Helping Friends or Influencing Foes: Electoral and Policy Effects of Campaign Finance Contributions

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Abstract

Campaign finance contributions may influence policy by affecting elections or by influencing the choices of politicians once in office. We study the trade-offs between these two paths to influence using a game in which contributions may affect electoral outcomes and signal policy-relevant information to politicians. In the model, an interest group and two politicians each possess private information that is correlated with a policy-relevant state of the world. The interest group may allocate its budget toward a candidate that shares its preferences or to a moderate candidate whose preferences may diverge from the group's preferred policy. When the interest group receives negative information about its policy it expects greater preference divergence from the moderate candidate. Thus, the information content of contributions is driven by differences in the expected cost of electing the moderate. Contributions that increase the likelihood of electing the moderate may allow interest groups to signal good news about their preferred policy and influence the moderate's policy choice. The informational effect breaks down when the electoral effect of contributions is too small to generate enough costs to deter imitation by groups with negative information. The welfare effects of contributions can be positive or negative depending on whether they generate enough policy information to offset the possible costs of interest group control over electoral outcomes.

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How can interest groups influence policy using campaign contributions? The literature emphasizes two mechanisms: interest groups can contribute money to influence who wins the election[1] or to influence the policy chosen by the winner.[2] Though existing empirical and theoretical research separately examines electorally-motivated contributions[3] and influence-motivated contributions aimed at winners,[4] effective policymaking requires an understanding of when and why groups choose one tactic rather than another.

We argue that groups face a steep trade-off between influencing elections and influencing policy choices because contributions to one candidate may reduce the group's credibility with an opposing candidate. Suppose a manufacturing firm seeks to avoid regulation of its product and can allocate contributions to an anti-regulation candidate or to a moderate candidate who will impose regulations if the firm's product turns out to be unsafe. The firm possesses internal research about the safety of its product and expects that the winning candidate will have access to independent information after gaining office.

One approach the firm may take is to contribute money to increase the probability that the anti-regulation candidate takes office. However, the moderate candidate may observe these contributions and infer that the firm believes its product to be so unsafe that electing the anti-regulation candidate is the firm's only hope for gaining favorable policy. Thus, contributions to the anti-regulation candidate may lead to more regulation in the event that the moderate candidate is elected. Alternatively, the firm may contribute to the moderate candidate. These contributions decrease the probability that the firm's most preferred candidate is elected but might cause the moderate candidate to infer that the firm believes its product to be safe. Thus, there is a direct trade-off between influencing elections and influencing policy choices: a contribution that is beneficial with respect to one goal is detrimental with respect to the other.

[1] See Erikson and Palfrey (1998, 2000) and Hall (N.d.) on the effects of campaign fundraising on electoral outcomes.

[2] See Fouirnaies and Hall (2014), Gordon, Hafer and Landa (2007), and Stratmann (1991, 1992), for instance.

[3] Bonica (2013, 2014) estimates preferences of donors and legislators under the assumption of ideologically motivated giving.

[4] Influence-motivated contributions may arise from vote-buying (e.g., Denzau and Munger, 1986; Grossman and Helpman, 1994; Groseclose and Snyder, 1996; Diermeier and Myerson, 1999) or from contributions aimed at gaining access (e.g., Cotton, 2012, N.d.; Grimmer and Powell, 2015; Kalla and Broockman, N.d.).

We consider how the trade-off between influencing elections and influencing policy impacts contribution decisions by interest groups and policy choices by politicians. In our model, an interest group may contribute to an ally candidate that shares its policy preferences or to a moderate candidate whose ideal policy depends on an unknown state of the world. The interest group and politicians each possess noisy and private signals that are correlated with the state of the world. Thus, campaign contributions affect electoral outcomes but may also be used by interest groups to communicate private information to politicians. The informational value of contributions is generated by their electoral effects: interest groups who receive positive information about their preferred policy (*good types*) expect that the moderate candidate will also receive positive information and therefore choose a favorable policy. Though both types of interest groups strictly prefer the sympathetic ally candidate over the moderate, good types are more willing to sacrifice electoral gains in order to influence the moderate's policy choice. Since the electoral costs of helping the moderate are felt more sharply by those with unfavorable information (*bad types*), who expect larger differences in policy between the two candidates, a contribution schedule that improves the electoral chances of the moderate candidate can credibly reveal positive information. Meanwhile, bad types of interest groups direct electorally-motivated contributions to their preferred candidate.

