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 mechanisms 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 about a policy-relevant state of the world. The interest group may contribute to its preferred candidate or to an opposing candidate. Contributions that increase the likelihood of electing the opposing candidate may allow interest groups to signal good information about their preferred policy and influence the opponent's policy choice. 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 contributions aimed at influencing policy through the electoral mechanism[3] and contributions aimed at persuading winners to set policy sympathetically,[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 contributing money to influence electoral outcomes and contributing money to persuade winning candidates to set policy in line with group interests 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 (i.e., the electoral mechanism). 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 (i.e., the persuasion mechanism). 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 policy through elec-

[1] See Erikson and Palfrey (1998, 2000) and Hall (Forthcoming) 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 (sincere) ideologically motivated giving.

[4] These types of 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, Forthcoming; Grimmer and Powell, 2015; Kalla and Broockman, Forthcoming).

toral mechanisms and influencing policy through persuasion: a contribution that is beneficial with respect to one goal is detrimental with respect to the other.

We consider how the trade-off between donating to have friendly politicians elected and donating to persuade potential foes 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. In contrast, interest groups who receive negative information (*bad types*) expect that the moderate candidate will likewise receive negative information, which increases the policy costs associated with the moderate relative to the ally winning the election. This informational dynamic implies that good types are more willing to sacrifice electoral gains in order to influence the moderate's policy choice even though both types of interest groups strictly prefer the sympathetic ally candidate over the moderate. Since the electoral costs of helping the moderate are felt more sharply by 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 that helps persuade her to set favorable policy should she win the election. Meanwhile, bad types of interest groups use contributions to attempt to influence policy through the electoral mechanism by contributing to their most preferred candidate (the ally).

Our model suggests a link between the electoral and persuasion mechanisms through which contributions can affect policy: 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 contributions predicated

on persuading politicians to set favorable policy. The key predictor of persuasion-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 persuasion-oriented groups (e.g., Fouirnaies and Hall, 2014, 2015; Hall, 2014, Forthcoming; 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 contribution 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 persuasion-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 upon gaining office then contributions lose their informational value, which precludes persuasion, thereby eliminating interest group 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 donations in which persuasion-oriented and election-oriented donors each give to candidates that most closely match their preferences, we predict that contributions aimed at persuading winning candidates will be insincere. In fact, contributions are only persuasive 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 both mechanisms for policy influence—persuasion and electoral—are relevant.

The logic of electoral versus persuasion-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, Forthcoming) considers models in which the politician sells her attention rather than directly selling policy favors. Both articles 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 candidate 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, Forthcoming). 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 (Forthcoming), interest groups buy access to sympathetic policymakers who serve as intermediaries to engage in informational lobbying with 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.

Some other work highlights the trade-off between electing friends and lobbying enemies. Felli and Merlo (2007) study a citizen-candidate model in which interest groups may donate campaign funds and make ex post transfers in exchange for policy favors. In equilibrium, interest groups only donate campaign funds to their most preferred candidate and only make ex post transfers when their least-preferred candidate wins the election. Thus, interest groups either influence electoral outcomes or buy policy, but not both. The mechanism for policy influence in our model differs from Felli and Merlo (2007). We assume that interest groups cannot contract with politicians. Instead, policy influence occurs when contributions transmit policy-relevant information to politicians.

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).

Finally, 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 for 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 the world $\theta \in [0,1]$ which may affect players' preferences over policies. The common prior belief is that θ is uniform over the state space, $[0,1]$.[5]

[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. In the Supplementary Information we generalize the distribution of θ to $Beta(a,b)$ and show that our results hold for any Beta distribution with parameters $a > 0$ and $b > 0$.

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 it receives positive information, $s_G = 1$, and a bad type when it receives negative information, $s_G = 0$. 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.[6] 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.[7] 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.[8] The moderate candidate prefers to set policy as close as possible to the state of the 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

The analysis we present in text is a special case of the more general model (i.e., when $\theta \sim Beta(1,1)$). We choose to focus on the uniform case in text for clarity and ease of exposition.

