

Electoral Donations and Interest Group Influence

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Abstract

An implicit assumption underlying most scholarly research and contemporary discourse on campaign finance is that interest groups offer campaign donations in order to “buy” policy favors. Empirical evidence in support of this assumption, however, is decidedly mixed. This paper presents a model of lawmaking and elections which demonstrates how fund-raising considerations can taint the policy decisions of incumbents even in an environment where interest groups and incumbent are unable to enter into quid pro quos. Specifically, we examine policymaking in the presence of an interest group which uses its resources solely to aid the electoral prospects of those politicians who are believed to share its policy preferences. Our main result is that such a contributor, in addition to increasing the likelihood that politicians sharing its policy commitments hold office in the future, has the effect of *distorting the incentives of current lawmakers*. In light of this result, we discuss several of the model’s various empirical and policy implications, many of which have previously gone unrecognized.

Keywords: interest groups, campaign donations, policymaking

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Too often, Members' first thought is not what is right or what they believe, but how it will affect fund-raising. Who, after all, can seriously contend that a 100,000 dollar donation does not alter the way one thinks about – and quite possibly votes on – an issue? – Senator Alan K. Simpson (R. Wyoming) ¹

So it's not like they (the interest groups) come in and say here's the money if you vote our way. What most of them, 90 percent of them do, is say what kind of guy is this and how did he vote. Your first two or three years are critical, and pretty soon you have an entourage of folks who follow you around. And they become your friends. And why? It's because they like the way you vote. – Congressman James V. Hansen (R. Utah)²

1 Introduction

The overwhelming majority of the public believes that fund-raising considerations distort the behavior of members of Congress.³ Yet we have little systematic evidence that this is in fact the case. In examining how the campaign giving of interest groups translates into influence over the behavior of congressmen, most studies have explored the possibility that interest groups use their resources to “buy” policy favors. Of these, many have tried to explain roll-call voting in the U.S. House of Representative as a function of contributions received. Upon reviewing about forty such papers, Ansolabehere, de Figueiredo, and Snyder (2003, 116) conclude: “Legislators’ (roll-call) votes depend almost entirely on their own beliefs and the preferences of their voters and their party. Contributions explain a minuscule fraction of the variation in voting behavior in the U.S. Congress.” In light of such evidence, opponent of campaign finance regulation have suggested that we need not worry too much about fund-raising considerations tainting the policy choices of lawmakers (Smith 1995). In this paper, we argue that such conclusions are premature.

Interest groups which expect policy favors from those lawmakers receiving their financial backing have been dubbed *investor contributors*.⁴ However, many interest groups expect no such favors from those receiving their campaign funds. Instead, these groups use their

campaign resources primarily to aid the electoral prospects of those politicians perceived to value the same things that they do (Bronars and Lott 1997; Levitt 1998; Wand 2003). Examples of such *electoral contributors* include the Club for Growth, Emily's List, and the National Rifle Association (NRA).⁵ The wealthiest of such groups have multi-million dollar budgets and are known to provide hundreds of thousands of dollars in financial support to candidates that they back via a combinations of bundling, issue advocacy, and independent expenditures. And as a consequence of the Bipartisan Campaign Reform Act of 2001, many expect that these groups will become an even more important source of campaign funds in the future (Weissman and Hassan 2006). Despite the growing role of these groups in the electoral process, however, we know surprisingly little about their impact on the policy process.

Whereas almost all empirical scholarship examining the effects of fund-raising considerations on public policy operates under the assumption, whether implicit or explicit, that the campaign giving of electoral contributors has little or no impact on incumbent behavior,⁶ some political observers have offered arguments suggesting the such campaign giving distorts the policy choices of lawmakers (Hacker and Pierson 2005). For example, a widely publicized tactic of the Club for Growth has been its attempt to defeat Republican incumbents it deems insufficiently committed to its supply-side agenda.⁷ Congressman Jeff Flake, a Club backed member of the House of Representatives, succinctly summarizes the perception that this tactic has altered the decision calculus of Republican incumbents: "When you have 100 percent of Republicans voting for the (2001) Bush tax cut, you know that they're looking over their shoulder and not wanting to have (the Club for Growth) recruiting candidates in their district." Flake's claim is not that the 2001 Bush tax cut passed with unanimity because the Club has been particularly successful in shaping the Republican caucus's ideological composition. Instead, Flake's assertion is that Republican unanimity on the 2001 Bush tax cut resulted from the Club's *commitment to try to elect* candidates to Congress like himself.

While it is obvious that the campaign giving of electoral contributors can potentially

influence electoral outcomes, under what conditions, if any, can their campaign giving influence the behavior of incumbent lawmakers? For example, if an incumbent knows that the National Rifle Association (NRA) will fund only those politicians it deems sympathetic to its policy priorities, under what conditions might a legislator personally disposed to regulating the sale and ownership of guns adjust her behavior in order to lead the NRA to believe otherwise? The answers to these questions affect the inferences we draw from existing empirical studies about the degree to which fund-raising considerations affect incumbent behavior. They also might have implications for the desirability of alternative campaign finance regulatory regimes. In order to provide such answers, we formulate and analyze a model of policymaking in the presence of an electoral contributor; specifically, we add an interest group to a standard model of political agency in which there is uncertainty about the underlying policy preferences of politicians.⁸

This paper's model of lawmaking starts with the simple premise that incumbent lawmakers care about both policy and reelection, while interest groups care about policy outcomes and the cost of their respective campaign outlays. Within this context, we consider an environment where an existing incumbent is running for reelection against a challenger, and the sole source of campaign funding is from a wealthy special interest. Prior to the election, the incumbent selects a policy. Upon observing this policy choice, the interest group decides how much to donate to each candidate. Unlike most models of incumbent decision making in the presence of an interest group, in the environment we consider, there is no opportunity for the interest group to buy policy favors from the incumbent. Instead, in any equilibrium of the paper's model, the only way the interest group can employ its campaign resources to increase its welfare is to enhance the electoral prospects of the politician it believes more likely to share its policy priorities: in any equilibrium, the interest group's behavior is consistent with that of an electoral contributor's.

Our first set of results deal with the conditions under which an electoral contributor can influence incumbent behavior. We show that so long as the interest group is not certain of the incumbent's underlying policy preference,⁹ then its electorally motivated campaign

giving can affect the incumbent's policy choice. As such, even if one were able to rule out the possibility that interest groups buy policy favors with their donations, this does not preclude the possibility that fund-raising considerations distort the policy choices of lawmakers.

Our second main result demonstrates that the influence of an electoral contributor extends beyond those incumbents receiving its campaign funds. This result is a byproduct of a feature of our model which is absent from prior game-theoretic models of interest group influence: the interest group in our paper has the option to donate to either the incumbent's campaign or the challenger's campaign. Thus, in an equilibrium, incumbent behavior is driven as much by the desire to maximize the funds she receives as to minimize the amount of funds her challenger receives.¹⁰

The intuition for these results can be gleaned from the following example. To fix ideas, consider the case of a Democratic incumbent, in a moderate district, deciding which position to take on a bill of concern to the NRA. Further, for the purpose of our example, suppose that while the NRA is uncertain about the incumbent's underlying policy preferences on gun control, the NRA is certain that her Republican challenger shares its policy priorities. Despite the fact that the NRA's preference for the Republican is independent of the incumbent's policy choice, the intensity of the campaign the NRA is willing to wage against her is not. To see why, begin by noting that the more certain the NRA is that the incumbent is hostile to its policy priorities, the more money it is willing to spend to see that she is defeated. Given the NRA's uncertainty about the incumbent's policy predispositions, its best guess of the what the incumbent will do in the future is what she has done in the past. Consequently, the amount of resources the NRA is willing to commit to defeating our incumbent when she openly opposes its agenda is greater than when she supports its agenda. Thus, in our stylized example, the NRA's attempt to elect an ideological ally generates an electoral incentive to cater to it, an incentive which would be muted in an environment where private campaign giving was prohibited.

Our third set of results deal with the model's comparative statics. Here we demonstrate that the more an incumbent values holding office, the more fund-raising considerations will

weigh on the lawmaker’s mind. We also demonstrate that the more expensive it is to wage a campaign against an incumbent, the less decisive fund-raising considerations will be in determining her behavior.

Turning to this paper’s connections to the game-theoretic literature on campaign finance, a well-known critique of existing models of interest group campaign giving is that their results rest on questionable assumptions regarding the “commitment technologies” of political actors (Morton and Cameron 1992; McCarty and Rothenberg 1997). For example, those scholars examining the impact of *investor contributors* on the policy process,¹¹ such as Grossman and Helpman (1994), assume that interest groups faithfully deliver on their end of a quid pro quo, whereas those scholars examining the impact of electoral contributors on electoral competition (Austen-Smith 1987, Baron 1994; Bennedsen 2003; Grossman and Helpman 2001) assume that politicians faithfully implement their announced platforms upon being elected.¹² This paper’s model relaxes the commitment assumptions made in previous work. Specifically, we consider an environment where at least one party to a quid pro quo has an incentive to renege, and interest groups discount the campaign promises of all politicians. Relative to existing models, this paper’s framework therefore stacks the deck against the possibility that fund-raising considerations taint incumbent policy choices. Yet, we show that even when such commitment assumptions are relaxed, fund-raising considerations can dramatically affect the policies chosen by lawmakers.¹³ Moreover, in relaxing the commitment assumptions made in previous scholarship, our model produces a variety of empirical and policy implications, several of which have previously gone unrecognized.