Our model suggests a link between the electoral and influence motivations for contributions: policy influence occurs when the electoral effect of contributions is strong enough to make contributions to opposing candidates a credible signal of policy information. Thus, we propose different ways of predicting and identifying influence-oriented contributions. The key predictor of influence-oriented versus election-oriented giving in our model is the interest group's private policy information, which is unlikely to be observed by researchers. Though researchers use observed characteristics of groups, such as whether they are single-issue or have partisan affiliations, to distinguish between election-oriented and (policy) influence-oriented groups (e.g., Fouirnaies and Hall, 2014, 2015; Hall, 2014, N.d.; Snyder, 1992), our argument implies that much of the variation is due to unobserved heterogeneity between groups with similar characteristics.

Other researchers have attempted to identify donor motivations from giving patterns, but our

model suggests different patterns than are usually assumed in these models. For instance, since contributions tend to more effectively change electoral outcomes in close races, it is often assumed that strategic influence-oriented donors will favor candidates highly likely to win whereas strategic election-oriented donors will target close races in competitive districts (e.g. Bonica (2014)). Instead, we predict that both tactics will be more effective in close races and less effective in landslides. The key insight is that credible policy influence is derived from contributions that are electorally costly to the group: if *every* group would give to the moderate in order to influence her policy choice then contributions lose the informational value that would lead to policy influence.

Additionally, we provide a rationale for why contributions may flow to the donors' least preferred candidates. In contrast to ideological models of political giving in which influence-motivated and election-motivated donors each give to the candidates that most closely match their preferences, we predict that influence-motivated contributions will be insincere. In fact, contributions are only influential when they contradict the electoral preferences of the donor. From this perspective, it could be difficult to infer policy preferences of donors and candidates from contributions when policy influence and electoral motivations are both relevant.

The logic of electoral versus influence-oriented donor motivations also allows us to provide new insights about the social welfare implications of campaign finance contributions. Contributions may have the positive effect of transmitting information that helps improve policymaking but may also have the negative effect of distorting electoral outcomes in favor of the interest groups' allies. The dilemma illustrated by our model is that the positive informational effects of contributions may only be feasible if the electoral effects are strong enough. At the same time, when the electoral effects of contributions are too strong, the negative effects of electoral distortions may overwhelm any informational benefits.

Relationship to the Literature

Our model relates to previous models in which contributions inform politicians about the desirability of different policy alternatives. Cotton (2009, N.d.) considers models in which the politician sells her attention rather than directly selling policy favors. Cotton (2009) and Cotton (N.d.) both show how a politician gains policy information by observing the contributions made by groups competing for attention. These papers include one politician and focus on the effects of competition between interest groups, whereas we focus on a model with one interest group and show how informative contributions are generated by their effects on competition between politicians vying for office. In this paper and in Cotton's papers, informative contributions are driven by the fact that politicians have an independent source of policy information. In Cotton's models, the politician verifies the quality of the policy advocated by the largest donor, which limits groups' temptation to exaggerate. In our model, the state of the world generates correlation between interest group and politician signals. Thus, the interest group's signals affect the intensity of its electoral preference for the sympathetic candidates implying that good types are more willing to forgo electoral gains to influence the policy choices of the moderate.

Though we do not explicitly model lobbying in this paper, the informational function of contributions relates to models of informational lobbying in which contributions pay for access (Austen-Smith, 1995, 1998; Cotton, 2012; Lohmann, 1995; Schnakenberg, 2015). In Austen-Smith (1995) and Lohmann (1995), interest group information is unverifiable but the credibility of informational lobbying can be enhanced by costly political contributions. In Austen-Smith (1998) and Cotton (2012), interest groups pay access fees in order to deliver verifiable information to the politician. Policymakers impose access fees in order to extract rent from interest groups and for this reason tend to grant more access to wealthy groups. In Schnakenberg (2015), interest groups buy access to sympathetic policymakers who serve as intermediaries to engage in informational lobbying to opponents. The mechanism in this paper differs substantially from this literature since the informational credibility of contributions is induced by the trade-off between electoral and informational motivations for giving.

