictions on representation of an interest group to a politician by a lobbyist. By incorporating personal characteristics of lobbyists into the analysis of pricing and profits as well as their decisions to represent clients before politicians, our paper contributes to making a tighter connection between theoretical and empirical work on lobbying.

With a decline in the number of staff and civil servants supporting legislative research (Baumgartner and Jones, 2015) and an increase in legislators' workloads and fundraising pressures (Curry, 2015; Lee, 2016), the opportunities for outside interests to influence legislation have increased. Our model can speak to when, and to whose benefit, these opportunities will be exploited. It can also be used to assess how both the influence of policy-motivated lobbyists and the lobbying fees they charge may vary across politicians with different legislative resources and agenda-setting power.

While we have focused on the bilateral lobbying relationship, another important area of inquiry is the organization of lobbying firms and the lobbying industry. Large lobbying firms often consist of multiple lobbyists with access to different politicians, sometimes across the aisle. These firms may create a set of individual "markets" inside the firm, in which a politician is "matched" to a lobbyist with the appropriate ideological and personal characteristics to serve as a credible intermediary for the politician. Furthermore, lobbyists and lobbying firms may compete to attract more clients and to get more access to politicians. We believe these are fruitful areas for further research.

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Appendix for "Lobbyists as Gatekeepers"

The Appendix is divided into five sections. The first section is an appendix for the empirical analysis. The second section does preliminary equilibrium analysis of the politician and SIG's strategies, and also partially characterizes equilibrium in a two-player variant of the model without the lobbyist for use in later analysis. The third section characterizes a subset of the equilibria with the lobbyist, including those discussed in the main text. The fourth section considers equilibria in which the lobbyist exits the market. The fifth section contains accessory proofs.

A   Empirical Appendix

A.1   Domestic versus Foreign Lobbying

Among the 93 lobbying firms in our data, 61 firms represented domestic clients in addition to their foreign clients (i.e., the firms were registered by both the LDA and FARA). Table A1 shows that, compared to firms registered by FARA only, these firms tended to reap larger yearly revenues, to have more foreign clients, to contact a larger set of politicians, and to employ both more lobbyists in number and more high-profile lobbyists, such as former members of Congress or those who worked in the legislative and/or executive branches.

A.2   Contacts with or without Lobbyist Information

Table A2 provides summary statistics at the lobbying report level, by whether and how we retrieved the information on lobbyists' identities for each contact.

A.3   Three Measures of Lobbyists' Ideology

Figure A2(a) presents the histograms of the CF scores for lobbyists that we identified as Democrats and Republicans, respectively. Among the Democrat lobbyists, two lobbyists' CF scores are greater than zero, and among the Republican lobbyists, one lobbyist's CF score is less than zero. Figure A2(b) provides similar histograms for the DW-NOMINATE scores of lobbyists, based on their past experience in Congress as a

Figure A1: A FARA Supplemental Statement: Contacts

Name of Registered Individual: ___Hal S. Shapiro___

Name of Client: Embassy of United Arab Emirates			
Activity/Contact (name, title and office/agency)	**Type of Activity/ Method of contact**	**Topic**	**Date**
Rep. H. Berman, Chairman, House Committee on Foreign Affairs	Meeting	US-UAE relations, status of pending arms sale, international nuclear fuel bank regional issues	7/31/08
Alan Makovsky - Senior Staff, House Committee on Foreign Affairs	Meeting	US-UAE relations, status of pending arms sale, international nuclear fuel bank regional issues	7/31/08
Alan Makovsky - Senior Staff, House Committee on Foreign Affairs	Phone call and email message	Status of pending arms sale and satellite sale	8/5/08
Alan Makovsky - Senior Staff, House Committee on Foreign Affairs	Email message	Status of pending arms sale and satellite sale	8/6/08
Alan Makovsky - Senior Staff, House Committee on Foreign Affairs	Email message	Status of pending arms sale	9/8/08
Alan Makovsky - Senior Staff, House Committee on Foreign Affairs	Email message	Status of pending arms sale	9/19/08
Rep. C. Rangel, Chairman, House Ways & Means Committee	Meeting	Regional issues, bilateral relationship, international nuclear fuel bank	9/23/08
Tim Reif, Majority Chef Trade Counsel, House Ways & Means Committee	Meeting	Regional issues, bilateral relationship, international nuclear fuel bank	9/23/08
Jennifer McCadney, Majority Trade Staff, House Ways & Means Subcommittee on Trade	Meeting	Regional issues, bilateral relationship, international nuclear fuel bank	9/23/08
Tim Reif, Majority Chief Trade Counsel, House Ways & Means Committee	Email message	Meeting request on regional issues	11/11/08

Notes: This is an excerpt from the report for the six-month period ending December 31, 2008, by Akin Gump Strauss Hauer & Feld, LLP. During this period, the embassy of the United Arab Emirates was one of its clients, and this page reports detailed information on the contacts made by a lobbyist of the firm, Hal S. Shapiro, on behalf of the embassy.

Table A1: Lobbying Firm Characteristics by the LDA Registration

	LDA & FARA		FARA Only	
	Mean	SD	Mean	SD
Annual revenue† ($thousand)	740.0	933.9	597.9	864.2
Number of government clients†	2.72	2.48	1.43	0.87
Number of contacted members	53.09	64.46	38.15	44.74
FARA registration year	2002.3	8.87	2004.9	5.51
Number of lobbyists				
All	9.48	8.30	3.75	4.24
Former member of Congress	0.51	0.94	0.21	0.55
Executive branch experience	1.54	1.46	0.44	0.79
Congress experience	2.39	2.35	0.86	1.55
Number of observations	61		32	

Notes: As for time-varying variables, the summary statistics are over the average value of each variable across multiple filings for each lobbying firm. †: For these two variables, we consider the lobbying reports included in this paper only. Therefore, the total annual revenues and the total number of foreign government clients are larger than the counterparts included here.

Table A2: Report-Level Summary Statistics

Contact-level Lobbyist Information:	Retrieved		Not Retrieved
Source:	Inferred, a Single Lobbyist	Observed from the Report	
Number of Reports	76	150	203
Number of FARA Clients	1.1	1.7	1.7
Fees ($K)	96	454	438
FARA Registration Year	2003	2003	1999
Involved in the Domestic Lobbying (LDA)	.35	.77	.77
Number of Lobbyists	1.0	9.1	11.9
Ex-Politicians	.13	.62	.55
Ex-Staffers	.2	2.2	2.7
Executive Branch Experience	.27	1.3	1.8
Number of Total Contacts	22.4	26.8	28.8
Number of Contacts per lobbyist	22.4	4.0	3.9
Mean of DW-NOMINATE[a]	-.08	-.08	-.12
Range of DW-NOMINATE[b]	.66	.79	.86

Notes: The unit of observation is a semi-annual FARA report. a. The average DW-NOMINATE scores of the contacted members, weighted by the contact frequency. b. The range of the DW-NOMINATE scores of the contacted members.

Figure A2: Distribution of Ideology Measures by Party Affiliation

(a) CF Scores

(b) DW-NOMINATE Scores
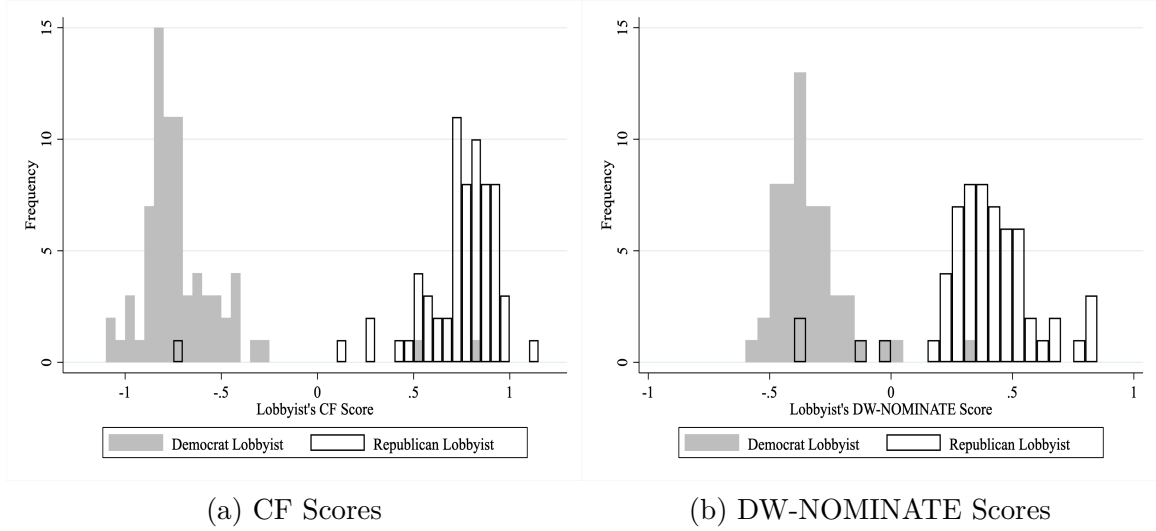
member or a staffer. Both histograms show that all three measures of the lobbyists' ideology are consistent.

A.4 Model Predictions in the Context of the Data

This section derive the comparative statics that we investigate using our data in Section 4, namely (E1)–(E4). We restate the following assumptions:

Assumption A.1. $0 < L \leq P < \overline{\omega}$.

Assumption A.2. *Each lobbyist-politician pair randomly draws T potential clients from the identical distribution of (π, ω) during our four-year period of study (2007–2010). The ideological positions (L and P) and the relationship between the pair (δ_I and δ_C) are invariant to clients.*

Without loss of generality, let us normalize $\overline{\omega} = 1$. Under these two assumptions, by Proposition 2, the probability that lobbyist i contacts politician j for a random client, denoted by ρ_{ij}, is:

$$\rho_{ij} = \left(\mathbb{1}_{\left[\frac{\delta_{I,ij}}{\delta_{I,ij}+\delta_{C,ij}}(P_j-L_i) \leq 1-P_j \right]} \right) \min \left\{ 1 - P_j + \frac{\delta_{I,ij}(P_j - L_i) + \tilde{\pi}_{ij}}{\delta_{I,ij} + \delta_{C,ij}}, 2(1 - P_j) \right\},$$

where $\tilde{\pi}_{ij}$ is the lobbyist-pair specific average value of favor. Figure A3 represents ρ_{ij}

Figure A3: Comparative Statics: Representation Probability

(a) Difference between P and L (b) Lobbyist's Connection (δ_C)
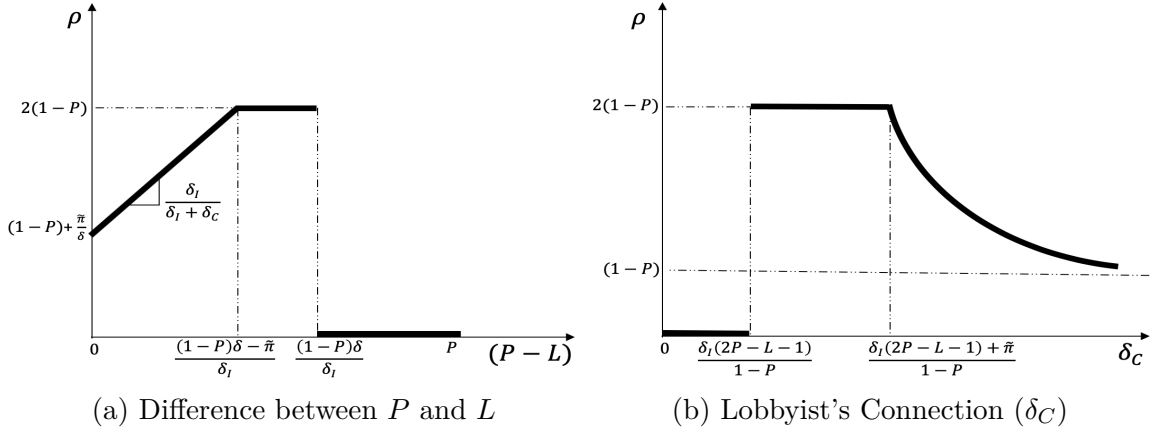
as a function of $P_j - L_i$ and $\delta_{C,ij}$ (holding $\delta_{I,ij} > 0$), respectively.

