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Appendix A: Theoretical Details and Proofs

A1. The Extended Game Theory Literature

Advice-giving by interested or biased parties has spawned a large and complex theoretical literature. Within this literature, existing models of non-verifiable information fall into two broad classes: cheap-talk models, in which a biased expert transmits information using a costless signal, and expenditure models, in which a biased expert pays to communicate. The first class of models, initiated by Crawford and Sobel (1982), and extended by numerous authors (for example, Krishna and Morgan 2001 and Battaglini 2004) is by far the more extensive. Because our interest is expenditures on lobbying, however, we focus on the second class of models.

The lobby expenditure literature distinguishes two situations. In the first costly activism situation, the advisor pays an exogenous fee (typically a flat fee) to engage in advocacy or acquire information (e.g. Lohmann 1993, Grossman and Helpman 2001 [section 5.1], Bennedsen and Feldmann 2002, and Battaglini and Benabou 2003). The focus of the analysis is how the legislator extracts truthful information from observed levels of activism, or on the micro-details of advocacy. Since there is no room in these models for the SIG (special interest group) to vary the level of lobbying expenditure (given participation), the state expenditure data are poorly suited for testing these models.[1]

The second group of models examines situations with endogenous spending. In these models, an observable, endogenously chosen expenditure level provides information about the group's private information. Initiated by Potters and Van Winden (1992) and Austen-Smith (1995) and extended in Grossman and Helpman (2001: Section 5.2), these models adapt the standard technology of costly

[1] These models may be quite good for generating predictions about targeting.

signaling to a political setting.[2] Data on groups' lobbying expenditures appears well-suited for testing this type of model.[3]

We theory proceed as follows. First, we review the basic framework, which we see as applicable in states with annual policy making due to annual budgeting. We then consider lobbying in the off-budget year of states with biennial budgeting. Here, due to the costliness of legislative action, the status quo is privileged absent a compelling reason for change. We distinguish states with higher and lower legislation costs in the off-budget year. Finally, we consider rational lobbying in budget years for states with biennial budgeting. Here, the state's policy receives active reconsideration but actors anticipate a degree of stickiness in policy in the next period.

A2. Random Walk Assumptions

In what follows we assume the state of the world evolves as a random walk. More specifically, if the state of the world in period 1 is θ_1, we assume the state of the world in the second period, θ_2, is

[2] Austen-Smith (1995) differs significantly from the other two models, in that the expenditure is a campaign contribution signaling the group's preferences rather than any policy-relevant information per se. In the model, the group acquires policy-relevant information subsequent to its costly signal and then engages in cheap talk lobbying. Lyon and Maxwell (2004) examine signal jamming in the context of Grossman and Helpman's informational lobbying model. Here, a third party with non-state-contingent preferences may obscure a signal for the SIG, either by subsidizing the signal's production or by paying for its extinction. To the extent signal jamming is a common occurrence, the practice will diminish or extinguish the patterns predicted by the standard Grossman and Helpman informational lobbying model.

[3] The base case in the endogenous spending framework involves a single signaler. In fact, because the signaler is perfectly informed about the policy-relevant information and separating equilibria exist, there is little real need for multiple signalers (see Grossman and Helpman 2001: 163 ff.) Extending the PWGH framework to include partially informed groups who engage in strategic action within and across coalitions of signalers would be a significant theoretical departure (see Battaglini and Benabou (2003) for a step in that direction). The amount of lobbying that a focal SIG pursues in adapting our model to dual signaler model would be extremely sensitive to the information structure and assumptions made in the model, and could result in more, equal, or less lobbying. Moreover, since our expenditure data is not issue-specific in any event, new propositions would not be testable with current data. Accordingly, in what follows we abstract from strategic interactions within or across coalitions of special interest groups to focus on the core comparative static predictions of the PWGH framework. However, because many state legislatures meet only periodically, we need to extend the PWGH framework to encompass rational lobbying when the status quo receives only periodic reconsideration. In Section V we consider one-sided lobbying as an additional test of our model.

drawn from a uniform distribution on $\left[\theta_1 - \frac{1}{2}, \theta_1 + \frac{1}{2}\right]$. Uniform drift provides an obvious baseline and motivates the empirical work in a natural way.

We also assume θ_1 is uniformly distributed on $\left[\theta_{1\min}, \theta_{1\max}\right]$. Earlier we assumed θ_2 is uniformly distributed on $\left[\theta_1 - \frac{1}{2}, \theta_1 + \frac{1}{2}\right]$; we further assume $\theta_{1\min} \geq \frac{1}{2}$, so all realizations of θ_2 are > 0.

A3. Proofs and Derivations

Proposition 2

Lobbying and policy in the off-budget year in high k_2 states are discussed in the text. Here we discuss lobbying and policy in low k_2 states.

If $\theta_2 \notin \left\lfloor p_1 - \sqrt{k}, p_1 + \sqrt{k} \right\rfloor$ the lobbying expenditure function indicated in Proposition Two induces revelation of θ_2 (this follows from Proposition One). So suppose $\theta_2 \in \left\lfloor p_1 - \sqrt{k}, p_1 + \sqrt{k} \right\rfloor$. In this case, the policy maker wishes to leave policy unchanged. Consequently, the policy maker cannot force the lobby to distinguish among such states, implying that the lobbying expenditure function is flat for states of the world in the "hole." Call this level of lobbying $\bar{l}$.

The following incentive compatibility constraints are critical. First, for any actual θ_2 outside the hole and θ_2' inside the "hole," it must be better for the SIG to indicate θ_2 and receive $p_2 = \theta_2$ than indicate θ_2' and receive $p_2 = p_1$. Second, for any actual θ_2 within the hole and any θ_2' outside the hole, it must be better for the SIG to indicate θ_2 is in the hole and receive $p_2 = p_1$ than indicate θ_2' and receive $p_2 = \theta_2'$.

Formally, in the case of positive bias we require

$$U(l(\theta_2), p_2(l); \theta_2, \delta) = -(-\delta)^2 - 2\delta(\theta_2 - \theta_{2\min}) \geq$$

$$U\left(\bar{l}, p_2(\bar{l}), \theta_2', \delta\right) = -(p_1 - \theta_2 - \delta)^2 - \bar{l}$$

$$\forall \theta_2, \theta_2',\ \theta_2 \notin \left[p_1 - \sqrt{k}, p_1 + \sqrt{k}\right] \text{ and } \theta_2' \in \left[p_1 - \sqrt{k}, p_1 + \sqrt{k}\right] \qquad \text{(A1)}$$

and

$$U(\bar{l}, p_2(\bar{l}), \theta_2, \delta) = -(p_1 - \theta_2 - \delta)^2 - \bar{l} \ \geq\ U(l(\theta_2'), p_2(l); \theta_2', \delta) =$$

$$-\left(\theta_2' - \theta_2 - \delta\right)^2 - 2\delta\left(\theta_2' - \theta_{2\min}\right)$$

$$\forall \theta_2, \theta_2', \theta_2 \in \left[p_1 - \sqrt{k}, p_1 + \sqrt{k}\right] \text{ and } \theta_2' \notin \left[p_1 - \sqrt{k}, p_1 + \sqrt{k}\right] \qquad \text{(A2)}$$