Other informational models of campaign finance focus on informational benefits to voters instead of politicians. In Ashworth (2006), candidates offer favors for campaign contributions. Voters face a trade-off from campaign finance: advertisements purchased with contributions provide valuable information to voters, but favors to interest groups are costly to voters. Ashworth illustrates how this trade-off affects the desirability of different campaign finance policies. For instance, an outright ban on contributions avoids favors but also eliminates all informational benefits from contributions, while public financing offers informational benefits without the costly political favors. Prat (2002) shows how campaign contributions may transmit information from interest groups to voters about candidate characteristics. We do not explicitly include rational voters in our model and focus instead on how contributions transmit policy information to politicians. Though contributions have an informational effect on policy in our model, the electoral effect of contributions is exogenous and does not operate through informational mechanisms. One way to conceptualize the effect of contributions in our model is that money increases the valence of the receiving candidates as in the activist valence models of Miller and Schofield (2003) and Schofield (2006).

This study complements Fox and Rothenberg (2011) in that both models explain how contributions might influence policy when politicians cannot commit to binding contracts with donors. A problem with traditional models of contributions as bribery (e.g., Grossman and Helpman, 1994) is that politicians may have an incentive to renege on promises of policy favors once they gain office. In vote buying models, politicians are often assumed to be able to commit to keeping these promises, but this assumption may be untenable (see McCarty and Rothenberg, 1996, for instance). Fox and Rothenberg provide an alternative mechanism that does not rely on contracting. In their model, politicians have private information about their policy preferences and the incumbent may bias policy toward an interest group to signal preference similarity and prevent the group from withholding contributions or giving to the challenger. Our model also provides a non-contracting explanation of the influence of contributions but information flows in the opposite direction: contributions signal policy information to politicians.

A Model of Campaign Contributions

We model a simplified election in which a single interest group may spend money to influence the outcome of a two-candidate election. There are three players: a moderate candidate M, an ally candidate A, and an interest group G. The set of feasible policies is $X = [0,1]$ where higher policies are more favorable to the interest group. Additionally, there is a state of nature $\theta \in [0,1]$ which may affect players' preferences over policies. The common prior belief is that θ is uniform over the state space, $[0,1]$.[5]

The sequence of the game is as follows. First, the interest group receives a noisy signal $s_G \in \{0,1\}$ about the state of the world, with $\Pr[s_G = 1|\theta] = \theta$. The signal is private information and we will call G a good type when $s_G = 1$ and a bad type when $s_G = 0$. Second, the interest group chooses contribution levels to the candidate. We assume that G has a fixed budget and chooses a proportion π of contributions to the moderate candidate, with $1-\pi$ going to the ally candidate. The probability that the moderate candidate wins the election is represented by a continuous, strictly increasing function $V(\pi)$ with $0 < V(0) < V(1) < 1$. Finally, the winner of the election $j \in \{M,A\}$ receives a signal $s_j \in \{0,1\}$ with $\Pr[s_j = 1|\theta] = \theta$ and chooses a policy $x \in X$.

All players are policy motivated.[6] The preferences of the interest group and ally candidate are perfectly aligned and independent of the state of the world: both players prefer policies as close to one as possible. The moderate candidate prefers to set policy as close as possible to the state of the

[5]The information structure used in our model, with θ distributed uniform on $[0,1]$ and $\Pr[s_j = 1|\theta] = \theta$, is a convenient set of assumptions that we borrow from the literature on information transmission in networks (e.g. Galeotti, Ghiglino and Squintani, 2013; Patty and Penn, 2014; Dewan et al., 2015; Penn, 2015). Besides being analytically convenient, the uniform distribution serves as a useful benchmark because it represents the case where nothing is known about the state of the world prior to the start of the game.

[6]Including office motivation or incentives for contribution-maximization into the candidates' payoffs would not change the predictions of the model since candidates cannot commit to policy platforms prior to contribution decisions.

world. The players' preferences are represented by the utility functions

$$u_G(x) = x, \tag{1}$$

$$u_A(x) = x, \text{ and} \tag{2}$$

$$u_M(x,\theta) = 1-(x-\theta)^2 \tag{3}$$

for the interest group, ally candidate, and moderate candidate respectively.

