

# Influencing Agencies through Pivotal Political Institutions

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We draw on the positive political theory and campaign finance literatures to examine how interest groups allocate influence activities (e.g. monetary donations, lobbying) across multiple government institutions when seeking more favorable *agency* policy decisions. By modeling agency behavior in the context of legislative oversight, we derive testable predictions about the political conditions under which an interest group will influence a) only the agency, b) the legislature and/or executive *instead of* the agency, c) the legislature or executive *in addition to* the agency, in order to induce a shift in regulatory policy. One implication of our conclusions relating to b) and c) is that empirical studies seeking to identify a relationship between electoral campaign contributions and public policy using data on legislative votes are potentially mis-specified. We find support for our hypotheses in an empirical analysis of electoral campaign contributions made to the U.S. House and Senate by the accounting industry during the 1990s.

*“Disagreement with the merits of a proposed SEC rule is not uncommon. Chairman Levitt has indicated his disappointment that the firms fighting the proposal have not taken the opportunity to engage the SEC but instead are focusing their resources on a **legislative** effort to limit the authority of the **agency**.”*

Tom Daschle, United States Senate<sup>1</sup>

## **1. Introduction**

Organized interest groups seeking to influence public policies face multiple government institutions that participate in policy-making procedures and that can influence final policy decisions. While legislatures and executives enact policies through the periodic passage of statutes, agencies, operating under legislative oversight, are frequently responsible for interpreting, implementing and enforcing statutes through the design of administrative regulations. Courts also have an effect on policy outcomes, by determining whether new legislation is constitutionally valid, or whether administrative rulings are consistent with enabling statutes. Interest groups must therefore decide how to allocate influence activities across multiple institutions, a task complicated by the fact that policy decisions by one institution are rarely made independently of another.

In this paper we examine how interest groups design political strategies aimed at achieving more favorable agency rulings than would otherwise obtain. In contrast to the voluminous literature considering how interest groups affect the legislative process, there are relatively few studies of how or when special interests decide to influence administrative outcomes.<sup>2</sup> Among existing research, studies tend to focus on interest groups’ direct interactions with agencies. In a principal-agent model of the interaction between a legislature, agency and single interest group, Spiller (1990) argues that the legislature has some incentive to allow interest groups to make resource transfers to agencies since this reduces the minimum budget required to induce agency effort. In an empirical analysis of the organization of interest groups’ lobbying activities, De Figueiredo and Tiller (2001) examine why some telecommunications firms lobby the

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<sup>1</sup> Letter to President Clinton, September 29, 2000. Emphasis added.

<sup>2</sup> A large literature examines interest groups’ political influence strategies within the context of legislative institutions, such as optimal campaign contribution or lobbying strategy within the U.S. House of Representatives or Senate (e.g. Snyder, 1990; 1992; Stratmann, 1992; 1995; 1998; Austen-Smith and Wright, 1994).

Federal Communications Commission using internal staff whereas other firms subcontract to external lobbying organizations. At a more conceptual level, Buchholz (1990) argues that interest groups increase their level of agency interactions - for example by participating in hearings – when salient policy issues are under administrative consideration. According to these and related studies, then, interest groups are assumed to be able to receive more favorable administrative rulings by directly influencing the relevant regulatory agency.

Here, we develop the argument that interest groups need not necessarily directly lobby, or otherwise influence, *agencies* in order to shift agency decisions. We demonstrate that special interests will influence legislatures or executives *in addition to*, or *instead of*, agencies, in order to induce changes in agency behavior in certain circumstances. As the above quote illustrates, interest groups make choices about whether to directly engage agencies when seeking favorable regulatory rulings or instead whether to exert pressure indirectly by influencing political principals who oversee agency decisions.

The implicit recommendation of the prior literature to lobby the relevant agency is based upon the premise that the agency has latitude to shift policy in response to the interest group's approaches. The positive political theory (PPT) literature which examines the interactions among administrative, legislative and judicial branches of government, however, suggests that such a strategy could be counterproductive: the ability of an agency to shift policy unilaterally depends on the relative preferences of other players in the policy process, such as the legislature and courts, and on the associated threat of judicial or legislative override (Weingast and Moran, 1983; McCubbins and Schwartz, 1984; McCubbins, Noll and Weingast, 1987 and 1989; Ferejohn and Shipan, 1990; Tiller, 1998; Tiller and Spiller, 1999). Indeed, attempts by the interest group to influence the agency for favorable administrative rules could leave it worse off if the new rules trigger a legislative reaction that establishes a less favorable policy through statute.

We draw on the PPT and political campaign contribution literatures by incorporating the strategic behavior of an interest group in a model of agency decision-

making that includes legislative and executive actors.<sup>3</sup> We are thus able to explicitly examine how interest groups decide to influence one branch of government rather than another in order to affect agency decisions. The central thrust of our argument is that interest groups concentrate their influence activities on influencing *pivotal institutions*. Pivotal institutions establish the position of the equilibrium public policy, and changes in the policy supported by a pivotal institution, for example after accepting campaign contributions, translate into changes in the equilibrium policy. Due to the strategic nature of interaction between government branches, the pivotal institution in any given situation need not be the agency that has responsibility for implementing policy. When the legislature is pivotal, for example, the interest group induces a change in agency policy by shaping the legislature's policy preferences. We distinguish between primary, secondary and tertiary pivots in different political environments, demonstrating that primary pivots receive the greatest level of an interest group's resources. As far as we know, this is the first paper to analyze the allocation of interest group influence activities across multiple government branches.

Although some recent research has considered the relationship between pivotal politicians and interest groups' political strategy (Krehbiel, 1999), the focus has been on legislative actors within a single institution. We contribute also to this literature by extending the analysis of pivotal players when agencies and executive bodies are included in the policy-making game.<sup>4</sup> In doing so, we find that the nature of who is pivotal can be quite different from the conclusions in the existing literature. While Baron concludes that, "*Attention thus should be directed to those legislators in the middle, i.e., those who are mildly opposed to x*" (Baron, 2001, pp.28), we argue that interest groups will concentrate on influencing relatively extreme institutional actors (and yet who are

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<sup>3</sup> Although a few existing studies have incorporated interest groups as institutional actors in broader policy games, they have typically done so in the context of a simplified version of the policy process. Spiller (1990) and de Figueiredo et al. (1999) argue that interest groups provide information as well as financial benefits to legislatures, reducing the informational disadvantage that legislatures face vis-à-vis agencies. While these papers also examine the relationship among interest groups, legislatures and agencies, the focus is on understanding how information asymmetries affect the incentives of legislatures to allow special interests to influence agencies. The paper here relates to these analyses by considering, under the perfect information scenario, the conditions under which interest groups choose to lobby agencies and/or their political principals.

<sup>4</sup> Also see Holburn and Vanden Bergh (2002) for a more conceptual approach to the problem.

still pivotal) in various situations.<sup>5</sup> Even though our model is quite stark, we are able to develop a rich set of predictions about interest groups' political strategy that can form the basis for future empirical testing.

## 2. Pivotal Political Institutions and Campaign Contributions

In this section we develop a three-part theoretical framework for analyzing interest groups' political strategies. In the first part we adopt a canonical model of how strategic interaction among multiple branches of the government (legislative, executive and administrative) influences an agency's decision about where to determine policy through an administrative ruling.<sup>6</sup> We thus initially analyze equilibrium policies in the absence of interest groups and associated influence activities. In the second part we extend the game by introducing a single interest group as an additional player. Since our emphasis is on understanding how the structure of government institutions affects interest group political strategy, we assume that the group has no direct competition. This would arise if opposing interests face free-rider problems or high costs of implementing political actions. Our model thus builds on the *client politics* rather than *interest group competition* literature (Baron, 2001; Grossman and Helpman, 2001). The interest group makes campaign contributions which have the effect of purchasing political votes for policies that would not normally obtain. Although we use campaign contributions here as the mechanism by which interest groups influence political actors, our approach also applies to lobbying activities. Contributions are made to the government in office rather than to political candidates in election situations. Our goal here is to determine how interest groups allocate campaign contributions across different branches of government in order to influence agency policy decisions. Finally, in part three of the model, we consider how the group's optimal campaign contribution strategy changes when it may also contribute to agencies as well as to legislatures and executives (we thus introduce

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<sup>5</sup> By 'extreme' we refer to the minimum and maximum in a linear ordering of the institutions' ideal points. Since we assume that the ideal point of a legislative institution is determined by the median legislator, that legislator is necessarily not 'extreme' *within* his or her legislative chamber.

<sup>6</sup> For expositional simplicity, we exclude courts from our analysis, though the game is readily extended to incorporate additional institutional players. See the following for an analysis of policy games that also include judicial actors: Ferejohn and Shipan (1990); Spiller (1990); Spiller & Vanden Bergh (forthcoming); Tiller and Spiller (1999); Vanden Bergh (2000).

*elected* agency heads, as opposed to *appointed* heads as in the first two parts of the model).

## 2.1 Pivotal Institutions and Policy Equilibrium with no Campaign Contributions

We begin with a simple spatial model, based on models used in the existing literature (e.g., Ferejohn and Shipan, 1990), that illustrates the intuition that agencies do not make policy decisions in a vacuum but in the shadow of political oversight and the threat of statutory override, budget cuts and committee hearings. The model allows us to identify the political environments when an agency moderates its rulings in deference to political actors and which particular actors have the greatest influence on the agency. This forms the basis for subsequently analyzing the interest group's political strategy regarding which actors to lobby or to donate campaign contributions to.

### *Players and Payoffs*

We initially model the interaction between four players: the house, the senate, the executive and the regulatory agency.<sup>7</sup> The policy preferences of elected actors reflect the interests of the relevant constituents and organized groups that determine their electoral success.<sup>8</sup> The preferences of the regulatory agency, which we assume for the moment is appointed, reflect those of the appointing political actors.<sup>9</sup> Each actor's utility depends on the distance between its ideal policy position,  $j$ , and the actual policy outcome,  $x$ . We assume that the range of policy outcomes can be captured in a single continuous dimension and that utility is linear, symmetric and single peaked.<sup>10</sup> Political actor  $j$ 's

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<sup>7</sup> Each institution is assumed to be a unitary actor. In the case of the house and senate, this may be interpreted as the median legislator in each chamber.

<sup>8</sup> Mayhew (1974) argues that, due to the electoral connection, legislators take into account the interests of voters and the electoral consequences of their actions.

<sup>9</sup> There is some controversy over the source of an agency's preferences. Bawn (1995) posits that preferences are endogenous to the designed procedures. On the other hand, Epstein and O'Halloran (1996) aver that the agency's preferences are aligned with the executive. In this paper we follow Vanden Bergh (2000), arguing that an agency's preferences reflect a bargaining game between the executive and legislature depending on the appointment rules. In most circumstances, agency heads are appointed by the executive on the advice and consent of the legislature. In other environments agency heads are elected. In an elected state, agency preferences may be quite different from a bargaining outcome between the executive and legislature. We also consider this type of environment in our analysis.

<sup>10</sup> Poole and Rosenthal (1991) found that a single dimensional policy space captured most of the spatial information arising from multiple policy dimensions.

utility is represented by  $U^j = -|x - j|$ . A policy that is closer to an actor's ideal point is thus preferred to one further away.

### *Policy Game and Equilibrium*

The policy-making game proceeds in three stages. In the first stage the agency (with ideal point A) promulgates an administrative rule that establishes the status quo policy ( $x_a$ ).<sup>11</sup> In the second stage, the house (H) and senate (S) decide whether to offer an alternative legislative response,  $x_L$ , to overturn the agency's rule.<sup>12</sup> In the third stage the executive (E) decides whether to sign or veto  $x_L$ . A veto reflects executive preference for  $x_a$  versus  $x_L$ .<sup>13</sup>

To derive the equilibrium, the game is solved by backward induction. Subgame perfection and complete information are assumed throughout. The policy equilibrium is stable in the sense that there is no incentive to alter the policy by the legislature or executive because any alteration will result in at least one actor being made worse off. Here, the political *core* of the game, consisting of all stable policies, lies in the region connecting the ideal points H, S, and E. We call this region  $W(H, S, E)$  where  $W(\cdot) \subseteq \mathbf{R}^1$  represents the line segment connecting the ideal points H, S and E. Thus, any policy,  $x^*$ , that lies within  $W(H, S, E)$  is an equilibrium. Any policy ruling outside the political core will be unstable in that there exists an alternative policy that will be preferred jointly by H, S and E.<sup>14</sup>

To begin, we analyze the optimal action of the executive in Stage 3 given the agency's ruling  $x_a$  and the legislative response  $x_L$ . Let  $P^j(x)$  be the set of policies that

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<sup>11</sup> We assume the agency makes its decision on a continuum. This is not unreasonable since an agency often has discretion over rules on any one dimension.

<sup>12</sup> Both  $x_L$  and  $x_a$  are elements of  $X$ , the set of possible policy alternatives.  $X$  is a subset of  $\mathbf{R}^1$  (the entire policy space).

<sup>13</sup> For simplicity, we abstract from the possibility that the house and senate may override an executive veto. We could incorporate a fourth and final stage when the House and Senate supermajorities determine whether the veto is overridden or sustained. An override reflects maximum super-majority preference for  $x_L$  versus  $x_a$ . While incorporating the veto override possibility better reflects the institutional rules of the game, the added complexity does not contribute to the qualitative results of the model.

<sup>14</sup> In the extant campaign contribution literature, e.g. Snyder (1990), the game occurs within a single house of the legislature. Thus, alternatives must receive majority support only. Here, by incorporating the agency and executive, our model better reflects the checks and balances present in a political system with a separation of powers.

actor  $j$  prefers to policy  $x$ .<sup>15</sup> The executive will sign the legislation  $x_L$  only if  $x_L \in P^E(x_a)$ , that is, if the executive prefers the legislature's bill to the agency rule.

In Stage two, the house and senate offer a bill to overturn the agency understanding that the bill ( $x_L$ ) will be supported by the executive only if  $x_L \in P^E(x_a)$ .<sup>16</sup> If  $x_a \in W(H,S,E)$ , then any  $x_L \neq x_a$  will make at least one actor (H, S, or E) worse off. Two cases need to be considered. First, if  $P^E(x_a) \cap W(H,S)$  is not empty, then H and S propose an alternative bill  $x_L \neq x_a$  such that  $x_L \in P^E(x_a) \cap W(H,S)$ . The actual location of  $x_L$  depends upon the relative bargaining power of H and S. Second, if  $P^E(x_a) \cap W(H,S)$  is empty, then  $x_L$  will be the point in  $P^E(x_a)$  that is closest to  $W(H,S)$ . In both cases, the legislative proposal will be within the political core.