Our key endogenous outcome variable is the total number of clients that lobbyist i represented to politician j during the period of study, which we denote by N_{ij}. Note that under Assumptions A.1 and A.2, N_{ij} follows a Binomial distribution with T draws and ρ_{ij} probability of success. Therefore, the probability that there is at least one contact between a lobbyist and a politician, $\Pr(N_{ij} > 0 | \rho_{ij})$, and the expected number of clients on behalf of whom the lobbyist contacts the politician conditioning on having any contacts between them, $\mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)$, can be written as follows:

$$\Pr(N_{ij} > 0 | \rho_{ij}) = 1 - (1 - \rho_{ij})^T; \text{ and } \mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0) = \frac{\rho_{ij} T}{1 - (1 - \rho_{ij})^T}.$$

Below we present the comparative statics on $\Pr(N_{ij} > 0 | \rho_{ij})$ and $\mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)$ with respect to $P_j - L_i$ and $\delta_{C,ij}$, which directly follows from Corollary 1 (T1)–(T4) in Section 4.1 and the above two equations.

Corollary A.1. *Suppose Assumptions A.1 and A.2 hold. Then, (a) $\Pr(N_{ij} > 0 | \rho_{ij})$ converges to one if $P_j - L_i \le (1 - P_j)(\delta_{I,ij} + \delta_{C,ij})/\delta_{I,ij}$ and to zero otherwise as T goes to infinity; (b) $\mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)$ is nondecreasing in $P_j - L_i$; (c) $\mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)$ is nonincreasing in $\delta_{C,ij}$; and (d) $\partial \mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)/\partial(P_j - L_i)$ is nonincreasing in $\delta_{C,ij}$.*

In studying whether the model predictions in Corollary A.1 are consistent with the data, an important challenge is that we do not observe $P_j - L_i$, $\delta_{C,ij}$, and other model

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primitives that determine ρ_{ij}, i.e., $(\delta_{I,ij}, P_j, \tilde{\pi}_{ij})$. In the following assumption, we explicitly state the statistical relationship between the model primitives and some of the observed attributes of lobbyist-politician pairs: the ideological difference between lobbyist i and politician j (D_{ij}); whether the lobbyist has prior government experience in the the Congress as a member or a staffer or in the executive branch as an official (W_i), and the lobbyist's firm attributes $(\mathbf{X}_i)$.

Assumption A.3. *(a) $P_j - L_i$ is a function of D_{ij}, $\mathbf{X}_i$ and a random variable, ϵ_{ij}:*

$$P_j - L_i = h_d(D_{ij}, \mathbf{X}_i, \epsilon_{ij}),$$

$\delta_{C,ij}$ is a function of W_i, $\mathbf{X}_i$, and a random variable, ν_{ij}:

$$\delta_{C,ij} = h_c(W_i, \mathbf{X}_i, \nu_{ij}).$$

(b) $(\delta_{I,ij}, P_j, \tilde{\pi}_{ij}, \epsilon_{ij}, \nu_{ij})$ are independent of $(D_{ij}, W_i, \mathbf{X}_i)$.

The following corollary corresponds to the testable predictions of (E1)–(E4) in Section 4.1.

Corollary A.2. *Suppose Assumptions A.1-A.3 hold.*
(a) If h_d is increasing in D_{ij}, then $\Pr(N_{ij} > 0 | D_{ij}, W_i, \mathbf{X}_{ij})$ is decreasing in D_{ij} for sufficiently large T.
(b) If h_d is increasing in D_{ij}, then $\mathbb{E}(N_{ij} | D_{ij}, W_i, \mathbf{X}_{ij}, N_{ij} > 0)$ is nondecreasing in D_{ij}.
(c) If $h_c(W_i = 1, \mathbf{X}_i, \nu_{ij}) > h_c(W_i = 0, \mathbf{X}_i, \nu_{ij})$ for any $(\mathbf{X}_i, \nu_{ij})$, then

$$\mathbb{E}(N_{ij} | D_{ij}, W_i = 1, \mathbf{X}_{ij}, N_{ij} > 0) \leq \mathbb{E}(N_{ij} | D_{ij}, W_i = 0, \mathbf{X}_{ij}, N_{ij} > 0).$$

(d) If h_d is increasing in D_{ij} and $h_c(W_i = 1, \mathbf{X}_i, \nu_{ij}) > h_c(W_i = 0, \mathbf{X}_i, \nu_{ij})$ for any $(\mathbf{X}_i, \nu_{ij})$, then

$$\frac{\partial \mathbb{E}(N_{ij} | D_{ij}, W_i = 1, \mathbf{X}_{ij}, N_{ij} > 0)}{\partial D_{ij}} \leq \frac{\partial \mathbb{E}(N_{ij} | D_{ij}, W_i = 0, \mathbf{X}_{ij}, N_{ij} > 0)}{\partial D_{ij}}.$$

Proof. (a) As $T \to \infty$, we have:

$$\Pr(N_{ij} > 0 | D_{ij}, W_i, \mathbf{X}_i) = \Pr\left(\frac{\delta_{I,ij} h_d(D_{ij}, \mathbf{X}_{ij}, \epsilon_{ij})}{\delta_{I,ij} + h_c(W_i, \mathbf{X}_{ij}, \nu_{ij})} \leq 1 - P_j \middle| D_{ij}, W_i, \mathbf{X}_i\right).$$

Therefore, if h_d is increasing in D_{ij}, then $\Pr(N_{ij} > 0 | D_{ij}, W_i, \mathbf{X}_i)$ is decreasing in D_{ij}.

(b) Now, let us denote $\mathbb{E}(N_{ij} | \rho_{ij}, N_{ij} > 0)$ by $m(\rho_{ij})$. By Assumption A.3,

$$\frac{\partial \mathbb{E}(N_{ij} | D_{ij}, W_i, \mathbf{X}_i, N_{ij} > 0)}{\partial D_{ij}} = \mathbb{E}\left[m'(\rho_{ij}) \frac{\partial \rho_{ij}}{\partial(P_j - L_i)} \frac{\partial h_d}{\partial D_{ij}} \middle| D_{ij}, W_i, \mathbf{X}_i\right].$$

Noting that $m' > 0$, $\partial \rho_{ij}/\partial(P_j - L_i) \geq 0$ conditional on $N_{ij} > 0$ by (T2) of Corollary 1, and $\partial h_d/\partial D_{ij} > 0$ by assumption, $\partial \mathbb{E}(N_{ij} | N_{ij} > 0, D_{ij}, W_i, \mathbf{X}_i)/\partial D_{ij} \geq 0$.

(c) Note that by Assumption A.3, W_i affects $\mathbb{E}(N_{ij} | D_{ij}, W_i, \mathbf{X}_i, N_{ij} > 0)$ through $\delta_{C,ij}$ only. Therefore, the proof is immediate once we note that $m' > 0$, $\partial \rho_{ij}/\partial \delta_{C,ij} \leq 0$ conditional on $N_{ij} > 0$ by (T3) of Corollary 1, and our assumption on h_c.

(d) The proof follows from $m' > 0$, $m'' \leq 0$, $\partial \rho_{ij}/\partial \delta_{C,ij} \leq 0$ conditional on $N_{ij} > 0$ by (T3) of Corollary 1, $\partial^2 \rho_{ij}/\partial(P_j - L_i)\partial \delta_{C,ij} \leq 0$ by (T4) of Corollary 1, and our assumptions on h_d and h_c. $\qquad\square$

A.5 Additional Results on Ideological Differences, Government Experience, and Screening

Figure A4 is similar Figure 7 except that we consider an alternative outcome variable, the average *fraction* of clients with a contact to a given politician among all active clients of the lobbyist's firm, as opposed to the average annual number of clients with a contact. The patterns found in both Figures are similar.

Table A3 presents the regression results

$$\log \overline{N}_{ij} = \alpha_1 W_i + \alpha_2 \log D_{ij} \times w_i + \alpha_3 \log D_{ij} \times (1 - W_i) + \rho \mathbf{X}_i + \mu_j + v_{ij},$$

where $\overline{N}_{ij}$ denotes the average annual number of clients on behalf of whom lobbyist i contacted politician j and $\mathbb{E}(v_{ij} | D_{ij}, W_i, \mathbf{X}_i) = 0$. Column (1) in Table A3 shows that the number of clients on behalf of whom a lobbyist with government experience with the same CF score as a politician contacts the politician is lower than that of a lobbyist without government experience by 58.3%, on average. Furthermore, we find

Figure A4: Ideological Differences, Government Experience and Screening
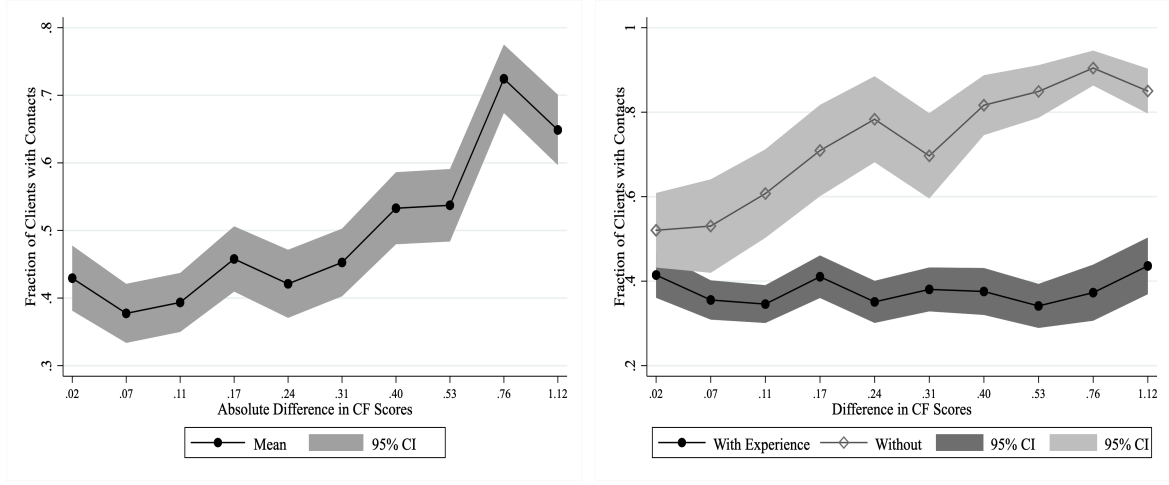
(a) All Active Lobbyist-Politician Pairs   (b) By Lobbyist's Government Experience

that the screening behavior of a lobbyist with any government experience in Congress or the executive branch does not vary with the ideological difference as measured by the CF score difference (i.e., the estimate for α_2 in the above equation is statistically insignificant). However, a lobbyist with no government experience tends to increase selectivity as the politician is more ideologically aligned with him (i.e., the estimate for α_3 is statistically significant and positive.) In Columns (2)-(6), we use alternative measures of lobbyists' screening behavior in representing clients, and we find that our key findings are robust.

B   Preliminary Analysis of Model

We begin by examining the incentives of the SIG and the politician and characterizing best-responses. We then examine equilibrium of the two-player game without the lobbyist.