The analysis focuses on sender-optimal pure strategy perfect Bayesian equilibria. A strategy for the interest group maps both possible signals into contribution decisions. Let $D : \{0,1\} \to [0,1]$ denote the interest group's contribution strategy. A strategy for each candidate $j \in \{M,E\}$ maps contribution strategies and signals into policies. Let $x_j : \{0,1\} \times [0,1] \to [0,1]$ denote each candidate's policy strategy. A perfect Bayesian equilibrium (PBE) is a profile of strategies and beliefs such that all players make optimal choices given their beliefs and the strategies of the other players and beliefs are consistent with Bayes' rule on the equilibrium path. An equilibrium is sender-optimal if it maximizes G's expected utility among the set of PBE.

Equilibrium characterization

Pure strategy equilibria are one of two types. In a separating equilibrium, good types of G choose different contributions than bad types and the candidates can perfectly infer the interest group's private information from its campaign contributions. In a pooling equilibrium, good types of G choose the same contributions as bad types and candidates do not learn any information by observing contributions. We show that the outcome of the game depends on how effectively money influences electoral outcomes: when the effect of money on elections is too small to change the incentives of the interest group, the equilibrium is pooling and contributions do not influence the policy choices of the moderate. When contributions more effectively influence elections, they also influence the moderate's policy choices by conveying the interest group's private information.

Players' Beliefs and Policy Choices

Given our distributional assumptions, G's posterior beliefs about the state of the world are distributed Beta$(s_G+1, 2-s_G)$. Thus, G's expectations of the state of the world following each signal are $\mathbb{E}[\theta|s_G=0]=\frac{1}{3}$ and $\mathbb{E}[\theta|s_G=1]=\frac{2}{3}$. Similarly, in a pooling equilibrium the candidates learn nothing about s_G so the candidates' expectations about the state of the world following its own signals are $\mathbb{E}[\theta|s_j=0]=\frac{1}{3}$ and $\mathbb{E}[\theta|s_j=1]=\frac{2}{3}$ for $j\in\{M,A\}$. In a separating equilibrium, the candidates learn both signals and their posterior beliefs about the state of the world are distributed Beta$(s_M+s_G+1, 3-s_M-s_G)$. In this case, the candidates' expectations about the state of the world following each pair of signals are $\mathbb{E}[\theta|s_G=s_j=0]=\frac{1}{4}$, $\mathbb{E}[\theta|s_G+s_j=1]=\frac{1}{2}$, and $\mathbb{E}[\theta|s_G=s_j=1]=\frac{3}{4}$ for $j\in\{M,A\}$.

In any equilibrium, M's strategy sets policy equal to the expected state of the world while A sets policy equal to one given any signals and contributions. From G's perspective, M's expected policy choice if elected is

$$\mu(\pi,s_G)\equiv\mathbb{E}[x_M|\pi,s_G]=\Pr[s_M=1|s_G]x_M(1,\pi)+(1-\Pr[s_M=1|s_G])x_M(0,\pi).$$

Though M's policy choice depends only on its own signal and contributions, G's signal affects M's *expected* policy choice from G's perspective through $\Pr[s_M=1|s_G]$. Specifically, $\Pr[s_M=1|s_G]=\mathbb{E}[\theta|s_G]$ so that $\mu(\pi,0)<\mu(\pi,1)$ for any π. This fact is key to the existence of a separating equilibrium because it guarantees that the bad type prefers A to M by a greater margin than does the good type. Thus, the bad type is less willing to accept increases in the probability that M wins in exchange for marginal shifts in x_M.