In stage one, the agency makes its ruling such that it maximizes its utility given the best response of the executive in stage three and of the house and senate in stage two. The agency knows that if the legislature offers a bill, then the final outcome depends on whether that bill is supported by the executive, i.e., if  $x_L \in P^E(x_a)$ . The agency also knows that if its ruling,  $x_a$ , is outside the political core,  $W(H,S,E)$ , then there exists an alternative bill that will be preferred by all the other actors. The agency thus establishes the equilibrium at the point in the core closest to its ideal.

The precise location of the agency's equilibrium ruling depends on the relative spatial preferences of the players. Three distinct political regimes are discernible where the agency has a different policy preference relative to the house, senate and executive (see Figure 1). In each regime, the agency sets policy at the pivotal institution's position. *Pivotal* means that a movement in that institution's preferred policy position induces the agency to make a corresponding adjustment to the policy outcome.<sup>17</sup> The pivotal institution thus establishes the equilibrium. In each regime, a different institutional player is pivotal. To illustrate this consider the three different regimes depicted in Figure 1.

INSERT FIGURE 1 ABOUT HERE

<sup>15</sup> Formally,  $P^j(x) = \{y: U^j(y) \geq U^j(x); \forall y \neq x\}$ .

<sup>16</sup> This occurs under the assumption that H and S incur a cost to offer a bill to overturn the agency. We do not assume that H and S receive any benefit simply by offering a bill. They only receive incremental utility if the alternative policy  $x_L$  is implemented in favor of the agency ruling.

<sup>17</sup> See Krehbiel (1999) for a discussion of pivotal legislators in the context of a single legislative chamber

In Regime 1, the agency is relatively liberal, with its ideal point lying to the left of the ideal points of H, S and E.<sup>18</sup> In this situation, the agency establishes the equilibrium at H, the lower boundary of the political core. Consider a ruling by the agency,  $x_a$ , between its ideal and H (i.e. outside the political core). In this case, any movement in policy closer to H is preferred by H, S and E. Since the actual location of  $x_L$  depends on the bargaining power between H and S, there is a possibility that  $x_L$  would not be equal to H and still be an element of  $W(H,S)$ , leaving the agency worse off than if it had ruled at H. The best the agency can achieve is to set policy at H's ideal point. At H no alternative policy will be supported by the house. In this regime, the house is the pivotal institution.

In Regime 2, the agency is more moderate, with an ideal point between the house and the senate on the policy dimension ( $H < A < S < E$ ). In contrast to Regime 1, the agency enjoys greater policy-making discretion in this situation since the house and senate are “pulling” the agency in opposing directions. The agency is able to establish its ideal point as the equilibrium policy since any attempt by the house to propose a policy alternative closer to H will be vetoed by S. The same applies for policy alternatives proposed by the senate: they will be vetoed by the house.<sup>19</sup> Since the policy outcome lies at the agency's ideal point, the agency is the pivotal player.

In Regime 3, where the agency is conservative relative to the legislature and executive (i.e.,  $H < S < E < A$ ), the agency is unable to obtain its ideal point as an equilibrium since, as in Regime 1, A lies outside the core. The best policy the agency can obtain, without triggering a legislative response, is to set  $x_a$  at E's ideal point. To understand this, suppose that in fact the agency mistakenly set  $x_a$  by an amount  $\delta$  to the right of E. H and S could then propose an  $x_L$  equal to E minus  $\delta$ , which H and S would

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<sup>18</sup> This preference ordering can occur if the tenure cycle of the agency's political appointees is not aligned with that of the legislature or executive. Re-elections can generate new political coalitions with preferences differing from those of the incumbent agency – whose preferences are likely to reflect those of prior political generations – or at least until the legislature has an opportunity to replace key agency officials through the appointment process. State public utility commissioners, for example, are generally appointed for five or more years and typically remain in office beyond one political election cycle. This preference ordering can also occur when agency actors are elected to office.

<sup>19</sup> This result also holds (i.e.,  $x_a^* = A$ ) if  $H < S < A < E$ . In this case any attempt by the house and senate to move policy closer to  $W(H,S)$  will be vetoed by the executive.

both prefer to  $x_a$ , and which E would still support.<sup>20</sup> E minus  $\delta$  would then become the equilibrium policy, making the agency worse off. We can see that the best the agency can achieve in this situation is to set  $x_a = E$  since H and S cannot propose an alternative which E prefers. In this situation, the executive is pivotal. In summary:

*Proposition 1:*

The agency sets the equilibrium policy ( $x_a^*$ ) at the pivotal institution's ideal point, the identity of which depends on the political regime:

$$x_a^* = \begin{cases} \min(H, S, E) & \text{for } A < \min(H, S, E) & \text{Regime 1} \\ A & \text{for } A \in W(H, S, E) & \text{Regime 2} \\ \max(H, S, E) & \text{for } A > \max(H, S, E) & \text{Regime 3} \end{cases}$$

To summarize, in an environment without interest group influences, the agency establishes the equilibrium policy through the initial rule  $x_a^*$  subject to the constraints imposed by the legislature and executive. Specifically, the agency selects policy as close as possible to its ideal point without triggering a legislative override. We can see that the location of the equilibrium is determined by the political institution with the most *extreme* policy preferences in the situations where the agency has relatively extreme preferences (Regimes 1 and 3).<sup>21</sup>

## 2.2 Pivotal Institutions and Campaign Contributions

We now expand the preceding game by introducing an interest group (a firm) as an additional player to the government actors. The firm moves first in the game by

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<sup>20</sup> We assume throughout that political actors support an alternative if it is indifferent between the original policy and the alternative. To be precise, H and S would offer an alternative policy equal to E minus  $(\delta - \epsilon)$  where  $\epsilon$  is an arbitrarily small amount. In this case, H, S and E all prefer the alternative policy.

<sup>21</sup> Introducing an agency into the policy game modifies the conclusion of the existing literature on pivotal politics (Krehbiel, 1999; Snyder, 1990); this stream of research identifies moderate political players as being pivotal, usually in the context of a multi-member single institution formulating a legislative decision. By incorporating multiple legislative and administrative institutions in the model here, extreme rather than moderate politicians can become pivotal. In Regimes 1 and 3, although moderate individuals *within* the pivotal institution are still pivotal, the pivotal institution is itself relatively extreme. The pivotal individuals thus have more extreme preferences than the median individuals in non-pivotal institutions.

proposing a campaign contribution schedule,  $c_j(x)$ , to political actor  $j$  if policy  $x$  is implemented. Stages two, three and four are equivalent to the game above.<sup>22</sup> Firms use campaign contributions to purchase the support (i.e. votes) of political actors for policies that are different from the equilibrium policies which would arise in the absence of contributions. To begin with, we assume that the agency head is appointed and cannot accept contributions. The firm is thus constrained to offering contributions only to the legislature or executive though, as we will see, such contributions will influence agency equilibrium rulings in certain political regimes. We assume also that the political actors' voting intentions, net of the contributions received, are common knowledge.

Campaign contributions increase political actors' utility. We assume now that each player's utility is the weighted sum of the utility deriving from the policy outcome and that deriving from contributions received. Actor  $j$ 's utility,  $\pi^j = -\alpha|x - j| + (1-\alpha)c_j(x)$ , where  $\alpha \in [0,1]$  represents the weight the political actor places on his direct utility from the policy or on that from campaign contributions.  $\alpha$  is interpreted as an actor's relative preference intensity over policy. To illustrate, if  $\alpha = 1$  then the policy is perfectly salient and the politician has no desire for campaign contributions. By contrast, if  $\alpha = 0$ , then the policy outcome does not affect the politician's utility, which depends entirely on the amount of campaign funds received. We assume the firm has maximum preference intensity ( $\alpha = 1$ ) to reflect its incentive to implement policy that maximizes profitability. The firm's payoff also depends on the distance between the policy outcome and the firm's preferred policy, and on total campaign expenditures. Formally,  $\pi^F = -|x - F| - \sum_j c_j(x)$  where  $F$  is the firm's preferred policy.

As before, to derive the equilibrium the game is solved via backward induction and subgame perfection is assumed throughout. In this environment, however, the firm maximizes its payoff (net of campaign contributions) subject to the constraint imposed by the agency game described above. To simplify the exposition we restrict our attention to political environments in which the firm's ideal policy,  $F$ , is to the right of each of the political actor's. That is,  $F > \max(A, H, S, E)$ . While this assumption eliminates some

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<sup>22</sup> We abstract from any contractual or enforcement challenges that may arise in the firm's payments to politicians for policy outcomes.

environments from the analysis, the qualitative results of the model will not change under different spatial assumptions for F.<sup>23</sup>

Since stages two, three and four are equivalent to the game above, we know that the agency rule ( $x_a$ ) will be an element of the post-contribution political core. To derive the equilibrium ruling,  $x_a^{*C}$ , we determine the optimal campaign contributions offered by the firm in stage one.<sup>24</sup> The firm maximizes its payoff by offering a contribution schedule  $c_j(y)$  to actor  $j$  such that the actor is just indifferent between the policy,  $y$ , he supports with the contributions and the equilibrium policy outcome in the absence of campaign contributions ( $x_a^*$ ). Actor  $j$  will be indifferent between the following two payoffs:

$$-\alpha|y - j| + (1-\alpha)c_j(y) = -\alpha|x_a^* - j|.$$

Rearranging terms, it is easy to see that the campaign contributions must compensate the political actor for the marginal increased distance of the policy  $y$  relative to  $x_a^*$  based upon the saliency of the policy ( $\alpha$ ). Thus:

$$c_j(y) = -(\alpha/1-\alpha)*(|y - j| - |x_a^* - j|).$$

While in theory this equality suggests that campaign contributions could be negative, we assume contributions flow only from the firm to the political actor. Rearranging terms, we derive the least cost campaign contribution schedule that the firm offers actor  $j$  to ensure that actor will vote for a given policy,  $y$ .

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<sup>23</sup> More specifically, we assume that the ideal point of F is greater than  $2*\max(A,H,S,E) - x_a^*$ . This point identifies the policy point where the  $\max(A, H,S,E)$  is indifferent with the policy that arises in an environment with no campaign contributions ( $x_a^*$ ). For reasons that become apparent below, this assumption eliminates some unnecessary computations.

<sup>24</sup> We assume that the firm makes a contingent offer to the political actors such that it is individually rational for each to accept the offer, irrespective of the other political actors' decisions. This would arise if the firm makes an offer schedule contingent on acceptance by all parties.

$$c_j^*(y) = \frac{\alpha}{1-\alpha} \begin{cases} 0 & \forall y \leq \max(2j - x_a^*, x_a^*) \\ y - \max(2j - x_a^*, x_a^*) & \forall y > \max(2j - x_a^*, x_a^*) \end{cases}^{25}$$

Note that the interval  $[2j - x_a^*, x_a^*]$  is the set of policies that are closer to actor  $j$ 's ideal point than  $x_a^*$  and which each actor prefers to the no-contribution policy equilibrium. Thus for a policy,  $y$ , that is inside this set, the political actor is actually better off than under the no-contribution equilibrium and will correspondingly support the policy without receiving contributions from the firm. This creates a discontinuous contribution schedule as illustrated in Figure 2. The firm thus only compensates political actors for policies that are further from their ideal points than the no-contribution equilibrium policy,  $x_a^*$ .

INSERT FIGURE 2 ABOUT HERE

Substituting the firm's optimal campaign contribution schedule for any given policy outcome into the firm's profit function allows us now to derive the equilibrium policy and associated contributions.

$$\pi^F(y, c(y)) = y - F - \sum_j \frac{\alpha}{1-\alpha} \begin{cases} 0 & \forall y \leq \max(2j - x_a^*, x_a^*) \\ y - \max(2j - x_a^*, x_a^*) & \forall y > \max(2j - x_a^*, x_a^*) \end{cases}$$

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We can see that the firm must contribute to multiple political actors in order to obtain certain policies. In Regime 1 (see Figure 2), for example, the firm always compensates H to induce the agency to move policy away from  $x_a^*$ . Movements of policy towards F do not require contributions to the senate until the movement is so great that the senate prefers  $x_a^*$  to the new policy proposal. This occurs for all policies  $y > 2S - x_a^*$ .

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<sup>25</sup> Given the simplifying assumption that  $F > \max(H, S, E, A)$ , F will only compensate actor  $j$  for policy  $y > \max(2j - x_a^*, x_a^*)$ . Compensation thus occurs for policies that are closer to F than  $x_a^*$ . More generally, firms compensate political actors for policies that move further from their indifference sets.

The firm can move policy up to  $2E - x_a^*$  by contributing to H and S. Beyond  $2E - x_a^*$ , where E prefers  $x_a^*$ , the firm must additionally contribute to E.

The firm makes contributions to the set of  $n$  political actors that results in the least cost to obtain policy  $y$ . Hence:

$$\pi^F(y, c(y)) = y - F - \frac{\alpha}{1-\alpha} \sum_{j=1}^n \{y - \max(2j - x_a^*, x_a^*)\} \quad \forall y > \max(2j - x_a^*, x_a^*)$$

Taking the first derivative with respect to  $y$  leads to the following insight. The maximum number of political actors that the firm will make positive campaign contributions to is found to be:

$$\frac{d\pi}{dy} \Rightarrow n^{\max} = \frac{1-\alpha}{\alpha}$$

The maximum number of political actors to whom the firm makes campaign contributions,  $n^{\max}$ , thus depends on the degree of policy saliency,  $\alpha$ . When  $\alpha$  is greater than 0.5, reflecting a high level of saliency,  $n < 1$ , meaning that the firm contributes to no actors. Campaign contributions would reduce utility by more than the resulting gain in policy. While the  $\alpha = 0.5$  threshold value arises here as an artifact of the particular profit equation for the firm, it nonetheless reflects the intuitive characteristic that gains from trade between politicians and firms are less likely to exist when politicians care strongly about a given issue. As alpha moves below 0.5, the firm contributes to a positive and increasing number of political institutions. When alpha is less than one half but greater than one third, the firm finds it profitable to move only one actor (which we term the firm's primary pivotal actor). When alpha equals less than one quarter and greater than one fifth, the firm contributes to up to three political actors. By moving multiple political

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<sup>26</sup> Given our assumption that  $F > 2 \cdot \max(A, H, S, E) - x_a^*$ , and that the firm only compensates political actors for movements in policy closer to its ideal point, we are able to simplify the profit function for the firm and eliminate the absolute value signs.

actors, the firm is typically able to shift policy closer to its ideal point than the situation where it finds it profitable to move only one actor.