In the next section, we formally develop our model of lawmaking in the presence of an electoral contributor. Section 3 provides preliminary results, identifying the key tradeoffs faced by the interest group and the incumbent, while section 4 presents the central theoretical results of our paper. Section 5 and Section 6 discuss the model’s various empirical and policy implications. Section 7 discusses some of the issues involved in empirically identifying the magnitude of an electoral contributor’s influence on the policy process. Section 8 explains why the central findings of this paper continue to hold when we relax some of the model’s

stronger assumptions. Section 9 offers concluding observations.¹⁴

2 A Model of Lawmaking and Elections with an Interest Group

To restate the central focus of our paper: In a world where quid pro quos between interest groups and incumbents are unenforceable, would a ban on campaign contributions have any effect on the incentive for incumbents to select policies favored by wealthy special interests? To begin to address this question, in this section, we formulate a model of lawmaking and elections where both legal and reputational mechanisms by which to enforce quid pro quos are absent.

2.1 Timing and Information

In each of two periods, a policy from the set $\{x, y\}$ is selected. An existing incumbent i selects the first-period policy p_1 . Upon selecting p_1 , an election is held between the incumbent and a challenger c . The election winner $w \in \{i, c\}$ selects the second-period policy p_2 . In determining her first-period policy choice, the incumbent must consider its impact on her and her opponent's ability to raise campaign funds, as campaign spending influences the election outcome. An interest group g , which prefers policy x , finances the spending of each politician. While each politician is aware of the interest group's preference for x , the interest group is uncertain of the underlying policy preference of each politician. As will be seen, the interest group's uncertainty of the incumbent's underlying policy preference will play a critical role in our subsequent analysis.

More formally, let $d_i \geq 0$ denote the interest group's donation to the incumbent; let $d_c \geq 0$ denote the interest group's donation to the challenger. Donations are offered after the first-period policy is selected. Because the interest group monitors the incumbent's first-period activity, the group is able to condition its campaign giving upon the incumbent's first-period policy choice.

The incumbent's probability of reelection is given by a function $r(d_i, d_c)$. The reelection

function r is taken to be increasing in d_i , and decreasing in d_c . That is, the incumbent's probability of reelection is increasing in the magnitude of the donation the interest group offers her, and decreasing in the magnitude of the donation the interest group offers her opponent. Note, as formulated, the incumbent's policy choice does not have a *direct effect* on her reelection prospects. Consequently, the model can be viewed to approximate policymaking on an issue of low salience to the electorate.

The incumbent, the challenger, and the interest group are assumed to care about policy outcomes. Specifically, each agent in the model is endowed with a type t which characterizes its preference over policies x and y . In any given period, the utility agent j receives from policy p when her type is equal to t is denoted $z(p; t)$, where

$$z(p; t) = \begin{cases} t & \text{if } p = x \\ 0 & \text{if } p = y \end{cases} .^{15}$$

Thus, an agent whose type is positive (negative) receives positive (negative) utility when x is implemented, whereas all agents receive zero utility when y is implemented. Consequently, those agents for whom $t > 0$ prefer policy x , those agents for whom $t < 0$ prefer policy y , and those for whom $t = 0$ are indifferent between x and y .

In order to model the interest group's uncertainty of each politician's policy preference, we begin by supposing that the group does not know the value of either the incumbent's type t_i or the challenger's type t_c . However, the group does know that the incumbent's type t_i is a draw from the density function f_i , and the challenger's type t_c is a draw from the density function f_c . For each $j \in \{i, c\}$, the density f_j is taken to place positive weight on each real number: for all $t \in (-\infty, \infty)$, $f_j(t) > 0$. This assumption implies that at the beginning of the game, the interest group does not know whether the incumbent prefers policy x .

To capture the fact that politicians' know the interest group's policy preference, we assume that the interest group's type $t_g > 0$ is common knowledge. Finally, we assume that the incumbent and the challenger do not know the value of each other's type, and that information about the value of the incumbent's type does not help one predict the challenger's type (i.e., the random variables t_i and t_c are statistically independent). The model's timing is summarized in Figure 1.

2.2 Payoffs

A complete history of the model is a list h specifying the incumbent's type, the challenger's type, the first-period policy, the interest group's donation pair, the election winner, and the second-period policy. The payoff an agent j receives from a complete history h is denoted $U_j(h)$. In this subsection, we specify how the individual components of a complete history affect each agent's payoff to the game.

We begin by specifying incumbent's payoff. In addition to policy, the incumbent values holding office. Specifically, the incumbent receives a wage of $\rho > 0$ during those periods in which she is the office holder. Given the preceding motivation, the incumbent's payoff function U_i is specified as the sum of her per-period policy and office utilities:

$$U_i(h) = \begin{cases} z(p_1; t_i) + z(p_2; t_i) + 2\rho & \text{if } w = i \\ z(p_1; t_i) + z(p_2; t_i) + \rho & \text{if } w = c \end{cases} .$$

Analogously, the challenger's payoff function U_c is specified as:

$$U_c(h) = \begin{cases} z(p_1; t_c) + z(p_2; t_c) & \text{if } w = i \\ z(p_1; t_c) + z(p_2; t_c) + \rho & \text{if } w = c \end{cases} .$$

In light of this formulation, the absolute value of the incumbent's type t_i can be viewed as a measure of the intensity of her policy preference. Specifically, as the absolute value of the incumbent's type t_i increases, the value she places on implementing her preferred policy today relative to holding office tomorrow increases as well. In other words, when the absolute value of the incumbent's type is large (i.e., $|t_i|$ approaches ∞), the incumbent will be motivated primarily by policy concerns, whereas when the absolute value of the incumbent's type is small (i.e., $|t_i|$ nears 0), the incumbent will be motivated primarily by reelection concerns.

Turning to the interest group, in addition to policy, the group cares about the size of its campaign outlays. The cost to the interest group of offering donation pair (d_i, d_c) is denoted $m(d_i, d_c)$, where the function m is increasing in both d_i and d_c . Hence, the group's opportunity cost from a donation is increasing in the donation's size. Given the preceding motivation, the interest group's payoff function U_g is specified as the sum of its per-period policy utilities minus the opportunity cost of its campaign outlays:

$$U_g(h) = z(p_1; t_g) + z(p_2; t_g) - m(d_i, d_c).$$

2.3 The Game and Definition of Equilibrium

Since the interest group does not know the incumbent's type at the time when the group is deciding how to allocate its campaign resources, this two-period model defines a game of incomplete information between the interest group, the incumbent, and the challenger. Our subsequent analysis, however, is considerably simplified by the following observation: Reelection considerations do not impinge upon the policy choice of the election winner since the game terminates after the second-period policy is determined (i.e., the election winner can be thought of as being termed out of office upon determining the second-period policy). Consequently, the election winner, regardless of what has transpired earlier, selects her preferred policy. Therefore, in analyzing the model, we will take this as given, and focus solely on the strategic interaction between the incumbent and the interest group.

Given that the interest group is uncertain of each politician's type, and a politician's type uniquely determines her second-period policy choice, a key problem for the interest group is in drawing inferences about these unobservables from each lawmaker's public record.

Prior to the incumbent's policy choice, the group's *initial assessment* of its ideological congruence with politician j , denoted π_j , is $\pi_j \equiv \int_0^\infty f_j(t)dt$. (This is simply the probability that a randomly drawn politician-type from density f_j prefers policy x .) At the time the group must decide how to allocate its resources, the group has no new information upon which to update its initial assessment of its likely ideological congruence with the challenger. Hence, the group anticipates that the challenger, if elected, will implement policy x with probability π_c .

The case of the incumbent, however, is different. At the time which the group must decide how allocate its resources, it has observed her first-period policy choice. This policy choice may provide the interest group with new information concerning the prospect that the incumbent shares its preference for policy x . We shall let $\pi_i(p)$ denote the group's *updated assessment* concerning its likely ideological congruence with the incumbent: $\pi_i(p)$ is the probability the group assigns to the incumbent having a positive type upon observing a first-period policy of p .

A candidate for an equilibrium to our model consists of three components: a strategy for the incumbent, a strategy for the interest group, and a belief system. A strategy for the incumbent is a rule which specifies a policy choice for each possible realization of her type. A strategy for the interest group is a rule which specifies how much the group will donate to the incumbent and how much the group will donate to the challenger for each possible first-period policy. A belief system for the interest group is an assessment regarding its likely ideological congruence with the incumbent for each possible first-period policy.

The following three conditions must be satisfied in an equilibrium.¹⁶ First, the incumbent's policy choice must maximize her expected payoff given her anticipation of the interest group's reaction. Second, for each policy choice of the incumbent, the interest group's decision of how to allocate its resources must be optimal given its assessment of its likely ideological congruence with the incumbent. Third, for each first-period policy choice, the group's assessment of its congruence with the incumbent must be generated by Bayes updating whenever possible.