Contribution Decisions

Regardless of type, G strictly prefers to elect A and receive its ideal policy with certainty. Thus, with no signaling motivation, G should contribute its entire budget to A ($\pi=0$). Thus, we can interpret all contributions to M as being motivated by policy influence, while contributions to A

are electorally motivated. The interest group faces a trade-off between contributing an amount that maximizes the probability of electing A or contributing some funds to M in order to signal that it is a good type. G's expected utility for a particular contribution decision given its type is

$$U(\pi, s_G) = V(\pi)\mu(\pi, s_G) + (1 - V(\pi)) = (\mu(\pi, s_G) - 1)V(\pi) + 1. \tag{4}$$

An interest group of type s_G has a weak incentive to choose $\pi = \pi' > 0$ rather than $\pi = 0$ if and only if

$$(\mu(\pi', s_G) - 1)V(\pi') > (\mu(0, s_G) - 1)V(0), \tag{5}$$

which is equivalent to

$$\frac{V(\pi')}{V(0)} > \frac{\mu(0, s_G) - 1}{\mu(\pi', s_G) - 1}. \tag{6}$$

The expression in 6 can only be met if $\pi = \pi'$ induces the belief that $s_G = 1$ and $\pi = 0$ induces the belief that $s_G = 0$. Under this assumption, we have:

$$\mu(0,0) = \frac{1}{3}\frac{1}{2} + \frac{2}{3}\frac{1}{4} = \frac{1}{3}, \tag{7}$$

$$\mu(\pi',0) = \frac{1}{3}\frac{3}{4} + \frac{2}{3}\frac{1}{2} = \frac{7}{12}, \tag{8}$$

$$\mu(0,1) = \frac{2}{3}\frac{1}{2} + \frac{1}{3}\frac{1}{4} = \frac{5}{12}, \text{ and} \tag{9}$$

$$\mu(\pi',1) = \frac{2}{3}\frac{3}{4} + \frac{1}{3}\frac{1}{2} = \frac{2}{3}. \tag{10}$$

Thus, the bad type has a weak incentive to choose $\pi = \pi' > 0$ rather than $\pi = 0$ if and only if

$$\frac{V(\pi')}{V(0)} > \frac{-\frac{2}{3}}{-\frac{5}{12}} = \frac{8}{5} \tag{11}$$

and the good type has a strict incentive to choose $\pi = \pi'$ if and only if

$$\frac{V(\pi')}{V(0)} > \frac{-\frac{7}{12}}{-\frac{1}{3}} = \frac{7}{4}. \tag{12}$$

Since $\frac{7}{4} > \frac{8}{5}$, the good type strictly prefers to choose π' any time the bad type weakly prefers to choose π'. Thus, expected payoffs from this game satisfy a single-crossing condition that helps us demonstrate the existence of separating equilibrium for suitable parameters.[7]

Pooling Versus Separating Equilibria

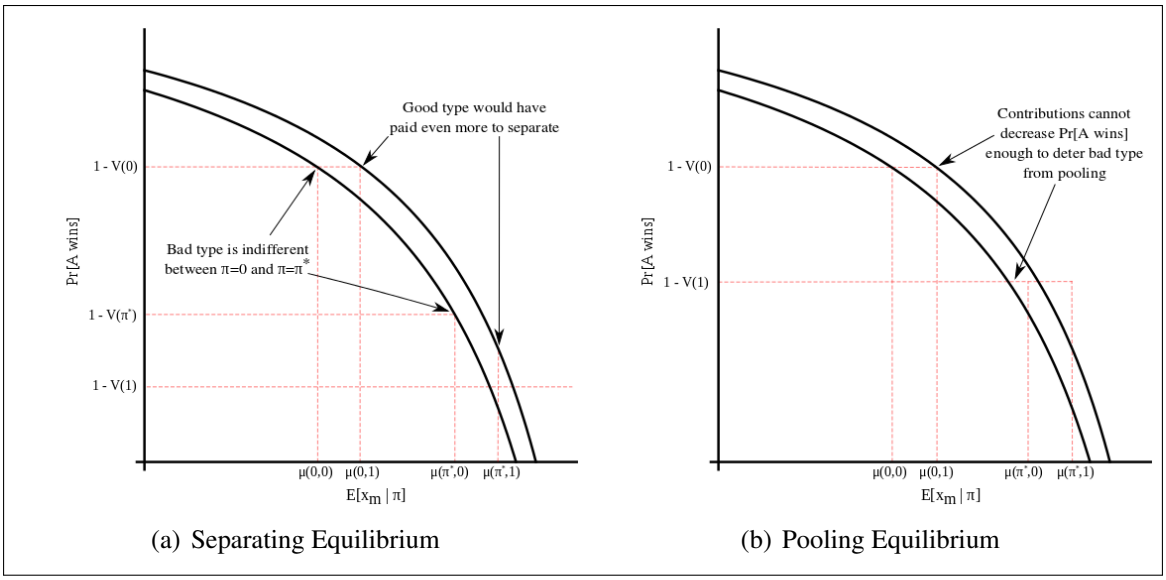
Figure 1 illustrates a separating and pooling equilibrium. The logic of the separating equilibrium in Figure 1(a) rests on the trade-off between maximizing the probability that A wins the election and maximizing M's expected policy choice in the event that she wins. This trade-off is represented by the indifference curves in Figure 1, showing combinations of victory probabilities for A and expected policy choices for M over which G is indifferent. In Figure 1(a), the separating equilibrium is found by identifying a contribution choice π^* that makes the bad type of G indifferent between choosing $\pi = 0$ and $\pi = \pi^*$ when M's policy choices upon observing π^* reflect a belief that G is a good type.[8] In this separating equilibrium, bad types of G choose $\pi = 0$ and good types of G choose $\pi = \pi^*$, so M learns G's private information and chooses policy accordingly.[9]