First consider (A1). When $\theta_2 \leq p_1 - \sqrt{k}$, it will be observed that the greatest temptation to deviate occurs when $\theta_2 = p_1 - \sqrt{k}$ as $U(l(\theta_2), p_2(l); \theta_2, \delta)$ is larger for all other values of θ_2 while $U\left(\bar{l}, p_2(\bar{l}), \theta_2', \delta\right)$ is smaller. Similarly when $\theta_2 \geq p_1 + \sqrt{k}$, the greatest temptation to deviate occurs at $\theta_2 = p_1 + \sqrt{k}$. Hence, it is sufficient to check (A1) at those two values. To wit, at $\theta_2 = p_1 - \sqrt{k}$ and $\theta_2 = p_1 + \sqrt{k}$ we require

$$-(-\delta)^2 - 2\delta(\theta_2 - \theta_{2\min}) \geq -(p_1 - \theta_2 - \delta)^2 - \bar{l}$$

$$\Rightarrow \bar{l} \geq 2\delta(p_1 - \theta_{2\min}) - k \qquad \text{(A3a)}$$

Now consider (A2). When $\theta_2 \in \left[p_1 - \sqrt{k}, p_1 + \sqrt{k}\right]$, it will be observed that the most attractive $\theta_2' \leq p_1 - \sqrt{k}$ is $\theta_2' = p_1 - \sqrt{k}$ as $U(l(\theta_2'), p_2(l); \theta_2', \delta)$ is smaller for all other values of $\theta_2' \leq p_1 - \sqrt{k}$, and similarly $\theta_2' = p_1 + \sqrt{k}$ is the most attractive θ_2' to deviate to when

$\theta_2' \geq p_1 + \sqrt{k}$.[4] So it is sufficient to check (2) at those values. Thus, at at $\theta_2' = p_1 - \sqrt{k}$ and $\theta_2' = p_1 + \sqrt{k}$ we require

$$-(p_1 - \theta_2 - \delta)^2 - \bar{l} \geq -\left(\theta_2' - \theta_2 - \delta\right)^2 - 2\delta\left(\theta_2' - \theta_{2\min}\right)$$

$$\Rightarrow \bar{l} \leq 2\delta(p_1 - \theta_{2\min}) - k \qquad \text{(A3b)}$$

Combining (A3a) and (A3b) yields $\bar{l} = 2\delta(p_1 - \theta_{2\min}) - k$, for the case with positive bias. A similar analysis in the case of negative bias yields $\bar{l} = 2\delta(p_1 - \theta_{2\max}) - k$.

Proposition 3

The maximand for the policy maker, conditional on truthful revelation of θ_1 and optimal play in the second period, is a policy loss in the first period, an expected policy loss in the second period given optimal legislating, and a legislating cost in the second period conditional on θ_2 falling outside the "hole." The maximand for the SIG is composed of a policy loss and associated lobby expenditures in the first period, and an expected policy loss and associated lobby expenditures in the second period.[5]

High k_2 states. In these states the policymaker anticipates that the "hole" will encompass the entire θ_2 space so $p_2 = p_1$ and no legislating costs are incurred. The policy maker's maximand is

$$-(p_1 - \theta_1)^2 - \int_{\theta_1 - \frac{1}{2}}^{\theta_1 + \frac{1}{2}} (p_1 - \theta_2)^2 f(\theta_2) d\theta_2$$

$$= -(p_1 - \theta_1)^2 - (p_1 - E(\theta_2))^2 - \text{var}(\theta_2)$$

Noting that $E(\theta_2) = \theta_1$ and $\text{var}(\theta_2) = \frac{1}{12}$, this expression is $-2(p_1 - \theta_1)^2 - \dfrac{1}{12}$

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[4] This follows from $\dfrac{\partial}{\partial \theta_2'} U(l(\theta_2'), p_2(l); \theta_2', \delta) = -2\left(\theta_2' - \theta_2\right) <> 0$ as $\theta_2' >< \theta_2$.

[5] It could also be the case that it is "more valuable" to lobbyists to influence policymakers in on-budget years. In the context of the model and if one holds costs fixed across years, but allow benefits to rise in the on-budget year, the results for the model are the same. We thank the referee for making this point.

Clearly, the best first period policy for the policy maker is $p_1 = \theta_1$, so that "high k_2 states" are those where $k_2 \geq \frac{1}{4}$.

In the high k_2 states, lobbying in the second period is zero ($l_2(\theta_2) = 0$). Therefore, SIG's maximand is

$$-(p_1 - \theta_1 - \delta)^2 - l_1(\theta_1) - \int_{\theta_1 - \frac{1}{2}}^{\theta_1 + \frac{1}{2}} (p_1 - \theta_2 - \delta)^2 f(\theta_2) d\theta_2$$

$$= -(p_1 - \theta_1 - \delta)^2 - (p_1 - E(\theta_2) - \delta)^2 - \text{var}(\theta_2) - l_1(\theta_1)$$

$$= -2(p_1 - \theta_1 - \delta)^2 - \frac{1}{12} - l_1(\theta_1)$$

The marginal gain to the SIG of a higher belief by the policy maker about the value of θ_1 is twice what it is in states with annual budgeting. Consequently, the lobbying expenditure function must be twice as steep to induce truthful revelation of θ_1: $l_1(\theta_1; \delta, \theta_{1\min}, \theta_{1\max}) = \begin{cases} 4\delta(\theta_1 - \theta_{1\min}) \; if \; \delta \geq 0 \\ 4\delta(\theta_1 - \theta_{1\max}) \; if \; \delta < 0 \end{cases}$

Low k_2 states. In this case, the policy maker will alter policy and incur the legislating cost if and only if θ_2 falls outside the "hole," which may happen if $\theta_{2\max} > p_1 + \sqrt{k}$ and/or $\theta_{2\min} < p_1 - \sqrt{k}$. Recall from Proposition 2 that if θ_2 falls outside the "hole," the SIG reveals θ_2 to the policy maker who then sets $p_2 = \theta_2$. Consequently, the policy maker's maximand becomes

$$-(p_1 - \theta_1)^2 - \int_{p_1 - \sqrt{k}}^{p_1 + \sqrt{k}} (p_1 - \theta_2)^2 f(\theta_2) d\theta_2 - k\left(1 - 2\sqrt{k}\right)$$

$$= -(p_1 - \theta_1)^2 - \frac{2}{3} k^{\frac{3}{2}} - k\left(1 - 2\sqrt{k}\right)$$

$$= -(p_1 - \theta_1)^2 - \frac{4}{3} k^{\frac{3}{2}} - k$$

Again, the best first period policy for the policy maker is $p_1 = \theta_1$.