B.1   The politician's calculus

The politician's objective is to grant the favor to a *worthy* SIG ($\omega \geq P$) and decline the favor to an *unworthy* one ($\omega < P$), while minimizing her review costs. She cannot observe the details of the prior contact between the SIG and the lobbyist (or prices

Table A3: Regression Results: Government Experience and Screening

Dependent Variable	(1) Log #Client	(2) Log # Dclients	(3) Frac. Clients	(4) Frac. Dclients	(5) Log Contacts	(6) Log Dcontacts
Any Gov. Experience	-0.583***	-0.891***	-0.389***	-0.641***	-0.624***	-0.704***
	(0.0529)	(0.117)	(0.0327)	(0.0837)	(0.0830)	(0.165)
Log(CF Difference) ×	0.00090	-0.0132	-0.00064	-0.0160	-0.0157	-0.0323
Any Gov. Experience	(0.0178)	(0.0362)	(0.0110)	(0.0247)	(0.0280)	(0.0470)
Log(CF Difference) ×	0.135***	0.165**	0.0831***	0.116**	0.133***	0.136*
No Gov. Experience	(0.0258)	(0.0755)	(0.0155)	(0.0492)	(0.0368)	(0.0823)
Lobbying Firm Attributes	✓	✓	✓	✓	✓	✓
Politician FE	✓	✓	✓	✓	✓	✓
N	1,846	777	1,846	777	1,846	777
Adj. R^2	0.241	0.364	0.363	0.503	0.154	0.232

Notes: The unit of observation is politician × lobbyist; standard errors clustered at the politician level are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. For regressions with the dependent variables related to direct contacts (columns (2), (4), and (6)), we only include the pairs with at least one direct contact.

paid), and so bases her decisions only on the observed channel of contact $c \in \{\ell, d, \emptyset\}$. We denote the CDF describing the politician's *interim* beliefs about the SIG's case ω (generated by Bayes' rule whenever possible) given the strategies of the other players as $H^c(\omega)$. For each observed channel and realized cost of review r, the politician makes two decisions – whether or not to review to learn ω (and decide accordingly), and if she does not review, whether or not to grant the favor.

We first characterize the probability $\alpha^c \in [0, 1]$ that the politician grants the favor absent a review for each channel c (her posture). Because the politician's preferences are linear, her posture depends only on whether the interim expectation $E^c[\omega]$ about the state ω is above or below her threshold P. Specifically, if $E^c[\omega] > P$ then she must always grant ($\alpha^c = 1$), if $E^c[\omega] < P$ she must always deny ($\alpha^c = 0$), and if $E^c[\omega] = P$ any α^c is optimal.

We next characterize the politician's review threshold. Her value of review given each channel c derives from the possibility that a review might alter her default decision. In a best response she will review if and only if her realized cost r is below this value, which is therefore ϕ^c. When $E^c[\omega] \geq P$ and the politician weakly prefers to grant absent additional information, a review is only *pivotal* for changing her decision when it reveals *negative evidence* that the SIG is unworthy, which she believes will

occur with probability $H^c(P)$. In this event, the expected net benefit of changing her decision from granting to denying the favor is $P - E^c[\omega|\omega < P]$, and the overall value of review is thus

$$\phi_-^c = H^c(P) \cdot (P - E^c[\omega|\omega < P]) \tag{B.1}$$

Similarly, when $E^c[\omega] \leq P$ and the politician weakly prefers to deny the favor absent additional information, a review is only pivotal for changing her decision when it reveals *positive evidence* that the SIG is worthy. The value of review is thus

$$\phi_+^c = (1 - H^c(P)) \cdot (E^c[\omega|\omega > P] - P) \tag{B.2}$$

Collecting the above observations yields the politician's best-response behavior.

Observation B.1. *Let $H^c(\omega)$ denote the CDF of the politician's beliefs after channel c, calculated from Bayes' rule wherever possible. The politician's strategy is a best response i.f.f she reviews when $r \leq \phi^c$ and absent a review grants with probability α^c, where*

- $\alpha^c = 1$ *and* $\phi^c = \phi_-^c = H^c(P) \cdot (P - E^c[\omega|\omega < P])$ *if* $E^c[\omega] > P$

- $\alpha^c = 0$ *and* $\phi^c = \phi_+^c = (1 - H^c(P)) \cdot (E^c[\omega|\omega > P] - P)$ *if* $E^c[\omega] < P$

- $\alpha^c \in [0,1]$ *and* $\phi^c = \phi_-^c = \phi_+^c$ *if* $E^c[\omega] = P$

B.2   The SIG's calculus

The probability that the SIG expects to receive the favor from pursuing channel $c \in \{\ell, d, \emptyset\}$ depends entirely on the politician's strategy and its type, and is equal to

$$\Delta_\omega^c = \left(1 - \frac{\phi^c}{\bar{r}}\right)\alpha^c + \mathbf{1}_{\omega \geq P}\frac{\phi^c}{\bar{r}}. \tag{B.3}$$

The favor is granted with probability equal to the politician's posture α^c when she fails to investigate, and if and only if the SIG is worthy when she does.

The SIG will weakly prefer pursuing the direct channel to the null channel if and only if $\Delta_\omega^d \pi - k \geq \Delta_\omega^\emptyset \pi \iff (\Delta_\omega^d - \Delta_\omega^\emptyset)\pi \geq k$; if the lobbyist is unavailable it will

be willing to lobby directly i.f.f. this inequality is satisfied. If it finds the lobbyist available, it will be willing to pay up to

$$F_\omega = \Delta^\ell_\omega \pi - \max \left\{ \Delta^d_\omega \pi - k, \Delta^\emptyset_\omega \pi \right\} \tag{B.4}$$

for the lobbyist's representation. Collecting the above observations yields the SIG's best-response behavior.

Observation B.2. *The SIG's strategy is a best response i.f.f.*

- *it always (never) accepts a representation offer that is $< (>) F_\omega$*

- *following a history h that resulted in a lack of representation, it always (never) lobbies directly when $\left(\Delta^d_\omega - \Delta^\emptyset_\omega \right) \pi > (<) k$*

B.3 Equilibrium without the lobbyist (as a player)

To both aid in the analysis of the full model and clarify implications of the preceding best response behavior, we first characterize equilibrium of a variant of the model without the lobbyist. We consider a general atomless distribution over $[0, \bar{\omega}]$ with CDF $H(\omega)$ that satisfies $H(P) \in (0, 1)$ (with a strictly positive probability the SIG is both unworthy or worthy) and $E[\omega] < P$ (absent more information the politician prefers to deny the favor). We first provide a general statement of equilibrium.

Lemma B.1. *In the game without the lobbyist, all PBEs with a strictly positive probability of direct lobbying satisfy the following:*

- *$E^d[\omega] \geq P$ and $E^\emptyset[\omega] < P$, implying that the politician's review thresholds are $\phi^d = \phi^d_-$ and $\phi^\emptyset = \phi^\emptyset_+$*

- *the probability that unworthy SIGs lobby directly is strictly interior, and*

$$\alpha^\emptyset = \Delta^\emptyset_U = 0 < \left(1 - \frac{\phi^d}{\bar{r}} \right) \alpha^d = \Delta^d_U = \frac{k}{\pi}$$

- *the probability that worthy SIGs lobby directly is either*

  - *strictly interior, and $\phi^d = \phi^\emptyset$*

– *equal to 1, and* $\phi^d > \phi^\emptyset = 0$

Proof: Appendix E

Lemma B.1 provides common condition for all equilibrium strategy profiles in which direct lobbying occurs with strictly positive probability. Direct lobbying yields at least a weakly favorable posture while staying home yields a strictly adversarial one, unworthy SIGs are indifferent over lobbying and have a strictly positive probability of doing so, and their probability of acquiring the favor via direct lobbying is $\frac{k}{\pi}$. Nevertheless, there remains substantial multiplicity due to the SIG's lack of state-dependent preferences. Among equilibria in which all worthy SIGs lobby, there are an infinite number of ways that unworthy SIGs may "sort themselves" between direct lobbying and staying home. In addition, there are also equilibria in which worthy SIGs stay home with a strictly positive probability.[1]

However, restricting attention to *cutpoint* strategies by the SIG – that is, the SIG lobbies i.f.f. $\omega \geq \underline{\omega}^d$ – yields a unique equilibrium. To define the equilibrium, let $\hat{\underline{\omega}}^d$ denote the unique cutpoint $< P$ satisfying $E\left[\omega | \omega \geq \hat{\underline{\omega}}^d\right] = P$, and further let

$$\phi_-\left(\underline{\omega}\right) = \left(\frac{H\left(P\right) - H\left(\underline{\omega}\right)}{1 - H\left(\underline{\omega}\right)}\right) \cdot \left(P - E\left[\omega | \omega \in \left[\underline{\omega}, P\right]\right]\right).$$

$\hat{\underline{\omega}}^d$ is the unique direct lobbying cutpoint above which the politician will have a strictly favorable posture in a best response, and below which she will have a strictly adversarial one. $\phi_-\left(\underline{\omega}\right)$ is the value of reviewing for negative evidence after the politician update his priors with the information that $\omega \geq \underline{\omega}$, and is decreasing in $\underline{\omega}$. Observe that in the two player game, the value of reviewing for negative evidence ϕ_-^d after direct lobbying when the SIG employs a cutpoint strategy $\underline{\omega}^d \in \left[\hat{\underline{\omega}}^d, P\right]$ is exactly equal to $\phi_-\left(\underline{\omega}^d\right)$. These quantities yield the following characterization of cutpoint equilibria.

Lemma B.2. *In the game without the lobbyist, among the equilibria with a strictly positive probability of direct lobbying, there is a unique one in which the lobbyist's strategy is described by a cutpoint.*

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[1]For example, when is $\frac{k}{\pi}$ sufficiently low and $H\left(\cdot\right)$ is uniform, there always exists an equilibrium in which the SIG lobbies directly i.f.f. $|P - \omega| \leq \delta$ for some $\delta < \bar{\omega} - P$.

- *If $1 - \frac{\phi_-\left(\hat{\omega}^d\right)}{\bar{r}} > \frac{k}{\pi}$ then $\underline{\omega}^d = \hat{\omega}^d$; otherwise $\underline{\omega}^d$ is the unique solution to $1 - \frac{\phi_-\left(\underline{\omega}^d\right)}{\bar{r}} = \frac{k}{\pi}$*

- $\phi^d = \phi_-\left(\underline{\omega}^d\right)$, $\Delta_U^d = \alpha^d\left(1 - \frac{\phi^d}{\bar{r}}\right) = \frac{k}{\pi}$, and $\alpha^\emptyset = \phi^\emptyset = \Delta_\omega^\emptyset = 0$

Proof: Appendix E

The unique cutpoint equilibrium has a simple structure; all worthy SIGs lobby alongside a strictly positive measure of the "best" unworthy SIGs. The unique cutpoint generates sufficiently unfavorable treatment by the politician (either through more reviews, or a lower posture) to make all unworthy SIGs indifferent to lobbying, while all worthy SIGs strictly prefer to lobby.

C Equilibrium with the lobbyist

We now consider the model when the lobbyist is present ($\lambda \in (0,1)$), and characterize equilibria in which the lobbyist represents the SIG with strictly positive probability.

C.1 Preliminary Restrictions

We begin by placing some restrictions on the form of strategy profiles we consider. We start with a key substantive assumption.

Assumption C.1. *The probability that a SIG of type ω lobbies directly absent representation does not depend on the history that led to a lack of representation.*

Assumption C.1 states that an unrepresented SIGs direct lobbying decision is invariant to *exactly how* it found itself unrepresented – that is, whether it was after finding the lobbyist busy, whether it was after finding the lobbyist available and rejecting his price, and if the latter the exact price he rejected. The rationale for the assumption is to rule out an indifferent unrepresented SIG conditioning its direct lobbying decision on a payoff-irrelevant history. Absent this assumption, it is possible to artificially sustain equilibria of a variety of forms by exploiting a combination of an unworthy SIGs' indifference to lobbying directly off the equilibrium path and the lobbyist's policy motivations.[1]

---

[1]For example, manipulating the SIG's off-path direct lobbying srategy can induce a policy-motivated lobbyist to represent a different set of clients, or even to offer a price that the SIG will accept with a probability strictly less than one.

Imposing history independence on the SIG's direct lobbying strategy then allows us further simplify the space of strategy profiles considered as follows.

Lemma C.1. *Given Assumption C.1, we may restrict attention w.l.o.g. to strategy profiles in which*

- *the lobbyist proposes the SIG's willingness to pay F_ω with probability ρ_ω^L, and a price $F_\omega + \varepsilon$ strictly above with probability $1 - \rho_\omega^L$*

- *the SIG always accepts (rejects) offers of representation $\leq (>) F_\omega$. Absent representation, it lobbies directly with probability ρ_ω^S*

Proof: Appendix E

In the simplified strategy profiles, the lobbyist mixes over at most two prices for each ω – one at the SIG's maximum willingness to pay F_ω – that is always accepted – and one strictly above – that is always rejected. We thus term charging the SIG's willingness to pay "accepting the SIG" and charging above "rejecting it." An interior probability that a SIG of type ω acquires representation can be achieved only via the lobbyist mixing between accepting and rejecting the SIG.