In Figure 1(b), we show a case for which a separating equilibrium does not exist. In this example, G's indifference curves are exactly the same as in the first but contributions are not as effective at influencing electoral outcomes. As a result, there is no contribution decision that decreases A's probability of victory enough to deter the bad type from imitating the good type. In

[7] Note that $\pi = 0$ could easily be replaced with any $\pi'' < \pi'$ and the same argument would apply. Thus, U satisfies the the single-crossing condition for any pair of contributions: $U(\pi'', 0) \leq U(\pi', 0)$ and $\pi'' < \pi'$ implies that $U(\pi'', 1) < U(\pi', 1)$.

[8] There are a continuum of separating PBE in this case, with the good type's contribution ranging from π^* to the highest contribution share that the good type would be willing to give in order to be seen as a good type. However, since higher values of π strictly decrease the payoffs of both types for a fixed policy choice, the sender-optimal equilibrium sets $D(1) = \pi^*$.

[9] To fully characterize the equilibrium we must also specify M's actions and beliefs given contributions off the path of play. This equilibrium can be supported by the belief that $s_G = 0$ if $\pi < \pi^*$ and $s_G = 1$ otherwise, with policy choices following from these beliefs as described above.



(a) Separating Equilibrium (b) Pooling Equilibrium

Figure 1: Illustrations of Equilibria.
Note: **(a):** An illustration of a separating equilibrium. Dark curves are indifference curves showing G's trade-off between maximizing the probability that A is elected and maximizing M's policy choice. Vertical lines denote M's expected policy choices when the bad type donates its entire budget to A ($\mu(0,0)$), when the bad type donates enough to M to imitate the good type ($\mu(\pi^*,0)$) and when the good type donates the threshhold amount to M ($\mu(\pi^*,1)$). The horizontal lines represent the probabilities that A wins the election given $\pi = 0$, $\pi = \pi^*$, and $\pi = 1$. The equilibrium is constructed by setting π^* to a level that makes the bad type indifferent between choosing $\pi = 0$ and $\pi = p^*$. **(b):** An illustration of the conditions for a pooling equilibrium. In this game, contributions do not affect M's victory probability enough to make the bad type indifferent between imitating the good type and donating its entire budget to M.

this case, the sender-optimal equilibrium is a pooling equilibrium in which both types of G choose $\pi = 0$.

The examples in Figure 1 illustrate the key parameter determining whether or not contributions influence policy: contributions influence policy only if their effect on electoral outcomes is large enough. We summarize the effect of contributions on electoral outcomes with the number

$$\beta = \frac{V(1)}{V(0)}$$

which represents the relative risk of electing the moderate if G goes from donating its entire budget to the ally candidate to donating its entire budget to the moderate. We may also think of β as a

measure of the average effect of contributions on the risk of electing the moderate.[10] Proposition 1 states our result.[11]

Proposition 1. *The unique sender-optimal equilibrium to the game is as follows:*

- *If $\beta < \frac{8}{5}$ then both types of interest group choose $\pi = 0$. The moderate candidate chooses $x_M(\pi, 0) = \frac{1}{3}$ and $x_M(\pi, 1) = \frac{2}{3}$ following any contributions, and the ally candidate sets $x_A(\pi, s_A) = 1$ following all contributions and signals.*