We focus on the case of positive bias for the SIG. From Proposition 2, if θ_2 falls outside the "hole," the SIG spends $2\delta(\theta_2 - \theta_{2\min}) = 2\delta\left(\theta_2 - \theta_1 + \frac{1}{2}\right)$, the policy maker sets $p_2 = \theta_2$ and the SIG receives a policy loss of $-\delta^2$. If θ_2 falls inside the "hole," the SIG spends the flat amount $2\delta(p_1 - \theta_{2\min}) - k = 2\delta\left(p_1 - \theta_1 + \frac{1}{2}\right) - k$, the policy maker does not alter policy and the SIG receives a policy loss of $-(p_1 - \theta_2 - \delta)^2$. Consequently

The SIG's maximand becomes:

$$-\left((p_1 - \theta_1 - \delta)^2 + l_1(\theta_1)\right) - \int_{\theta_1 - \frac{1}{2}}^{p_1 - \sqrt{k}} \left((\delta)^2 + 2\delta\left(\theta_2 - \theta_1 + \frac{1}{2}\right)\right) f(\theta_2)d\theta_2$$

$$- \int_{p_1 - \sqrt{k}}^{p_1 + \sqrt{k}} \left((p_1 - \theta_2 - \delta)^2 + 2\delta(p_1 - \theta_1 + \frac{1}{2}) - k\right) f(\theta_2)d\theta_2$$

$$- \int_{p_1 + \sqrt{k}}^{\theta_1 + \frac{1}{2}} \left(\delta^2 + 2\delta\left(\theta_2 - \theta_1 + \frac{1}{2}\right)\right) f(\theta_2)d\theta_2$$

Solving each integral and combining terms yields

$$-\left((p_1 - \theta_1 - \delta)^2 + l_1(\theta_1)\right) + \frac{4}{3}k^{\frac{3}{2}} - \delta(1 + \delta)$$

Note that the value of the second period is independent of the policy set in the first period, conditional on θ_1 being revealed (which is quite different from the case in the high k_2 states). Consequently, the lobbying expenditure function that forces revelation of θ_1 in the first period is identical to that in annual budgeting states.

Derivation of Expected Expenditure Functions

Using Propositions 1 and 3, $L_A = L_{B1}^{Low\,k} = \int_{\theta} 2\delta(\theta - \theta_{\min}) f(\theta) d\theta = 2\delta(E(\theta) - \theta_{\min}) =$

$2\delta\left(\frac{\theta_{\max} + \theta_{\min}}{2} - \theta_{\min}\right) = \delta(\theta_{\max} - \theta_{\min})$. Using Proposition 3, $L_{B1}^{High\,k} = \int_{\theta_1} 4\delta(\theta_1 - \theta_{1\min}) f(\theta_1) d\theta_1 =$

$2\delta(\theta_{1\max} - \theta_{1\min})$. From Proposition 2, $L_{B2}^{High\,k} = 0$.

Finally, consider $L_{B2}^{Low\,k}$, the expected lobbying expenditures for SIGs in off-budget years in states with biennial budgeting and low *k*. In this case, one must consider joint realizations of θ_2 and θ_1, (θ_1, θ_2). From Proposition 2, if θ_2 falls outside the "hole" the SIG's expenditures are $2\delta(\theta_2 - \theta_{2\min}) =$ $2\delta(\theta_2 - \theta_1 + \frac{1}{2})$ (focusing on positive bias). If θ_2 falls inside the "hole," the SIG's expenditure is $2\delta(p_1 - \theta_{2\min}) - k = \delta - k$ (recalling that $p_1 = \theta_1$). The latter occurs with probability $2\sqrt{k}$. The domain in the $\theta_1 \times \theta_2$ space is θ_2 simple so we integrate over θ_2 first. Putting the pieces together:

$$L_{B2}^{Low\,k} = \int_{\theta_{1\min}}^{\theta_{1\max}} \left(\int_{\theta_1 - \frac{1}{2}}^{\theta_1 - \sqrt{k}} 2\delta\left(\theta_2 - \theta_1 + \frac{1}{2}\right) d\theta_2 + \int_{\theta_1 + \sqrt{k}}^{\theta_1 + \frac{1}{2}} 2\delta\left(\theta_2 - \theta_1 + \frac{1}{2}\right) d\theta_2 + 2\sqrt{k}(\delta - k) \right) f(\theta_1) d\theta_1$$

$$= \int_{\theta_{1\min}}^{\theta_{1\max}} \left(\frac{1}{4}\delta\left(2\sqrt{k} - 1\right)^2 - \frac{1}{4}\delta\left(4k + 4\sqrt{k} - 3\right) + 2\sqrt{k}(\delta - k) \right) f(\theta_1) d\theta_1$$

$$= \int_{\theta_{1\min}}^{\theta_{1\max}} \left(\delta - 2k^{\frac{3}{2}}\right) f(\theta_1) d\theta_1$$

$$= \left(\delta - 2k^{\frac{3}{2}}\right)\left(\theta_{1\max} - \theta_{1\min}\right)$$

A4. Discussion of our Model Relative to Vote-Buying and Policy Implications (referenced in footnote 19)

It is worth highlighting the theoretical and empirical differences between vote-buying models and informational lobbying models. First and foremost, vote-buying models involve the transfer of money from an interest group to a political campaign or politician; lobbying expenditures do not. In fact, none of the expenditures studied in this paper involved the transfer of money from interest group to politician or campaign. Second, the revealed temporal patterns of spending are distinctly different. While most campaign contributions occur in the 12 months before an election, while lobbying expenditures occur in budget years, independent of the electoral cycle. Moreover, the temporal pattern of lobbying expenditures responds to the details of the budget cycle in ways predicted by the extended model. Thus, although some of the predictions of the vote buying and informational signaling models are superficially similar—especially those related to ideological distance—hypotheses 2a-2c, 3a-3c, 4a-4c, and 5 are quite different between the two models. In sum, the domains of the models (contributions versus lobbying expenditures) are different; their logic is dissimilar; and their empirical implications are distinct.

Given the apparent empirical relevance of the PWGH model, it is worth discussing the model's normative and policy implications. The normative implications of PWGH-type models are quite different from those of vote-buying models of campaign contributions. In the latter, contributions are pay-offs to legislators who sell out their constituents' interests. In contrast, in the former, lobbying expenditures help legislators learn about policy relevant conditions. Thus, lobbying actually assists legislators in pursuing the interests of their constituents. Particularly attractive are lobbying expenditures from groups aligned with the legislature, as a mutual agreement on desirable policy allows information transmission to occur more cheaply.

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Appendix B: Data, Method, Results, and Implications

B1. Discussion of Data Collection Process and Comparable Datasets (referenced in footnote 7)

The Center for Public Integrity (CPI) maintains a data base of this kind, but with much shorter panels (none before 1995). We find significant inconsistency in the data within some states in the CPI data. Typical data from an ethics commission consisted of expenditures by a lobbyist on behalf of a client (a group). Determining expenditures by group required carefully matching and assembling expenditures across lobbyists, a laborious procedure.

B2. Classification System (referenced in footnote 8):

In order to create congruence with the classification of campaign contributors used by the Federal Elections Commission (FEC), we classified groups into four categories: membership organizations (e.g., AARP, ACLU, Sierra Club), firms (e.g., GE, Merck), trade associations (e.g., Pharmaceutical Manufacturers' Association (PHARMA)), and unions (e.g., United Auto Workers). In addition to these four categories, we identified a fifth category—government—because it is common for governmental organizations (e.g., city and county governments, school districts, sanitation districts) to lobby the state legislature as well. (These groups are not permitted to provide campaign contributions, and hence do not appear in the FEC classification system.) Each group in the data base was classified into one of these five categories, using supplemental information from web searches when necessary.