History independence of direct lobbying decisions also allows us to connect the two and three player games as follows; equilibrium of the three player game requires the SIG's direct lobbying strategy ρ_ω^S and politician's strategy $(\phi^c, \alpha^c) \ \forall c \in \{\emptyset, d\}$ to be an equilibrium of the corresponding two-player game with a prior $H(\omega)$ equal to politician's posterior $H^{\neg\ell}(\omega)$ after observing a lack of representation. In other words, equilibrium requires "leftover" SIG's lacking representation (of whom there are always a strictly positive measure) to sort themselves between direct lobbying and staying home *as if* it is a game absent the lobbyist, but with a distribution over the SIG's case equal to the politician's posterior after observing only a lack of representation. Consequently, the equilibrium that would prevail after the lobbyist has "taken" his desired share of the market determines the value of the SIGs "outside options" (direct lobbying and staying home) if she turns down the lobbyist's offer, and pins down both the price the lobbyist can charge and his expectations about what the SIG will do absent representation.

The preceding observation implies an algorithm for verifying whether a given lobbyist strategy is consistent with equilibrium; (1) conjecture a representation strategy

ρ_ω^L for the lobbyist, (2) calculate an equilibrium of the two-player game given the implied $H^{\neg\ell}(\omega)$ (which is well-defined since the lobbyist is unavailable with strictly positive probability), (3) calculate a politician best-response (ϕ^ℓ, α^ℓ) to the interim beliefs $H^\ell(\omega)$ implied by the lobbyist's representation strategy ρ_ω^L, and (4) verify whether the original ρ_ω^L is a lobbyist best-response given the remaining strategy profile calculated.

C.2 Form of Equilibria

While it is conceptually straightforward to verify whether a given strategy profile satisfying the preceding restrictions is an equilibrium, it is not straightforward to calculate the set of *all* possible equilibria for two reasons: (a) the space of potential representation strategies ρ_ω^L is very large, and (b) conditional on a given ρ_ω^L there may be multiple equilibria of the two-player game given the implied $H^{\neg\ell}(\omega)$. To restrict attention to a manageable class of strategy profiles, we thus further restrict attention to ones in which both the lobbyist's representation strategy and the SIG's direct lobbying strategy can be described by a *cutpoint*.

Assumption C.2. *The probability that the lobbyist offers an acceptable price to a SIG of type ω is $\rho_\omega^L = \mathbf{1}_{\omega > \underline{\omega}^\ell}$ for some $\underline{\omega}^\ell$, and the probability that a SIG of type ω lobbies directly absent representation is $\rho_\omega^S = \mathbf{1}_{\omega > \underline{\omega}^d}$ for some $\underline{\omega}^d$.*

Given Assumption C.1 (history independence), the rationale for restricting attention to a cutpoint strategy for direct lobbying decisions is that the assumption of state-independent preferences for the SIG is a simplifying rather than substantive one – were the SIG to have even slightly state-dependent preferences matching the form of the other players, then it indeed would need to employ a cutpoint strategy, and the equilibrium characterized in Lemma B.2 would be unique given a particular lobbyist cutpoint.

The justification for restricting attention to a cutpoint strategy for the lobbyist is somewhat weaker; we show that all equilibria in which lobbyist representation strictly helps SIGs who would otherwise lobby directly have this property.

Lemma C.2. *If $\Delta_\omega^\ell > \Delta_\omega^d \ \forall \omega$, then the lobbyist's behavior is described by a cutpoint.*

Proof: Appendix E

That the lobbyist would strictly help SIGs who otherwise lobby directly is a natural property, and one that holds in all of the equilibria described in the main text with representation. However, it is not one that applies to *all* equilibria with representation, or even equilibria with representation in which some clients are strictly helped. We do not fully characterize the set of representation equilibria that do not have a cutpoint structure, and the set may be potentially large. In Appendix E we give an example of a non-cutpoint equilibrium in which representation strictly increases the chance that some but not all clients get the favor.

Concluding, the following remark summarizes the types of strategy profiles we consider, and is a restatement of Remark 1 in the main text.

Remark C.1. *We restrict attention to strategy profiles satisfying Assumptions C.1-C.2 and Restriction C.1 (w.l.o.g.), which have the following form.*

1. *The politician sees if she was contacted by the lobbyist ($c = \ell$), lobbied directly ($c = d$), or not lobbied at all ($c = \emptyset$). After observing this **channel of contact** c she reviews the SIG's case if $r \leq \phi^c$, and otherwise grants the favor outright with probability α^c.*

2. *The SIG accepts an offer of representation with price up to F_U if it is unworthy ($\omega < P$) and up to F_W if it is worthy ($\omega \geq P$). If it declines representation, it lobbies directly i.f.f. $\omega > \underline{\omega}^d$.*

3. *The lobbyist charges the SIG's (type-contingent) willingness to pay (which is accepted) i.f.f. $\omega > \underline{\omega}^\ell$, and some strictly higher price otherwise (which is rejected).*

We now characterize the equilibria in the main text (as well as some others) restricting attention to this class. To do so we subdivide the class into three cases, and characterize conditions under which an equilibrium in each case holds: **Case A** ($\underline{\omega}^\ell > (2P - \bar{\omega}, \bar{\omega})$) involves representation with a fully favorable posture. **Case B** ($\underline{\omega}^\ell = 2P - \bar{\omega}$) involves representation with a weakly favorable posture. **Case C** ($\underline{\omega}^\ell < 2P - \bar{\omega}$) involves representation with an adversarial posture, and we show that such equilibria cannot exist.

C.3   Preliminary Properties

We first describe some equilibrium properties in each case.

Properties of the Lobbyist Channel

(**Case A:** $\underline{\omega}^\ell > (2P - \bar{\omega}, \bar{\omega})$): This implies $E^\ell[\omega] > P$, which then requires $\phi^\ell = \phi^\ell_-$ and $\alpha^\ell = 1$. Applying that $H(\cdot)$ is uniform we have that $\phi^\ell_- = \frac{(P - \underline{\omega}^\ell)^2}{2(\bar{\omega} - \underline{\omega}^\ell)}$. These jointly imply that $\Delta^\ell_U = 1 - \left(\frac{1}{r}\right) \frac{(P - \underline{\omega}^\ell)^2}{2(\bar{\omega} - \underline{\omega}^\ell)}$ and $\Delta^\ell_W = 1$.

(**Case B:** $\underline{\omega}^\ell = 2P - \bar{\omega}$): This implies $E^\ell[\omega] = P$, so then $\phi^\ell_+ = \phi^\ell_- = \frac{\bar{\omega} - P}{4}$ and any $\alpha^\ell \in [0, 1]$ is a best-response, so $\Delta^\ell_U = \alpha^\ell \left(1 - \left(\frac{1}{r}\right) \frac{\bar{\omega} - P}{4}\right)$ and $\Delta^\ell_W = \Delta^\ell_U + \left(\frac{1}{r}\right) \frac{\bar{\omega} - P}{4}$.

(**Case C:** $\underline{\omega}^\ell < 2P - \bar{\omega}$): This implies $E^\ell[\omega] < P$, so then $\phi^\ell = \phi^\ell_+$ and $\alpha^\ell = 0$. Applying that $H(\cdot)$ is uniform we have that $\phi^\ell_+ = \frac{(\bar{\omega} - P)^2}{2(\bar{\omega} - \underline{\omega}_\ell)}$. These jointly imply that $\Delta^\ell_U = 0$ and $\Delta^\ell_W = \left(\frac{1}{r}\right) \frac{(\bar{\omega} - P)^2}{2(\bar{\omega} - \underline{\omega}_\ell)}$.

Properties of the Direct and Null Channel

As previously described, the direct lobbying cutpoint and politician strategies toward $\{d, \emptyset\}$ when the SIG's direct lobbying strategy satisfies Assumption C.1 must be an equilibrium of the two player game when $H(\omega) = H^{\neg \ell}(\omega)$. Next observe that a cutpoint strategy by the lobbyist implies that $E^{\neg \ell}[\omega] < P$, so by Lemma B.2 for each $\underline{\omega}^\ell < \bar{\omega}$ there is a unique cutpoint equilibrium of the two player game that pins down the direct lobbying cutpoint and politician strategies toward $\{d, \emptyset\}$.

We now apply the characterization of the equilibrium in Lemma B.2 to derive properties of the direct and null channels as a function of $\underline{\omega}^\ell$ in each of the three cases (A,B,C). Immediately we have that $\underline{\omega}^d \in (0, P)$, $\phi^d = \phi^d_-$, $\Delta^d_U = \frac{k}{\pi}$, $\Delta^d_W = \frac{k}{\pi} + \frac{\phi^d_-}{r}$, and $\alpha^\emptyset = \phi^\emptyset = \Delta^\emptyset_\omega = 0$. Next we derive the precise values of $\underline{\omega}^d$ and ϕ^d_- for each $\underline{\omega}_\ell < \bar{\omega}$.

(**Case A:** $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega})$): Using the equilibrium characterization in Lemma B.2, we first derive the unique cutpoint $\hat{\underline{\omega}}^d$ satisfying $E[\omega | \omega \geq \hat{\underline{\omega}}^d] = P$. It is straightforward that we must have $\hat{\underline{\omega}}^d < \underline{\omega}^\ell$ for the equality to be satisfied. Next, observe

that since the prior over ω is uniform over $[0, \bar{\omega}]$, for $\underline{\omega}^d < \underline{\omega}^\ell$ we have that

$$
E\left[\omega | \omega \geq \underline{\omega}^d\right] = \left(\frac{\left(\underline{\omega}^\ell - \underline{\omega}^d\right)}{\left(\underline{\omega}^\ell - \underline{\omega}^d\right) + (1 - \lambda)\left(\bar{\omega} - \underline{\omega}^\ell\right)}\right)\left(\frac{\underline{\omega}^d + \underline{\omega}^\ell}{2}\right)
$$
$$
+ \left(\frac{(1 - \lambda)\left(\bar{\omega} - \underline{\omega}^\ell\right)}{\left(\underline{\omega}^\ell - \underline{\omega}^d\right) + (1 - \lambda)\left(\bar{\omega} - \underline{\omega}^\ell\right)}\right)\left(\frac{\underline{\omega}^\ell + \bar{\omega}}{2}\right).
$$

(Substantial) algebraic manipulation then yields that $\hat{\underline{\omega}}^d$ uniquely satisfies the equality:

$$
\left(P - \hat{\underline{\omega}}^d\right)^2 = (1 - \lambda)\left(\bar{\omega} - P\right)^2 + \lambda\left(P - \underline{\omega}^\ell\right)^2
$$

which yields $\hat{\omega}^d = P - \sqrt{(1 - \lambda)\left(\bar{\omega} - P\right)^2 + \lambda\left(P - \underline{\omega}^\ell\right)^2}$ which is $\in \left(2P - \bar{\omega}, \min\left\{\underline{\omega}^\ell, P\right\}\right)$ unless $\underline{\omega}^\ell = 2P - \bar{\omega}$ or $\underline{\omega}^\ell = \bar{\omega}$ in which case $\hat{\underline{\omega}}^d = 2P - \bar{\omega}$ and $\phi_-^d = \phi_-^\ell = \frac{\bar{\omega} - P}{4}$. Further, observe that $\hat{\underline{\omega}}^d$ is only affected by $\underline{\omega}^\ell$ via its *distance* $\left(P - \underline{\omega}^\ell\right)^2$ from P. Thus, two representation cutpoints $\underline{\omega}^\ell$ and $\tilde{\underline{\omega}}^\ell = 2P - \underline{\omega}^\ell$ yield the same $\hat{\underline{\omega}}^d$. Next, the following lemma is proved in Appendix E.

Lemma C.3. *If $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega})$ and $\underline{\omega}^d = \hat{\underline{\omega}}^d$ then $\frac{\bar{\omega} - P}{4} > \phi_-^d$.*

Finally Lemma C.3 implies that $1 - \frac{\phi_-^d}{\bar{r}} > 1 - \frac{\bar{\omega} - P}{4\bar{r}} > \frac{k}{\pi}$, so that by Lemma B.2 the equilibrium cutpoint on the direct channel $\underline{\omega}^d$ is indeed equal to $\hat{\underline{\omega}}^d$.