3 Preliminary Results: Incentives of the Incumbent and the Interest Group

In solving for an equilibrium, we must provide answers to the subsequent questions: How does the incumbent's policy choice affect the interest group's assessment regarding their likely ideological congruence? In turn, how does the interest group's perception of this congruence affect its campaign giving? And, finally, how does the incumbent's anticipation of the group's campaign giving affect the policy which she selects in the first period? In this section, we do so.

3.1 Behavior of the Incumbent

Recall, a (first-period) strategy for the incumbent is a policy choice for each possible realization of her type. The key tradeoff that an incumbent might face when determining policy in the first period is between selecting her preferred policy today and maximizing the

probability that she holds office tomorrow. In light of this potential tradeoff, it turns out that the incumbent's equilibrium strategy takes a simple form:

Result 1 *For each equilibrium of the model, there is an associated cutpoint t^* , such that any incumbent whose type t_i is greater than t^* chooses x , and any incumbent whose type t_i is less than t^* chooses y . Moreover, in any equilibrium where the incumbent maximizes her probability of re-election by selecting x (y), this cutpoint is negative (positive).*

In other words, any incumbent who likes x even more than incumbent-type t^* selects x , and any incumbent who likes x less than incumbent-type t^* selects y .¹⁷ Consequently, as t^* increases, the fraction of incumbent-types who select x in period one decreases. This implies that the (ex-ante) equilibrium probability that the incumbent caters to the interest group is decreasing in t^* .¹⁸

Result 1 is a consequence of the following logic. If an incumbent's preferred policy also happens to maximize her probability of reelection, then it is optimal for her to select it. However, if the incumbent's preferred policy *does not* maximize her reelection prospects, she will select her preferred policy only when the policy benefit of doing so outweighs the electoral cost of doing so.

As an application of the preceding logic, suppose that the incumbent's probability of reelection is maximized when she selects x . Then, each incumbent-type who prefers x will select x . In addition, those incumbent-types whose preference for y over x is not too intense will do so as well. Finally, t^* will be negative, since the cutpoint of the incumbent's strategy is defined by the incumbent-type whose expected payoff to the game is independent of her first-period policy choice. (The bottom panel of Figure 3 graphically depicts this case.)

As one might anticipate, the magnitude of the cutpoint of the incumbent's equilibrium strategy depends on the degree to which the incumbent's reelection prospects are enhanced by catering to the interest group. Letting r_p denote the incumbent's probability of reelection when she selects policy p (to be determined in an equilibrium), we define $\Delta \equiv r_x - r_y$ as the incumbent's *net electoral benefit from selecting policy x* .

Result 2 *The greater the equilibrium net electoral benefit from selecting policy x , the smaller the value of the cutpoint characterizing the incumbent's equilibrium strategy.*

Intuitively, the greater the extent to which the incumbent's reelection prospects are furthered by catering to the interest group, the greater the fraction of incumbent-types who find it optimal to do so.

In light of our characterization of the incumbent's equilibrium strategy, we now turn to addressing the impact of the incumbent's policy choice on the interest group's perception of their ideological affinity. Since the incumbent's equilibrium strategy is characterized by a cutpoint t^* , the probability that the incumbent selects x is weakly increasing in the intensity of her preference for policy x : for all $t < t^*$, the probability the incumbent selects x is zero, and for all $t > t^*$, the probability the incumbent selects x is one. Consequently, the incumbent's policy choice is correlated with her underlying policy preference. This fact implies that the interest group will infer that an incumbent who selects x in the first period is more likely to share its preference for x than an incumbent who selects y . Thus, by selecting x in the first period, the incumbent strictly maximizes her reputation for sharing the group's policy aim.

Result 3 *In any equilibrium, the interest group's updated assessment of ideological congruence with the incumbent is greater when x is selected than when y is selected: $\pi_i^*(x) > \pi_i > \pi_i^*(y)$.*

3.2 Behavior of the Interest Group

Recall, the key problem facing the interest group is in determining how to allocate its campaign resources in light of the fact that it does not directly observe the incumbent's policy preference. However, as we have just seen, the incumbent's first-period policy choice affects the group's perception of its ideological affinity with the incumbent. In the subsection, in partially characterizing the interest group's equilibrium strategy, we examine the consequences of this feature of our model.

We begin this subsection by arguing that the interest group’s equilibrium behavior is consistent with that of an electoral contributor’s. To see why, note that the interest group offers its donations *after* observing the incumbent’s first-period policy choice, anticipating that the election winner’s type will uniquely determine the second-period policy. As such, the only way the group can employ its resources to increase its welfare is to enhance the electoral prospects of the candidate who it deems more likely to share its preference for policy x . Consequently, for a given first-period policy choice, it will never be optimal for the group to offer campaign donations to both politicians.¹⁹

Result 4 *In any equilibrium of the model, for a given first-period policy, if the interest group offers a donation, the donation is offered to the politician the interest group believes more likely to share its preference for policy x .*

Given the interest group’s desire to elect an ideological ally, we now turn to examining the effect of the incumbent’s policy choice on the interest group’s equilibrium campaign spending. We shall say that the *interest group’s campaign spending is positive* if its strategy calls for it to make a positive donation when either policy x is selected or when policy y is selected. Letting d_j^{p*} denote the interest group’s equilibrium donation to politician j when the first-period policy is p , we have:²⁰

Result 5 *In any equilibrium of the model where the group’s campaign spending is positive, $d_i^{x*} \geq d_i^{y*}$ and $d_c^{y*} \geq d_c^{x*}$, where at least one of these inequalities is strict.*

In words, by selecting x and signaling her ideological affinity with the interest group, the incumbent maximizes the size of the donation she receives and minimizes the size of the donation her challenger receives.

To understand the logic behind Result 5, begin by noting that the group, in deciding how much to donate to its preferred candidate, must weigh its expected payoff from the incumbent’s reelection against its expected payoff from the challenger’s election. When the group believes that one candidate is sufficiently more likely than the other to share its preference for policy x , the interest group’s stake in the election will be “large,” and thus

its willingness to expend resources influencing the election outcome will be “large.” This is depicted graphically in Figure 2.

Given this incentive, consider the effect of the incumbent’s policy choice on the group’s funding of her reelection campaign. If the interest group offers the incumbent a donation of zero when she selects policy y , then it trivially follows that the incumbent maximizes the size of the donation she receives when she selects x . So, consider the case where the interest group offers the incumbent a positive donation when she selects y . Since the group’s perception of its ideological affinity with the incumbent when x is selected is greater than when y is selected, it follows that the group’s net gain from the incumbent’s reelection when x is selected is greater than when y is selected. In other words, if the interest group prefers the incumbent when y is selected, she likes the incumbent even more when x is selected. Consequently, if the group offers a positive donation to the incumbent when she selects policy y , the group is willing to spend even more on behalf of the incumbent when she selects policy x .

A parallel argument illustrates that the incumbent minimizes the size of the donation her challenger receives when $p_1 = x$. An immediate consequence of Result 5, taken together with the fact that incumbent’s reelection prospects are increasing in her own campaign spending and decreasing in that of her challenger’s, is:

Result 6 *In any equilibrium where the group’s campaign spending is positive, the incumbent strictly maximizes her reelection prospects by catering to the interest group.*

4 Electoral Donations and Policy Bias

Having worked through the incentives facing the interest group and the incumbent, we now present the central result of our paper: The campaign giving of an interest group which employs its resources solely to aid the electoral prospects of ideological allies can have the effect of distorting the policy choices of incumbent lawmakers. Consequently, even in a polity where quid pro quos between interest groups and incumbents *never* occur, fund-raising considerations can affect the latter’s behavior.

To formally derive the above claims, let t° denote the equilibrium cutpoint when donations are prohibited, and let t^* denote the equilibrium cutpoint when donations are allowed. We shall say that *fund-raising considerations influence incumbent behavior* if the equilibrium probability that the incumbent caters to the interest group when donations are prohibited differs from when they are allowed. Therefore, if fund-raising considerations affect incumbent behavior, then $t^\circ \neq t^*$.

Proposition 1 *In any equilibrium of the model in which the interest group's campaign spending is positive, fund-raising considerations increase the equilibrium probability that the incumbent caters to the interest group: $t^* < t^\circ = 0$.*²¹

The effect of the interest group's campaign giving on incumbent behavior is characterized graphically in Figure 3.

The logic driving this proposition draws upon the results of the previous section. Begin by considering the case when donations are prohibited. Given such a ban on campaign giving, since we have assumed the incumbent's policy choice does not have a direct effect on her reelection prospects, the incumbent's probability of reelection is independent of her policy choice. Thus, each incumbent-type selects her preferred policy in the first period whenever campaign giving is prohibited.

Now consider the case when donations are allowed. Since the interest group is uncertain of the incumbent's policy preference, the group uses the incumbent's first-period policy choice to predict her second-period policy choice. As such, the group infers that an incumbent who selects x in the first period is more likely to share its ideological predisposition than an incumbent who selects y . Given such inferences, by selecting x , the incumbent maximizes the group's incentive to finance her own campaign and minimizes the group's incentive to finance her opponent's campaign. In other words, whenever the interest group's anticipated spending is positive, the incumbent strictly maximizes her probability of reelection by selecting x . Thus, the interplay between the interest group's uncertainty of the incumbent's underlying policy preference and its desire to elect an ideological ally, has the effect of generating an

electoral incentive to cater to it, an incentive which is absent in our model when donations are prohibited.