The firm's profit function, as a function of alpha, is thus:

$$\pi^F(y, c^*(y)) = y - F - \begin{cases} c_k^*(y) - \begin{cases} c_l^*(y) - \begin{cases} c_m^*(y) & \forall \alpha < \frac{1}{4} \\ 0 & \forall \alpha \in [\frac{1}{4}, \frac{1}{3}) \end{cases} \\ 0 & \forall \alpha \in [\frac{1}{3}, \frac{1}{2}) \end{cases} \\ 0 & \forall \alpha \geq \frac{1}{2} \end{cases}$$

From the firm's perspective, actor  $k$  is the primary pivot,  $l$  is the secondary pivot and  $m$  is the tertiary pivot. The identity of the pivotal institutions depends on the political regime and the firm's policy preference relative to the regime. While the firm may contribute to multiple political institutions in equilibrium, we can determine that the primary pivotal institution receives (weakly) the largest share of the firm's total campaign contributions. Since no actor's utility (before contributions) will be reduced by more than the primary pivot's after a shift in policy from the no-contribution equilibrium, the cost to the firm of purchasing other actors' support for a new policy will therefore be (weakly) less than that for the primary pivot.

The discontinuous nature of the optimal campaign contribution schedule means that the profit function is also discontinuous (see Figure 3 below). We therefore identify the profit-maximizing  $y^*$  and corresponding contribution offer to each political actor by evaluating the firm's profits at different intervals along the range of  $y$  in each political regime.

### *Regime 1*

Consider Regime 1, where the agency is relatively liberal compared to the elected political actors ( $A \leq \min(H, S, E)$ ) and to the firm. The firm wishes to move the non-

contribution equilibrium policy, which the agency establishes at the liberal boundary of the core,  $x_a^* = \min(H,S,E)$ . For small movements in policy to the right of  $x_a^*$ , the firm need only compensate  $\min(\cdot)$ ,<sup>27</sup> the primary pivotal actor, since  $\text{med}(\cdot)$  and  $\text{max}(\cdot)$ , whose ideal points lie to the right of  $\min(\cdot)$ , are made better off by this change. Along the range  $x_a^* < y < 2\text{med}(\cdot) - x_a^*$ , the firm's profits are:

$$\begin{aligned}\pi^F(y, c(y)) &= y - F - \frac{\alpha}{1-\alpha}(y - x_a^*) \\ \Rightarrow \frac{\partial \pi}{\partial y} &= 1 - \frac{\alpha}{1-\alpha} \Rightarrow \frac{\partial \pi}{\partial y} > 0 \text{ if } \alpha < \frac{1}{2} \\ \Rightarrow y_1 &= 2\text{med}(H, S, E) - x_a^*\end{aligned}$$

Since the first derivative in this range is positive when alpha is less than  $\frac{1}{2}$ , the firm increases its profits by purchasing  $\min(\cdot)$ 's support for the highest policy level in this range, that is at  $y_1 = 2\text{med}(\cdot) - x_a^*$ . Note that at this point,  $\text{med}(\cdot)$  is just indifferent between  $y_1$  and  $x_a^*$  and  $\text{max}(\cdot)$  prefers  $y_1$  to  $x_a^*$ . The firm thus need not make contributions to these players in order to achieve  $y_1$ . When alpha is greater than  $\frac{1}{2}$  (i.e. policy is too salient), profits net of campaign contributions decrease in  $y > x_a^*$  so the firm makes no attempt to move policy from the original equilibrium.

Figure 3 illustrates the firm's profits for different policies and for different saliency levels. We can see that for  $\alpha=0.6$ , the slope of the profit function is negative whereas for  $\alpha < 0.5$  the slope is initially positive.

INSERT FIGURE 3 ABOUT HERE

In order to move policy beyond  $y_1$ , the firm must contribute to the  $\min(\cdot)$  and  $\text{med}(\cdot)$  players since  $\text{med}(\cdot)$  is additionally made worse off. Profits in the range  $y_1 < y < 2\text{max}(\cdot) - x_a^*$  are:

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<sup>27</sup>  $(\cdot) \equiv (H,S,E)$

$$\begin{aligned} \pi^F(y, c(y)) &= y - F - \frac{\alpha}{1-\alpha} \left\{ (y - x_a^*) + (y - (2\text{med}(\cdot) - x_a^*)) \right\} \\ \Rightarrow \frac{\partial \pi}{\partial y} &= 1 - \frac{2\alpha}{1-\alpha} \Rightarrow \frac{\partial \pi}{\partial y} > 0 \text{ if } \alpha < \frac{1}{3} \\ \Rightarrow y_2 &= 2 \max(H, S, E) - x_a^* \end{aligned}$$

As long as alpha is less than  $\frac{1}{3}$ , the firm increases its profits beyond the level achieved at  $y_1$  by contributing to the secondary pivotal actor,  $\text{med}(\cdot)$ , in addition to the primary pivot, and by thus moving  $y$  beyond  $\text{med}(\cdot)$ 's indifference point. Profits in this range are maximized when the firm makes contributions that purchase support for policy at the upper end of the range, at  $y_2 = 2\max(H, S, E) - x_a^*$ . When policy is too salient (i.e.  $\frac{1}{3} < \alpha < \frac{1}{2}$ ), the firm's contributions to  $\text{min}(\cdot)$  and  $\text{med}(\cdot)$  outweigh the gains from moving  $y$  beyond  $y_1$ , so equilibrium policy is established at  $y^* = y_1 = 2\text{med}(H, S, E) - x_a^*$ , which the firm achieves by contributing to just  $\text{min}(\cdot)$ .

Beyond  $y_2$ , the firm must contribute to the tertiary pivot,  $\text{max}(\cdot)$ , which becomes worse off as policy moves to the right of  $y_2$ . In the range  $y_2 < y < F$ , profits are:

$$\begin{aligned} \pi^F(y, c(y)) &= y - F - \frac{\alpha}{1-\alpha} \left\{ (y - x_a^*) + (y - (2\text{med}(\cdot) - x_a^*)) + (y - (2\text{max}(\cdot) - x_a^*)) \right\} \\ \Rightarrow \frac{\partial \pi}{\partial y} &= 1 - \frac{3\alpha}{1-\alpha} \Rightarrow \frac{\partial \pi}{\partial y} > 0 \text{ if } \alpha < \frac{1}{4} \\ \Rightarrow y_3 &= F \end{aligned}$$

When alpha is less than  $\frac{1}{4}$ , the firm maximizes its profits by contributing to all political actors and by purchasing support for policy at its ideal point (i.e.  $y^* = y_3 = F$ ). In Figure 3, the profit function has a positive slope at all values of  $y$  when alpha equals 0.2 and thus reaches its peak at  $y = F$ . For values of alpha between  $\frac{1}{3}$  and  $\frac{1}{4}$ , the firm's optimal strategy is to set  $y^* = y_2 = 2\max(\cdot) - x_a^*$ , achieved by contributing to the  $\text{min}(\cdot)$  and  $\text{med}(\cdot)$  actors. We can see that when alpha equals 0.3 in Figure 3, the profit function has a positive slope until  $y_2$  but a negative slope thereafter.

In Regime 1, then, the firm's primary pivotal institution is  $\min(H,S,E)$ ; the firm must always contribute to  $\min(H,S,E)$  in order to induce the agency to move policy closer to F.  $\text{Med}(H,S,E)$  is the firm's secondary pivotal institution. As  $\alpha$  falls to a value in the range  $\frac{1}{2}$  to  $\frac{1}{3}$ , the firm takes advantage of further gains from trade by purchasing the support of  $\text{med}(H,S,E)$ , as well as of  $\min(H,S,E)$ , for policy that is even closer to F. Finally, as  $\alpha$  falls into the 0 to  $\frac{1}{3}$  range, the firm exhausts gains from trade by additionally contributing to  $\max(H,S,E)$ , which becomes the tertiary pivot, and by inducing the agency to rule at  $y^* = F$ . The firm contributes the greatest amount to  $\min(\cdot)$ , a lesser amount to  $\text{med}(\cdot)$  and the least to  $\max(\cdot)$ ; this arises since  $\min(\cdot)$  witnesses the greatest reduction in utility following a movement in policy towards F while  $\max(\cdot)$  witnesses the smallest reduction.

#### *Regime 2a*

In Regime 2a, where the agency is moderate-liberal ( $\min(\cdot) < A < \text{med}(\cdot)$ ), the analysis of the firm's optimal contribution strategy yields similar results in terms of the identity of the firm's primary, secondary and tertiary pivotal actors. Note that while the agency is pivotal in that it sets policy at its ideal point in the no-contribution game (see Proposition 1), it is not pivotal from the *firm's perspective* since, in this game, the firm cannot make resource transfers to the agency. Instead, for the firm, the primary pivot is the player that establishes the minimum boundary of the political core ( $\min(H,S,E)$ ). In order to induce the agency to move policy closer to F, the firm must purchase  $\min(H,S,E)$ 's support for a policy that is a binding constraint on the agency – i.e that lies between the agency's ideal point and the firm's. As with Regime 1, the firm contributes the most to  $\min(\cdot)$ , the least to  $\max(\cdot)$ .

#### *Regime 2b*

In Regime 2b, the agency still lies in the political core but closer to F than the  $\text{med}(\cdot)$  player (i.e.  $\text{med}(\cdot) < A < \max(\cdot)$ ). In contrast to Regime 2a, the firm must now compensate both  $\min(H,S,E)$  and  $\text{med}(H,S,E)$  to support policy  $y$  closer to F than  $x_a^* = A$ . Thus, in this regime, the firm will not realize gains from trade unless the saliency of the issue is relatively small. To illustrate, consider  $\alpha \in [\frac{1}{3}, \frac{1}{2})$ . The firm finds it profitable

to invest in a maximum of one actor. The agency, however, no matter which actor is influenced will not adjust its ruling away from  $x_a^* = A$  because the agency will still be an element of the post-contribution political core.

For  $\alpha \in [1/4, 1/3)$ , however, the firm finds it profitable to buy both  $\min(\cdot)$  and  $\text{med}(\cdot)$ 's support for policy to the right of  $A$  such that the agency is no longer an element of the core. The agency will then adjust policy closer to  $F$  at the minimum boundary of the post-contribution political core. In this way neither  $\min(H,S,E)$  nor  $\text{med}(H,S,E)$  are unique primary pivots but both are jointly primary pivotal actors for the firm. When  $\alpha < 1/4$ , the  $\max(H,S,E)$  becomes the tertiary pivot and the firm must offer non-negative contributions to this actor to motivate the agency to rule  $x_a^* > \max(H,S,E)$ . The firm thus contributes most to  $\min(\cdot)$  and  $\text{med}(\cdot)$ , the least to  $\max(\cdot)$  in Regime 2b.

The preceding analysis of the firm's optimal campaign contribution strategy in Regimes 1, 2a and 2b is summarized in the following proposition.

**Proposition 2a:**

When the agency has liberal or moderate policy preferences relative to political actors and to the firm, and when policy is not too salient, the firm induces a change in the agency's policy ruling by allocating campaign contributions to legislative and executive institutions in the following manner:

1. Greatest level of contributions to  $\text{minimum}(H,S,E)$
2. Smallest level of contributions to  $\text{maximum}(H,S,E)$

The level of contributions to each actor depends on the degree of policy saliency. See Appendix 1a for contribution levels and equilibrium policies.

*Regime 3*

When the agency is relatively conservative, lying closer to the firm's ideal point than any other political actor, conclusions about the pivot identities are quite different from the other regimes. Recall that when  $A > \max(H,S,E)$ ,  $x_a^* = \max(H,S,E)$ . The political actor that establishes the upper boundary of the political core is the constraining

player on the agency and is the primary pivot from the firm's perspective. In this environment, the firm thus contributes to  $\max(H,S,E)$  in order to initially shift policy closer to F when  $\alpha \in [\frac{1}{3}, \frac{1}{2})$ .<sup>28</sup>

Interestingly, for  $\alpha \in [\frac{1}{4}, \frac{1}{3})$  the firm will still only invest in one political actor even though, hypothetically, the firm could realize gains from trade with two actors. Whether the firm invests in one actor or two political actors, the agency will still remain an element of the post-investment political core and will rule  $x_a = A$ . An investment in two actors will not bring about a policy closer to F than A. Only if  $\alpha < \frac{1}{4}$ , when the firm can realize gains from trade with all three actors, will the new policy shift even closer to F than A's ideal. In this setting, the lower boundary of the post-investment political core shifts to the right of A.  $\text{Med}(H,S,E)$  and  $\text{min}(H,S,E)$  are joint tertiary pivots. In Regime 3, then, the firm will contribute the most resources to  $\max(H,S,E)$ , the least to  $\text{min}(H,S,E)$ .

Hence, Proposition 2b:

When the agency has conservative policy preferences relative to political actors but liberal preferences relative to the firm, and when policy is not too salient, the firm induces a change in the agency's policy ruling by allocating campaign contributions to legislative and executive institutions in the following manner:

1. Greatest level of contributions to  $\text{maximum}(H,S,E)$
2. Smallest level of contributions to  $\text{minimum}(H,S,E)$

The level of contributions to each actor depends on the degree of policy saliency. See Appendix 1a for contribution levels and equilibrium policies.

Regarding Proposition 2a and 2b, we emphasize a couple of general implications for interest group influence activities. In an environment where an interest group is not allowed to influence an agency directly, when the agency is relatively aligned with

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<sup>28</sup> Technically, any one of the political actors is a unique primary pivot. Since  $x_a^* = \max(H,S,E)$ , any  $y > x_a^*$  will reduce each political actor's utility by the same amount. An investment in any one political actor such that the political actor supports policy  $y > \max(H,S,E)$  will thus cost the firm the same amount for each political actor. We assume that when such ties exist, the firm contributes to the political actor whose ideal point is closest to the firm's. This would obtain automatically if utility was a quadratic rather than a linear function of distance.

(opposed to) the interest group, the interest group will tend to concentrate its campaign contributions on institutions with relatively aligned (opposed) preferences, all else equal. The intuition here is that the interest group is more likely to need to relax political constraints on a favorably aligned agency and to tighten them on an opposed one.

### 2.3 Pivotal Institutions, Elected Agencies and Campaign Contributions

We now adapt the prior game by allowing the firm to invest in influencing the agency, which we assume is now elected, as well as the political actors. While not frequent, in some jurisdictions agency heads are selected through election rather than through appointment. Heads of Public Utility Commissions (PUCs) are elected in ten states in the U.S., and research has found that the method of PUC commissioner selection affects policy outcomes. Elected commissioners tend to set residential consumer utility rates at lower levels than their appointed counterparts and to allow utilities to earn lower financial rates of return (Besley and Coate, 2003; Holburn and Spiller, 2003). Interest groups thus have an incentive to adapt their political strategies according to the method of agency selection.