[6]The results do not depend on the assumption of a fixed budget. We relax this assumption in the Supplementary Information by modeling costly donations and allowing the interest group to choose any allocation of contributions subject to a budget constraint. The results from this alternative specification are qualitatively similar to those presented in text. They are identical when the bad types budget constraint binds. If the bad types budget constraint does not bind then the conditions to support separating equilibria are less demanding.

[7]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.

[8]In the Supplementary Information we allow the ally candidate to have state-dependent preferences so that $u_A(x,\theta) = (1-\alpha)x + \alpha(x-\theta)^2$ where $\alpha \in (0,1)$. We show that our main results hold in that environment as well provided that there is sufficient preference divergence between the moderate and ally candidates (i.e., sufficiently low α). That is, the results are qualitatively similar to those presented in text so long as the ally candidate's preferences are sufficiently aligned with the group relative to the moderate.

for the interest group maps both possible signals into contribution decisions and a strategy for each candidate maps contribution strategies and signals into policies. 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 persuade the moderate candidate to choose more favorable policy. When contributions more effectively influence electoral outcomes, they also influence the moderate's policy choices should she win 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 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 $j \in \{M, A\}$.

The politician that wins the election sets policy to maximize their own payoffs. In any equilibrium, M's strategy sets policy equal to the expected state of the world while A sets policy equal to one for any set of signals and contributions. From G's perspective, M's expected policy choice if elected given contribution amount π and signal s_G 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. That is, s_G impacts $G's$ beliefs regarding what signal the moderate candidate is likely to receive should she win. This in turn affects the expected policy choice of M from G's perspective. Good types of G believe M is likely to receive a signal of 1 that will lead to more favorable policy for G should M win. Similarly, bad types believe it is more likely that M will also receive a low signal thereby inducing a lower policy choice. 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 attempting to influence policy through persuasion, while contributions to A attempt to influence policy through influencing the election. 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,

$$U(\pi, s_G) = V(\pi)\mu(\pi, s_G) + (1 - V(\pi)) = (\mu(\pi, s_G) - 1)V(\pi) + 1.$$

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

$$(\mu(\pi', s_G) - 1)V(\pi') > (\mu(0, s_G) - 1)V(0),$$

which is equivalent to

$$\frac{V(\pi')}{V(0)} < \frac{\mu(0, s_G) - 1}{\mu(\pi', s_G) - 1}. \tag{4}$$

The expression in 4 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:

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

$$\mu(\pi',0) = \frac{1}{3}\frac{3}{4} + \frac{2}{3}\frac{1}{2} = \frac{7}{12}, \tag{6}$$

$$\mu(0,1) = \frac{2}{3}\frac{1}{2} + \frac{1}{3}\frac{1}{4} = \frac{5}{12}, \text{ and} \tag{7}$$

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

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

$$\frac{V(\pi')}{V(0)} < \frac{8}{5} \tag{9}$$

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

$$\frac{V(\pi')}{V(0)} < \frac{7}{4}. \tag{10}$$

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.[9]

Informative Versus Uninformative Equilibria

We will prove that contributions influence the policy choice of M only if the electoral effect of contributions is sufficiently strong. 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 $\pi = 0$ and donate their entire budget to the ally candidate. The moderate candidate chooses $x_M(\pi, 0) = \frac{1}{3}$ and $x_M(\pi, 1) = \frac{2}{3}$ following*

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

[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 $\pi \geq \pi^*$.