Specifically, the group’s campaign giving affects the behavior of each incumbent whose type lies in the interval $[t^*, 0]$. When donations are banned, these incumbent-types select policy y in each period. However, when donations are allowed, they select x in the first-period prior to reverting to selecting y in the second period. Therefore, given that the group’s campaign giving generates an electoral incentive to cater to it, these incumbents – whose preference for y over x is not too intense – allow electoral considerations to trump policy considerations when determining policy in the first period. By pooling with those incumbent-types who prefer policy x , these incumbent-types mislead the group concerning their second-period policy intentions, and, as a result, maximize their prospects of holding office in the second period.

To further cement the intuition behind Proposition 1, we conclude this section by discussing the patterns of campaign giving which can arise in this paper’s theoretical framework. I begin by claiming that the interest group will never offer a positive donation to an incumbent who selects its less preferred policy in the first period. Thus, in an equilibrium of the model, it appears as if the group deliberately sets out to “punish” those incumbents who do not cater to it. However, this is not the case. Instead, the reason why the group fails to donate to an incumbent who selects y is a result of the fact that only incumbents who prefer y ever select y . Therefore, whenever y is selected, the group knows that the incumbent does not share its ideological predisposition (i.e., $\pi_i^*(y) = 0$). Consequently, an incumbent who selects y fails to receive a donation from the interest group, because, upon doing so, the group infers that it has a greater ideological affinity with her challenger.

One might suspect that since the interest group is inclined to fund the challenger when y is selected, the group will have an incentive to fund the incumbent when x is selected. Somewhat surprisingly, this intuition need not hold. While it is certainly true that by selecting x , the incumbent enhances her reputation for sharing the group’s policy preference, it does not necessarily follow that the group will wish to see the incumbent reelected. As the

group's campaign spending results in incumbent-types who prefer policy y selecting policy x in the first period, the group cannot be certain than an incumbent who selects x in period one will do so again in period two (i.e., $\pi_i^*(x) < 1$). Consequently, when the group is sufficiently confident that the challenger shares its policy preference (i.e., π_c close to one), the group will prefer the challenger's election to the incumbent's reelection regardless of the latter's policy choice. Summarizing our discussion:

Proposition 2 *In any equilibrium of the model where the group's campaign spending is positive, one of four patterns of campaign giving arises: (1) The group donates to the challenger regardless of the first-period policy, where the group's donation to the challenger is greater when y is selected than when x is selected; (2) The group donates to the challenger when y is selected, and donates to neither politician when x is selected; (3) The group donates to the challenger when y is selected, and donates to the incumbent when x is selected; (4) The group donates to neither politician when y is selected, and donates to the incumbent when x is selected.*

A distinct feature of this paper's theoretical framework, which follows from the first two items of this proposition, is that an electoral contributor's influences extends beyond those lawmakers receiving its financial backing. For example, consider the case where the interest group knows for certain that the challenger shares its preference for policy x . Then regardless of the incumbent's policy choice, the group will never offer her a donation. Nonetheless, I maintain that the incumbent has an electoral incentive to cater to the group. This follows from the fact that even though the interest group's preference for the challenger over the incumbent is independent of the incumbent's policy choice, the *intensity* of the group's preference for the challenger over the incumbent is not. To see why, note that since $\pi_c = 1$, as the group's perception of its ideological affinity with the incumbent increases, its stake in the election outcome decreases. Consequently, the incumbent minimizes the group's incentive to bankroll her opponent's campaign when she selects policy x , since by doing so, she enhances her reputation for sharing the group's policy predisposition. Thus, in this example, the incumbent does not cater to the interest group in order to receive a campaign donation.

Instead, she caters to the group in order to minimize the amount of resources the group commits to her challenger.

5 Empirical and Policy Implications

Implications of the Desire to Minimize Challenger Funding. In contrast to models of investor contributors (e.g., Grossman and Helpman (1994) and Snyder (1991)), our model points to the possibility that incumbent behavior is motivated by the desire to minimize the funding of one’s challenger. Whereas an investor contributor can only influence the policy choices of those lawmakers it donates to, this is not the case for an electoral contributor: such groups can influence an incumbent’s policy choice without offering her a donation. As existing empirical studies examining the impact of fund-raising considerations on roll-call voting in the U.S. Congress neglect this possibility – for example, see the thirty-six studies reviewed in Ansolabehere, de Figueiredo, and Snyder (2003, 113) – these studies potentially underestimate the total impact fund-raising considerations have.

A number of policy implications arise from the fact that incumbents are motivated to minimize their challengers’ funding. For example, consider Ackerman and Ayres’s (2002) “donation booth.” Under this scheme, a contributor’s identity is shielded from both politicians and the public. The premise here is that when donations are secret, politicians will have no way of knowing who they are indebted to. While such a reform could potentially undermine the influence of investor contributors, there is no compelling reason to believe the same is true for electoral contributors, since even in a world of donor anonymity, an incumbent must still avoid providing wealthy special interests with a reason to replace her with someone potentially more sympathetic to their concerns.

Others have suggested that the influence of investor contributors might be mitigated under a system of matching funds (Hall and Lin 2003), whereby for each dollar a politician raises from a private source, she receive z dollars from either the government or a public trust. Whether this is in fact the case, matching funds clearly can exacerbate the influence of an electoral contributor. Essentially, for any given belief of the interest group concerning

its ideological congruence with the incumbent, a system of matching funds will increase total spending on behalf of its preferred candidate. Thus, an incumbent concerned about a group bankrolling her challenger in the absence of matching funds, will be even more concerned in their presence.

Importance of a Candidate's Past. Interest group campaign giving tends to have a strong “retrospective” flavor to it. Before offering their financial backing to a candidate with no national experience, ideological interest groups are known to spend anywhere from a couple days to a couple weeks interrogating his or her past. In addition, in those contests where an incumbent is running for reelection, it appears as if many interest groups take account of their voting records in deciding how to allocate their resources (Gopoian 1984; Poole and Romer 1985; Poole, Romer, and Rosenthal 1987).

The consequences of retrospective campaign giving are not fully understood. Prior models examining the impact of electoral contributors on platform selection (e.g., see Austen-Smith (1987) and Baron (1994)) provide little insight into this matter, since, in these models, interest groups determine which candidate to back based solely on the promises made over the course of a campaign. By examining the effect of interest group campaign giving in the context of an environment where the only signal of what a lawmaker will do in the future is what she has done in the past, our model begins to fill this gap in the literature. In doing so, we identify a number of overlooked channels by which an electoral contributor can bias public policy. Two such channels are discussed below.

First, an electoral contributor which employs its resources solely to influence the outcomes of federal contests can nevertheless affect the behavior of state lawmakers; this follows as those state officials considering a run for Congress must contemplate the inferences such groups will draw from their voting records. Second, an electoral contributor can affect the behavior of lawmakers on issues which are beyond its immediate concern. To see why, suppose that a lawmaker's underlying position on a women's right to choose is correlated with her underlying position on the government's role in the economy (e.g., being pro-life predicts being a supply-sider). In such a setting, an interest group concerned only about tax policy

would have good reason to take account of a lawmaker's stance on abortion in deciding how to allocate its resources. As a result, incumbents, when taking positions affecting abortion policy, will need to consider this possibility.

6 Comparative Statics

Having provided alternative micro-foundations for the widespread belief that fund-raising considerations affect incumbent behavior, we now discuss some of the comparative static predictions which arise from this paper's theoretical framework.²² We begin by examining how the interest group's influence over an incumbent's behavior changes as the incumbent becomes more concerned about achieving reelection. The following relationship holds at any equilibrium of the model where the group's campaign spending is positive.

Comparative Static 1 *As the value the incumbent attaches to holding office increases, the equilibrium probability that the incumbent caters to the interest group increases.*

The logic of this relationship follows from the fact that the more an incumbent values reelection, the greater the weight she assigns to holding power tomorrow relative to achieving her preferred policy today. Since the incumbent maximizes her reelection prospects by catering to the interest group, increasing the value of holding office increases the incumbent's incentive to do so.

If we assume that the value of winning reelection diminishes as a politician ages, this comparative static suggests that incumbents will become less responsive to the needs of wealthy special interests over the course of their careers on issues of low salience or low visibility to their constituents. Similarly, in a legislature with term limits, this comparative static suggests that the closer a lawmaker is to being termed out office, the less responsive she will be to the concerns of well-heeled interests (on issues of low salience or low visibility), with this decreased responsiveness being particularly acute when we examine the change in behavior between a lawmaker's final term and her penultimate term.²³

We now turn to examining how the incumbent's equilibrium probability of catering to the interest group changes as we manipulate either the marginal cost to campaign spending or

the marginal productivity of campaign spending (i.e., the degree to which money can sway an election's outcome).²⁴ These comparative statics hold at any parametrization of the model in which the interest group's spending is positive and its preference over the incumbent's reelection is correlated with her (first-period) policy choice.