Assuming that agencies are elected affects the firm's optimal strategy and the policy equilibrium of our game dramatically. Reconsider Regime 1. We continue to refer to  $x_a^*$  as the equilibrium outcome when no resources are allocated to political actors by the firm. Recall that in this regime  $x_a^* = \min(H,S,E)$ . As before, the firm maximizes its profits by recruiting the least cost set of actors in order to fully realize the gains from trade available to the firm (a function of  $\alpha$ ). Consider the firm's optimal contribution strategy over various ranges of the policy space. The boundaries of the ranges coincide with the boundaries of each political actor's preferred set of policies to  $x_a^*$ . In Regime 1, therefore, we first consider the range from  $x_a^*$  to  $2\max(H,S,E) - x_a^*$ . We know from the previous discussion that the firm could achieve  $y = 2\max(H,S,E) - x_a^*$  by recruiting the  $\min(H,S,E)$  and  $\text{med}(H,S,E)$  actors. In an environment with an elected agency, however, the firm can achieve the same policy outcome by recruiting only the agency. Profits from the two alternative contribution strategies are:

$$\pi^F(y|\text{Agency elected}) = y - F - \frac{\alpha}{1-\alpha}(y - x_a^*)$$

vs.

$$\pi^F(y|\text{Agency appointed}) = y - F - \frac{\alpha}{1-\alpha} \left\{ (y - x_a^*) + (y - (2\text{med}(H, S, E) - x_a^*)) \right\}$$

It is clear that the firm's profits from investing only in the agency are greater than those from investing in both the  $\min(H, S, E)$  and  $\text{med}(H, S, E)$  actors. Furthermore, the firm exploits all gains from trade with the agency for all values of alpha less than  $\frac{1}{2}$ . By contrast, for the firm to exploit gains from trade with both  $\min(H, S, E)$  and  $\text{med}(H, S, E)$ , alpha must be even less salient with a value less than  $\frac{1}{3}$ . As such, the firm's primary pivotal institution becomes the agency when the agency is elected.

Now consider attempts by the firm to achieve a policy outcome in the range  $2\max(H, S, E)$  to  $F$ . From the above, we know that the firm will first recruit its primary pivotal institution, the agency, and then contribute to the secondary pivotal institution to move the policy even closer to  $F$ . Notice that in an environment where the agency can be influenced by the firm, the firm only needs to recruit one other actor to achieve policy very close to its ideal point. The firm needs to establish the upper boundary of the political core at its ideal point - by moving one institution - so legislative attempts to overturn the agency through statutory means will be vetoed by the secondary pivot. The firm's secondary pivotal actor is the institution that has its ideal point closest to the firm's ideal  $F$  and which thus requires the least compensation for supporting policy at the firm's ideal. Under our spatial ordering assumption this institution is  $\max(H, S, E)$ .

Qualitatively, the results for Regimes 2a and 2b are similar to Regime 1. In each of these regimes the firm first achieves the support of the agency for the best possible policy that will survive legislative override (i.e. at the maximum of the political core). The firm then relaxes this political constraint by gaining the support of the constraining political institution to enable the agency to rule at  $F$ . The agency is thus the firm's primary pivotal player and  $\max(H, S, E)$  is the firm's secondary pivot.

In Regime 3, however, the agency's rule-making is constrained by  $\max(H, S, E)$  such that  $x_a^* = \max(H, S, E)$ . In order to move policy, the firm relaxes the constraint on the agency by recruiting the support of  $\max(H, S, E)$  for a new policy to the right of  $x_a^*$ .

Max(H,S,E) is thus the primary pivot, in contrast to the agency in Regimes 1, 2a and 2b. The firm is able to establish  $y = 2A - x_a^*$  by contributing to max(H,S,E). At this point, the agency is just indifferent between  $y$  and  $x_a^*$ . The firm's profits in this range are:

$$\pi^F(y, c(y)) = y - F - \frac{\alpha}{1-\alpha}(y - x_a^*)$$

As before, the firm realizes gains from trade if  $\alpha < 1/2$ . For less salient policies ( $\alpha < 1/3$ ), the firm realizes gains from trade by recruiting two or more actors. The secondary pivotal institution is the agency in this setting. The firm's payoff for policy  $y$  over the range  $2A - x_a^*$  to  $F$  is:

$$\pi^F(y, c(y)) = y - F - \frac{\alpha}{1-\alpha}(y - x_a^* + y - (2A - x_a^*))$$

The change in profits is positive for all policies closer to  $F$  over this range of the policy space as long as  $\alpha < 1/3$ . In this case, the firm maximizes its profits by recruiting support for  $y^* = F$ . This analysis leads to the following proposition:

Proposition 3a:

When the agency has liberal or moderate policy preferences relative to political actors and to the firm, and when the firm is able to influence the agency as well as legislative and executive institutions, the firm induces a change in the agency's policy ruling by allocating campaign contributions in the following manner:

1. Greatest level of contributions to the agency
2. Smallest level of contributions to maximum(H,S,E)

Proposition 3b:

When the agency has conservative policy preferences relative to political actors but liberal preferences relative to the firm, and when the firm is able

to influence the agency as well as legislative and executive institutions, the firm induces a change in the agency's policy ruling by allocating campaign contributions in the following manner:

1. Greatest level of contributions to maximum(H,S,E)
2. Smallest level of contributions to the agency

The level of contributions to each actor depends on the degree of policy saliency. See Appendix 1b for contribution levels and equilibrium policies.

Proposition 3 states that even when the firm has the ability to directly influence an agency - by lobbying or making campaign contributions, for example - when seeking improved regulatory rulings, it will not necessarily do so. Since agencies operate under the watchful eyes of political principals, the firm must first relax political constraints whenever they are binding (as in Regime 3) by influencing legislative or executive institutions. Lobbying the agency in such a situation without simultaneously gaining the support of the legislature or executive would be fruitless since the agency could not move policy without triggering punishment by political principals. Relaxing such constraints by lobbying or otherwise influencing political institutions allows the agency to move policy closer to the firm's preferred position.

By comparison, even in situations where the firm can achieve some favorable policy gain by influencing the agency alone (i.e. Regimes 1 and 2), there are limits. To induce the agency to rule outside the political core, the firm must also purchase the support of one political institution. When policy is not too salient then, the firm enlists the support of both administrative *and* legislative or executive institutions when aiming to improve its regulatory environment. Influencing the agency and influencing the agency's political principals are thus not substitute but complementary activities in these environments.

### **3. Discussion**

In this paper we examine how interest groups allocate political influence activities across government institutions in order to gain more favorable agency rulings than would otherwise obtain. The critical assumption in our paper is that agencies behave strategically with regard to their political principals. Since legislatures and executives have the ability to punish errant agencies through budgetary cuts, committee hearings and the enactment of new statutory constraints, agencies have an incentive to make policy rulings that account for political preferences. As such, agency-determined public policies are shaped not by agencies alone, but also by the shadow of legislative and executive bodies. The implication for organized interest groups is that they may be able to induce changes in administrative decisions not by directly influencing the agency, for example by lobbying, but instead by shifting the policy preferences of political principals. In the right circumstances, agencies will modify their rulings in response to changed political preferences. Interest groups may thus find it optimal to “buy” agencies through legislatures.

We derive predictions in Propositions 2 and 3 that explicitly consider the conditions when interest groups find it more profitable to influence legislatures and/or executives instead of, or in addition to agencies, in order to indirectly shift agency rulings. Our analysis builds on the structured-interaction models of policy-making used in the political science literature (Ferejohn and Shipan, 1990; Weingast and Moran, 1983) by introducing an interest group as an additional player to the political actors. We identify the situations when legislative or executive preferences are binding constraints on agency decisions, and when these institutions are *pivotal* in shaping policy. In general, we argue that interest groups will invest in influencing pivotal institutions. When an interest group is prevented from directly lobbying the agency – or finds it prohibitively costly, for instance if policy is highly salient for the agency – the interest group will manipulate the political constraints on the agency, either by relaxing them or by imposing them, by investing in pivotal legislative or executive players. When the interest group has the additional option of investing in the agency – this may be interpreted here as permitting campaign contributions to elected agency heads or by allowing the firm to lobby agency staff – the interest group will enlist the support of the agency and

additionally relax political constraints so that the agency's decision will be insulated from subsequent statutory override.

Our findings contribute to the literature on how interest groups influence policy outcomes in several ways. First, by incorporating administrative, legislative and executive institutions in the underlying model of policy-making, we develop testable predictions about how interest groups allocate influence resources across multiple government branches – an issue that has not yet received attention in the political action literature. Our analysis of primary, secondary and tertiary institutional pivots demonstrates how political actions centered on one branch (e.g. a legislature) can induce a change in behavior in another branch (e.g. an agency). So far, the majority of political action research has focused on how groups design strategy within the context of a single branch of government. The campaign contribution literature, for example, has concentrated on understanding how interest groups design contribution strategies in the context of a legislature making a legislative decision (Snyder, 1991; Krehbiel, 1999; Stratmann, 1998). Here, we identify the conditions when, in seeking improved agency decisions, interest groups will influence a) only the agency, b) the legislature and/or executive *instead of* the agency, c) the legislature or executive *in addition to* the agency.

Second, our model suggests that empirical analyses that attempt to establish a causal link between inputs and outputs within the same institution may be mis-specified. There is a large theoretical and empirical literature questioning whether electoral campaign contributions influence legislators' votes on legislative bills (e.g. Stratmann, 1995, 1998), overall yielding mixed conclusions. Other studies have similarly considered the impact of interest groups' lobbying of legislators on subsequent roll call votes (e.g. Wright, 1990; Caldeira and Wright, 1998). Most of this research is conducted in the context of either the U.S. House of Representatives or the U.S. Senate. However, the assumption in these studies that, following interest group approaches, changes in deduced policy preferences of legislators will be correlated with observed votes on legislation is challenged by our structured-interaction model. Campaign contributions to legislators, for example, may instead be correlated with modified *agency* decisions if the agency is closely tracking its political principals. Legislation – which frequently directs agencies in their policy-making decisions - is less likely to arise when astute agencies preempt it by

updating regulatory policy in response to changing political preferences. Studies which conclude that campaign contributions are ineffectual strategic tools, on the basis of inconclusive empirical vote analyses, should thus be treated with some caution.

While we explore the theoretical implications of our model, we believe there are also opportunities for substantial empirical development. The fifty U.S. states, for example, provide a quasi-natural experiment in which to empirically test our predictions. At any given point in time, there exists significant cross sectional variation in the political environments where the same policy issues are determined. For instance, we observe variation in both PUC commissioner selection rules as well as in the spatial configuration of the political actors that determine intra-state utility regulation. Firms affected by these regulatory decisions have high powered incentives to optimally allocate their campaign contributions to influence PUC decisions. We would predict that the observed campaign contributions vary according to the specifics of the regime that determine the identity of the pivotal institution.

Alternatively, one could test the implications of our model by looking at changes in the spatial configuration of political actors over time within a single political environment. When firms are restricted from making contributions to agencies, a shift from Regime 1 or 2 to Regime 3 (see figure 1) should be accompanied by an increase in the share of contributions made to the firm's political supporters (E) and a reduction in the share made to the firm's opponents (H), all else equal.

Whether testing the model cross sectionally or over time, the researcher will find that some of the data required is readily available. Detailed historic data on campaign contributions to candidates is publicly available in the U.S. enabling an examination of the relative allocation among the two legislative chambers and the executive, both at the state and federal levels. Precisely identifying underlying relative preferences of different government actors may present more of a challenge. Using observed measures of preferences (e.g. public statements or votes) on a specific policy dimension is likely to be problematic since such measures will reflect the impact of interest groups' influence. Political ideology scores or measures of partisan control, however, may provide suitable proxies that allow the researcher to gauge the political regime. Although the specifics of

such an empirical approach need to be worked out, we believe this offers a potentially fruitful avenue for future empirical tests of our propositions.

Naturally, our model is incomplete in a number of ways, inviting extensions and further refinements. For simplicity, we excluded the courts from the set of institutional players, though recent research suggests that courts behave in a strategic manner regarding legislative actors (Spiller and Vanden Bergh, 2003; Spiller and Gely, 1992; Gely and Spiller, 1990). We believe introducing courts into the analysis will not affect our findings qualitatively. Including the court expands the set of distinct political regimes. Depending on the preferences of the court, the judicial selection rules, and the relative spatial configuration of the other actors, the court will be pivotal in certain political environments and not in others. The identity of the pivotal institutions does depend then to some extent on whether the courts are included. The choice of players in the game will be informed by the specific policy issue that the researcher wishes to represent and whether the courts are salient.<sup>29</sup>

Our assumptions of complete information and costless policy changes are responsible for perfectly adapting agency behavior; introducing costs would generate some more realistic “stickiness” into the predictions, though it is not obvious that the expense of a more complex analytical structure would be outweighed by additional theoretical insights.

More substantively, we have restricted our analysis to the case of a single interest group seeking to influence policy outcomes rather than multiple competing interest groups. While introducing another interest group would increase the complexity of the model, we can see that moving policy in one direction is likely to be more costly than moving it in another, and that the identity of pivotal institutions depends on whose perspective one adopts. Consider a consumer group, for example, that is diametrically opposed to the firm’s policy preferences, with an ideal point to the far left of the policy spectrum illustrated in Figure 1. In Regime 2a, where the agency is relatively moderate,

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<sup>29</sup> For simplicity, we also ignore the veto override rules. As Krehbiel (1998) notes, incorporating a veto override into the game introduces an additional pivotal actor within each legislative chamber. In our model, as with the courts, the qualitative results will not change. The identity of the pivotal institution, however, will reflect the details of the override rule and the regime’s relative spatial configuration. Intuitively, we expect that actors pivotal to a veto override within a legislative chamber will be pivotal in

the consumer group's primary pivotal actors are the Senate and Executive, whereas for the firm the primary pivot is the House.<sup>30</sup> We thus expect that opposing interest groups will focus their lobbying or influence activities on different sets of government institutions over a common issue.

Furthermore, to induce the agency to shift policy to the left of  $H = x_a^*$  is likely to be more costly for the consumer group than for the firm to move policy to the right of  $H$  since the former must purchase the support of two institutional actors whereas the latter requires the support of only one. Opposing groups thus face asymmetric costs in purchasing new regulatory policies by leveraging political actors. Irrespective of how organized interest groups are in demanding regulatory favors (Stigler, 1971; Peltzman, 1976), differences in the cost of supply (i.e. buying) favors will lend an advantage to one interest group. Extending the model to include multiple interest groups should thus yield further predictions about the distribution of campaign contributions conditional on each interest group's position on the issue at hand. We leave exploration of this topic and other limitations of the paper for future work.

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our model only when the executive's preferences are extreme relative to median preferences in the legislative chambers.

<sup>30</sup> These are the pivotal actors under the assumption that the firm cannot directly influence the agency – as in the first game involving campaign contributions.