To derive the explicit expression for ϕ_-^d in this case, recall from Observation B.1 that when $\underline{\omega}^d = \hat{\underline{\omega}}^d$ we have $\phi_-^d = \phi_+^d$ by definition, and we may thus employ either expression. The expression for ϕ_+^d is simpler to write when $\underline{\omega}^\ell \leq P$, and the expression for ϕ_+^d is simpler to write when $\underline{\omega}^\ell \geq P$. For $\underline{\omega}^\ell \leq P$ we have

$$
\phi_+^d = \left(\frac{(1 - \lambda)\left(\bar{\omega} - P\right)}{\lambda\left(\underline{\omega}^\ell - \hat{\underline{\omega}}^d\right) + (1 - \lambda)\left(\bar{\omega} - \hat{\underline{\omega}}^d\right)}\right)\left(\frac{P + \bar{\omega}}{2} - P\right)
$$
$$
= \frac{1}{2}\left(\frac{(1 - \lambda)\left(\bar{\omega} - P\right)^2}{\lambda\left(\underline{\omega}^\ell - \hat{\underline{\omega}}^d\right) + (1 - \lambda)\left(\bar{\omega} - \hat{\underline{\omega}}^d\right)}\right),
$$

where the denominator of the second term is the unconditional probability of direct

lobbying. For $\underline{\omega}^\ell \geq P$ we have

$$
\begin{aligned}
\phi_-^d &= \left(\frac{P - \hat{\underline{\omega}}^d}{\lambda \left(\underline{\omega}^\ell - \hat{\underline{\omega}}^d \right) + (1 - \lambda) \left(\bar{\omega} - \hat{\underline{\omega}}^d \right)} \right) \left(P - \frac{\hat{\underline{\omega}}^d + P}{2} \right) \\
&= \frac{1}{2} \left(\frac{\left(P - \hat{\underline{\omega}}^d \right)^2}{\lambda \left(\underline{\omega}^\ell - \hat{\underline{\omega}}^d \right) + (1 - \lambda) \left(\bar{\omega} - \hat{\underline{\omega}}^d \right)} \right)
\end{aligned}
$$

Now using that $\left(P - \hat{\underline{\omega}}^d \right)^2 = (1 - \lambda) \left(\bar{\omega} - P \right)^2 + \lambda \left(\underline{\omega}^\ell - P \right)^2$, $\phi_+^d = \phi_-^d$ at $\hat{\underline{\omega}}^d$, and combining yields that for any $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega})$ we have

$$
\phi_-^d = \frac{1}{2} \left(\frac{(1 - \lambda) \left(\bar{\omega} - P \right)^2 + \lambda \left(\max \left\{ \underline{\omega}^\ell - P, 0 \right\} \right)^2}{\lambda \left(\underline{\omega}^\ell - \hat{\underline{\omega}}^d \right) + (1 - \lambda) \left(\bar{\omega} - \hat{\underline{\omega}}^d \right)} \right).
$$

(Cases B and C: $\underline{\omega}^\ell \leq 2P - \bar{\omega}$): It is straightforward that $\underline{\omega}^d = 2P - \bar{\omega}$ and $\phi_-^d = \frac{\bar{\omega} - P}{4}$, and the only SIGs who lobby directly are those that found the lobbyist unavailable.

The Lobbyist's Incentives

If the lobbyist accepts the SIG, he expects it to acquire the favor with probability Δ_ω^ℓ, while if he rejects it he expects it to acquire the favor with probability $\mathbf{1}_{\omega > \underline{\omega}_d} \cdot \Delta_\omega^d + \left(1 - \mathbf{1}_{\omega > \underline{\omega}_d} \right) \Delta_\omega^\emptyset$ (the probability the rejected SIG lobbies directly times the probability direct lobbying yields the favor, plus the probability it stays home times the probability staying home yields the favor). The net benefit to the lobbyist of accepting the SIG is thus:

$$
\left(F_\omega - k \right) + \left(\Delta_\omega^\ell - \left(\mathbf{1}_{\omega > \underline{\omega}_d} \cdot \Delta_\omega^d + \left(1 - \mathbf{1}_{\omega > \underline{\omega}_d} \right) \Delta_\omega^\emptyset \right) \right) \cdot \delta \left(\omega - L \right) \tag{C.1}
$$

$F_\omega - k$ is the net profit from representation at the SIG's maximum willingness to pay, $\Delta_\omega^\ell - \left(\mathbf{1}_{\omega > \underline{\omega}_d} \cdot \Delta_\omega^d + \left(1 - \mathbf{1}_{\omega > \underline{\omega}_d} \right) \Delta_\omega^\emptyset \right)$ is the net change in the probability the SIG acquires the favor, and $\delta \left(\omega - L \right)$ is the net policy benefit to the lobbyist of the SIG going from being denied to being granted the favor.

Now, equilibrium on the direct and null channels imply that all types of SIGs weakly prefer lobbying directly to staying home, so $\forall \omega$ we have $F_\omega = \left(\Delta_\omega^\ell - \Delta_\omega^d \right) \pi + k$. Further, unworthy SIGs are indifferent to lobbying directly and staying home, so $F_U =$

$\left(\Delta_U^\ell - \Delta_U^d\right) \pi + k = \Delta_U^\ell \pi$. Applying these properties to the net benefit expression and rearranging yields the following best response behavior.

Observation C.1. *Among strategy profiles of the form in Remark C.1, the lobbyist's strategy is a best response i.f.f.*

$$\left(\Delta_\omega^\ell - \Delta_\omega^d\right) (\pi + \delta (\omega - L)) + \mathbf{1}_{\omega < \underline{\omega}^d} \cdot \Delta_\omega^d \delta (\omega - L) > (<) 0 \qquad \text{(C.2)}$$

implies that $\omega > (\leq) \underline{\omega}_\ell$

C.4 Representation Equilibria

We now characterize the three classes of equilibria with representation. Observe that $\pi + \delta (\omega - L)$ is the net benefit of representation if the lobbyist is *pivotal* for the favor being granted, and let $\hat{\underline{\omega}}^\ell (L) = L - \frac{\pi}{\delta}$ denote the unique value of ω s.t. this is $= 0$. This quantity will be crucial in the equilibrium characterization that follows.

Case A: Representation with a fully-favorable posture

When $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega})$, the remaining strategies are pinned down to unique values as characterized above. We argue that such a $\underline{\omega}^\ell$ is an equilibrium i.f.f. $\underline{\omega}^\ell = \hat{\underline{\omega}}^\ell (L)$, and thus such equilibria exist $\iff \hat{\underline{\omega}}^\ell (L) \in (2P - \bar{\omega}, \bar{\omega})$.

We begin by arguing that $\Delta_\omega^\ell - \Delta_\omega^d > 0 \ \forall \omega$. For $\omega < P$ we have that $\Delta_\omega^\ell = 1 - \frac{\phi_-^\ell}{\bar{r}} = 1 - \frac{\left(P - \omega^\ell\right)^2}{2\left(\bar{\omega} - \underline{\omega}^\ell\right)} > 1 - \frac{\bar{\omega} - P}{4\bar{r}} > \frac{k}{\pi} = \Delta_\omega^d$. For $\omega > P$ we have $\Delta_\omega^d = \frac{k}{\pi} + \phi_-^d$, which has already been shown to be $< 1 = \Delta_\omega^\ell$.

Now recall that $\underline{\omega}^d < \underline{\omega}^\ell$ when $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega})$. Thus, for $\omega \geq \underline{\omega}^d$ (SIGs who would lobby directly absent representation) eqn. C.2 is $> (<) 0 \iff \pi + \delta (\omega - L) > (<) 0$. A necessary condition for $\underline{\omega}^\ell$ to be a best response for the lobbyist is thus $\underline{\omega}^\ell = \hat{\underline{\omega}}^\ell (L)$. To argue that this is also sufficient and therefore an equilibrium we must also show the lobbyist would not wish to represent SIGs who would not lobby directly absent representation, i.e. $\omega < \underline{\omega}^d$. But this is straightforward since $\omega < \underline{\omega}^d < \underline{\omega}^\ell \to \pi + \delta (\omega - L) < 0 \to \delta (\omega - L) < 0$.

Case B: Representation with a partially-favorable posture

When $\underline{\omega}^\ell = 2P - \bar{\omega}$, all remaining strategies *except* the politician's posture α^ℓ toward the lobbyist's client are pinned down. We derive conditions under which $\underline{\omega}^\ell = 2P - \bar{\omega}$

for some value(s) of α^ℓ. From the preceding analysis we have that $\underline{\omega}^d = \underline{\omega}^\ell = 2P - \bar{\omega}$ and $\phi^d = \phi^\ell = \frac{\bar{\omega} - P}{4}$, which further implies that $\Delta_U^\ell - \Delta_U^d = \Delta_U^\ell - \frac{k}{\pi} = \Delta_W^\ell - \Delta_W^d$, where $\Delta_U^\ell = \alpha^\ell \left(1 - \frac{\bar{\omega} - P}{4\bar{r}}\right)$ may take any value in $\left[0, 1 - \frac{\bar{\omega} - P}{4\bar{r}}\right]$ and has a one to one relationship with implied $\alpha^\ell \in [0, 1]$.

Now using eqn. C.2 and exploiting the preceding observations, for this behavior to be a best response for the lobbyist the following two conditions are necessary and sufficient; (i) she prefers to decline unworthy SIGs $\omega \in [0, 2P - \bar{\omega}]$ who would otherwise stay home, i.e.

$$\Delta_U^\ell \left(\pi + \delta \left(\omega - L\right)\right) \le k \ \forall \omega \in [0, 2P - \bar{\omega}]$$

(ii) she prefers to represent SIGs $\omega \ge 2P - \bar{\omega}$ who would otherwise lobby directly (which is a mixture of worthy and unworthy clients), i.e.

$$\left(\Delta_U^\ell - \frac{k}{\pi}\right) \left(\pi + \delta \left(\omega - L\right)\right) \ge 0 \ \forall \omega \ge 2P - \bar{\omega}$$

Condition (i) may be checked only at $\omega = 2P - \bar{\omega}$ since the l.h.s is strictly increasing in ω when $\Delta_U^\ell > 0$. Thus to be satisfied it is necessary and sufficient that either $\hat{\underline{\omega}}^\ell (L) \ge 2P - \bar{\omega}$ or $\hat{\underline{\omega}}^\ell (L) < 2P - \bar{\omega}$ and

$$\Delta_U^\ell \le \tilde{\Delta}_U^\ell (L) = \frac{k}{\pi + \delta \left((2P - \bar{\omega}) - L\right)}$$

where $\tilde{\Delta}_U^\ell (L)$ is a strictly increasing function that $\to \infty$ as $\hat{\underline{\omega}}^\ell (L) \to 2P - \bar{\omega}$.

With conditions (i) and (ii) in hand we walk through when $\underline{\omega}^\ell = 2P - \bar{\omega}$ is an equilibrium for all possible values of $\hat{\underline{\omega}}^\ell (L) = L - \frac{\pi}{\delta} \in (-\infty, \infty)$. There are three subcases.

(Subcase B.1: $\hat{\underline{\omega}}^\ell (L) \le 2P - \bar{\omega}$): Condition (i) is satisfied i.f.f. $\Delta_U^\ell \le \tilde{\Delta}_U^\ell (L)$. Now since $\pi + \delta \left(\omega - L\right) > 0 \ \forall \omega > 2P - \bar{\omega}$, condition (ii) is satisfied $\iff \Delta_U^\ell \ge \frac{k}{\pi}$. Thus, this is an equilibrium i.f.f.

$$\Delta_U^\ell \in \left[\frac{k}{\pi}, \min\left\{\tilde{\Delta}_U^\ell (L), \frac{\bar{\omega} - P}{4\bar{r}}\right\}\right].$$

This set is nonempty i.f.f. $L \ge 2P - \bar{\omega}$; when it is empty ($L < 2P - \bar{\omega}$) we later argue that an equilibrium with lobbyist exit will prevail.