B3. Alternative methods and measurements for Table 3 (referenced in footnote 10)

For each of two dependent variables, log of lobbying per capita in a state, and log of total lobbying in a state, we have run the analysis on a) levels on levels with state fixed effects for only those states with stationary series, b) on all states with state fixed effects with corrections for AR-1, c) on all states using the Arellano-Bond Dynamic Panel estimation techniques, d) differences on differences using dummies for session and special session instead of number of days, and e) limiting the data to 1998- 2004 to create a more balanced panel. All of these methods yield remarkably similar results to those presented in Table 2. Please see Table B1 in this Appendix for the results. In addition, we have run a series of analyses with more balanced panel data and these analyses yield statistically significant coefficients on the Budget Year variable of approximately 0.18.

B4. Alternative estimation when legislative session length is endogenous (referenced in footnote 13)

One concern that the number of days the legislature is in session is endogenous to the lobbying effort. To address this, we also estimate all models presented in this paper using a dummy variable for the years in which the legislature is in session. This is mandated in each state's constitution, most at the time of joining the Union, and is unlikely to be influenced by interest groups. The specifications with this variable result in statistically significant coefficients on the distance measure for both the levels regressions ($\beta = .22$; t-statistic = 2.0) and the differences on differences regressions ($\beta = .50$; t-statistic 5.0). Details are available from the authors.

B5. Discussion of National Council of State Legislatures (referenced in footnote 15)

This categorization was made by the National Council of State Legislatures. See the data description in the Table 2. What is attractive about this characterization of the states is that the frequency of budgeting and the kinds of bills that can be considered in each session is given through each state's constitution. In most cases, this was set when the state was admitted to the Union. Some of the states did change these rules in the 1960s and 1970s, in response to the influx of population and economic activity in the state. However, these rules are largely exogenous to the lobbying effort in the states today. In the aggregate dataset, only Arizona and Kentucky switch their budgeting status during the sample period. All analysis is robust to dropping these two states from the analysis.

B6. Policy Implications of this Paper (referenced in footnote 19)

The extended PWGH model also has implications about the normative properties of different budgeting systems, but these are complex and not explored in any depth here. For instance, in contrasting annual budgeting with low-*k* biennial budgeting, there is a trade-off between policy losses due to lock-in followed by drift in the off-year in the biennial design, and expenditures on information transmission in the annual design that may not be particularly valuable in the absence of changes in policy relevant conditions. Low rates of drift and low lock-in costs will tend to favor the low-*k* biennial design; high rates of drift and high lock-in costs will favor the annual design. However, biennial budgeting with high-*k* appears inefficient in the context of our simple model, because lobbying expenditures simply shift into the budget year while policy lock-in necessarily occurs in the off-year. Additional modeling specifically directed at these and related issues could help clarify the potential costs and benefits of the competing institutional designs.

Our paper points to a number of policy implications. First, arbitrary caps on lobbying expenditures are a poor policy prescription, since caps may preclude the transmission of valuable information. This is especially true when a lobbying group is out-of-step with the legislature, since the group may need to spend considerably in order to convince a skeptical legislature. Second, restrictions on the nature of expenditures may well be justified, particularly if the restrictions keep lobbying expenditures directed at information transmission rather than leaking into what are effectively bribes. Heuristically, expenditures on informative studies are good; expenditures on lavish golf vacations bad. Third, rigorous reporting requirements for lobbying expenditures appear useful. Not only do reporting requirements help verify expenditure levels; they may make more difficult the diversion of (good) information dollars into (bad) bribe money.

This view of lobbying expenditures may be unduly benign, but it clarifies the point that all money in politics is not the same thing: information dollars (as it were) are quite different from bribes. And, information dollars may be good, not bad.

B7. First Stage Results (referenced in Section IV, B, 2.)

Please see Table B2 in this Appendix.

TABLE B1: ROBUSTNESS CHECKS OF LOBBYING IN THE STATES

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Dependent Variable	Ln(Lobbying Per Capita)	Ln(Lobbying)	Ln(Lobbying Per Capita)	Ln(Lobbying)	Ln(Lobbying Per Capita)	Ln(Lobbying)	Ln(Lobbying Per Capita)	Ln(Lobbying)
Method	Levels on Levels (Only Stationary States)	Levels on Levels (Only Stationary States)	AR-1 Corrected Fixed Effects	AR-1 Corrected Fixed Effects	Arellano-Bond Dynamic Panel Estimation	Arellano-Bond Dynamic Panel Estimation	Differences on Differences	Differences on Differences
Variable								
Budget Year	0.356***	0.356***	0.320***	0.323***	0.290***	0.296***	0.173***	0.173***
	(0.12)	(0.12)	(0.08)	(0.08)	(0.07)	(0.09)	(0.05)	(0.05)
Session Days	0.007***	0.007***	0.003***	0.003***	0.003*	0.002*		
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
Session Dummy							1.044***	1.043***
							(0.09)	(0.09)
Special Session Days	0.006*	0.006*	0.001	0.001	0.001	0.000		
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
Special Session Dummy							0.057	0.056
							(0.04)	(0.04)
Election Year	0.015	0.019	-0.014	-0.017	-0.019	-0.012	-0.040	-0.040
	(0.08)	(0.08)	(0.05)	(0.05)	(0.03)	(0.03)	(0.03)	(0.03)
Republican Government	0.311**	0.300**	0.032	0.032	-0.045	-0.046	0.229**	0.229**
	(0.14)	(0.14)	(0.09)	(0.09)	(0.17)	(0.14)	(0.11)	(0.11)
Democratic Government	-0.002	-0.020	-0.111*	-0.115*	-0.114*	-0.166**	-0.010	-0.011
	(0.09)	(0.09)	(0.07)	(0.07)	(0.06)	(0.07)	(0.09)	(0.09)
Ln(Per Capita Income)	0.9174151	0.928	0.894***	1.061***	0.832**	1.095**	1.591	1.616
	(1.52)	(1.52)	(0.09)	(0.09)	(0.37)	(0.48)	(1.07)	(1.07)
Year	12.152*	12.248*						
	(6.36)	(6.37)						
$Year^2$	-0.003*	-0.003*						
	(0.00)	(0.00)						
Constant	-1.21e+04*	-1.22e+04*	-9.074***	4.227***	-8.420**	4.99**	-0.045	-0.036
	(6386.13)	(6396.06)	(0.88)	(0.88)	(3.54)	(2.34)	(0.05)	(0.05)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
n	178.00	178.00	352.00	352.00	313.00	313.00	351.00	351.00

Two-sided t-tests: * p<.10 ** p<.05 *** p<.01

Note: Dependent variables and method used are noted. An observation is a state-year.