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### Appendix 1a: Optimal Campaign Contributions when Agencies are Appointed\*

Regime	Policy Saliency	Equilibrium Policy	Contributions to Political Actors**		
			min(H, S, E)	med(H, S, E)	max(H, S, E)
<i>Regime 1</i>			<i>Primary Pivot</i>	<i>Secondary Pivot</i>	<i>Tertiary Pivot</i>
	$\alpha > 1/2$	Min(.)	0	0	0
	$\alpha \in [1/3, 1/2)$	2Med(.)-Min(.)	+	0	0
	$\alpha \in [1/4, 1/3)$	2Max(.)-Min(.)	++	+	0
	$\alpha < 1/4$	F	+++	++	+
<i>Regime 2a</i>			<i>Primary Pivot</i>	<i>Secondary Pivot</i>	<i>Tertiary Pivot</i>
	$\alpha > 1/2$	A	0	0	0
	$\alpha \in [1/3, 1/2)$	2Med(.)-A	+	0	0
	$\alpha \in [1/4, 1/3)$	2Max(.)-A	++	+	0
	$\alpha < 1/4$	F	+++	++	+
<i>Regime 2b</i>			<i>Primary Pivot</i>	<i>Primary Pivot</i>	<i>Tertiary Pivot</i>
	$\alpha > 1/2$	A	0	0	0
	$\alpha \in [1/3, 1/2)$	A	0	0	0
	$\alpha \in [1/4, 1/3)$	2Max(.)-A	+	+	0
	$\alpha < 1/4$	F	++	++	+
<i>Regime 3</i>			<i>Tertiary Pivot</i>	<i>Tertiary Pivot</i>	<i>Primary Pivot</i>
	$\alpha > 1/2$	Max(.)	0	0	0
	$\alpha \in [1/3, 1/2)$	A	0	0	+
	$\alpha \in [1/4, 1/3)$	A	0	0	+
	$\alpha < 1/4$	F	++	++	++

\* (.)  $\equiv$  (H,S,E)

\*\* 0  $\equiv$  actor receives no resources from firm in equilibrium

+  $\equiv$  actor receives strictly positive resources from firm in equilibrium

### Appendix 1b: Optimal Campaign Contributions when Agencies are Elected\*

Regime	Policy Saliency	Equilibrium Policy	Agency	Contributions to Political Actors**		
				min(H, S, E)	med(H, S, E)	max(H, S, E)
<i>Regime 1</i>			<i>Primary Pivot</i>			<i>SecondaryPivot</i>
	$\alpha > 1/2$	Min(.)	0	0	0	0
	$\alpha \in [1/3, 1/2)$	2Max(.)-Min(.)	+	0	0	0
	$\alpha \in [1/4, 1/3)$	F	++	0	0	+
	$\alpha < 1/4$	F	++	0	0	+
<i>Regime 2a</i>			<i>Primary Pivot</i>			<i>SecondaryPivot</i>
	$\alpha > 1/2$	A	0	0	0	0
	$\alpha \in [1/3, 1/2)$	2Max(.)-A	+	0	0	0
	$\alpha \in [1/4, 1/3)$	F	++	0	0	+
	$\alpha < 1/4$	F	++	0	0	+
<i>Regime 2b</i>			<i>Primary Pivot</i>			<i>SecondaryPivot</i>
	$\alpha > 1/2$	A	0	0	0	0
	$\alpha \in [1/3, 1/2)$	2Max(.)-A	+	0	0	0
	$\alpha \in [1/4, 1/3)$	F	++	0	0	+
	$\alpha < 1/4$	F	++	0	0	+
<i>Regime 3</i>			<i>SecondaryPivot</i>			<i>Primary Pivot</i>
	$\alpha > 1/2$	Max(.)	0	0	0	0
	$\alpha \in [1/3, 1/2)$	2A-Max(.)	0	0	0	+
	$\alpha \in [1/4, 1/3)$	F	+	0	0	++
	$\alpha < 1/4$	F	+	0	0	++

\* (.)  $\equiv$  (H,S,E)

\*\* 0  $\equiv$  actor receives no resources from firm in equilibrium

+  $\equiv$  actor receives strictly positive resources from firm in equilibrium

**Figure 1: Political Regimes and Policy Equilibria ( $x_a^*$ )**

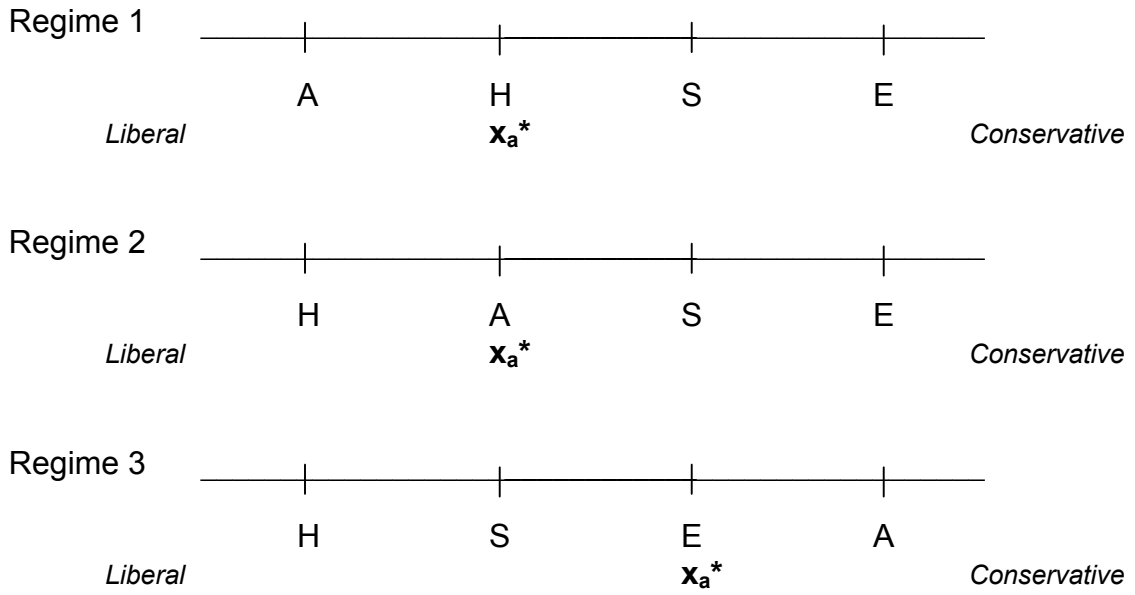
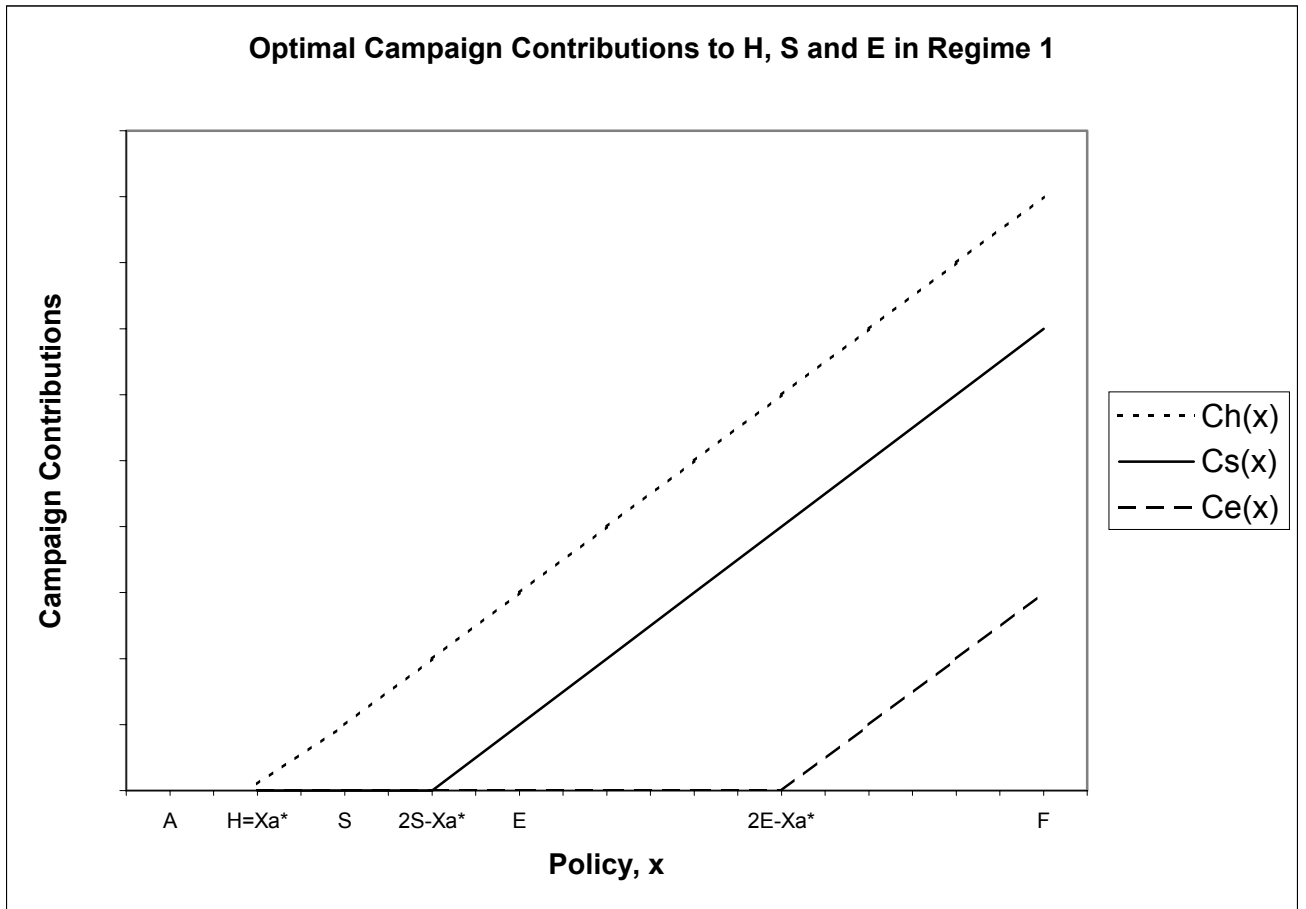


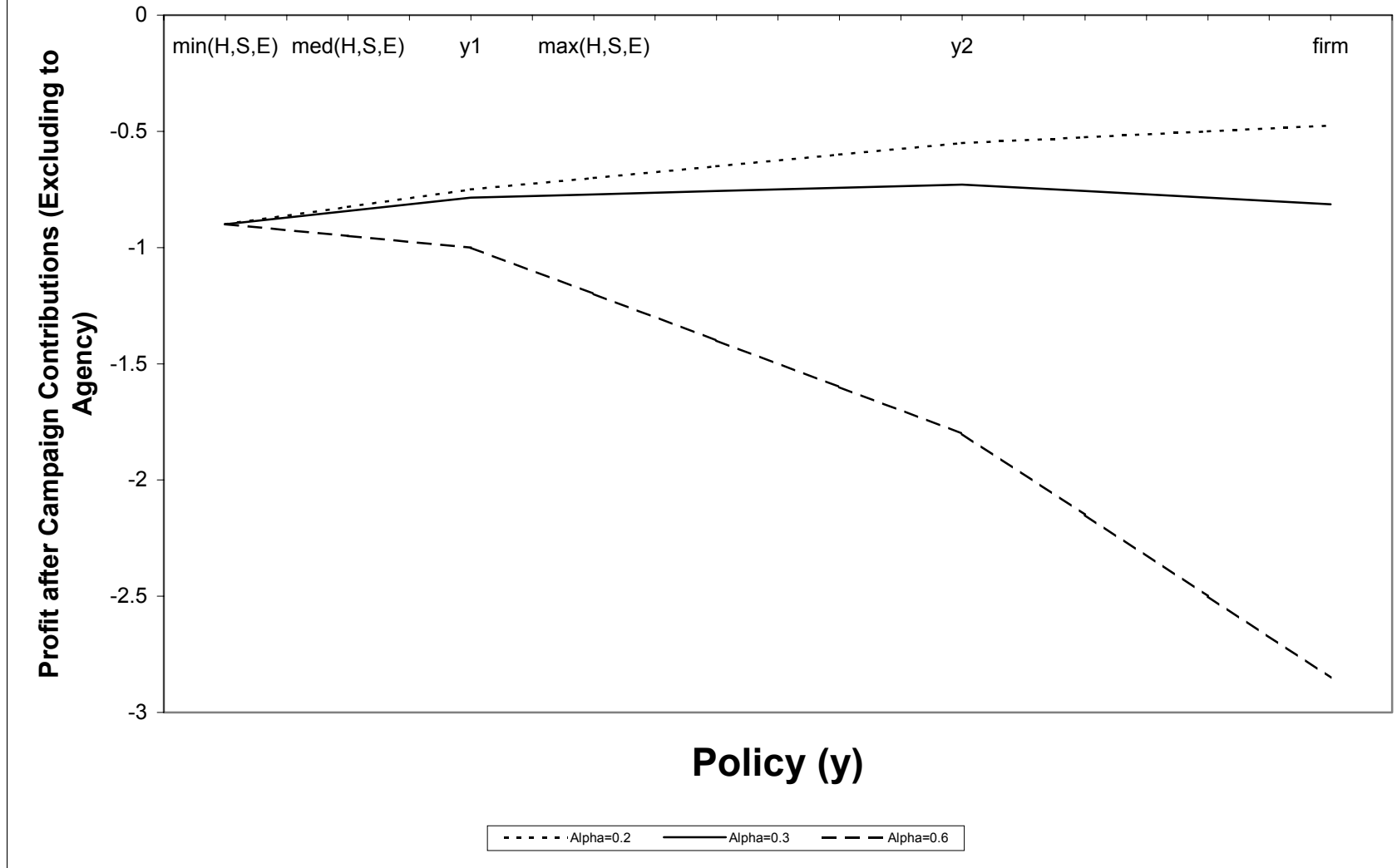
Figure 2: Optimal Campaign Contribution Schedules in Regime 1





**Figure 3: Simulated Firm Profits in Political Regime 1**

( $A < \min(H, S, E)$ ;  $x_a^* = \min(H, S, E)$ )



# **Influencing Agencies through Pivotal Political Institutions: Evidence from the U.S. Accounting Industry**

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FEBRUARY 2004

PRELIMINARY DRAFT

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We test our predictions by analyzing the allocation of electoral campaign contributions made by the accounting industry to politicians vying for seats in the U.S. House and Senate during the last 2 years of George H.W. Bush's term (102<sup>nd</sup> Congress) and the first two years of William J. Clinton's first term as President (103<sup>rd</sup> Congress). We choose this setting for three primary reasons. First, Congress has delegated formal authority to the Securities and Exchange Commission (SEC) since the 1930s to regulate the accounting industry as part of the broader requirement to ensure the integrity of national financial markets.<sup>32</sup> The SEC operates as an independent agency, subject to Congressional oversight, with responsibility for devising and implementing regulatory policy. The policy-making process thus closely matches the representation in the previous section. Second, compared to other industries, the accounting industry is highly politically organized. The American Institute of Certified Public Accountants (AICPA), which is the trade association that represents the accounting profession in negotiations with the SEC and Congress, is a major donor to election campaign funds along with the large accounting firms such as PriceWaterhouseCoopers which dominate the market for accounting services. It is thus reasonable to treat this environment as one dominated by a single interest group. Third, during the transition from Bush to Clinton in the early 1990s, there was a shift in the identity of the pivotal political institution over the issues of interest to the accounting industry. We leverage this shift to derive comparative static predictions about the allocation of campaign funds between different political institutions. First, however, we briefly describe the policy issue under consideration – auditor independence – and the political environment confronting the accounting industry during this period.