(Subcase B.2: $\hat{\underline{\omega}}^\ell(L) \in (2P - \bar{\omega}, \bar{\omega}))$: Condition (i) is always satisfied. Since $\hat{\underline{\omega}}^\ell(L)$ is interior to $(2P - \bar{\omega})$, condition (ii) is satisfied i.f.f. $\Delta_U^\ell = \frac{k}{\pi}$.

(Subcase B.3: $\hat{\underline{\omega}}^\ell(L) \geq \bar{\omega}$): Condition (i) is always satisfied. Since $\pi + \delta(\omega - L) < 0 \ \forall \omega < \bar{\omega}$, condition (ii) is satisfied i.f.f. representation weakly hurts the chances that a SIG who would otherwise lobby directly gets the favor, i.e. $\Delta_U^\ell \in \left[0, \frac{k}{\pi}\right]$.

We assume that equilibria in subcase $(B.1)$ prevail when $\hat{\underline{\omega}}^\ell(L) \leq 2P - \bar{\omega}$, which is precisely when Case A equilibria with a fully favorable posture ($\underline{\omega}^\ell > 2P - \bar{\omega}$) do not exist. We further assume that the equilibrium lobbyist exit on the extensive margin will prevail when $L < 2P - \bar{\omega}$ and neither equilibria in subcase $(B.1)$ nor any other case with representation exist.

Equilibria in subcase $(B.2)$ co-exist exactly with Case A equilibria $\underline{\omega}_\ell \in (2P - \bar{\omega})$ with a fully favorable posture. We assume that in this case, the equilibrium with a fully favorable posture will prevail, as opposed to subcase $(B.2)$ equilibrium with a somewhat favorable posture that are sustained by a knife-edge condition that the lobbyist is exactly no better at securing the favor than the SIG is on her own.

Subcase $(B.3)$ equilibria prevail under conditions that we state the main text will lead to an equilibrium with lobbyist exit because she is too ideologically opposed to the SIG, i.e. $\hat{\underline{\omega}}^\ell(L) \geq \bar{\omega}$. In these equilibria, a policy-motivated lobbyist wishes to *harm* the SIG's ability to acquire the favor regardless of the value of ω, and is willing to take a loss on lobbying in order to do it. She thus charges a price below the mutual cost of access, and the SIG accepts because it is willing to have its prospects harmed in exchange for a reduced cost of access. We consider these equilibria empirically implausible and omit their consideration from the main text.

Case C: Representation with an adversarial posture

We argue that equilibria of the form in Remark C.1 with $\underline{\omega}^\ell < 2P - \bar{\omega}$ (so the politician's posture toward the lobbyist is adversarial) do not exist.

From the preceding analysis observe that $\underline{\omega}^\ell < 2P - \bar{\omega} = \underline{\omega}^d$ and $\Delta_U^\ell = 0$. Thus, the net benefit of representing a SIG $\omega < \underline{\omega}^d$ who would not lobby directly (and are also all unworthy) is:

$$\Delta_U^\ell (\pi + \delta(\omega - L)) - k = -k < 0$$

Thus it cannot be an equilibrium for the lobbyist to represent unworthy SIGs in $\left(\underline{\omega}^{\ell}, \underline{\omega}^{d}\right)$. More generally, when the lobbyist has no chance of acquiring the favor for an unworthy SIG, she will never be willing to represent such a SIG if it does not otherwise intend to lobby directly; the reason is that she will both lose money and have *no effect* on the likelihood the SIG acquires the favor

D   Equilibrium with lobbyist exit

We next consider equilibria when the lobbyist is present as a player, but chooses to exit the market. For simplicity we restrict attention to strategy profiles of the form in Remark C.1, so that exit is described by $\underline{\omega}^{\ell} = \bar{\omega}$.

It is straightforward that in strategy profiles of the form in Remark C.1, $\underline{\omega}^{d} = 2P - \bar{\omega}$ and $\phi^{d} = \frac{\bar{\omega} - P}{4}$, which further implies that $\Delta_{U}^{\ell} - \Delta_{U}^{d} = \Delta_{U}^{\ell} - \frac{k}{\pi}$. Thus, necessary and sufficient conditions to sustain lobbyist exit are that (i)

$$\Delta_{U}^{\ell} \left(\pi + \delta \left((2P - \omega) - L\right)\right) \leq k$$

(to reject $\omega \leq \underline{\omega}^{d} = 2P - \bar{\omega}$), and (ii)

$$\left(\Delta_{\omega}^{\ell} - \Delta_{\omega}^{d}\right) \left(\pi + \delta \left(\omega - L\right)\right) \leq 0 \ \forall \omega \in [2P - \bar{\omega}, \bar{\omega}]$$

(to reject $\omega \in (2P - \bar{\omega}, \bar{\omega}]$). The (off-path) probabilities that the SIG acquires the favor through the lobbyist $\left(\Delta_{U}^{\ell}, \Delta_{W}^{\ell}\right)$ must then arise from a politician strategy $\left(\phi^{\ell}, \alpha^{\ell}\right)$ toward the lobbyist that is optimal given the politician's off-path beliefs.

The model is not a straightforward signaling game since the "signals" that the politician receives result from the choices by *two* privately informed players – the SIG and the lobbyist – rather than just one. It is thus necessary to somehow structure expectations of what sorts of off-path beliefs and best responses for the politician might be reasonable.

To do so we begin with the supposition that off-the-equilibrium path, the politician will ascribe deviations only to the lobbyist in her pricing strategy, rather than the SIG and its acceptance strategy. For the purposes of refinement we therefore treat the model *as if* it is a standard two-player signaling game, in which the lobbyist's payoffs from deviating to different representation decisions are computed as if the SIG will accept representation if and only if it is weakly profitable. With this assumption

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we apply universal divinity (Banks and Sobel, 1987) and then heuristic arguments to restrict the set off-path beliefs.

First, it is straightforward that any value of $\Delta_U^\ell \in [0,1]$ may be constructed from a strategy toward the lobbyist $\left(\phi^\ell, \alpha^\ell\right)$ that is a best responses to *some* feasible beliefs by the politician. This observation can be used to "prune" some types by applying D1, in the sense that the politician should place zero probability weight on them.

Lemma D.1. *In any equilibrium satisfying universal divinity with lobbyist representation off the equilibrium path, the politician's interim-belief may only place positive probability on types $[2P - \bar\omega, \bar\omega]$, all of whom except $\omega = 2P - \bar\omega$ lobby directly absent representation. In addition, if $L > 2P - \bar\omega$, then type $\omega = \underline\omega^d = 2P - \bar\omega$ may also be pruned.*

Proof: The net benefit of representing SIGs $\omega \leq 2P - \bar\omega$ is

$$\Delta_U^\ell \left(\pi + \delta \left(\omega - L\right)\right) = k$$

It is clear that types $\omega < 2P - \bar\omega = \underline\omega^d$ may be pruned; either no feasible value of Δ_U^ℓ will invite a deviation, or if some value Δ_U^ℓ makes type ω indifferent to deviating then types $\omega' \in (\omega, 2P - \bar\omega)$ strictly prefer to deviate.

We next argue the highest type $\omega = \underline\omega^d = 2P - \bar\omega$ that does not lobby directly may also be pruned if $L > 2P - \bar\omega$. If $\pi + \delta \left((2P - \bar\omega) - L\right) < k$ then this is straightforward since no value of Δ_U^ℓ invites deviation, so suppose $\pi + \delta \left((2P - \bar\omega) - L\right) \geq k$ but $L > 2P - \bar\omega$. The probability makes type $\omega = 2P - \bar\omega$ indifferent to deviating is $\frac{k}{\pi - \delta(L - (2P - \bar\omega))} > \frac{k}{\pi}$ but since $\pi + \delta\left(\omega - L\right) > k > 0 \ \forall \omega \in (2P - \bar\omega, P)$, this probability makes all unworthy types who lobby directly strictly prefer to deviate. QED

Using the preceding we now propose an equilibrium with lobbyist exist satisfying universal divinity for every possible value of L. The lemma is divided into several subcases. The first two subcases ($L < 2P - \bar\omega$ and $\hat{\underline\omega}^\ell(L) \geq 2P - \bar\omega$) are the ones for which we argue that lobbyist exit will indeed prevail as the equilibrium. The remaining subcases are those in which we have already characterized another equilibrium with representation, and argue that equilibrium will prevail instead of lobbyist exit. In several subcases, our equilibrium is not the unique one sustaining lobbyist exit that satisfies universal divinity, but in the proof we provide a heuristic argument for our choice.

Lemma D.2. *The following equilibria with lobbyist exit ($\underline{\omega}^\ell = \bar{\omega}$) satisfy universal divinity for each possible value of L.*

(D1) $L < 2P - \bar{\omega}$: off-path the politician believes $\omega = 2P - \bar{\omega}$ with probability 1, and $\Delta_U^\ell = \Delta_W^\ell = 0$.

(D2) $\hat{\underline{\omega}}^\ell(L) \geq \bar{\omega}$: off-path the politicain believes $\omega \sim U[2P - \bar{\omega}, \bar{\omega}]$, and $\Delta_\omega^\ell = \Delta_\omega^d$ $\forall \omega$.

(D3) $L \geq 2P - \bar{\omega}$ and $\hat{\underline{\omega}}^\ell(L) < \bar{\omega}$: off-path the politician believes $\omega \sim U[2P - \bar{\omega}, \bar{\omega}]$, and $\Delta_\omega^\ell = \Delta_\omega^d$ $\forall \omega$.

Proof:

(Case D.1): We first argue that iterating refinement D1 implies that unworthy types who will lobby directly $\omega \in (\underline{\omega}^d, P)$ may be pruned, and so the set of off-equilibrium path beliefs for the politician must be concentrated on $\{2P - \bar{\omega}\} \cup [P, \bar{\omega}]$. For such types $\pi + \delta(\omega - L) > 0$. To make all such types exactly indifferent to deviation then requires that $\Delta_U^\ell = \Delta_U^d = \frac{k}{\pi}$, but then $\frac{k}{\pi}(\pi + \delta((2P - \omega) - L)) = k\left(1 + \frac{\delta}{\pi}((2P - \omega) - L)\right) > k$ so a type $\omega = \underline{\omega}^d$ would strictly prefer to deviate.

Next we argue that universal divinity places *no further restriction on beliefs.* Observe that to make worthy types $\omega \in [P, \bar{\omega}]$ indifferent to deviating requires that $\Delta_W^\ell = \Delta_W^d \iff \Delta_U^\ell = \frac{k}{\pi} + \left(\frac{1}{\bar{r}}\right)\left(\frac{\bar{\omega} - P}{4} - \frac{\phi^\ell}{\bar{r}}\right)$; given such a best response the net benefit to a type $\omega = 2P - \bar{\omega}$ of deviating is

$$\frac{1}{\bar{r}}\left(\frac{\bar{\omega} - P}{4} - \phi^\ell\right) + \Delta_U^\ell \delta((2P - \omega) - L)$$

For any $L < 2P - \bar{\omega}$ this expression can be both strictly negative given some best responses by the politician to beliefs concentrated on $\{2P - \bar{\omega}\} \cup [P, \bar{\omega}]$ (for example, if the politician places equal weight on $2P - \bar{\omega}$ and $\bar{\omega}$ then $\Delta_U^\ell = 0$ and $\Delta_W^\ell = \phi^\ell = \frac{\bar{\omega} - P}{2}$ is a best response) and strictly positive (for example, if the politician believes $\omega \in [P, \bar{\omega}]$ so $\Delta_U^\ell = 1$ and $\phi^\ell = 0$).

Although universal divinity places no further restrictions on beliefs, we further argue heuristically that off-equilibrium path, we should consider only beliefs that are a point mass on $\omega = 2P - \bar{\omega}$ ($\rightarrow \Delta_U^\ell = \Delta_W^\ell = 0$) or uniform on $\omega \in [P, \bar{\omega}]$ ($\rightarrow \Delta_U^\ell = \Delta_W^\ell = 1$). Our logic is as follows. First, if a *given* worthy type $\omega \in [P, \bar{\omega}]$ is indifferent to (strictly prefers) to deviate, then so too do *all* worthy types – so there

is such no reason for the politician to believe that some worthier types are likelier to have deviated than others. Second, the ex-ante probability that ω is exactly $2P - \bar{\omega}$ is 0 since ω is distributed uniformly; thus, the politician can only believe off path that $\omega = 2P - \bar{\omega}$ if she places *no weight* on $\omega \in [P, \bar{\omega}]$.