TABLE B2: FIRST-STAGE REGRESSION ON STATE TIME-VARYING VARIABLES

	Model 1	Model 2
Method	Differences	Differences
Dependent Variable	Ln(Lobbying)	Ln(Lobbying)
Sample	Budget Years for All States	Non-Budget Years for Biennial States Budget Years for Annual States
Variable		
Ln(Per Capita Income)	0.6544	1.1654
	(0.70)	(0.76)
Days in Session	0.0005	0.0008
	(0.00)	(0.00)
Days in Special Session	-0.0010	0.0013
	(0.00)	(0.00)
Election Year	-0.0288	-0.0326
	(0.02)	(0.02)
Republican Unified Govt	0.1741**	0.0208
	(0.07)	(0.09)
Democratic Unified Govt	-0.0585	0.0117
	(0.07)	(0.09)
Constant	0.1223***	-0.1305***
	(0.04)	(0.04)
State Fixed Effects	Yes	Yes
n	278	274

Two-sided t-tests: ** p<.05 *** p<.01

Note: The dependent variable is the log of total aggregate lobbying expenditures in the state in a year. The sample frames, standard errors, statistical significance, and use of fixed effects are noted.

Appendix C: Robustness of Results in Section V

C1. Robustness 1: Distance-CF (Section V.A.)

In order to obtain more fine-grained measures of interest group distance to a legislature, we created a new measure called Distance-CF. Bonica (2014) developed what is now a widely used measure of interest group ideology called CF-Scores. The measures were constructed by tracking the ideology scores of congressional representatives and senators and mapping this ideology (weighted by the campaign contributions the interest groups gave to the elected officials) into an ideology score for the interest group. Thus, each interest group has a CF-score which reflects the weighted ideology of the recipient of the group's campaign contribution. These CF scores are available at: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/UQLKRY

We took our dataset of 7,052 observations and mapped these into the CF-Score/Bonica database. This was a substantial task because interest groups in the Bonica database do not have the same unique identifiers as in our lobbying database. With a battery of research assistants and large amount of time, we matched interest groups and thus generated CF-scores for 4,634 observations in our dataset using the Bonica (2014) scaling of ideology (which is a different scale than used in our Distance measures).[i]

In order to develop Distance-CF scores, we now needed a measure the distance from the interest group to the state government. Thus, the next step was to develop ideology scores for the government on the Bonica scale. We developed a number of different ways to measure a CF-score of state governments, but none was perfectly satisfactory. In the end, we opted to use an approach not dissimilar to the approach used earlier in the paper. We assumed firms, though having heterogeneous preferences, are *on average* aligned with Republicans and that unions, though having heterogeneous preferences, are *on average*, aligned with Democrats. We set the Unified Republican government ideal point at the average of the CF scores of all firms (-1.64), and we set the Unified Democratic government idea point at the average of the CF scores of all unions (0.27). The divided government ideal point was set at the median value between the Unified Democratic and Unified Republican government scores (-0.69).

With the unique CF-scores for each interest group and ideal points in CF-score space for each form of government, we were able to generate a CF-Distance score for each interest group-government pair. CF-Distance is (the absolute value of) the distance between the interest group and government in CF-score space.

We then replicated the entire Table 6 and Table 7 in the main paper, using Distance-CF. The results of the fully re-estimated Table 6 are provided here as Table C1. The results of a re-estimated Table 7 are in the main body of the paper (Table 11). In Table C1, Models 1-5 present the levels regressions and Models 6-10 present the differences regressions. In all the models, the coefficient on Distance-CF is positive and in many of the models, it reaches standard level of statistical significance, despite losing more than 34% of our data points, creating less powerful statistical tests. Our preferred model, as noted in the paper, is Model 10, as this is the most stringent and specific test of the theory as it measures changes in lobbying expenditures as a function of changes in Distance-CF. Thus, this model is identified off changes in the political make-up of government. Model 10 suggests that an increase of one-point in Distance-CF will result in a 28.5% increase in lobbying. Model 5, the fully specified levels model, reaches statistical significance at the 92% level of confidence, and its coefficient value suggests that a one-point change in Distance-CF will result in 13% more lobbying. These magnitudes are comparable to, but slightly less than, those values found in Table 6 of the paper. Other nested specifications are presented and the Distance-CF coefficient continues to be positive and largely statistically significant, especially in the differences models.

In Table 11 of the paper, we replicate Table 7 in the paper using Distance-CF. Because the results are the same as in the text of the paper, we do not repeat the findings. We do highlight, though, that the empirical results of Model 1CF, in the budget years, with the Distance-CF scores are all consistent with all the predictions in the second hypothesis: $L_A = L_{B_1}^{low\,k}$, $L_{B_1}^{high\,k} = 2L_A$, $L_{B_1}^{high\,k} = 2L_{B_1}^{low\,k}$. The Distance-CF model in the off-budget years, found in Model 2CF is also consistent with two of the three predictions of Hypothesis 3. Overall, the results with Distance-CF mirror the results in the main analyses congruent with Hypotheses 2a, 2b, 2c, 3a, and 3c; only Hypothesis 3b does not find support in the analysis with Distance-CF.

This is analysis is not without its shortcomings. First, the Bonica (2014) data measures interest group ideology at the federal level. Our dataset is for these same lobbying groups at the state level. One assumption that must be made is that a given group's ideology as measured at the federal level is not very different from that same group's ideology at the state level. Second, there are many ways to set the ideal points for the government, as we experimented with many alternative approaches. We have assumed that firms, *on average*, are allied with Republicans, and unions, *on average*, are allied with Democrats. Despite these assumptions, we believe this is the best data and best analytical approach we could develop for generating more fine-grained measures of hundreds and hundreds of interest groups over many years in our datasets.

C2. Robustness II: One-Sided Lobbying Using the Thieme (2019a,b) Data (Section V.B.1.)

The purpose of this empirical approach is to identify the SIGs which are most likely engaged in predominantly one-sided lobbying. The general approach is to map the one-sided lobbying categories in the Thieme (2019a,b) database to the lobbying categories in our database and then to determine which groups are most likely to be associated with those categories. Thieme (2019a,b) has collected a census of all lobbying on each of the 13,580 bills introduced into the legislature for the state of Wisconsin from 2003-2015. For each bill, the State requires interest groups that lobby on the bill to indicate if they are lobbying in support of the bill, in opposition to the bill, or "other" position on the bill. We define one-sided lobbying as: "one or zero groups on one side; everyone else is on the other side, neutral, or unknown, OR 90% or greater of lobbying groups are on one side." (An alternative definition of one-sided lobbying is discussed in the footnote.)[ii] For each bill (and each definition), Professor Thieme kindly provided us with a database of the bills and whether the bill qualified as one-sided "pro" lobbying, one-sided "against" lobbying, or neither. Just over 70% of bills are characterized by one-sided lobbying by the definition above.

Thieme (2019b) categorizes each of the bills introduced into the Wisconsin legislature as falling into one of 11 categories. Our 12-state lobbying data in this paper has created 25 categories of interest group areas. We map our 25 categories into Thieme's 11 categories. The mapping is presented in Table C2. For each category in the Thieme data, we know how much one-sided lobbying occurs. We then impute that into the categories in our data. For example, 84% of lobbying Thieme's Transportatoin, Telecommunications, and Technology category is one-sided. Thus, based on Table C2, we would impute 84% of lobbying is one-sided in our database in our Telecommunications, Transportation, Manufacturing Hi-Tech (not telecom), and Services Hi-Tech (not telecom) categories. Table C2 provides the average level of one-sided lobbying by Thieme category. We create a dummy variable =1 if a category has more than 80% one-sided lobbying, and =0 otherwise. We then limit the sample frame to those categories where greater than 80% of the observations are believed to be one-sided.