### **Auditor Independence Policy**

A central issue that has caused a long history of debate in the regulation of the accounting industry has been the relationship between auditor independence – a statutory requirement as specified in federal securities legislation – and the provision by accountants of consulting

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<sup>32</sup> Items 25 and 26 of Schedule A to the Securities Act of 1933 and Items 15 U.S.C 77aa and 78q of the Securities Exchange Act of 1934 require that financial statements be audited by independent public or certified accountants. Sections 12 and 13 of the Securities Exchange Act of 1934 authorize the SEC to require the filing of financial statements that have been audited by independent accountants.

services to audit clients.<sup>33</sup> While accounting firms were not prohibited from providing an extensive range of consulting services until 2002 with the passage of the Sarbanes-Oxley act, the issue has been salient for many decades (Gerde and White, 2003). During the 1980s, following several large corporate bankruptcies and the prosecution of Arthur Young & Co. for auditing malpractice, Congress initiated hearings on the accounting profession. As a similar investigation, chaired by Senator Metcalf in 1977 had concluded, a major policy concern was the conflict between the provision of management advisory services and auditor independence, and the role of the AICPA in enforcing independence requirements.

With the increasing role of consulting contracts in contributing to corporate profits in the accounting industry, auditor independence policy continued to be an important issue for policy-makers throughout the 1990s.<sup>34</sup> In 1993 Congress requested the SEC to study the importance of, and any impediments to, the independence of public accountants in performing their responsibilities under the federal securities laws. Following the appointment of various public and industry-led taskforces during the 1990s, the SEC eventually proposed in summer 2000 to implement draconian new rules limiting the scope of consulting services. While they were subsequently withdrawn by the SEC after political opposition from the industry and Congress, the SEC's proposals were ultimately enacted by Congress in 2002 after the Enron, Worldcom and Tyco financial scandals (Levitt, 2002).

### **Political Environment and Pivotal Institutions**

While auditor independence remained a salient issue during the 1990s, the threat to the accounting industry of a disadvantageous shift in policy (i.e. restricting non-audit services) did not remain constant but changed with the nature of the political environment. During the last two

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<sup>33</sup> Formal definitions of what constitutes auditor independence have been vague, affording the accounting industry considerable discretion in ruling on practices that may be perceived as violating independence requirements. SEC Rule 2-01 of Regulation S-X, for instance, states that 'the Commission will not recognize any accountant as independent who is not in fact independent.' The accounting profession has also avoided a precise definition of the practices that define or that might compromise independence. Generally Accepted Auditing Standards (GAAS), issued by the profession's self-regulatory body, the AICPA, state that, "To be independent, the auditor must be intellectually honest; to be recognized as independent, he must be free from any obligation or interest in the client, or its owners. Independent auditors should not only be independent in fact; they should avoid situations that may lead outsiders to doubt their independence." Determinations of whether an accountant has violated independence requirements have thus historically been made on a case-by-case basis.

<sup>34</sup> To provide a dramatic illustration, Motorola, in a recent fiscal year, paid its accountant \$4 million in audit services and \$62 million in consulting fees. Similarly, GM paid its accountant \$17 million for audit services and \$79 million for consulting.

years of the Bush presidency (1991 and 1992, 102<sup>nd</sup> Congress), the political environment was similar to Regime 1 in Figure 1. Since 1981 the Executive branch had been controlled by Republicans who, typically, favored the status quo policy of allowing the accounting industry to provide both audit and non-audit services to audit clients with minimal restrictions. Given the dominance of the Executive by Republicans, the SEC was also controlled by relatively conservative commissioners.<sup>35</sup> The House and Senate, however, were both controlled by the Democrats during the 102<sup>nd</sup> Congress. Democrats had historically favored tighter regulation of the financial services industry, including accounting regulations.<sup>36</sup> In this type of heterogeneous political context, the SEC had discretion to promulgate rules close to its own ideal policy: any attempts by a more liberal House and Senate to overturn the SEC by introducing new legislation would be vetoed by a relatively conservative executive. With the reduced threat of Congressional override, the primary pivotal institution from the accounting industry's perspective was the SEC: in order to assure the continuance of the status quo auditor independence policy, the optimal approach would be to concentrate non-market resources on lobbying the SEC staff and commissioners.

The election of President Clinton at the end of 1992 brought about an important shift in the political environment for the accounting industry. For the first time in twelve years, the House, Senate and Executive branches of government were all controlled by the Democrat party. The SEC, however, with a majority of Republican commissioners was still relatively conservative during the 103<sup>rd</sup> Congress (1993 and 1994). The new environment was thus equivalent to Regime 2 in Figure 1. Even though Clinton appointed Arthur Levitt as chairman of the SEC during his first year in office, the appointment rules of the SEC dictated that a Democrat-dominated SEC would not be in place until the 104<sup>th</sup> Congress (1995 and 96). That said, the SEC was severely constrained by the relatively liberal House, Senate and Executive: unlike in the previous session when substantial political differences existed between the legislature and executive, the new political alignment significantly increased the potential for

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<sup>35</sup> Each of the five SEC commissioners is appointed by the President with the advice and consent of the Senate. Commissioners serve overlapping five year terms. As such, each year one commissioner's term will expire.

<sup>36</sup> Democrats had voiced concerns over auditor independence regulations as, for instance, when Edward Markey, Chairman of Subcommittee on Telecommunications and Finance, formally instructed the SEC to conduct a review of such policies in 1993. Broad divisions in Republican and Democrat attitudes towards stricter financial services regulation were also apparent in the debate over the passage of the Private Securities Litigation Act in 1995 which favored accounting firms by limiting their exposure to lawsuits from shareholders. While President Clinton vetoed the bill, the Republican-controlled House and Senate overrode the veto with supermajority votes.

statutory override of the SEC's policy positions. As depicted in Regime 2 in Figure 1, a conservative ruling by the SEC (i.e. close to its ideal point A) would face a credible threat of a statutory response by the legislative actors since A is outside the 'bargaining set' of the legislature and executive. Indeed, the SEC would have been under pressure to update its regulatory rulings on auditor independence – to curtail consulting services – in order to avoid the initiation of bills with similar purposes by the legislature. From the accounting industry's perspective, therefore, the political climate during the 103<sup>rd</sup> Congress was substantially more dangerous, with an increased likelihood of an adverse change from the relatively favorable status quo policy. Perhaps reflecting this increased political threat, the accounting industry increased its campaign contributions to Congress by nearly 30% in the 103<sup>rd</sup> Congress compared to the 102<sup>nd</sup>, from \$4.8million to \$6.2 million.

As discussed in the theory section, after a shift in the political environment from Regime 1 to Regime 2, the accounting industry should allocate more campaign contributions to the new pivotal institution in an attempt to support the status quo policy which, in this instance, is relatively close to the accounting industry's ideal. The pivotal institution is the one that is the most conservative and, as such, closest in ideology to the industry. Our examination of the ideological scores of the House and Senate reveals that a shift took place between the 102<sup>nd</sup> and 103<sup>rd</sup> Congresses. While the Democrats controlled the House and Senate in both sessions, ideology indices compiled by Americans for Democratic Action – one of the most widely used indices – demonstrate that the House became more conservative relative to the Senate from the 102<sup>nd</sup> to the 103<sup>rd</sup> congress (see Figure 2).<sup>37</sup> We also examined ideological scores from the League of Conservation Voters and the AFL-CIO. Consistent with the ADA scores, these alternative measures also show that the House committee became more conservative than the Senate committee in the 103<sup>rd</sup> Congress.

[Insert Figure 2 here]

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<sup>37</sup> Ideology scores are constructed based on the voting patterns of each congressman across a broad range of bills introduced into the House or Senate. Perfectly conservative and liberal legislators will have ADA scores of 0 and 100, respectively. Unlike some other indices, ADA scores have the advantage of allowing a comparison of ideologies across the two legislative chambers.

The evidence suggests that the House was thus the pivotal political institution for the accounting industry during the 103<sup>rd</sup> Congress. Since the House was the binding constraint on the SEC's choice of regulatory policies, the accounting industry should refocus its non-market resources on gaining the support of the House for the status quo. Such a strategy would prevent the Senate or Executive branches from introducing new legislation designed to curtail non-audit services. This leads to the following hypotheses.

Hypothesis 1: The accounting industry will increase its campaign contributions to the House relative to the Senate in session 103, all else equal.

We also account for the power of the legislative committee with jurisdiction over accounting industry policies (Schuler, Rehbein & Cramer, 2002; Shepsle & Weingast, 1987). Legislative committees act as gatekeepers for new bill proposals coming before the full chamber: a bill may generally only be presented to the House or Senate for a full vote if it first gains the support of the relevant committee. In the House, the Energy and Commerce Committee has jurisdiction whereas in the Senate the Banking Committee oversees accounting industry policy. In a political environment similar to session 103, where the industry wants to block any attempts to write new statutes, gaining support of the committee members is critical. Hence:

Hypothesis 2: The accounting industry will contribute more to legislators sitting on the House Energy and Commerce Committee and the Senate Banking Committee than to non-committee members, all else equal.

Hypothesis 3: The accounting industry will increase its campaign contributions to the House Energy and Commerce Committee relative to the Senate Banking Committee in session 103, all else equal.

## METHODS

### **Sample**

We use data on electoral campaign contributions by the accounting industry during the 102<sup>nd</sup> and 103<sup>rd</sup> Congresses to test our hypotheses. Since accounting firms are prohibited from

making financial contributions to SEC commissioners, we analyze the impact of the House becoming pivotal in the 103<sup>rd</sup> Congress by considering the contributions received relative to the Senate. We thus include information on the entire population of both election candidates and members of the United States House of Representatives and Senate during the 102<sup>nd</sup> (1991 - 1992) and 103<sup>rd</sup> (1993 – 1994) sessions of Congress. During sessions 102 and 103 there were 2,214 such observations.

### **Measures**

Our dependent variable is the total amount of inflation-adjusted campaign contributions a politician received from the accounting industry during a congressional session. We obtained campaign contribution data from the Center for Responsive Politics which tracks all submissions made to the Federal Election Commission. The data includes all contributions made by PACs and those from individuals giving more than \$200. To reduce the effects of outliers we take the natural logarithm of total campaign contributions.

The set of independent variables captures both political attributes of the politicians receiving campaign contributions and the characteristics of their constituents. To test our hypotheses we use nine dummy variables to indicate a politician's institutional locus: the first dummy variable, *house incumbent 102*, is set equal to one if the politician is a member of the House during the 102<sup>nd</sup> Congress and not on the Energy and Commerce Committee (HECC), and zero otherwise; the second, *house committee 102*, equals one if the politician sits on the HECC during the 102<sup>nd</sup> Congress; the third dummy variable, *senate incumbent 102*, is set equal to one for senators in the 102<sup>nd</sup> Congress that are non-Senate Banking Committee (SBC) members; the fourth, *senate committee 102*, equals one for senators that are members of the SBC during the 102<sup>nd</sup> Congress. The fifth dummy variable, *103rd Congress*, is set equal to one if the observation occurs during the 103<sup>rd</sup> session of Congress. To isolate the effect of shifting pivotal institutions, we need to control for the increased level of campaign contributions made by the accounting industry during the 103<sup>rd</sup> Congress relative to the 102<sup>nd</sup> Congress. The sixth, seventh, eighth and ninth dummy variables are analogous incumbent or committee dummies for the 103<sup>rd</sup> Congress. The omitted category, which is included in the regression's constant term, consists of 102<sup>nd</sup> Congress non-incumbent challenger candidates competing for a seat in the House or Senate.

We also control for other personal attributes that are likely to effect electoral contributions to individual politicians. *Party* is equal to one if the politician is a Republican and zero if he/she is a Democrat.<sup>38</sup> *Seniority* is measured as the number of years that the representative or senator has served in office. *Historical contributions* is a dummy variable which equals one if a politician has received campaign contributions from the accounting industry in the past. Finally, we include measures to control for constituency effects. We utilize Adler's congressional district data to measure demographic characteristics of a politician's constituency. *Manufacturing* measures per capita employment in manufacturing. *Finance* measures per capita employment in finance, insurance and real estate. *Urban* measures the percent of the population that lives in an urban setting. *Union* measures the percentage of the population that is unionized. Unlike *manufacturing*, *finance* and *urban*, *union* only varies across states and not across congressional districts. Table 1 provides summary statistics and correlations for the variables used in the regression analysis.

### **Analytical Technique**

Consistent with other studies analyzing campaign contribution strategy (Chappell, 1982; Grier, Munger & Roberts, 1994; McCarty & Rothenberg, 1996), our empirical model accounts for a potentially important selection bias. The problem arises since the dependent variable (level of campaign contributions) is limited below at zero dollars. In our theoretical model, the accounting industry views a campaign contribution to a given politician as an investment, where the industry expects to earn a positive return on this investment in the form of favorable policy outcomes. If the accounting industry expects that an investment in a given politician will have a negative return (e.g., having no effect on the policy outcomes), then the industry will contribute zero dollars to that politician. By contrast, if the accounting industry expects a positive return from its campaign contributions, we will observe a positive level of contributions. Our theoretical model predicts that the industry will allocate a greater level of campaign contributions to the pivotal political institution given that the industry expects a positive return.