Among these two possible off-path beliefs, only one supports lobbyist exit as an equilibrium – if the politician believes that $\omega = 2P - \bar{\omega}$ off equilibrium path. We thus argue that this equilibrium will prevail when $L < 2P - \bar{\omega}$.

(**Case D.2**). By Lemma D.1 type $\omega = 2P - \bar{\omega}$ may also be pruned. We argue that universal divinity places no further restriction on the politician's beliefs beyond Lemma D.1 by arguing that there exists a best response to beliefs concentrated on $(2P - \bar{\omega}, \omega]$ that makes unworthy types indifferent to deviation worthy types strictly prefer to deviate, and another best response that makes worthy types indifferent and unworthy types strictly prefer to deviate.

For the former, suppose the politician believes exactly that $\omega = P$ so she is indifferent to granting or denying the favor. Then she never reviews ($\phi^\ell = 0$), so $\Delta_U^\ell = \frac{k}{\pi}$ and $\Delta_W^\ell = \frac{k}{\pi} < \Delta_W^d = \frac{k}{\pi} + \frac{1}{\bar{r}} \left(\frac{\bar{\omega} - P}{4} \right)$ is a best response. For the latter, suppose the politician places equal weight on only $(2P - \bar{\omega}) + 2\varepsilon$ and $\bar{\omega} - 2\varepsilon$, so that $\phi^\ell = \frac{\bar{\omega} - P}{2} - \varepsilon > \frac{\bar{\omega} - P}{4}$. Then $\Delta_W^\ell = \frac{k}{\pi} + \left(\frac{1}{\bar{r}} \right) \left(\frac{\bar{\omega} - P}{4} \right) = \Delta_W^d$ and $\Delta_U^\ell = \frac{k}{\pi} - \left(\frac{1}{\bar{r}} \right) \left(\phi^\ell - \frac{\bar{\omega} - P}{4} \right) < \frac{k}{\pi} = \Delta_U^d$ is a best response.

Although universal divinity places no further restrictions on beliefs, we argue heuristically that off-equilibrium path, we should consider only beliefs that place probability γ on $\omega \sim U[2P - \bar{\omega}, P]$ and $1 - \gamma$ on $\omega \sim U[P, \bar{\omega}]$. Our logic is similar to the previous case; if a *given* worthy type $\omega \in [P, \bar{\omega}]$ is indifferent to (strictly prefers) to deviate then so too do *all* worthy types, and if a given unworthy type $\omega \in [2P - \bar{\omega}, P]$ is indifferent to (strictly prefers) to deviate then so too do *all* unworthy types. Thus, there is no reason for the politicain to believe that unworthy (worthy) types do not all deviate together.

It is straightforward to show that the set of politician best responses to this restricted set of beliefs yields feasible pairs $\left(\Delta_U^\ell, \Delta_W^\ell \right)$ satisfying

$$\left\{ \Delta_U^\ell \in [0, 1], \, \Delta_W^\ell = \min \left\{ \Delta_U^\ell + \frac{\phi^\ell}{\bar{r}} \right\}, 1 \right\}$$

with $\phi^\ell = \frac{\bar{\omega} - P}{4}$. The set of best responses to this restricted set of beliefs that in-

vite or make a SIG indifferent to deviation is *identical* across worthy and unworthy types. Iterating our previous heuristic argument then suggests that upon observing a deviation, it is reasonable to suppose that the politician should infer that ω is uniform over the set $[2P - \bar{\omega}, \bar{\omega}]$ who would otherwise lobby directly. With these beliefs, $\Delta_U^\ell = \frac{k}{\pi} = \Delta_U^d$ and $\Delta_W^\ell = \frac{k}{\pi} + \left(\frac{1}{\bar{r}}\right)\left(\frac{\bar{\omega}-P}{4}\right) = \Delta_W^d$ is the unique best response that sustains an equilibrium with lobbyist exit. We thus argue that this is equilibrium will prevail when $\hat{\underline{\omega}}^\ell(L) \geq \bar{\omega}$.

(Case D.3): In Case D.3, the equilibrium with exit coexists with the equilibrium with representation, and we argue that the latter will prevail. In this case, by Lemma D.1 type $\omega = 2P - \bar{\omega}$ may also be pruned. We now examine three subcases.

Subcase D.3.1 ($\hat{\underline{\omega}}^\ell(L) \in (2P - \bar{\omega}, \bar{\omega})$): We argue universal divinity places no further restriction on beliefs. Consider first $\hat{\underline{\omega}}^\ell(L) \in (P, \bar{\omega})$. By previous arguments we know that some best responses will invite deviation from $\omega \in (2P - \bar{\omega}, P]$ but not $\left[P, \hat{\underline{\omega}}^\ell(L)\right]$, and otherwise will invite deviation from $\left[P, \hat{\underline{\omega}}^\ell(L)\right]$ but not $\omega \in (2P - \bar{\omega}, P]$. In addition, types $\omega \in \left(\hat{\underline{\omega}}^\ell(L), \bar{\omega}\right)$ with $\pi + \delta(\omega - L) < 0$ prefer to deviate exactly when types $\omega \in \left(P, \hat{\underline{\omega}}^\ell(L)\right)$ with $\pi + \delta(\omega - L) > 0$ do not, and visa versa.

Although universal divinity places no further restrictions on beliefs, we argue heuristically that off-equilibrium path, we should consider only beliefs that place probability γ on $\omega \sim U[2P - \bar{\omega}, P]$ and $1 - \gamma$ on *either* (i) only $U\left[P, \hat{\underline{\omega}}^\ell(L)\right]$, (ii) only $U\left[\hat{\underline{\omega}}^\ell(L), \bar{\omega}\right]$, or (iii) $U[2P - \bar{\omega}, \bar{\omega}]$. The argument is similar to before; when one type within these sets wishes to deviate so to do all types, and in addition types $\omega \in \left(P, \hat{\underline{\omega}}^\ell(L)\right)$ strictly prefer deviate precisely exactly when types $\omega \in \left(\hat{\underline{\omega}}^\ell(L), \bar{\omega}\right)$ strictly prefer not to (and visa versa). An equilibrium with lobbyist exit then requires that $\Delta_\omega^\ell = \Delta_\omega^d \ \forall \omega$, and it is easily verified that the only beliefs among this restricted set generating such a best response is $\omega \sim U[2P - \bar{\omega}, \bar{\omega}]$ as in Case D.2. We thus argue that this is the only reasonable equilibrium with lobbyist exit to consider; and further recall that under these conditions we argue that the equilibrium with lobbyist entry will instead prevail.

Consider next $\hat{\underline{\omega}}^\ell(L) \in (2P - \bar{\omega}, P]$. An effectively identical argument implies that the same equilibrium with lobbyist exit is the only reasonable equilibrium with exit to consider.

Subcase D.3.2 ($L \geq 2P - \bar{\omega}$ and $\hat{\underline{\omega}}^\ell(L) \leq 2P - \bar{\omega}$): By a similar argument as case

D.2 ($\underline{\hat{\omega}}^\ell(L) \geq \bar{\omega}$) we argue that the only reasonable beliefs are $\omega \sim U[2P - \bar{\omega}, \bar{\omega}]$, and (if $L = 2P - \bar{\omega}$) also that $\omega = 2P - \bar{\omega}$. The latter belief does not support lobbyist exit in a best response, and the former belief does only when $\Delta_\omega^\ell = \Delta_\omega^d \; \forall \omega$.

E   Accessory Proofs

Proof of Lemma B.1

We first argue both that unworthy SIGs must stay home with strictly positive probability, and that worthy SIGs must lobby with strictly positive probability. If all unworthy SIG's lobbied or only unworthy SIG's lobbied, then $E^d[\omega] < P \rightarrow \alpha^d = 0 \rightarrow \Delta_U^d = 0 \rightarrow \left(\Delta_U^d - \Delta_U^\emptyset\right)\pi \leq 0 < k$, so all unworthy SIGs would want to deviate to not lobbying. We next argue that unworthy SIGs lobby with strictly positive probability. If not, then (a) lobbying would be a perfect signal that the SIG is worthy, and (b) $E^\emptyset[\omega] < P$. Then (a) would imply $\alpha^\ell = 1$ and $\phi^\ell = 0 \rightarrow \Delta_U^d = 1$, while (b) would imply $\alpha^\emptyset = 0 \rightarrow \Delta_U^\emptyset = 0$, together implying $\left(\Delta_U^d - \Delta_U^\emptyset\right)\pi = \pi > k$, implying all unworthy SIGs would want to deviate to lobbying.

Next observe that

$$E[\omega] = \Pr(c = d) \cdot E^d[\omega] + \Pr(c = \emptyset) \cdot E^\emptyset[\omega]$$
$$\iff \quad \Pr(c = d) \cdot \left(E^d[\omega] - E[\omega]\right) = \Pr(c = \emptyset)\left(E[\omega] - E^\emptyset[\omega]\right)$$

Since $E[\omega]$ is $< P$ by assumption, the preceding expression implies that $E^c[\omega] \geq P$ (and so $\alpha^c > 0$) for at most one $c \in \{d, \emptyset\}$. Now a strictly interior probability of lobbying for unworthy SIG's implies that they must be indifferent, i.e. $\left(\Delta_\omega^d - \Delta_\omega^\emptyset\right)\pi = k$. This clearly requires $\alpha^d > 0$, in turn implying $E^d[\omega] \geq P$, $E^\emptyset[\omega] < P$, and $\alpha^\emptyset = 0$, further implying $\Delta_U^\emptyset = 0$ and $\Delta_U^d = \frac{k}{\pi}$.

Lastly, the net benefit to a worthy SIG of lobbying is:

$$\left(\Delta_W^d - \Delta_W^\emptyset\right)\pi - k = \left(\left(\Delta_U^d + \frac{\phi_-^\emptyset}{\bar{r}}\right) - \left(\Delta_U^\emptyset + \frac{\phi_+^\emptyset}{\bar{r}}\right)\right)\pi - k = \frac{\phi_-^d - \phi_+^\emptyset}{\bar{r}}$$

Observe that $\phi_-^d > 0$ since unworthy SIGs lobby directly with strictly positive probability. Now a worthy SIGs strategy is a best-response i.f.f. $\phi_-^d = \phi_+^\emptyset$ (implying $\phi_+^\emptyset > 0$, further implying a strictly positive probability that worthy SIGs stay home), or $\phi_-^d > \phi_+^\emptyset$ and all worthy SIGs lobby directly, which in turn implies that only

unworthy SIGs stay home and $\phi_+^\emptyset = 0$. **QED**

Proof of Lemma B.2

$\alpha^d > 0$ requires that $E^d[\omega] = E[\omega|\omega \geq \hat{\underline{\omega}}^d] \geq P \rightarrow \underline{\omega}^d \geq P$. Further we must have $\underline{\omega}^d < P$ since $\underline{\omega}^d \geq P \rightarrow \alpha^d = 1$ and $\phi_-(\underline{\omega}^d) = 0 \rightarrow \Delta_U^d = 1 > \frac{k}{\pi}$. Finally, for every value of $\Delta_U^d \in (0,1)$ there is a unique combination of lobbyist cutpoint $\underline{\omega}^d$ and politician best responses (α^d, ϕ^d) that achieve it. For $\Delta_U^d \in \left(0, 1 - \frac{\phi_-(\hat{\underline{\omega}}^d)}{\bar{r}}\right)$ it is $\underline{\omega}^d = \hat{\underline{\omega}}^d$ ($\rightarrow E^d[\omega] = P$) and $\alpha^d = \frac{\Delta_U^d}{1 - \phi_-(\hat{\underline{\omega}}^d)/\bar{r}}$. For $\Delta_U^d \in \left[1 - \frac{\phi_-(\hat{\underline{\omega}}^d)}{\bar{r}}, 1\right]$ it is the unique value satisfying $1 - \frac{\phi_-(\underline{\omega}^d)}{\bar{r}} = \Delta_U^d$, implying $\underline{\omega}^d > \hat{\underline{\omega}}^d$ and $\alpha^d = 1$. The preceding ensures that the behavior of unworthy SIGs and the politician are mutual best responses. To verify that the behavior of worthy SIGs (always lobby) is also a best response observe that $\underline{\omega}^d < P \rightarrow \phi_+^\emptyset = 0 < \phi_-(\underline{\omega}^d)$. **QED**

Proof of Lemma C.1

Consider an equilibrium strategy profile satisfying Assumption C.1, let p_A be the probability that the SIG accepts price F_W, and let ρ_ω^L denote the probability a SIG of type ω acquires lobbyist representation through the bargaining process.