- *If $\beta \geq \frac{8}{5}$ then bad types choose $\pi = 0$ and good types choose $\pi^* > 0$ such that $\frac{V(\pi^*)}{V(0)} = \frac{8}{5}$. The moderate learns s_G with certainty and sets policy equal to $\frac{1}{4}$ if $s_M = s_G = 0$, $\frac{1}{2}$ if $s_M + s_G = 1$, and $\frac{3}{4}$ if $s_M = s_G = 1$. The ally candidate sets $x_A(\pi, s_A) = 1$ following all contributions and signals.*

Proposition 1 establishes key predictions about electoral versus policy influence motivations for contributions. When the electoral effect of contributions is too small to generate informational effects from contributions, the interest group cannot influence the policy of the moderate candidate and any contributions are electorally motivated. When the electoral effect of contributions is large enough to generate substantial differences in contribution preferences between groups based on their policy information, some groups change their contribution behavior in order to signal their favorable information to the moderate candidate.

Welfare

Do campaign contributions have a positive or negative effect on social welfare? The answer to this question, like the answers to the other questions posed in this study, depends on the relative effects

[10] Note that

$$\int_0^1 \frac{\partial}{\partial \pi} \frac{V(\pi)}{V(0)} d\pi = \frac{V(1)}{V(0)} - 1,$$

so β is a measure of the average effect of contributions on the risk of electing the moderate compared to the baseline of giving all contributions to the ally (up to addition of a constant).

[11] Beliefs for the equilibria in Proposition 1 are as follows. For the pooling equilibrium, candidates' beliefs about s_G are equal to their prior beliefs following any contributions. For the separating equilibrium, candidates' beliefs place full mass on $s_G = 0$ for any $\pi < \pi^*$ and on $s_G = 1$ for any $\pi \geq \pi^*$.

of contributions on elections and policy. Informative contributions tend to improve policymaking but contributions may also cause undesirable distortions in electoral outcomes.

In the following discussion, we assume that social welfare corresponds to the preferences of the moderate candidate. That is, social welfare is maximized when the policy matches the state of the world. To establish an appropriate benchmark for welfare comparisons, let $v_0 \in (V(0), V(1))$ denote the probability that the moderate candidate is elected if contributions are not allowed. Proposition 2 shows how welfare effects depend on the electoral effects of contributions.

Proposition 2. *Let π^* be G's equilibrium contribution when $s_G = 1$. Contributions improve welfare if and only if $\beta > \frac{8}{5}$ and $V(0) > \frac{200}{237} v_0$.*

Proposition 2 provides two insights about social welfare. First, contributions are always bad for social welfare in a pooling equilibrium since they increase the probability of electing the interest group's ally without providing any useful policy information. Second, contributions may improve welfare in a separating equilibrium, but only if they do not increase the probability of electing the ally so much that electoral distortions outweigh the informational benefits of contributions. Notably, this condition depends only on the effectiveness of electoral contributions to the ally relative to no contributions, since good types will only contribute enough to the moderate candidate to leave the bad types indifferent.

Proposition 2 suggests that the electoral effects of contributions have a non-monotonic impact on social welfare. If the electoral effects of contributions are so low that informative contributions are not possible or so high that the electoral distortions outweigh any informational benefits, then campaign contributions negative affect voter welfare. If the electoral effects of contributions are moderately strong, then campaign contributions tend to improve voter welfare.

Discussion and Conclusions

We have provided a model of campaign finance contributions in which contributions may affect the outcome of an election as well as the policy choice of one of the candidates. The results differ

substantially from common assumptions used to predict and identify electorally-motivated versus influence-motivated contributions. For instance, Bonica (2014) points to three possible sources of strategic contributions: First, strategic factors may motivate investment in the political process but not the choice of candidates or races, which implies that contributions will be ideologically sincere but perhaps more heavily allocated toward close races or to powerful incumbents. Second, donors may have incentives to influence winners but have weak ideological preferences, implying that donors will select candidates that hold powerful positions and are likely to win. Third, donors may desire to influence electoral outcomes and strategically allocate funds to achieve those goals, implying that donors will allocate funds to ideologically proximate candidates in close elections.