Comparative Static 2 *As the marginal cost to campaign spending increases, the equilibrium probability that the incumbent caters to the interest group decreases.*

The intuition for the claimed effect of a change in the marginal cost to campaign spending is straightforward. Where it is cheaper for a group to bankroll a challenger, the incumbent will be more receptive to group interests. A testable implication of this comparative static is that the effect of an electoral contributor's anticipated campaign giving should be greatest in low-cost media markets. For example, in the third quarter of 2000, the average price of a 30-second prime-time ad in the second district of Idaho was \$18, whereas the comparable cost for a district in New York City was \$1,875 (Stratmann 2004). As such, incumbents in Idaho should place more weight on interest group concerns than those in New York City.

A related logic underpins the subsequent claim concerning the effect of a change in the productivity of campaign spending.

Comparative Static 3 *As the marginal productivity of campaign spending increases, the equilibrium probability that the incumbent caters to the interest group increases.*

If we assume that less partisan (or, perhaps, less educated) voters are more likely to be swayed by campaign advertising, this comparative static suggests that interest group influence will be greatest in those districts where partisanship (education) is low.

7 An Approach to Estimation

Suppose we are interested in estimating an electoral contributor's impact on a roll-call vote. Based upon this paper's theoretical framework and the preceding comparative statics, a statistical model of roll-call voting should take account of variation in the marginal productivity of campaign spending, variation in the marginal cost of campaign spending, variation in the

value incumbents' attaches to reelection, and variation in the parameters of the distribution from which a lawmaker's policy preference (i.e., her type) is drawn.²⁵

A variable universally included in statistical models estimating the effect of investor contributors, but conspicuously absent from the preceding list, is some measure of the *contributions received* by the incumbent. This follows because, unlike an investor contributor, an electoral contributor does not allocate its resources with the aim of affecting incumbent behavior; instead, donations are offered in light of past roll-call votes. In addition, in contrast to statistical models of incumbent decision making in the presence of an investor contributor, we do not include among our independent variables a point estimate of a legislator's ideal point. Since a crucial premise of the electoral contributor approach is interest group uncertainty of the policy preferences of incumbents, the analyst should incorporate this uncertainty into his statistical model of roll-call vote choice.²⁶

With these caveats in mind, one way to identify the impact of an electoral contributor is to include a variable in one's statistical model which has a direct effect on the contributor's incentive to intervene in an incumbent's reelection campaign and would have no effect on an incumbent's incentive to cater to the group in a setting where campaign contributions were prohibited. Essentially, our aim is to conduct a "natural experiment," where our identifying variable proxies the incumbent's (exogenous) vulnerability to having an electoral contributor finance an opponent to run against her.²⁷ If an electoral contributor's attempt to elect ideological allies affects behavior, then this identifying variable should be statistically significant.

8 Robustness

While our model is relatively sparse, its logic is quite general. So long as an electoral contributor conditions its campaign giving on an incumbent's past policy choices, the group's attempt to elect an ideological ally will typically affect the net electoral benefit associated with catering to it. And whenever this is so, fund-raising considerations will affect incumbent behavior. Thus, the main insights of this paper continue to hold when we relax some of the

stronger assumptions of this paper’s theoretical framework.²⁸

For example, to see that the main result of this paper (Proposition 1) in no way depends on our simplifying assumption that the incumbent’s policy choice does not have a direct effect on her reelection prospects, consider the case where it does. Specifically, assume that regardless of the interest group’s campaign spending, the incumbent’s reelection prospects are maximized by selecting policy y . (In this context, we can think of policy y as the policy preferred by the majority of the unmodeled electorate.) As such, regardless of whether campaign donations are legally prohibited, the cutpoint of the incumbent’s equilibrium strategy will be positive: some incumbent-types who prefer policy x will select policy y in the first period. Nonetheless, if the interest group donates to the incumbent when x is selected and donates to the challenger when y is selected,²⁹ then the net electoral cost of catering to the group will be lower when donations are allowed than when donations are prohibited. Consequently, the interest group’s anticipated campaign giving, by dampening the net electoral cost associated with bucking public opinion, increases the fraction of its ideological allies who are willing to do so.

As noted in the introduction, a widespread assumption in the empirical literature on campaign finance is that electorally motivated campaign giving has no effect on incumbent behavior. Before concluding this section, we note a special case of our model where these claims receive theoretical support. In contrast to our assumption otherwise, suppose that the interest group knows the incumbent’s policy preference. Then, the incumbent’s first-period policy choice does not affect the group’s forecast of her second-period policy choice. Therefore, there will always exist an equilibrium in which the interest group’s campaign spending is independent of the incumbent’s decision (i.e., $(d_i^{x*}, d_c^{x*}) = (d_i^{y*}, d_c^{y*})$). In such an equilibrium, each incumbent-type selects her preferred policy in the first period, just as she would if campaign contributions were prohibited. Consequently, when the incumbent’s policy preference is known by the interest group, equilibria exist to our model where fund-raising consideration have no effect on her behavior.

9 Conclusions

Despite over a quarter century of research suggesting that public policy in the U.S. Congress is not for sale, the public continues to persist in its belief that fund-raising considerations affect the policy choices of lawmakers. That said, we do have considerable evidence suggesting that numerous interest groups allocate their resources with the aim of influencing the ideological composition of the Congress (e.g., Wand 2003). In fact, in contrast to the predictions of many models of investor contributors (e.g., Grossman and Helpman 1996), however, consistent with the predictions of this paper’s model, instances where an interest group donates to more than one candidate in a given congressional election are exceedingly rare (Bronars and Lott 1997; McCarty and Rothenberg 1996). While it has long been assumed that such electoral contributors have little to no effect on incumbent behavior, this paper’s model of lawmaking demonstrates that this need not be the case. Specifically, in our model, whenever there is uncertainty about the underlying policy preferences of incumbents, those groups which employ their resources to elect ideological allies can have the effect of distorting the actions of lawmakers. Consequently, lacking evidence that quid pro quos are common, a major contribution of this paper is in providing alternative theoretical foundations for the public’s concern that incumbents are particularly responsive to the needs of wealthy special interests.

We conclude by observing two matters which should be addressed in future research. First, political observers argue that over the past decade or so, politics in the U.S. Congress has become more partisan, with politicians placing more weight on placating their respective bases as opposed to working together to reach so-called “centrist compromises” (Hacker and Pierson 2005). At the same time, electoral contributors have become a more important source of campaign funds. To what extent are these trends related? Extending this paper’s model to a legislative setting might provide some leverage on this question; by doing so, we could begin to examine the effects electoral contributors have on legislative bargaining. Second, while recent caricatures of U.S. Congressmen as “running scared” (King 1997) suggest that incumbents will be especially responsive to the concerns of wealthy electoral contributors,

this is a matter in need of rigorous and systematic empirical investigation. Although we have outlined many of the elements involved in such an empirical examination, a fully specified statistical model of incumbent behavior in the presence of an electoral contributor is needed.

Notes

¹For Alan Simpson’s reflections on the effects of interest group campaign giving on the policy process, see *McConnell v. FEC*.

²For James Hansen’s reflections on his interactions with campaign donors, see Makinson (2003, 62).

³In a 2001 Zogby survey, 88 percent agreed with the statement that corporate money has too much influence in politics. 80 percent had similar sentiments regarding the influence of union money.

⁴Numerous models of such contributors adapt the “menu-contract” approach of Grossman and Helpman (1994). Grossman and Helpman’s model unfolds over two stages. In the first stage, the interest group offers the incumbent a contract. The contract specifies a non-negative contribution for each possible policy the incumbent could pursue. In the second stage, the incumbent selects a policy in light of this contract. As these contracts alter an incumbent’s payoff from a given policy course, the incumbent can be induced to select policies that differ from those selected in the group’s absence.

⁵Others have referred to such groups as ideological contributors.

⁶For example, Wright (1984, 45) claims that a “necessary condition for political action committee (PAC) contributions to influence roll call votes” is that “PACs allocate money with the intent of influencing roll calls.” Similarly, Stratmann (2002, 346) asserts: “If interest groups donate funds because they agree with legislators’ positions, there is less concern that contributions have a ‘corrupting’ influence on government, as opposed to groups giving because they desire to sway legislators’ decisions.” Gordon and Hafer (2005, 245) maintain this assumption as well: “If corporate political expenditures merely reflect the expressive desire of a few executives, we needn’t be too worried that those with deep pockets get their way in politics more often than others.”

⁷The most prominent of these challenges to date was the Club’s failed attempt to unseat Arlen Specter, a moderate Republican Senator from Pennsylvania, in 2004. While Specter beat his Club backed primary opponent by a mere two percentage points, in the absence

of the Club’s intervention, Specter most likely would have faced a token opponent or no opposition at all in his bid to win the Republican nomination.

⁸Thus, this paper builds upon the two-period models of political agency examined in Coate and Morris (1997), Cho (2005), and Maskin and Tirole (2004); there are also similarities with the infinite-horizon model of repeated elections formulated in Duggan (2000). In these models the public is uncertain of the underlying policy preferences of lawmakers (i.e., a politician’s “ideal point” is private information). As such, these authors are able to examine how the public draws inferences about the underlying policy preferences of lawmakers from their past policy choices, how these inferences affect a citizen’s decision to reelect her representative, and how incumbents select policies in light of their expectations regarding the public’s reaction to their policy choices.