Now let $U_\omega^\ell(F)$ denote the lobbyist's utility from offering price F in the original strategy profile; it is easily verified that

$$
U_\omega^\ell(F) = \begin{cases} U_\omega^A - (F_\omega - F) & \text{if } F < F_\omega \\ p_A \cdot U_\omega^A + (1 - p_A) U_\omega^R & \text{if } F = F_\omega \\ U_\omega^R & \text{if } F > F_\omega \end{cases}
$$

where U_ω^A is the lobbyist's utility from "accepting" the SIG at its willingness to pay and U_ω^R is the lobbyist's utility from "rejecting" the SIG (which is unaffected by the price due to assumption C.1). From this it is clear that the lobbyst must only mix over prices $F \geq F_\omega$, and that the lobbyist's equilibrium utility must be $\rho_\omega^L U_\omega^A + \left(1 - \rho_\omega^L\right) U_\omega^R$.

Now, jointly perturbing p_A to $p_A' = 1$ and the lobbyist's pricing strategy to F_ω with probability ρ_ω^L and $F_\omega + \varepsilon$ with probability $1 - \rho_\omega^L$ keeps the SIG's strategy a best response, and does not perturb the lobbyist's utility. We further argue that perturbing the SIG's strategy did not change the maximum utility $\max_F \left\{U_\omega^\ell(F)\right\}$ achievable by the lobbyist, and thus his strategy in the perturbed profile must also be a best response. If $U_\omega^A \leq U_\omega^R$ this is straightforward, and if $U_\omega^A > U_\omega^R$ then p_A must

have already been 1 (otherwise the lobbyist would not have had a best response in the original profile). Lastly, the politician's best response set is only affected by the probability the SIG pursues each channel, which was unaffected. **QED**

Proof of Lemma C.2

First suppose that the lobbyist only represents types $\omega \geq \underline{\omega}^d$ who would otherwise lobby directly (for whom the net benefit of representation is $\left(\Delta_\omega^\ell - \Delta_\omega^d\right)\left(\pi + \delta\left(\underline{\omega}^\ell - L\right)\right)$). Then she represents the SIG i.f.f. $\pi + \delta\left(\omega - L\right) \geq 0$, and her behavior must follow a cutpoint.

Suppose next that the lobbyist represents some types $\omega < \underline{\omega}^d$ that do not lobby directly. The net benefit of representing such types is

$$\Delta_U^\ell\left(\pi + \delta\left(\omega - L\right)\right) \geq k$$

Thus, *among* $\omega \leq \underline{\omega}^d$ her behavior must be described by a cutpoint. In addition, if she represents some $\omega \leq \underline{\omega}^d$ then $\pi + \delta\left(\omega - L\right) > 0\ \forall \omega > \underline{\omega}^d$ so she also represent types who would otherwise lobby directly her behavior is described by a cutpoint overall. QED

Example of non-cutpoint equilibria with representation

Suppose $\hat{\underline{\omega}}\left(L\right) \in \left(P, \bar{\omega}\right)$. Consider the lobbyist representing $\left[2P - \bar{\omega}, \underline{\omega}^\ell\right] \cup \left[\bar{\omega}^\ell, \bar{\omega}\right]$ with $\bar{\omega}^\ell = \hat{\underline{\omega}}\left(L\right)$ and $\underline{\omega}^\ell = 2P - \hat{\underline{\omega}}\left(L\right)$, and suppose the SIG lobbies directly i.f.f. $\underline{\omega}^d = 2P - \bar{\omega}$. It is easily verified that both $E^\ell\left[\omega\right] = P$ and $E^d\left[\omega\right] = P$. Further it is easily verified that:

$$\phi^\ell = \frac{\left(\bar{\omega} - P\right) + \left(\hat{\underline{\omega}}\left(L\right) - P\right)}{4} \quad \text{and} \quad \phi^d = \frac{\left(1 - \lambda\right)\left(\bar{\omega} - P\right) + \lambda\left(\hat{\underline{\omega}}\left(L\right) - P\right)}{4}$$

and observe that $\phi^\ell > \frac{\bar{\omega} - P}{4} > \phi^d$.

Now for both $c \in \{\ell, d\}$ we argue that $\exists \alpha^c \leq 1$ s.t. $\left(1 - \frac{\phi^c}{\bar{r}}\right)\alpha^c = \frac{k}{\pi}$. This requires that $\frac{\phi^c}{\bar{r}} \leq 1 - \frac{k}{\pi}\ \forall c \in \{\ell, d\}$ which will hold for $\hat{\underline{\omega}}\left(L\right)$ sufficiently close to P. We last argue that the lobbyist's strategy is indeed a best response. She is indifferent over representing $\omega \in \left[2P - \bar{\omega}, P\right]$ since $\Delta_U^\ell = \Delta_U^d$ and so is willing to carry out her strategy among this set, and since $\Delta_W^\ell > \Delta_W^d$ prefers to represent worthy SIGs i.f.f. $\omega \geq \hat{\underline{\omega}}\left(L\right)$ which is exactly her strategy among this set. QED.

Proof of Lemma C.3

First, recall from Observation B.1 that at $\underline{\omega}^d = \hat{\omega}^d$ we have $\phi_-^d = \phi_+^d$. Next observe that when $\underline{\omega}^\ell \le P$, using the definition and simplifying yields that:

$$\phi_-^d = \phi_+^d = \left(\frac{1}{2}\right) \frac{(1-\lambda)(\bar{\omega}-P)^2}{\left(\lambda\left(\underline{\omega}^\ell - \hat{\omega}^d\right) + (1-\lambda)(\bar{\omega}-P) + (1-\lambda)\left(P - \underline{\hat{\omega}}^d\right)\right)}$$

where the denominator of the second term is the unconditional probability of direct lobbying, which we denote $\rho^S\left(\underline{\omega}^d; \underline{\omega}^\ell\right)$. Next we argue $\underline{\omega}^\ell \in (2P - \bar{\omega}, \bar{\omega}) \rightarrow \lambda\left(\underline{\omega}^\ell - \hat{\omega}^d\right) > (1-\lambda)\left(\hat{\omega}^d - (2P - \bar{\omega})\right)$, which further implies that $\rho^S\left(\hat{\omega}^d; \underline{\omega}^\ell\right) > 2(1-\lambda)(\bar{\omega}-P)$. Observe that

$$
\begin{aligned}
\left(P - \hat{\omega}^d\right)^2 &= (1-\lambda)(\bar{\omega}-P)^2 + \lambda\left(P - \underline{\omega}^\ell\right)^2 \\
&> \left((1-\lambda)(\bar{\omega}-P) + \lambda\left(P - \underline{\omega}^\ell\right)\right)^2 \text{ (since } x^2 \text{ convex)}
\end{aligned}
$$

which implies $P - \hat{\omega}^d > (1-\lambda)(\bar{\omega}-P) + \lambda\left(P - \underline{\omega}^\ell\right)$, which implies $\lambda\left(\underline{\omega}^\ell - \hat{\omega}^d\right) > (1-\lambda)\left(\hat{\omega}^d - (2P - \bar{\omega})\right)$. Finally, using this we have

$$\frac{(1-\lambda)(\bar{\omega}-P)^2}{2\rho^S\left(\hat{\omega}^d; \underline{\omega}^\ell\right)} < \frac{(1-\lambda)(\bar{\omega}-P)^2}{2 \cdot 2(1-\lambda)(\bar{\omega}-P)} = \frac{\bar{\omega}-P}{4}$$

proving the desired property for $\underline{\omega}^\ell \le P$.

To prove the desired property for $\underline{\omega}^\ell \ge P$, observe that $\hat{\omega}^d$ is identical for the reflection point $\tilde{\omega}^\ell = 2P - \underline{\omega}^\ell \le P$ about P. We already know from the preceding that $\frac{\bar{\omega}-P}{4} > \phi_+^d = \phi_-^d$ at $\tilde{\omega}^\ell \le P$. We now wish to show that ϕ_-^d at $\tilde{\omega}^\ell \le P$ is strictly greater than ϕ_-^d at $\underline{\omega}^\ell = 2P - \tilde{\omega}^\ell \ge P$, which yields the desired property. First observe that ϕ_-^d at $\tilde{\omega}^\ell$ is $W \cdot X$, where

$$W = \frac{\lambda\left(\tilde{\omega}^\ell - \hat{\omega}^d\right) + (1-\lambda)\left(P - \hat{\omega}^d\right)}{\lambda\left(\tilde{\omega}^\ell - \hat{\omega}^d\right) + (1-\lambda)(\bar{\omega}-P) + (1-\lambda)\left(P - \underline{\hat{\omega}}^d\right)}$$

and

$$
\begin{aligned}
X = {}& P - \left(\frac{\lambda\left(\tilde{\omega}^\ell - \hat{\omega}^d\right)}{\lambda\left(\tilde{\omega}^\ell - \hat{\omega}^d\right) + (1-\lambda)\left(P - \hat{\omega}^d\right)}\right)\left(\frac{\hat{\omega}^d + \tilde{\omega}^\ell}{2}\right) \\
& - \left(\frac{(1-\lambda)\left(P - \hat{\omega}_d\right)}{\lambda\left(\tilde{\omega}^\ell - \hat{\omega}_d\right) + (1-\lambda)\left(P - \hat{\omega}_d\right)}\right)\left(\frac{\hat{\omega}_d + P}{2}\right).
\end{aligned}
$$

Next observe that ϕ^d_- at $\underline{\omega}^\ell$ is $Y \cdot Z$, where

$$Y = \frac{\lambda\left(\tilde{\underline{\omega}}^\ell - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right) + \lambda\left(P - \tilde{\underline{\omega}}^\ell\right)}{\lambda\left(\tilde{\underline{\omega}}^\ell - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(\bar{\omega} - P\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right) + 2\lambda\left(P - \tilde{\underline{\omega}}^\ell\right)}$$

and $Z = P - \left(\frac{\hat{\underline{\omega}}^d + P}{2}\right)$. Clearly, $X > Z$. We wish to show that also $W > Y$, proving the desired property. Write W as $\frac{a}{b}$ which yields $Y = \frac{a+c}{b+2c}$, where $c = \lambda\left(P - \tilde{\underline{\omega}}^\ell\right)$; taking the difference $W - Y = \frac{a}{b} - \frac{a+c}{b+2c}$ yields $\left(\frac{2c}{b+2c}\right)\left(\frac{a}{b} - \frac{1}{2}\right)$, which is > 0 provided $W = \frac{a}{b} > \frac{1}{2}$. This is straightforward again using $\lambda\left(\tilde{\underline{\omega}}^\ell - \hat{\underline{\omega}}^d\right) > (1-\lambda)\left(\hat{\underline{\omega}}^d - (2P - \bar{\omega})\right)$ since

$$W = \frac{\lambda\left(\tilde{\underline{\omega}}^\ell - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right)}{\lambda\left(\tilde{\underline{\omega}}^\ell - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(\bar{\omega} - P\right)}$$

$$> \frac{(1-\lambda)\left(\hat{\underline{\omega}}^d - (2P - \bar{\omega})\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right)}{(1-\lambda)\left(\hat{\underline{\omega}}^d - (2P - \bar{\omega})\right) + (1-\lambda)\left(P - \hat{\underline{\omega}}^d\right) + (1-\lambda)\left(\bar{\omega} - P\right)} = \frac{1}{2} \quad \textbf{.QED}$$