With this approach, we replicate Table 6 and Table 7 of the paper. In the main paper, we present and discuss a replication of Table 5, Model 10, and Table 6, Models 1 and 2, both with our usual distance measure and with our Distance-CF measure. Here, for completeness, we provide the full replication of Table 5's 10 models with both distance measures. Table C3 shows a full replication of Table 6 using the Thieme approach to one-sided lobbying. Table C4 shows a full replication of Table 6 using the Thieme approach at the Distance-CF scores. In all of the results in Table C3, the coefficients on the Distance and Distance-CF measures are similar to those found in Table 6 and tend to be positive, large, and statistically significant. Even with both adjustments (Thieme and CF-scores), the coefficient on Distance-CF is positive and statistically significant, as in the original results, despite the sample now being only 35% of the original sample size. They conform to the expectations of the theory with respect to Hypothesis 1 which is one of the core predictions of the theory.

The replication of Table 7 using the Thieme approach is found in Table 11 of the main paper. These results are strikingly similar to the results in Table 6. The coefficients on Distance are both positive and statistically significant at the 99% level, as predicted by the theory. The coefficient on Biennial High k in Model 1CP is 0.61 and statistically significant, allow us to reject the hypothesis that Biennial High k states have equivalent lobbying to annual states in budget years, but does not allow us to reject the hypothesis that these high k states have twice the lobbying of annual states in those same years. In addition, Biennial Low k states are predicted to have levels of lobbying similar to annual states in budget years, consistent with the theory. In Model 2CP the coefficients on Biennial High k and Low k are both positive and statistically significant. As in Table 5, the former coefficient is statistically larger than the latter coefficient. Overall, the results from this analysis are completely consistent with the main results regarding Hypotheses 2 and 3, finding consistency with five of the six sub-hypotheses of Hypotheses 3 and 4.

We find this approach attractive for a number of reasons. First, it is the only approach that employs state level lobbying data. The nature of state level issues and lobbying is quite different from federal lobbying. Lobbyists are less expert, deal with a different set of issues, and might employ different strategies than at the federal level. Much of the behavior of state level lobbyists in the literature has been imputed from behavior at the federal level. However, this dataset allows us to do a state-to-state level imputation on issues and interest groups. Second, Wisconsin is one of (and the largest) three states that maps interest groups positions to bills, and the only state that has a long time series of data doing so. This creates a unique opportunity in the archival data to do large scale statistical analysis knowing the position of groups. Most papers at the federal level extract positions of interest groups through careful, intense, and detailed interviews, reviews of the press, and analysis of websites (Baumgartner et al 2009). This yields detailed data, but very small sample sizes. Third, the Thieme categories and our categories were created at the time of data collection, and thus unlikely to be manipulated for the purposes of this paper. Overall, the advantage to this approach is to begin to isolate those cases of lobbying in which there is likely to be a high proportion of one-sided lobbying.

However, this approach is not without drawbacks. First, it assumes that the categories and interest group engagement in issues in Wisconsin is, to a first approximation, the same as other states. Second, there is a 30% variation between the highest amount of one-sided lobbying and lowest amount of one-sided lobbying. We assume that the degree of variation in each subject is roughly the same across all states in the 12-state dataset. Third, it assumes the category mapping from Thieme to our categories is, to a first approximation, reasonable. Despite these potential shortcomings, we believe this is the best approach for identifying the likely one-sided lobbying.

C3. Robustness III: One-Sided Lobbying Using the Baumgartner et al (2009) and Weighted Regression Techniques

The purpose of this empirical approach, like that of Thieme (2019a,b), is to identify the SIGs which are most likely engaged in one-sided lobbying. As before, the general approach is the map the one-sided lobbying categories in the Baumgartner et al (2009: Table A1) database to the lobbying categories in our database and then to determine which groups are most likely to be associated with those categories. Through data, archival research, and interviews, Baumgartner et al (2009) has painstakingly collected incredibly detailed information of 98 bills 106th and 107th Congress that were lobbied by interest groups. The bills were collected from a stratified sample with greater weight accorded to those issues that are of interest to a greater number of organizations (see Baumgartner et al 2009: 4-5 for a detailed description of the sampling approach), meaning that issues that were lobbied more heavily will be more highly represented. If issues which are more heavily lobbied are more likely to have two-sided lobbying rather than one-sided lobbying, then the sample will underestimate the frequency of issues which are one-sided lobbied.

We used the data in Table A1 of Baumgartner et al (2009) and supplemented that with the extensive detailed archived developed by these authors and placed on the "Advocacy and Public Policymaking" website http://lobby.la.psu.edu/ to supplement our analysis. For each bill, the authors identified the various positions that each interest group took on the issue and how many groups were taking each of those positions. From this position data, we can determine the percentage of bills that had one-sided lobbying. As before, we define one-sided lobbying as "one or zero groups on one side; everyone else is on the other side, neutral, or unknown, OR 90% or greater of lobbying groups are on one side." Under this definition, 30% of the bills in the Baumgartner et al database have one-sided lobbying.

We mapped each bill in the Baumgartner et al database into one or more of the 37 categories in our database. To ensure the correct mapping, we read the Advocacy and Public Policymaking website to learn the details of the bill. A number of bills were mapped into more than one category. (This bill mapping is available upon request from the authors.) We now had 98 bills mapped into 37 categories. We then examined for each of the 37 categories, how many bills in that category had one-sided lobbying and how many had two-sided lobbying. We created a percentage of total bills in each category that had one-sided lobbying and used that vector of percentages as the weights in the weighted regression analysis described below. Table C5 has the 37 categories and the weights used. All observations in our database that are in a given category are weighted by the percentage of one-sided lobbying in that category as determined by the Baumgartner et al (2009) data. Because 45% of observations are classified in categories with 100% two-sided lobbying, they have weights which are zero and are thus eliminated from our sample frame. In order to estimate the parameters, we use weighted ordinary least squares regression techniques. We are able to use weighted regression because there is substantial variance in the weights (from 0 to 1.00), thus we are able exploit the full variation of weights.

With this approach, we replicate Table 6 of the paper. In the main paper, we present and discuss a replication of Table 6, Model 10, both with our usual distance measure and with our CF-Distance measure. Here, for completeness, we provide the full replication of Table 6 with both distance measures. Table C6 shows a replication of Table 6 using the Baumgartner et al approach to one-sided lobbying. Table C7 shows a replication of Table 6 using the Baumgartner et al approach with the CF-Distance scores. In all the results the coefficients on the Distance and CF-Distance measures are similar to those found in Table 5. In Table C6, the fully specified models (Models 5 and 10) have coefficients on Distance are positive, large, and statistically significant. They conform to the expectations of the theory with respect to Hypothesis 1. In Table C7, the coefficient on CF-Distance in the levels Model 5 is positive and large, but the standard error is large. However, the coefficient on CF-Distance in the differences Model 10 is positive, large, and statistically significant at the 99% level of confidence, as predicted by Hypothesis 1 of the theory. The difference in results could be related to the lack of power in the tests because of the 65% contraction in the sample size relative to Table 6. It may also be because the identification of the statistics in levels model is coming off lower variation in the distance variable, which combined with the lower power, yields unbiased but statistically weaker coefficients. We believe the more stringent Model 10 is a better test.