⁹Hixon (2002, 4) reports that prior to the passage of the Bipartisan Campaign Finance Reform Act of 2002 there was significant uncertainty among key lobbyists as to which incumbents were likely to vote their way: “When (a lobbyist was) asked if the process (of locating ideological allies) was anything like arranging members according to their well-known positions on reform to select lobbying targets, one staffer laughed ‘Oh God, no!’ ”

¹⁰The intuition here is related to that in Dal Bo and Di Tella (2003) and Dal Bo, Dal Bo, and Di Tella (2005). In these models, the incumbent is induced to select the group’s preferred policy, not to receive a reward, but to avoid a punishment, modeled as a utility loss, that the group would inflict otherwise. Note, however, in their models, the interest group determines its level of punishment in order to directly affect incumbent policy choices, whereas in this paper’s model, the group’s punishment of incumbents who do not cater to it is a byproduct of its desire to elect ideological allies.

¹¹A sampling of the literature examining the impact of investor contributors on incumbent behavior includes: Besley and Coate (2001), Denzau and Munger (1986), Grossman and Helpman (1994), and Snyder (1991). A sampling of the literature examining the impact of investor contributors on candidate positioning in two-candidate models of electoral competition includes: Baron (1989), Grossman and Helpman (1997), and Snyder (1990).

¹²These models have the following timing: First, office-motivated candidates simultaneously announce their platforms. Second, interest groups make donations in light of these announcements under the assumption that the winner will implement her promised platform.

¹³In the context of a model of lobbying, Austen-Smith (1995) provides an alternative explanation as to why an interest group need not buy policy favors with its campaign funds in order for its campaign giving to affect incumbent behavior. While in this paper's model and his model, interest groups tend to donate to ideological allies, in this paper's model, this is a consequence of the desire of interest groups of to elect ideological allies, whereas in his model, this is a consequence of the desire of interest groups to credibly signal policy consequential information to ideological allies.

¹⁴The proofs of Result 1 through Result 6 are included in the appendix to this paper. Proposition 1 and Proposition 2 are immediate consequences of these results. All remaining technical details are relegated to a supplemental appendix, available upon request.

¹⁵Assuming $z(x; 0) = z(y; 0)$, all results continue to hold under the more general assumption that the difference $z(x; t) - z(y; t)$ is increasing in t .

¹⁶Formally, our solution concept is perfect Bayesian equilibrium. And, technically speaking, a belief system for the interest group is a function which maps each policy choice of the incumbent into a density function on the real line. However, since the sign of the incumbent's type uniquely determines her second-period policy choice, the interest group's payoff from the incumbent's reelection depends solely on the sign of her type. As such, in the main text of the paper, we focus on how the incumbent's policy choice affects the probability that the group attaches to the incumbent's type being positive as opposed to its affect on the weight the group assigns to the incumbent's type taking on a particular realization.

¹⁷Note, since the incumbent's types space (i.e., the real line) is larger than her action space (i.e., $\{x, y\}$), there are no separating equilibrium. Since the incumbent's equilibrium strategy is always characterized by a cutpoint, some incumbent-types select x and some incumbent-types select y , and, as a result, there are no pooling equilibrium either.

¹⁸Formally, given a cutpoint of t^* , from the group's perspective at the beginning of the game, the probability that the incumbent selects policy x is $\int_{t^*}^{\infty} f_i(t)dt$.

¹⁹This prediction is consistent with evidence demonstrating that instances in which an interest group donates to more than one candidate in a Congressional election are exceedingly rare (Bronars and Lott 1997; McCarty and Rothenberg 1996).

²⁰Formally, the interest group's campaign spending is positive whenever $(d_i^{x*}, d_c^{x*}) \neq (0, 0)$ or $(d_i^{y*}, d_c^{y*}) \neq (0, 0)$.

²¹In our supplemental appendix we identify conditions under which a unique equilibrium exists to our model. Namely, if the marginal productivity of interest group spending is decreasing (i.e., r is strictly concave in d_i and strictly convex in d_c) and the marginal cost of interest group spending is increasing (i.e., m is convex in its arguments), then existence and uniqueness are ensured.

²²While the proof technique underpinning these results is sketched in this paper's appendix, the complete mathematical machinery developed to establish these results can be found in the supplemental appendix.

²³In order to increase one's confidence that any observed change in behavior is a result of fund-raising considerations (as opposed to ordinary legislative shirking), one should restrict attention to those districts where the policy preferred by the interest group differs from the policy preferred by the majority of the incumbent's constituents.

²⁴Here, we are assuming that $r(d_i, d_c) \equiv \alpha\tilde{r}(d_i, d_c)$, where \tilde{r} is increasing in d_i and decreasing in d_c , and $m(d_i, d_c) \equiv \beta\tilde{m}(d_i, d_c)$, where \tilde{m} is increasing in both d_i and d_c . α is a measure of the marginal productivity of campaign spending, and β is a measure of the marginal cost of campaign spending.

²⁵For example, it is reasonable to believe that the type of Republican lawmakers is drawn from a different distribution than the type of Democratic lawmakers.

²⁶For a potential approach to structurally estimating the parameters of the distribution from which a lawmaker's type is drawn, see Gowrisankaran *et al.* (2005).

²⁷We have already discussed a strong candidate for this type of identifying variable: the

cost of a thirty-second campaign ad. As discussed, there is substantial heterogeneity in advertising costs across Congressional districts. And, there is reasons to believe that these costs are not affected by political competition. (To ensure that this is the case, one could use the price of a thirty-second ad in the second quarter of an election year.). Moreover, advertising costs clearly affect an electoral contributor's calculus as to whether it should bankroll a challenger to run against a give incumbent. And, if private campaign giving was prohibited, it is not obvious as to why such costs would affect incumbent behavior.

²⁸In the supplemental appendix, we show that our main insights continue to hold in settings where incumbent lawmakers are not term limited. Essentially, when lawmakers place sufficient weight on the future, the value an incumbent attaches to winning reelection in any given period of the infinite-horizon version of our model is greater than in the first period of our two-period model. As such, removing term limits increases the incumbent's incentive to take whichever action maximizes her probability of reelection. Thus, when catering to the interest group maximizes (minimizes) the incumbent's reelection prospects, removing term limits increases (decreases) the probability that she does so.

The analysis of the case of policymaking in the presence of two interest groups with opposing policy preferences is almost identical to the analysis of the case of policymaking on an issue of high salience to the incumbent's constituents. Specifically, one can show that the main effect of countering an interest group which prefers policy x with an interest group which prefers policy y is that the probability that the incumbent selects policy x in the first period decreases.

²⁹This will be the case, for example, if $f_i = f_c$. In the supplemental appendix, we show that whenever $\pi_c > \pi_i$, an electoral contributor's campaign giving will affect incumbent behavior on an issue of high salience.

The Appendix

Proposition 1 and Proposition 2 immediately follow from the results in this appendix.

A Strategies and Solution Concept

First, some notation. Let $P \equiv \{x, y\}$, let $D \equiv \mathbb{R}_+^2$, and let $T \equiv \mathbb{R}$, where P is the set of policies from which the office holder can select, D is the set of possible donation pairs that the group can offer, and T is the set of types from which each politician's type is drawn. Throughout the appendix, we presume that the reelection function r and the cost function m are continuously differentiable. (Note that one can show that Proposition 1 and Proposition 2 hold even in the absence of these assumptions.)

Given that the game ends in the second period, it is immediate that the election winner will select her preferred policy in the second period. We denote the policy choice of an election winner with type t as $\sigma_2^*(t)$, where

$$\sigma_2^*(t) = \begin{cases} x & \text{if } t \geq 0 \\ y & \text{otherwise} \end{cases} .$$

For the remainder of the appendix, we will take it as given that the election winner picks her preferred policy. As such, in analyzing the model, we will focus on the strategic interaction between the incumbent and the interest group.

A strategy for the incumbent is a function $\sigma : T \rightarrow P$ which specifies a first-period policy for each incumbent-type. A strategy for the interest group is a function $(\gamma_i, \gamma_c) : P \rightarrow D$. For each first-period policy $p \in P$, $\gamma_i(p)$ is the interest group's donation to the incumbent, and $\gamma_c(p)$ specifies its donation to the challenger. Since the interest group is uncertain of the incumbent's type at the time it decides how to allocate its resources, this model constitutes an extensive-form game of incomplete information. Consequently, our solution concept is perfect Bayesian equilibrium (PBE). A candidate for a PBE is a strategy for the incumbent, a strategy for the interest group, and a belief system. A belief system for this model is a function $\mu : P \rightarrow \Delta(T)$. ($\Delta(T)$ is the set of density functions with domain T .) For each

first-period policy $p \in P$, $\mu(p)$ specifies the interest group's belief about which incumbent-types may have selected p ; we interpret $\mu(t|p)$ to be the weight the interest group attaches to the incumbent's type being t when the first-period policy is p .