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 donate their entire budget to the ally candidate and good types contribute a positive amount to the moderate by choosing* $\pi^* > 0$ *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 how interest groups balance contributions aimed at persuasion with those directed at influencing the election. 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 through persuasion and any contributions are motivated by influencing the electoral outcome. 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 of contributions on elections and policy choices. Informative contributions tend to improve policymaking but 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 negatively affect voter welfare. If the electoral effects of contributions are moderately strong, then campaign contributions tend to improve voter welfare by providing beneficial policymaking information that outweighs detrimental electoral distortions. From a social welfare perspective campaign contributions are only beneficial when they are informative, which requires that they also have a sufficiently strong impact on electoral outcomes.

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 contributions aimed at influencing policy through electoral versus persuasive mechanisms. For instance, Bonica (2014) points to three possible sources of strategic contributions. First, contributions may be ideologically sincere but more heavily allocated toward close races or to powerful incumbents. Second, donors

may have incentives to persuade 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, contributions made to persuade winning candidate policy choices 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 try to persuade winners in close elections relative to landslides. Second, persuasion-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.

Additionally, our model may generate some patterns that are observationally equivalent to some predictions from vote-buying models (e.g., Grossman and Helpman, 1994). In both models, an analyst may observe a politician changing positions on an issue as a result of contributions from the group. However, in vote buying models the contributions tempt the politician to make decisions contrary to social welfare. In contrast, contributions lead the Moderate to change positions in our model because they allow the politician to learn more about which policies are *best* for social welfare. Thus, our model shows how patterns that appear similar to vote buying may have exactly the opposite normative implications.

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Appendix

Proof of Proposition 1. We have established that if there exists π^* such that $V(\pi^*)/V(0) = \frac{8}{5}$ then the bad type of G is indifferent between $\pi = 0$ and $\pi = \pi^*$ and the good type strictly prefers π^* if π^* induces the belief that $s_G = 1$ and $\pi = 0$ induces the belief that $s_G = 0$. Thus, if such a π^* exists then there is a separating equilibrium in which the bad type chooses $\pi = 0$ and the good type chooses $\pi = \pi^*$. Clearly $V(0)/V(0) = 1 < \frac{8}{5}$. Since $V(\pi)/V(0)$ is continuous in π, if $\beta \geq \frac{8}{5}$ then there exists a π^* with $V(\pi^*)/V(0) = \frac{8}{5}$. Furthermore, since $V(\pi)/V(0)$ is increasing in π, if $\beta < \frac{8}{5}$ then $V(\pi)/V(0) < \frac{8}{5}$ for all $\pi \in [0,1]$, implying that no contribution would deter the bad type from pooling and therefore separating equilibrium exists. ■

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

$$\begin{aligned}
&\mathbb{E}[1-(x-\theta)^2] \\
&\qquad = 1 - \int_0^1 \left[v_0 \left(t \left(\frac{2}{3} - t \right)^2 + (1-t) \left(\frac{1}{3} - t \right)^2 \right) + (1-v_0)(1-t)^2 \right] dt \\
&\qquad = \frac{2}{3} + \frac{5}{18} v_0
\end{aligned} \tag{11}$$

under no contributions,

$$\mathbb{E}[1-(x-\theta)^2] = \frac{2}{3} + \frac{5}{18} V(0) \tag{12}$$

in a pooling equilibrium by a similar calculation, and

$$\begin{aligned}
&\mathbb{E}[1-(x-\theta)^2] \\
&\qquad = 1 - \int_0^1 \left[t \left(V(\pi^*) \left(t \left(\frac{3}{4} - t \right)^2 + (1-t) \left(\frac{1}{2} - t \right)^2 \right) (1 - V(\pi^*))(1-t)^2 \right) \right. \\
&\qquad\quad \left. + (1-t) \left(V(0) \left(t \left(\frac{1}{2} - t \right)^2 + (1-t) \left(\frac{1}{4} - t \right)^2 \right) (1 - V(0))(1-t)^2 \right) \right] dt \\
&\qquad = \frac{2}{3} + \frac{1}{16} V(\pi^*) + \frac{11}{48} V(0)
\end{aligned} \tag{13}$$

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 $V(0) > \frac{200}{237}v_0$. ■