We are not able to replicate Table 6 using our weighted regression techniques because of limitations in statistical methods for deriving unbiased estimators. A random-effects weighted OLS regression cannot be estimated without additional assumptions. This is related to fact that the random effects are drawn from a distribution and interfere with the weights being imposed on the observations. One can impose additional assumptions in an attempt to estimate the model. In particular, the only way of which we are aware to run this model is a generalized linear latent and mixed model (GLLAMM). These multilevel models impose a structure on the level at which you will estimate the random effects within groups and the weights and impose substantial assumptions on the model. Given we cannot clearly justify the structure for such a multi-level model, and no other general model is available, we do not attempt to replicate Table 7 using weighted regression techniques with random effects.

The weighted regression technique was not used in the Thieme technique because there was no sufficient variation in weights to yield potentially different results from the original regressions in the paper. Hence, we opted to utilize a cutoff approach instead.

This approach is attractive because it provides a second avenue (in addition to Thieme) to measuring and understanding one-sided lobbying. It also embraces very detailed and microanalytic understandings of bills and issues and scales these insights up to thousands of data points, thus providing a bridge between the micro-political and macro-political approaches to understanding lobbying. Finally, it employs a different econometric technique which also allows for more nuanced measurement of one-sided lobbying.

However, there are shortcomings to this approach. First, it assumes that a very small number of observations (n=98) can map well, to a first approximation, to a large dataset. Second, the bills are derived from a sampling technique that might under estimate the degree of one-sided lobbying. Third, this approach assumes that federal lobbying and issues map nicely into state lobbying and issues. Although this approach to one-sided lobbying is not our favored approach, we believe that it confirms the results of other analyses relatively well.

[i] We eliminated 30 observations of firms and unions where the values were extreme. Two thirds of these observations were from two interest groups.

[ii] We also considered many other definitions of one-sided lobbying. One which was similar included "one or zero groups on one side; everyone else on the other side, other, or unknown." This alternative definition yields similar results with different cutoffs (because it is a subset of the data). The data is flexible to other definitions. We believed, however, based on our conversations with academics in the field of lobbying, that the definitions we are using in this paper is one of the best that reflects of one-sided lobbying while still preserving powerful statistical tests.

TABLE C1: INTERST GROUP LEVEL ANALYSIS FOR MULTI-STATE GROUPS WITH CF SCORE

Variable	Levels					Differences				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Distance-CF	0.057	0.177***	0.197***	0.104	0.123*	0.077	0.100	0.099	0.131	0.251***
	(0.10)	(0.06)	(0.06)	(0.07)	(0.07)	(0.08)	(0.06)	(0.08)	(0.09)	(0.09)
Ln(Population)			0.245***	1.106	-0.307			5.599*	17.570***	-2.332
			(0.08)	(1.85)	(2.25)			(3.92)	(6.34)	(7.79)
Ln(Per Capita Income)			2.002***	0.840*	1.812			0.984	-0.322	4.747***
			(0.19)	(0.46)	(1.57)			(0.95)	(1.21)	(1.77)
Session Days			0.007***	0.004***	0.005***			0.005***	0.005***	0.006***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Special Session Days			0.005***	0.003	0.004**			0.002	0.002	0.004**
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Constant	9.397***	9.268***	-15.511***	-20.250	-6.938	0.064***	-0.173	-0.313	-0.282*	-0.511*
	(0.11)	(0.06)	(1.80)	(25.44)	(42.53)	(0.02)	(0.20)	(0.20)	(0.25)	(0.32)
Group Fixed Effects	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	No	No	No	Yes
n	4,634	4,634	4,634	4,634	4,634	3,456	3,456	3,456	3,456	3,456

Two-sided t-tests: *p<.10 ** p<.05 *** p<.01

Note: The sample frame is interest groups that engage in multi-state lobbying in 12 states under analysis. The dependent variable is the log of lobbying expenditures by an interest group lobbying in a state-year. Models 1-5 are level on level regression; Models 6-10 are differences on differences regressions. Standard errors, statistical significance, and use of fixed effects are noted. Models 1 and 6 report standard errors clustered on interest group.

TABLE C2: Mapping from Thieme Database into Current Paper Database

Thieme Database Category	One-Sided Lobbying	Current Paper Database Category
Agriculture	94%	Agriculture
Economy, Business, and Finance	85%	Banking Hotel/Tourism Insurance Manufacturing--Autos Manufacturing--General Services--General Small Business--General Sports Teams
Education	80%	Education
Energy Environment and Natural Resources	74%	Energy Natural Resources Environment Services--Waste Disposal Utilities
Government Operations	68%	Government Gambling
Health and Social Welfare	78%	Health Pharmaceuticals Tobacco Welfare
Justice, Family, and Defense	74%	Civil Rights Fire Awareness Law Prisons Religious Women
Labor and Employment	63%	Education-Teachers Police and Fire Labor
Mixed	76%	Spirits
Transportation, Telecommunications, Technology	84%	Communications Construction Manufacturing--Technology Services--Technology Small Business--Technology Transportation

Note: The Community and Housing category in Thieme did not have a direct mapping to paper database.

TABLE C3: INTERST GROUP LEVEL ANALYSIS FOR MULTI-STATE GROUPS WITH ONE-SIDED LOBBYING--WISCONSIN CONCORDANCE

Variable	Levels					Differences				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Distance	0.767***	0.701***	0.771***	0.227*	0.271**	0.350***	0.402***	0.387**	0.406**	0.600***
	(0.20)	(0.11)	(0.11)	(0.13)	(0.13)	(0.12)	(0.15)	(0.16)	(0.16)	(0.17)
Ln(Population)			0.180**	0.371	2.441			1.479	4.813	-10.250
			(0.08)	(1.99)	(2.44)			(4.31)	(6.56)	(8.17)
Ln(Per Capita Income)			1.861***	0.669	4.714***			2.776***	2.758**	6.566***
			(0.20)	(0.48)	(1.62)			(0.99)	(1.26)	(1.82)
Session Days			0.007***	0.004***	0.005***			0.005***	0.005***	0.005***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Special Session Days			0.003	0.002	0.004*			0.001	0.002	0.003
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Constant	8.900***	8.670***	-13.575***	-7.012	'-79.261*	0.032*	-0.173	-0.346*	-0.330	-0.338
	(0.12)	0.22	(1.92)	(27.33)	(45.68)	(0.02)	(0.19)	(0.20)	(0.27)	(0.34)
Group Fixed Effects	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	No	No	No	Yes
n	4,114	4,114	4,114	4,114	4,114	2,941	2,941	2,941	2,941	2,941

Two-sided t-tests: *p<.10 ** p<.05 *** p<.01

Note: The sample frame is interest groups that engage in multi-state lobbying in 12 states under analysis. The dependent variable is the log of lobbying expenditures by an interest group lobbying in a state-year. Models 1-5 are level on level regression; Models 6-10 are differences regressions. Standard errors, statistical significance, and use of fixed effects are noted. Models 1 and 6 report standard errors clustered on interest group.