In order to formally define a PBE to our game, it will be useful to work with the expression defining an actor's expected payoff as a function of the incumbent's type, the first-period policy and the interest group's donation pair when uncertainty remains about the election's outcome and the challenger's type. For $j \in \{i, c\}$, we denote this expression by $V_j(t_i, p, d_i, d_c)$, where

$$V_j(t_i, p_1, d_i, d_c) = r(d_i, d_c) [U_j(t_i, t_c, p_1, d_i, d_c, i, \sigma_2^*(t_i))] + (1 - r(d_i, d_c)) \left[\int U_j(t_i, t_c, p_1, d_i, d_c, c, \sigma_2^*(t_c)) f_c(t_c) dt_c \right].$$

The first bracketed term is j 's payoff conditional on the incumbent winning re-election; the second bracketed term is j 's expected payoff conditional on the challenger winning the election. Note, uncertainty regarding the challenger's type enters the second bracketed term only. The weight attached to each bracketed term is determined by the incumbent's probability of re-election.

Definition 1 *A PBE is a strategy profile (σ^*, γ^*) and a belief system μ^* in which*

a. for each $t \in T$, $\sigma^(t)$ is a solution to*

$$\max_{p \in P} V_i(t, p, \gamma_i^*(p), \gamma_c^*(p));$$

b. for each $p \in P$, $(\gamma_i^(p), \gamma_c^*(p))$ is a solution to*

$$\max_{(d_i, d_c) \in D} \int V_g(t, p, d_i, d_c) \mu^*(t|p) dt;$$

c. for each $p \in P$, $\mu^(p)$ is derived from σ^* through Bayes' rule when possible.*

B The Interest Group's Donation Problem

Define a function $W : D \times P \times \Delta(T) \times \Delta(T) \rightarrow \mathbb{R}$, where

$$W(d_i, d_c; p, \mu) = \int V_g(t, p, d_i, d_c) \mu(t|p) dt.$$

Given a first-period policy p and a belief system μ , the interest group's *donation problem* is

$$\max_{(d_i, d_c) \in D} W(d_i, d_c; p, \mu). \quad (1)$$

This section characterizes the solution to the interest group's donation problem. Let

$$\pi_c \equiv \int_0^\infty f_c(t) dt,$$

and let

$$\pi_i(p, \mu) \equiv \int_0^\infty \mu(t|p) dt.$$

Thus, π_c is the group's assessment of its ideological congruence with the challenger, and for a given first-period policy p and belief system μ , $\pi_i(p, \mu)$ is the group's updated assessment of its ideological congruence with the incumbent. With this notation, one can establish the useful equivalence

$$W(d_i, d_c; p, \mu) \equiv z(p; t_g) + r(d_i, d_c)[\pi_i(p, \mu) - \pi_c]t_g + \pi_c t_g - m(d_i, d_c).$$

This expression reveals that the interest group's marginal return on a campaign contribution (i.e., the derivative of W w.r.t. either d_i or d_c) depends on the difference in each politician's probability of pursuing x in the second-period. When $|\pi_i(p, \mu) - \pi_c|$ is large (small), the group's return on a donation to its preferred politician will be large (small).

We begin to characterize the solution to the interest group's donation problem by formally stating the *Kuhn-Tucker first-order necessary conditions* that such a solution must satisfy.

Lemma 1 *Suppose that (d_i^*, d_c^*) is a solution to (1). Then there exists a vector (μ_i^*, μ_c^*) :*

$$\frac{\partial r(d_i^*, d_c^*)}{\partial d_i} [\pi_i(p, \mu) - \pi_c] t_g - \frac{\partial m(d_i^*, d_c^*)}{\partial d_i} + \mu_i^* = 0 \quad (2)$$

$$\frac{\partial r(d_i^*, d_c^*)}{\partial d_c} [\pi_i(p, \mu) - \pi_c] t_g - \frac{\partial m(d_i^*, d_c^*)}{\partial d_c} + \mu_c^* = 0 \quad (3)$$

$$\mu_i^* \geq 0 \quad d_i^* \mu_i^* = 0 \quad (4)$$

$$\mu_c^* \geq 0 \quad d_c^* \mu_c^* = 0. \quad (5)$$

Proof: As the constraint qualification holds at any $(d_i, d_c) \in D$, by the Kuhn-Tucker Theorem, the result follows. ■

We now prove that at a solution to the group's donation problem, only the politician most likely to pursue x in the second period is ever offered a positive donation.

Lemma 2 *Let (d_i^*, d_c^*) denote a solution to (1). If $d_i^* > 0$, then $\pi_i(p, \mu) > \pi_c$. If $d_c^* > 0$, then $\pi_i(p, \mu) < \pi_c$.*

Proof: Suppose that (d_i^*, d_c^*) is a solution to (1), where $d_i^* > 0$. We need to show that $\pi_i(p, \mu) > \pi_c$. To do so, we invoke the Kuhn-Tucker first-order necessary conditions for a maximum to the interest group's donation problem. When $d_i^* > 0$, (2) and (4) imply that

$$\frac{\partial r(d_i^*, d_c^*)}{\partial d_i} [\pi_i(p, \mu) - \pi_c] t_g - \frac{\partial m(d_i^*, d_c^*)}{\partial d_i} = 0.$$

By assumption, $\partial r(d_i^*, d_c^*)/\partial d_i > 0$, $\partial m(d_i^*, d_c^*)/\partial d_i > 0$, and $t_g > 0$. Consequently, if the preceding equality is to hold, $\pi_i(p, \mu) > \pi_c$. A similar argument applied to (3) and (5) shows that $d_c^* > 0$ implies $\pi_i(p, \mu) < \pi_c$. ■

The last result of this section states that as the incumbent's probability of pursuing x in the second-period increases, the magnitude of the interest group's optimal donation to the incumbent (challenger) is non-decreasing (non-increasing).

Lemma 3 *Fix belief systems μ' and μ'' . Suppose that (d_i^*, d_c^*) is a solution to*

$$\max_{(d_i, d_c) \in D} W(d_i, d_c; p', \mu'),$$

*and that (d_i^{**}, d_c^{**}) is a solution to*

$$\max_{(d_i, d_c) \in D} W(d_i, d_c; p'', \mu'').$$

- i. If $\pi_i(p', \mu') \geq \pi_c \geq \pi_i(p'', \mu'')$, then $d_i^* \geq d_i^{**} = 0$ and $d_c^{**} \geq d_c^* = 0$.*
- ii. If $\pi_i(p', \mu') > \pi_i(p'', \mu'') > \pi_c$, then $d_i^* \geq d_i^{**}$ and $d_c^{**} = d_c^* = 0$, where the former inequality is strict if $d_i^{**} > 0$.*

iii. If $\pi_c > \pi_i(p', \mu') > \pi_i(p'', \mu'')$, then $d_i^* = d_i^{**} = 0$ and $d_c^{**} \geq d_c^*$, where the latter inequality is strict if $d_c^* > 0$.

Proof:

Case (i): Since $(d_i^*, d_c^*) \in \arg \max W(d_i, d_c; p', \mu')$, by Lemma 1, $\pi_i(p', \mu') \geq \pi_c$ implies that $d_c^* = 0$. Since $(d_i^{**}, d_c^{**}) \in \arg \max W(d_i, d_c; p'', \mu'')$, by Lemma 1, $\pi_c \geq \pi_i(p'', \mu'')$ implies that $d_i^{**} = 0$. Consequently, $d_i^* \geq d_i^{**} = 0$ and $d_c^{**} \geq d_c^* = 0$.

Case (ii): Since $(d_i^*, d_c^*) \in \arg \max W(d_i, d_c; p', \mu')$, by Lemma 1, $\pi_i(p', \mu') > \pi_c$ implies that $d_c^* = 0$. Since $(d_i^{**}, d_c^{**}) \in \arg \max W(d_i, d_c; p'', \mu'')$, by Lemma 1, $\pi_i(p'', \mu'') > \pi_c$ implies that $d_c^{**} = 0$.

All that remains to establish is that $d_i^* \geq d_i^{**}$, where this inequality is strict if $d_i^{**} > 0$.

Since

$$\frac{\partial^2 W}{\partial d_i \partial \pi_i} = \frac{\partial r(d_i, 0)}{\partial d_i} t_g > 0,$$

the group's marginal return on a campaign donation to the incumbent is increasing in the group's perception of its ideological affinity with the incumbent. Consequently, the Strict Monotonicity Theorem of Edlin and Shannon (1998, 205) applies, and our desired conclusion follows.

Case (iii): This case is established by employing arguments similar to those employed to establish Case (ii). ■

C The Incumbent's First-Period Policy Problem

Let $d^p = (d_i^p, d_c^p)$ denote the donation pair offered when the first-period policy is p . Given (d^x, d^y) , the incumbent's *first-period policy problem* is

$$\max_{p \in P} V_i(t_i, p, d_i^p, d_c^p).$$

In this section, we establish that for any (d^x, d^y) , the set of incumbent-types that find it optimal to choose policy p in the first period is convex.