Zero contributions occur in 716 (32.3%) observations during the 102<sup>nd</sup> and 103<sup>rd</sup> congresses. With this selection problem, and the large mass of the distribution located at zero,

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<sup>38</sup> In sessions 102 and 103 there is a single third party incumbent (Bernard Sanders, Vermont) and no third party challengers in the data set. Representative Sanders aligns himself with the Democratic caucus. Further, the Democratic leadership determines the committee assignments for Representative Sanders.

ordinary least squares estimates are biased and inconsistent. Following Greene (1993), the selection mechanism is

$$\begin{aligned}
 z_j^* &= \mathbf{w}_j\gamma + u_j & (1) \\
 z_j &= 1 \text{ if } z_j^* > 0 \\
 z_j &= 0 \text{ if } z_j^* \leq 0, \\
 \text{Prob}(z_j=1) &= \Phi(\mathbf{w}_j\gamma), \\
 \text{Prob}(z_j=0) &= 1 - \Phi(\mathbf{w}_j\gamma).
 \end{aligned}$$

The vector  $\mathbf{w}_j$  represents the set of regressors that determine whether the accounting industry makes a positive campaign contribution to candidate  $j$ . Assuming that the error term is normally distributed, the probability that we observe a campaign contribution ( $z_j=1$ ) is  $\Phi(\mathbf{w}_j\gamma)$ , the standard cumulative normal distribution. The regression model is

$$\begin{aligned}
 y_j &= \mathbf{x}_j\beta + \varepsilon_j \quad \text{observed only if } z_j=1 & (2) \\
 (u_j, \varepsilon_j) &\sim \text{bivariate normal } [0, 0, 1, \sigma_\varepsilon, \rho],
 \end{aligned}$$

where  $y_j$  is the amount of campaign contributions candidate  $j$  receives from the accounting industry. The vector of covariates  $\mathbf{x}_j$  affects the accounting industry's allocation of campaign contributions across politicians. We use maximum likelihood to estimate the parameters of the sample selection model,  $\gamma$ ,  $\beta$ ,  $\sigma_\varepsilon$  and  $\rho$ . The effect of selection is incorporated into the expected level of campaign contributions through the inverse Mills ratio ( $\phi(\mathbf{w}_j\gamma)/\Phi(\mathbf{w}_j\gamma)$ ) as follows:

$$E[y_j|z_j=1] = \mathbf{x}_j\beta + \sigma_\varepsilon\rho(\phi(\mathbf{w}_j\gamma)/\Phi(\mathbf{w}_j\gamma)). \quad (3)$$

The general empirical model used to test our hypotheses is thus:

$$\begin{aligned}
 y_j = & \beta_1 + \beta_2\text{House Incumbent } 102 + \beta_3\text{House Committee } 102 + \beta_4\text{Senate Incumbent } 102 + \\
 & \beta_5\text{Senate Committee } 102 + \beta_6\text{103rd Congress} + \beta_7\text{House Incumbent } 102 + \beta_8\text{House} \\
 & \text{Committee } 103 + \beta_9\text{Senate Incumbent } 103 + \beta_{10}\text{Senate Committee } 103 + \beta_{11}\text{Party} + \\
 & \beta_{12}\text{Seniority} + \beta_{13}\text{Historical Contributions} + \beta_{14}\text{Manufacturing} + \beta_{15}\text{Unions} + \beta_{16}\text{Urban} + \\
 & \beta_{17}\text{Finance} + \lambda\text{selection}
 \end{aligned}$$

Here,  $y_j$  represents the natural log of the inflation-adjusted level of contributions that politician  $j$  received from the accounting industry during the 102<sup>nd</sup> Congress or 103<sup>rd</sup> Congress.

The variable *Selection* controls for the sample selection problem discussed above and is estimated from the selection equation discussed in the Appendix. The coefficient  $\lambda$  is equal to  $\sigma_{\epsilon}\rho$  in equation 3 above. For ease of exposition we present only the results of the selection corrected regression model in the main text. We discuss the selection equation in the Appendix.

## RESULTS

Our theoretical model predicts how the accounting industry will reallocate campaign contributions across politicians between the 102<sup>nd</sup> and 103<sup>rd</sup> congresses. To test the implications of our model, we first estimate the parameters of the selection corrected regression model and present the results in Table 2. We then analyze the marginal effect that a politician's institutional position has on the expected inflation-adjusted (real) campaign contributions made by the accounting industry. We present this analysis in Table 3.

The positive and statistically significant coefficients on the House committee and Senate committee in both the 102<sup>nd</sup> and 103<sup>rd</sup> congresses provide support for hypothesis 2. The accounting industry allocated a greater amount of campaign contributions to committee members relative to both non-committee incumbents and challengers. Table 3 illustrates this result for the comparison with challengers. For example, in the 102<sup>nd</sup> Congress the industry allocated 5.87 times more to legislators sitting on the House Energy and Commerce Committee than to challengers. Furthermore, house committee members attracted 2.81 times more than incumbents not sitting on the committee. We observe a similar result for senators. Relative to non-committee members, Senate Banking Committee members garnered 9.46 times and 3.5 times more than challengers and senators not on the committee, respectively. We observe a similar pattern in the 103<sup>rd</sup> Congress. Committee members attracted 2.34 times and 2.21 times more than non committee incumbents in the House and Senate respectively. We also tested whether the coefficient on *house incumbent 102* (*senate incumbent 102*) is equal to the coefficient on *house committee 102* (*senate committee 102*). We find that we can reject the equality hypothesis at the 5% level. These results suggest that the industry recognized the power of committee jurisdiction and allocated resources accordingly.

Comparison of the 102<sup>nd</sup> Congress versus 103<sup>rd</sup> Congress coefficients presented in Table 2 provides strong support for hypotheses 1 and 3 regarding the relative shift in contributions away

from the Senate and to the House, which became uniquely pivotal in the 103<sup>rd</sup> Congress. First, the pattern of statistical significance on the coefficients for House and Senate members provides support for the hypothesis that the accounting industry allocates more to a political institution if it is pivotal than if it is not pivotal. In the 102<sup>nd</sup> Congress, each of the four incumbency coefficients are statistically significant. In the 103<sup>rd</sup> Congress the coefficients on both House committee and non-committee members are positive and statistically significant. By contrast, while the coefficient on Senate Committee is statistically significant in both sessions the coefficient on Senate Non-Committee becomes insignificant in the 103<sup>rd</sup> Congress. This suggests that the accounting industry, in purchasing a broad base of legislator support for its policy position beyond the immediate committees, chose to focus on the House rather than the Senate. Such an allocation is consistent with the House being the pivotal institution in the 103<sup>rd</sup> Congress.

Second, a comparison of the expected real contributions made to House and Senate members illustrates the industry's changing pattern of allocation. As Tables 3 illustrates, the accounting industry contributed 41.4% more in expected real contributions to House non-committee members in the 103<sup>rd</sup> Congress versus the 102<sup>nd</sup> Congress. Senate non-committee members, on the other hand, attracted 24.8% *less* in the 103<sup>rd</sup> Congress than in the 102<sup>nd</sup> Congress. This provides strong evidence in favor of Hypothesis 1. A similar pattern emerges for committee members: the marginal benefit of being a House committee member, in terms of additional accounting industry campaign contributions, increased by 18.1% in the 103<sup>rd</sup> Congress. By contrast, being on the Senate Banking Committee was associated with a statistically significant *reduction* of 53% in the marginal level of campaign contributions in the 103<sup>rd</sup> Congress versus the 102<sup>nd</sup> Congress. Furthermore, we are able to reject the hypothesis, at the 10% level, that the coefficient *senate committee 102* is equal to *senate committee 103*. These results offer strong support for hypothesis 3 regarding the relative shift in accounting industry resources away from the senate and to the relevant committee of the pivotal political institution, the House, in the 103<sup>rd</sup> Congress.

We analyzed various model specifications to determine the robustness of our results on the primary variables of interest. First, we wanted to make certain that our results were not sensitive to our categorization of House and Senate members. We used alternative measures to categorize membership in the House and Senate, including, for example, dummies for committee

chairs and dummies for House versus Senate challengers. In every case the results were qualitatively similar and the pattern of statistical significance provided support for our hypotheses. Second, we tried numerous alternative sets of control variables. For example, we included ideological categories for incumbents in the set of controls. We also utilized alternative measures of seniority and contribution history in addition to constituency controls. While the patterns of significance on the control variables marginally changed, the qualitative and statistical significance in support of our model remained.

## DISCUSSION AND CONCLUSION

In sum, we have developed theoretically-motivated predictions in this paper about how firms allocate non-market influence activities across multiple branches of government in different types of political environment. The core of our argument is that firms will concentrate their resources on the institution that is pivotal in the policy-making process. We find empirical support for this thesis in our comparative static analysis of how U.S. accounting firms shifted their political campaign contributions towards the House of Representatives following a change in the political environment in 1993 that made the House pivotal.

### **Implications for Existing Research**

At a broad level, our arguments and results suggest that the structure of the political environment matters as much for the design of firms' non-market strategies as existing research suggests it does for the design of market strategies. While this claim is not new, we adopt a more micro-analytic view of the institutional environment than has been typical in most political strategy research. Hillman and Keim (1995), for instance, tease out strategic implications for firms operating in parliamentary versus presidential systems, arguing that firms will focus more on the executive than on the legislative branch in the former as compared to the latter. We build on these insights by concentrating on variation within presidential systems that stems from the distribution of political preferences across multiple branches. As we have developed, an environment with heterogeneous preferences can have quite different implications for firm strategy than a setting with relatively homogeneous preferences. A more complete model of strategy formulation thus requires an understanding not only of the formal 'rules of the game' but also of the policy preferences of the players.

In this regard, the Life Cycle model approach to non-market strategy has severe limitations since it does not account for how the rules of the game shape strategic interactions between different institutions. It is not uncommon for tensions or differences in opinion to arise between regulatory agencies and legislatures. Established models of interactions between government actors predict that the credible prospect of punishment by a legislature that disagrees with an agency's view will induce the agency to moderate its administrative rulings (Weingast and Moran, 1983; Weingast and Marshall, 1988). Recognizing this dynamic leads to quite different prescriptions about the focus of firms' lobbying and financial contribution strategies than those arising from the Life Cycle model. Indeed, the structured-interaction approach that we propose here implies that the Life Cycle's strategic prescriptions may be counter-productive for the firm: suppose an agency is actively implementing a statute by issuing a series of administrative rulings. The Life Cycle model would argue for actively lobbying the agency staff and heads in order for the firm to gain influence. However, if the firm persuades a constrained agency to mistakenly make a ruling in its favor that prompts the legislature to enact an overriding statute (consider an agency ruling at A in Regime 2, for example), the firm will generally be worse off. Since the new status quo, as established by statute, will lie within the political bargaining set (between the Executive and House in Regime 2), it will be further from the firm's preferred point than the original agency ruling. In such an environment, the firm gains advantage not by influencing the agency but the constraining (pivotal) political institution.

Our focus on the 'supply-side' of the political environment here complements an emerging stream of research that seeks to assess the attractiveness of political markets for firms or organized interest groups (Bonardi, Hillman & Keim, forthcoming). The focus of this research so far has been on understanding how demand-side characteristics make non-market strategies more or less profitable. Environments with multiple, organized interest groups competing for political favors on highly salient issues are regarded as being less attractive than those where the firm faces less organized opposition or over issues that are less salient for policy-makers (as we argued was the case for the accounting industry during the 1990s). Our approach to modeling the supply side suggests that irrespective of demand factors, attractiveness also depends on the ability of policy-makers, such as agencies or legislative committees, to respond to the firm's provision of information or financial resources. Depending on the configuration of political preferences, it will be relatively easier for the firm to obtain favorable

policy in some environments than others (compare Regime 1 to Regime 3 for an example where the natural equilibrium is either close to or far from the firm's ideal point). A fruitful avenue for further research would thus be to combine both these supply-side and demand-side streams to produce a more integrated analysis of political markets.

### **Managerial Implications**

Our model yields clear signals for managers about the optimal way to navigate complex institutional environments when seeking more favorable public policy decisions. The generic lesson is to invest in understanding the precise rules of the broad policy-making process and the preferences of the political actors involved. It is important to recognize that even if one institution is not actively involved in formulating policy at a particular point in time, it may still have a strong influence on the eventual outcome due to its future ability to step in – which conditions the behavior of the 'active' institution. Understanding the interaction between process and preferences will enable firms to identify the institution that is most influential (i.e. pivotal), and hence the candidate for a carefully targeted political campaign by the firm.

More specifically, our analysis sheds light on how firms can best influence regulatory agencies. Since most industries are regulated to some extent by expert agencies, this is one component of firms' broader non-market strategy. To date, however, very little research has asked how firms should influence agencies (which are usually appointed) as opposed to elected legislatures and executives (firm-legislature interactions account for the majority of political strategy research). Here we contribute to our understanding in this field by providing some structure on the common wisdom that firms can achieve influence either by directly lobbying the agency or by indirectly approaching the agency's political principals such as the legislative committee with jurisdiction. Our hypotheses identify the political situations in which each strategy is appropriate. Further, when using the indirect approach, we are able to discern which precise political institution has the greatest leverage over the agency's decisions.

### **Limitations**

Naturally, there are many limitations, both theoretical and empirical, to our analysis which should lead to some caution in interpreting the results. First, we have made some simplifying assumptions about the 'rules of the game' in our model of the policy process. We

have excluded the judiciary from our model even though we recognize that, being able to overturn agency decisions, they are an important actor. Similarly, we have not included the ability of the legislature to override an executive veto with a supermajority vote in the U.S. system. While our model thus abstracts from some aspects of reality, we believe that it still retains the critical aspect that has strong implications for non-market strategy, i.e. the strategic, far-sighted nature of the interactions between political actors. Bringing in the courts and the supermajority override would not change this basic insight but would qualify the identification of the political regimes with more precision. We leave the institutional refinement and extension of our model for future research.

A further drawback is that our model is based on the U.S. presidential system where government is divided between multiple legislative chambers, an executive and an expert agency system. The policy-making process is quite different from parliamentary systems found in many European countries where there is a less clear separation between executive and legislative functions. In the United Kingdom, for example, the elected House of Commons embodies both the primary legislating and executive institutions. In the absence of a system of checks and balances, the implications of our model are limited in scope. The spirit of our game-theoretic approach, however, may be applied to modeling other institutional settings in future work. Since national constitutions clearly define policy-making powers of governmental institutions, it is generally possible to identify the rules of the game and to make first-order predictions about which institutional players will be pivotal. An interesting exercise would be to derive some comparative static predictions about the allocation of firms' non-market activities using game-theoretic models of presidential and parliamentary systems.

Third, a generic challenge in testing spatial models such as the one presented here is in identifying the relative ordering of political preferences and hence in establishing which institution is pivotal on a specific issue. Using observed legislative votes or even public statements on the particular policy is not viable since these are endogenous to firm and interest group influence strategies. Instead, we use generic ideology scores that are likely to be correlated with political actors' preferences and which prior research has shown to be a strong predictor of preferences across a range of policy issues (Poole and Rosenthal, 1991). While a single ideology index may be an imprecise measure of preferences a common pattern may emerge from a series of indices, as is the case in our study. An additional approach to identifying preference orderings

is to use time series rather than cross sectional data: given the unobserved idiosyncrasies of any institutional setting, comparing the impact of a change in party political control within a single jurisdiction provides greater precision in predictions about which institution is pivotal than comparing across multiple jurisdictions at one point in time. Again, we adopt this comparative static technique in our study though recognize nonetheless that it does not provide absolute irrefutable identification of the pivotal institution.