Patterns of giving in our account differ from all three of these scenarios in two ways. First, influence-oriented contributions should be common in close races since the electoral effect of donations lends greater informational value to contributions. Though landslide elections decrease the effectiveness of both types of contributions, a higher proportion of contributions may be influence-oriented in close elections than in landslides. Second, influence-oriented contributions should not be ideologically sincere: these contributions are effective precisely because they are known to run contrary to the electoral motivations of the donors.

Further research is needed to provide a full account of donor motivations. For instance, our model explains how an interest group allocates a fixed political budget to two different candidates but does not explain the allocation of resources across races. Though the logic of the main result would hold in a model with multiple elections, some empirical implications would change considerably. For instance, in the current model, 100% of the interest group's budget is contributed to the extremist in an election where the electoral effect of contributions is low. With multiple districts, electorally-motivated and influence-motivated contributions should both flow away from districts in which contributions are not effective. Thus, our model should be conceptualized as a partial equilibrium explanation of contributions which is meant to illustrate interest groups' trade-off between helping friends and influencing foes.

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Appendix

Proof of Proposition 1. If $\beta < \frac{8}{5}$ then $U(0,0) < U(1,0)$ by the expression in Equation 11. Since $U(\pi,0)$ is decreasing in π, this implies that $U(0,0) < U(0,\pi)$ for all $\pi \in (0,1)$. Thus, the bad type will deviate to any π that induces the belief that $s_G = 1$, implying that there does not exist a separating equilibrium. If $\beta \geq \frac{8}{5}$ then, by continuity of $U(\pi,1)$, there exists some $\pi^* \in (0,1]$ such that $U(0,0) = U(\pi^*,0)$. Since U satisfies the single crossing condition, the good type strictly prefers to choose π^* over 0. Thus, there is a separating equilibrium such that $D(0) = 0$ and $D(1) = \pi^*$ with beliefs placing full mass on $s_G = 0$ for $\pi < \pi^*$ and on $s_G = 1$ for $\pi \geq \pi^*$. Since $U(1,\pi)$ is decreasing in π, this is the sender-optimal equilibrium. ■

Proof of Proposition 2. To prove this proposition, we note that social welfare is

$$\begin{aligned}
&\mathbb{E}[1-(x-\theta)^2] \\
&\qquad = 1 - \int_0^1 \left[v_0 \left(t \left(\frac{2}{3} - t \right)^2 + (1-t) \left(\frac{1}{3} - t \right)^2 \right) + (1-v_0)(1-t)^2 \right] dt \\
&\qquad = \frac{2}{3} + \frac{5}{18} v_0
\end{aligned} \tag{13}$$

under no contributions,

$$\mathbb{E}[1-(x-\theta)^2] = \frac{2}{3} + \frac{5}{18} V(0) \tag{14}$$

in a pooling equilibrium by a similar calculation, and

$$\begin{aligned}
&\mathbb{E}[1-(x-\theta)^2] \\
&\qquad = 1 - \int_0^1 \left[t \left(V(\pi^*) \left(t \left(\frac{3}{4} - t \right)^2 + (1-t) \left(\frac{1}{2} - t \right)^2 \right) (1 - V(\pi^*))(1-t)^2 \right) \right. \\
&\qquad\quad \left. + (1-t) \left(V(0) \left(t \left(\frac{1}{2} - t \right)^2 + (1-t) \left(\frac{1}{4} - t \right)^2 \right) (1 - V(0))(1-t)^2 \right) \right] dt \\
&\qquad = \frac{2}{3} + \frac{1}{16} V(\pi^*) + \frac{11}{48} V(0)
\end{aligned} \tag{15}$$

in a separating equilibrium. Since $V(0) < v_0$, a pooling equilibrium is never welfare improving. For a separating equilibrium, we have

$$\frac{2}{3} + \frac{1}{16}V(\pi^*) + \frac{11}{48}V(0) > \frac{2}{3} + \frac{5}{18}v_0$$

if and only if $3V(\pi^*) + 11V(0) > \frac{40}{3}v_0$. By Proposition 1, we have $V(\pi^*) = \frac{8}{5}V(0)$, so this condition becomes $V(0) > \frac{200}{237}v_0$. ■