We begin by expressing $V_i(t_i, p_1, d_i, d_c)$ in terms of the model's parameters:

$$V_i(t_i, p_1, d_i, d_c) = \begin{cases} t_i + \rho + r(d_i, d_c)[t_i + \rho] + [1 - r(d_i, d_c)]\pi_c t_i & \text{if } p_1 = x \text{ and } t_i \geq 0 \\ \rho + r(d_i, d_c)[t_i + \rho] + [1 - r(d_i, d_c)]\pi_c t_i & \text{if } p_1 = y \text{ and } t_i \geq 0 \\ t_i + \rho + r(d_i, d_c)\rho + [1 - r(d_i, d_c)]\pi_c t_i & \text{if } p_1 = x \text{ and } t_i < 0 \\ \rho + r(d_i, d_c)\rho + [1 - r(d_i, d_c)]\pi_c t_i & \text{if } p_1 = y \text{ and } t_i < 0 \end{cases} .$$

Define

$$T^x(d^x, d^y) \equiv \{t_i \in T : V_i(t_i, x, d_i^x, d_c^x) \geq V_i(t_i, y, d_i^y, d_c^y)\},$$

and define

$$T^y(d^x, d^y) \equiv \{t_i \in T : V_i(t_i, y, d_i^y, d_c^y) \geq V_i(t_i, x, d_i^x, d_c^x)\}.$$

Given (d^x, d^y) , $T^p(d^x, d^y)$ is the set of incumbent-types for whom p is a solution to (6). The following lemma characterizes the sets $T^x(d^x, d^y)$ and $T^y(d^x, d^y)$. Simple algebra establishes:

Lemma 4 *Let*

$$c(d^x, d^y) \equiv \begin{cases} \frac{\rho[r(d^y) - r(d^x)]}{1 + [r(d^y) - r(d^x)]\pi_c} & \text{if } r(d^x) > r(d^y) \\ 0 & \text{if } r(d^x) = r(d^y) \\ \frac{\rho[r(d^y) - r(d^x)]}{1 + [r(d^x) - r(d^y)](1 - \pi_c)} & \text{if } r(d^x) < r(d^y) \end{cases} . \quad (6)$$

$$T^x(d^x, d^y) = [c(d^x, d^y), +\infty) \text{ and } T^y(d^x, d^y) = (-\infty, c(d^x, d^y)].$$

Note, if for a given (d^x, d^y) , the incumbent's reelection prospects are maximized by selecting x (y), then $c(d^x, d^y)$ is negative (positive). Moreover, inspection of (6) reveals that as the net electoral benefit of selecting policy x increases, the fraction of incumbent-types who find it optimal to do so increases. The following lemma summarizes these facts.

Lemma 5 *For any (d^x, d^y) and $(d^{x'}, d^{y'})$ we have: (a) If $r(d^x) > r(d^y)$, then $c(d^x, d^y) < 0$. (b) If $r(d^x) < r(d^y)$, then $c(d^x, d^y) > 0$. And, (c) if $r(d^x) - r(d^y) > r(d^{x'}) - r(d^{y'})$, then $c(d^x, d^y) < c(d^{x'}, d^{y'})$.*

D Equilibrium Cut-point and Equilibrium Beliefs

To state the next lemma, we say that σ is a *cutpoint strategy with cutpoint* $c \in \mathbb{R}$ if

$$\sigma(t) = \begin{cases} x & \text{if } t > c \\ y & \text{if } t < c \end{cases} .$$

Hence, if the incumbent employs a cutpoint strategy, the set of incumbent-types that select policy p is convex.

Lemma 6 *If $(\sigma^*, \gamma^*, \mu^*)$ is a PBE of the incomplete information matching model, then*

a. σ^* is a cutpoint strategy with cutpoint $c(\gamma^*(x), \gamma^*(y))$;

b.

$$\mu^*(t|x) = \begin{cases} \frac{f_i(t)}{\int_{c(\gamma^*(x), \gamma^*(y))}^{\infty} f_i(t) dt} & \text{if } t \geq c(\gamma^*(x), \gamma^*(y)) \\ 0 & \text{otherwise} \end{cases}, \quad (7)$$

and

$$\mu^*(t|y) = \begin{cases} 0 & \text{if } t \geq c(\gamma^*(x), \gamma^*(y)) \\ \frac{f_i(t)}{\int_{-\infty}^{c(\gamma^*(x), \gamma^*(y))} f_i(t) dt} & \text{otherwise} \end{cases}. \quad (8)$$

Proof: Suppose $(\sigma^*, \gamma^*, \mu^*)$ is a PBE. Part (a) is an immediate consequence of Lemma 4. Part (b) immediately follows from part (a). ■

E Proof of Results 1 through 6

Proof of Result 1: This result immediately follows from part (a) of Lemma 6 and parts (a) and (b) of Lemma 5. ■

Proof of Result 2: This result immediately follows from part (a) of Lemma 6 and part (c) of Lemma 5. ■

Proof of Result 3: Suppose that $(\sigma^*, \gamma^*, \mu^*)$ is an equilibrium of our model. We need to show that $\pi_i^*(x, \mu^*) > \pi_c > \pi_i^*(y, \mu^*)$. In words, upon observing the incumbent select policy x (y), the interest group's updated assessment of its ideological affinity with the incumbent is greater (less) than its initial assessment.

There are two cases to consider: the case where the cutpoint of incumbent's strategy is greater than or equal to zero, and the case where the cutpoint of the incumbent's strategy is negative.

Letting t^* denote the cutpoint of the incumbent's strategy, we begin by considering the case where $t^* < 0$. By (8), for each $t > 0$, $\mu^*(t|y) = 0$. Hence, $\pi_i^*(y, \mu^*) = 0 < \pi_c$. And, by (7), for $t > 0$,

$$\mu^*(t|x) = \frac{f_i(t)}{\int_{t^*}^{\infty} f_i(t) dt}.$$

Thus,

$$\pi_i^*(x, \mu^*) = \frac{\int_0^\infty f_i(t) dt}{\int_{t^*}^\infty f_i(t) dt} = \frac{\pi_i}{\int_{t^*}^\infty f_i(t) dt}$$

In words, upon observing x selected in the first period, the probability that the group assigns to the incumbent sharing its preference for x is simply the probability that a randomly drawn incumbent-type prefers policy x divided by the probability that a randomly drawn incumbent-type selects policy x . As the denominator of this expression is less than one, the group's updated assessment of its ideological affinity with the incumbent is greater than its initial assessment: $\pi_i^*(x, \mu^*) > \pi_i$. A similar argument establishes our desired claim for the case where $t^* \geq 0$. ■

Proof of Result 4: This result is an immediate consequence of Lemma 2. ■

Proof of Result 5: Result 3 established that for any equilibrium $(\sigma^*, \gamma^*, \mu^*)$, $\pi_i^*(x, \mu^*) > \pi_i^*(y, \mu^*)$. Hence, Result 5 is an immediate consequence of this fact taken together with Lemma 3. ■

Proof of Result 6: This result is an immediate consequence of Result 5 taken together with the fact that r is increasing in d_i and decreasing in d_c . ■

F Sketch of Comparative Static Results

In the supplemental appendix to this paper, we demonstrate that for any given parametrization of the model θ , the cutpoint of the incumbent's equilibrium strategy is a fixed point of a function $q(\cdot; \theta)$ which maps negative cutpoints into negative cutpoints, and is non-increasing over $[\infty, 0]$. Specifically,

$$q(c; \theta) \equiv \frac{\rho[r(\tilde{d}_i^y(c, \theta), \tilde{d}_c^y(c, \theta)) - r(\tilde{d}_i^x(c, \theta), \tilde{d}_c^x(c, \theta))]}{1 + [r(\tilde{d}_i^y(c, \theta), \tilde{d}_c^y(c, \theta)) - r(\tilde{d}_i^x(c, \theta), \tilde{d}_c^x(c, \theta))]\pi_c}$$

In words, $q(c; \theta)$ is the cutpoint which defines the best-response condition for each incumbent-type when the interest group best-responds to an incumbent strategy with a cutpoint of c . The comparative static results in the main text are established by signing the effect of a change in the relevant parameters on $-q(c; \cdot)$. For example, since $q(c; \cdot)$ is \downarrow in ρ , the equilibrium cutpoint \downarrow as $\rho \uparrow$; in other words, the group's influence \uparrow as $\rho \uparrow$.

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Figure 1: Time Line of Interaction between Incumbent and Interest Group

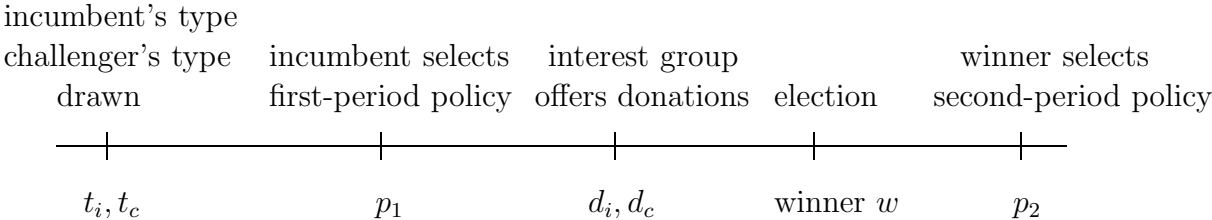


Figure 2: The Effect of the Interest Group's Perception of its Ideological Affinity with the Incumbent on its Expected Benefit from the Incumbent's Reelection and its Campaign Spending