Fourth, we have measured firm non-market strategy using data only on one dimension, electoral campaign contributions, whereas in practice firms deploy a range of tactics, including lobbying and grassroots mobilization (Hillman and Hitt, 1999). Our model is generic in its predictions since the emphasis is on the firm achieving influence through any appropriate means. It might be argued that while accounting firms were shifting campaign contributions towards the House in 1993 and 1994, they might have been shifting other activities, such as lobbying, towards the Senate – which would refute our hypotheses. Although we are unable to test such a conjecture due to the unavailability of equivalent lobbying data, we note that existing research on the relationship between lobbying and financial strategies would predict the opposite: Tripathi et al (2002) argue that these two aspects of non-market strategy are in fact complements, with campaign contributions effectively purchasing access to legislators that then enables firms to engage in the provision of information through lobbying. Again, future research could examine the re-allocation of lobbying expenditures in tandem with campaign contributions following a change in the nature of the pivotal political institution.

Finally, our choice of the accounting industry for the empirical analysis may limit the generalizability of our findings to firms in other industries. The accounting industry has historically been highly organized politically, meaning that it is likely to have a better understanding of its political environment than other industries. Firms that are less active in their non-market arenas may be less likely to adapt their strategy to the pivotal political institution or to respond to changes in a slower fashion. Empirical studies in other settings may thus find a weaker concentration of non-market resources on the pivotal institution. The accounting industry also did not encounter such organized opposition from other interest groups during the 1990s since corporate shareholders, who would be the natural beneficiaries of tighter independence regulations, were more fragmented in numbers than the highly concentrated large accounting firms. In this setting it is thus appropriate to model the interaction between a single firm and the

political actors rather than to include multiple competing interest groups. In industries where firms face well organized competing interest groups – for example, consumers or environmental NGOs – firms adopt different allocation strategies. Further work is required to extend the model to incorporate multiple interest groups.

Despite these and other limitations, we believe that the results of our analysis are indicative of the way in which the political environment shapes firms' non-market strategy. We leave it to future work to both refine our theoretical model and to conduct further tests of our hypotheses in different institutional and industry settings.

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**TABLE 1**  
**Correlations and Descriptive Statistics - Selection Corrected Regression\***

Variable	mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Log of Real Contributions	7.94	1.38																	
2. House incumbent 102	0.21	0.41	0.03																
3. House committee 102	0.03	0.16	0.14	-0.09															
4. Senate incumbent 102	0.03	0.17	0.09	-0.09	-0.03														
5. Senate committee 102	0.01	0.09	0.13	-0.05	-0.02	-0.02													
6. Session 103	0.51	0.50	0.09	-0.52	-0.17	-0.18	-0.09												
7. House incumbent 103	0.22	0.42	0.19	-0.28	-0.09	-0.10	-0.05	0.53											
8. House committee 103	0.03	0.16	0.16	-0.09	-0.03	-0.03	-0.02	0.16	-0.09										
9. Senate incumbent 103	0.04	0.19	0.07	-0.10	-0.03	-0.03	-0.02	0.19	-0.10	-0.03									
10. Senate committee 103	0.01	0.11	0.10	-0.06	-0.02	-0.02	-0.01	0.11	-0.06	-0.02	-0.02								
11. Party	0.49	0.50	-0.05	-0.09	-0.05	-0.02	-0.01	0.04	-0.06	-0.03	-0.04	0.00							
12. Seniority	8.14	13.37	0.24	0.11	0.06	0.37	0.10	0.01	0.05	0.04	0.47	0.17	-0.13						
13. Historical contributions	0.54	0.50	0.36	0.30	0.13	0.05	0.08	0.10	0.41	0.15	0.12	0.06	-0.11	0.36					
14. Manufacturing	0.09	0.04	0.05	0.02	0.03	-0.04	0.00	0.01	0.01	0.02	-0.04	-0.01	0.00	0.03	0.03				
15. Unions	0.21	0.08	0.05	0.05	0.02	-0.01	-0.03	-0.01	0.03	0.01	-0.03	-0.02	-0.04	0.03	0.02	0.15			
16. Urban	0.75	0.20	0.05	0.02	0.01	-0.06	0.00	-0.03	0.03	-0.01	-0.09	0.01	-0.09	-0.05	0.05	-0.10	0.21		
17. Finance	0.03	0.01	0.04	0.03	0.02	-0.03	0.01	-0.04	0.02	-0.01	-0.06	0.00	0.00	-0.05	0.04	-0.15	0.16	0.68	

\* n = 1,498

**TABLE 2**  
**Empirical Results: Dependent Variable**  
**LN of Real Campaign Contributions**

Variable	Session 102 & 103	
House incumbent 102	0.33 **	(0.15)
House committee 102	1.25 ***	(0.22)
Senate incumbent 102	0.58 *	(0.31)
Senate committee 102	1.73 ***	(0.39)
Session 103	0.16 *	(0.1)
House incumbent 103	0.52 ***	(0.15)
House committee 103	1.25 ***	(0.22)
Senate incumbent 103	0.13	(0.32)
Senate committee 103	0.81 **	(0.39)
Party	0.03	(0.07)
Seniority	0.02 ***	(0.01)
Historical contributions	-0.07	(0.12)
Manufacturing	1.17	(0.91)
Unions	0.61	(0.43)
Urban	0.12	(0.22)
Finance	-2.22	(4.42)
Selection	-1.10 ***	(0.11)
Constant	7.67 ***	(0.22)

Values are selection corrected regression coefficients,  
with robust standard errors in parentheses

\* p < 0.1

\*\* p < 0.05

\*\*\* p < 0.01

**TABLE 3**  
**Empirical Results: Marginal Effects on**  
**Expected Real Campaign Contributions**

	<i>Session 102</i> <i>Baseline = \$1,191</i>	<i>Session 103</i> <i>Baseline = \$1,404</i>	<i>103 vs 102</i> 17.90%
<b>Variable</b>	<b>vs. baseline</b>	<b>vs. baseline</b>	
House Incumbent	x2.09 **	x2.51 ***	41.4%
House Committee	x5.87 ***	x5.88 ***	18.1%
Senate Incumbent	x2.68 *	x1.71	-24.8%
Senate Committee	x9.46 ***	x3.77 **	-53.0%
Seniority	x0.86 ***	x0.86 ***	17.9%
Historical Contributions	x1.50	x1.50	17.9%

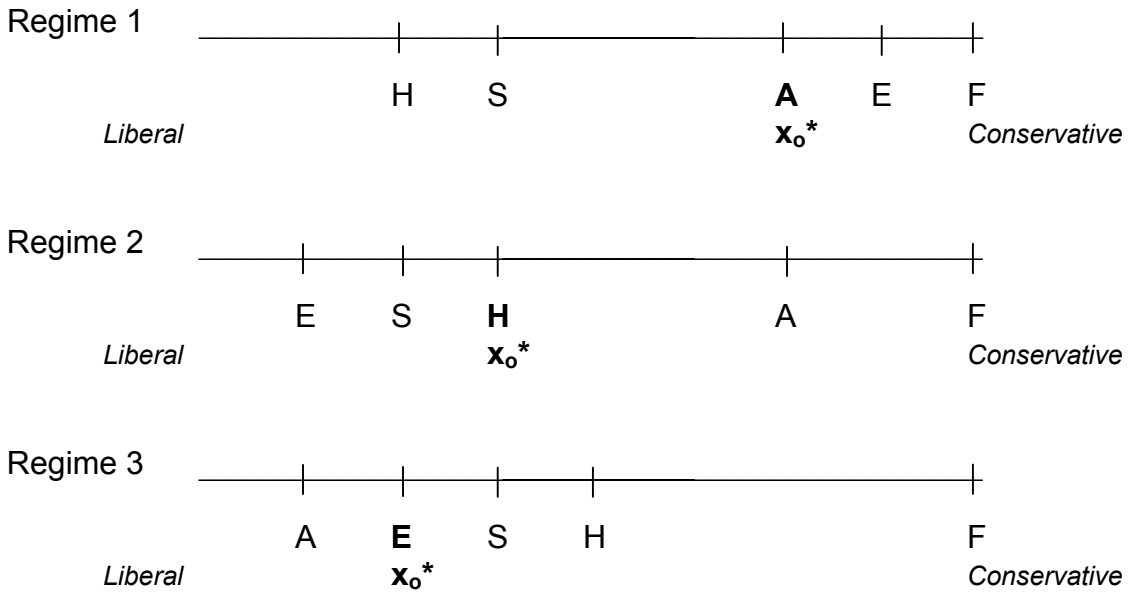
Baseline expected real campaign contribution evaluated at the mean of each continuous variable in regression and selection equation and with each dummy variable equal to zero. For dummy variable effect, compare to baseline with dummy variable changed to 1. For seniority, measured as +1 standard deviation from mean.

\* p < 0.1

\*\* p < 0.05

\*\*\* p < 0.01

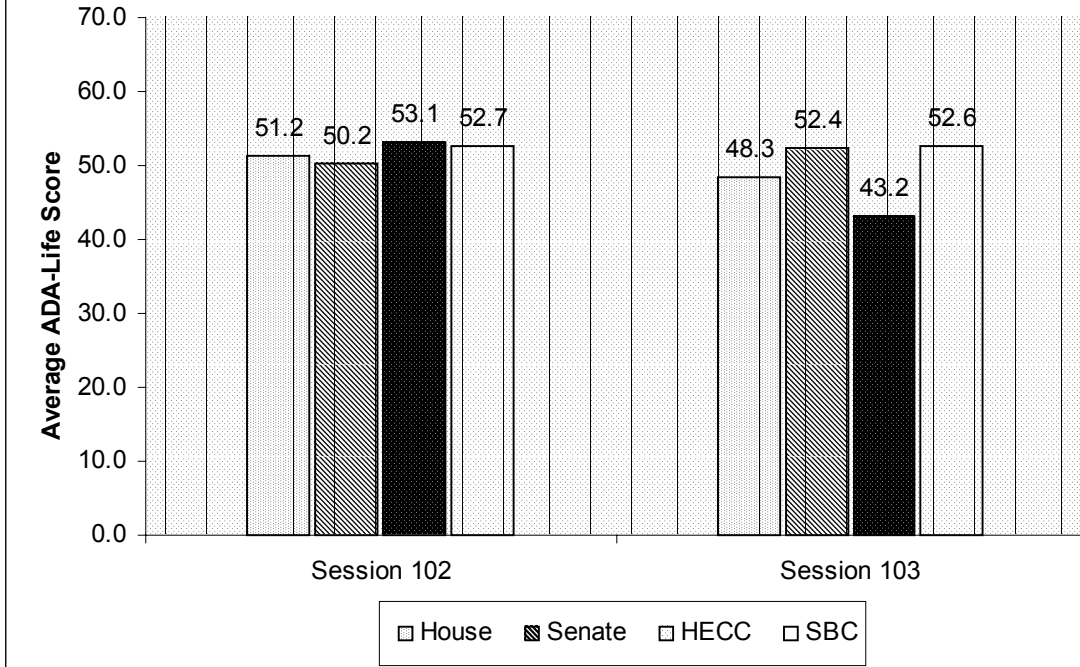
**Figure 1: Political Regimes and Policy Equilibria**



**KEY**

- F Firm's ideal policy
  - A Agency's ideal policy
  - H House's ideal policy
  - S Senate's ideal policy
  - E Executive's ideal policy
  - $x_o^*$  Equilibrium agency policy ruling
- Primary pivotal institution is Agency in Regime 1, House in Regime 2, Executive in Regime 3

**Figure 2:  
Ideology of Congress**



## APPENDIX

In order to estimate unbiased coefficients in the regression equation, we also estimate the probability that a candidate receives contributions greater than zero. The variables included in the selection equation are similar to those in the regression equation with a few exceptions: *Incumbent* is a dummy variable equal to one if the candidate is currently a member of the House or Senate; *Committee* is a dummy variable equal to one if the candidate is a member of the House Energy and Commerce Committee or the Senate Banking Committee. *Senator reelection* is a dummy variable equal to one if the candidate is a senator in the last year of office; *Population* is the natural log of the district population for House candidates, natural log of state population for Senate candidates.

**TABLE 4**  
**Correlations and Descriptive Statistics - Selection Model\***

Variable	mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1. Positive Contributions	0.68	0.47	1.00										
2. Incumbent	0.43	0.49	0.21	1.00									
3. Committee	0.06	0.23	0.12	-0.21	1.00								
4. Senator reelection	0.03	0.17	0.09	0.12	0.14	1.00							
5. Party	0.49	0.50	-0.01	-0.15	-0.04	-0.02	1.00						
6. Seniority	8.01	14.60	0.01	0.49	0.18	0.35	-0.11	1.00					
7. Historical contributions	0.43	0.50	0.31	0.66	0.24	0.10	-0.10	0.39	1.00				
8. Manufacturing	0.09	0.04	-0.01	-0.01	0.02	-0.04	-0.01	0.01	0.00	1.00			
9. Unions	0.21	0.08	-0.03	-0.01	-0.01	-0.02	-0.03	-0.03	-0.04	0.15	1.00		
10. Urban	0.73	0.21	0.10	-0.03	0.02	-0.04	-0.05	-0.07	0.04	-0.10	0.20	1.00	
11. Finance	0.03	0.01	0.09	-0.02	0.02	-0.02	-0.01	-0.07	0.04	-0.13	0.15	0.68	1.00
12. Population	13.49	0.83	0.14	-0.06	0.10	0.30	-0.03	0.26	-0.02	0.04	0.01	-0.02	-0.02

\*n=2,214

**TABLE 5**  
**Empirical Results: Sample Selection Equation**  
**Dependent Variable Contributions > 0**

Variable	Session 102 and 103	
Incumbent	0.61 ***	(0.12)
Committee	0.83 ***	(0.19)
Senator reelection	1.54 ***	(0.35)
Party	0.07	(0.06)
Seniority	-0.03 ***	(0.)
Historical contributions	0.74 ***	(0.1)
Manufacturing	-0.23	(0.78)
Unions	-0.79 **	(0.37)
Urban	0.57 ***	(0.19)
Finance	2.90	(3.87)
Population	0.48 ***	(0.04)
Constant	-6.62 ***	(0.61)

Values are selection regression coefficients,  
with robust standard errors in parentheses

\* p< 0.1

\*\* p< 0.05

\*\*\* p< 0.01