TABLE C4: INTERST GROUP LEVEL ANALYSIS FOR MULTI-STATE GROUPS WITH ONE-SIDED LOBBYING--WISCONSIN CONCORDANCE AND CF-SCORES

Variable	Levels					Differences				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Distance-CF	0.128	0.359***	0.382***	0.153	0.200*	0.178*	0.221*	0.213	0.253*	0.376***
	(0.14)	(0.09)	(0.09)	(0.11)	(0.11)	(0.11)	(0.13)	(0.13)	(0.14)	(0.14)
Ln(Population)			0.279***	-1.177	-0.470			0.514	10.745	-0.671
			(0.10)	(2.54)	(3.06)			(5.47)	(8.64)	(10.72)
Ln(Per Capita Income)			1.961***	1.084*	4.084*			3.175**	2.179	4.714**
			(0.26)	(0.61)	(2.13)			(1.28)	(1.64)	(2.35)
Session Days			0.007***	0.003***	0.004***			0.004***	0.004***	0.004***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Special Session Days			0.003	0.002	0.003			0.001	0.001	0.002
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Constant	9.287***	8.678***	-16.109***	13.560	-26.795	0.033	-0.173	-0.351*	-0.502*	-0.528
	(0.16)	0.24	(2.42)	(34.89)	(57.78)	(0.02)	(0.20)	(0.20)	(0.30)	(0.41)
Group Fixed Effects	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	No	No	No	Yes
n	2,515	2,515	2,515	2,515	2,515	1,843	1,843	1,843	1,843	1,843

Two-sided t-tests: *p<.10 ** p<.05 *** p<.01

Note: The sample frame is interest groups that engage in multi-state lobbying in 12 states under analysis. The dependent variable is the log of lobbying expenditures by an interest group lobbying in a state-year. Models 1-5 are level on level regression; Models 6-10 are differences regressions. Standard errors, statistical significance, and use of fixed effects are noted. Models 1 and 6 report standard errors clustered on interest group.

Table C5: Weights for Categories Derived from BBHKL Database

CD Database Category	Weights
Agriculture	0
Banking	0
Civil Rights	1
Communications	0.13
Construction	0.33
Education	0.56
Education-Teachers	1
Energy	0.18
Environment	0.18
Fire Awareness	1
Gambling	1
Government	0.25
Health	0.5
Hotel/Tourism	1
Insurance	0.42
Law	0.25
Manufacturing--Autos	0
Manufacturing--General	0.33
Manufacturing--Technology	0.22
Natural Resources	0
Pharmaceuticals	0.25
Police and Fire Labor	0.83
Prisons	1
Religious	0
Services--General	0
Services--Technology	1
Services--Waste Disposal	1
Small Business--General	0
Small Business--Technology	0.22
Spirits	0
Sports Teams	1
Tobacco	0
Transportation	0.43
Utilities	0.25
Welfare	0.5
Women	0

TABLE C6: INTERST GROUP LEVEL ANALYSIS FOR MULTI-STATE GROUPS WITH ONE-SIDED LOBBYING--BBHKL CONCORDANCE WEIGHTED REGRESSION

Variable	Levels					Differences				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Distance		0.224**	0.302***	0.343***	0.336***		0.607***	0.582***	0.626***	0.826***
		(0.10)	(0.10)	(0.11)	(0.11)		(0.14)	(0.15)	(0.15)	(0.16)
Ln(Population)			0.083	3.053	3.205			8.736**	20.188***	-3.757
			(0.07)	(1.88)	(2.27)			(3.85)	(6.25)	(7.50)
Ln(Per Capita Income)			2.265***	0.431	3.042**			-0.026	-1.325	4.434***
			(0.20)	(0.46)	(1.54)			(0.91)	(1.18)	(1.63)
Session Days			0.007***	0.003***	0.004***			0.005***	0.005***	0.005***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Special Session Days			0.002	0.000	0.001			0.001	0.002	0.001
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Constant		8.987***	-15.667***	-47.563*	'-75.491*		-0.204	-0.335	-0.630*	-0.765*
		0.37	(1.84)	(25.78)	(42.36)		(0.33)	(0.33)	(0.37)	(0.42)
Group Fixed Effects	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	No	No	No	Yes
n	4,871	4,871	4,871	4,871	4,871	3,531	3,531	3,531	3,531	3,531

Two-sided t-tests: *p<.10 ** p<.05 *** p<.01

Note: The sample frame is interest groups that engage in multi-state lobbying in 12 states under analysis. The dependent variable is the log of lobbying expenditures by an interest group lobbying in a state-year. Models 1-5 are level on level regression; Models 6-10 are differences on differences regressions. Standard errors, statistical significance, and use of fixed effects are noted. Models 1 and 6 report standard errors clustered on interest group.

Note: Models 1 and 6 are not estimated because of ambiguity of combining clustered starndard errors (Which involves and observation grouping covariance matrix) with weighted regression (which involves an observation weighting matrix).

TABLE C7: INTERST GROUP LEVEL ANALYSIS FOR MULTI-STATE GROUPS WITH ONE-SIDED LOBBYING--BBHKL CONCORDANCE AND CF SCORES WEIGHTED REGRESSION

Variable			Levels					Differences		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Distance-CF		-0.009	0.033	0.106	0.105		0.348***	0.338***	0.367***	0.515***
		(0.08)	(0.08)	(0.08)	(0.09)		(0.11)	(0.11)	(0.12)	(0.12)
Ln(Population)			0.207**	1.128	0.447			7.521*	19.663***	-2.087
			(0.09)	(2.17)	(2.64)			(4.35)	(7.19)	(8.45)
Ln(Per Capita Income)			2.000***	1.028*	2.618			0.036	-1.514	3.530*
			(0.23)	(0.53)	(1.84)			(1.03)	(1.36)	(1.82)
Session Days			0.008***	0.004***	0.006***			0.005***	0.005***	0.005***
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Special Session Days			0.004*	0.002	0.002			0.002	0.002	0.002
			(0.00)	(0.00)	(0.00)			(0.00)	(0.00)	(0.00)
Constant		9.086***	-14.849***	-22.679	-27.192		-0.205	-0.328	-0.601	-0.953**
		(0.36)	(2.13)	(29.87)	(49.72)		(0.32)	(0.32)	(0.37)	(0.44)
Group Fixed Effects	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes	Yes	No	No	No	Yes	Yes
Year Fixed Effects	No	No	No	No	Yes	No	No	No	No	Yes
n	3,250	3,250	3,250	3,250	3,250	2,420	2,420	2,420	2,420	2,420

Two-sided t-tests: *p<.10 ** p<.05 *** p<.01

Note: The sample frame is interest groups that engage in multi-state lobbying in 12 states under analysis. The dependent variable is the log of lobbying expenditures by an interest group lobbying in a state-year. Models 1-5 are level on level regression; Models 6-10 are differences on differences regressions. Standard errors, statistical significance, and use of fixed effects are noted. Models 1 and 6 report standard errors clustered on interest group.

Note: Models 1 and 6 are not estimated because of ambiguity of combining clustered starndard errors (Which involves and observation grouping covariance matrix) with weighted regression (which involves an observation weighting matrix).