Signaling with Reform: How the Threat of Corruption Prevents Informed Policymaking

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Abstract

Lobbying is a potential source of corruption but is also a valuable source of information for policymakers. We analyze a game-theoretic model that shows how the threat of corruption affects the incentives of non-corrupt politicians to enlist the help of lobbyists to make more informed decisions. Politicians face a dilemma because voters cannot always tell whether a politician allows access to lobbyists in order to solicit corruption or to seek information. Thus, a non-corrupt politician may deny access to lobbyists to signal that she is non-corrupt even though doing so impedes her ability to make good policy. This signaling may decrease the welfare of the voters depending on the value of the lost policy information relative to the value of screening out corrupt politicians.

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Political scientists are usually skeptical of blanket statements about the evils of special interest groups. Though corruption may explain some lobbying behavior (Grossman and Helpman, 2001), interest groups can also provide helpful policy information (Austen-Smith and Wright, 1992, 1994; Wright, 1996), increase the work-capacity of legislators (Hall and Deardorff, 2006), and provide a connection between the public and the policy process. In contrast, most campaign discourse focuses entirely on the potential negative effects of lobbying: it is hard to imagine a campaign emphasizing how its candidate's cozy relationship with lobbyists will make her more effective in office. In this article, we propose an explanation for this contrast: as long as the possibility for corruption exists, politicians may try to signal that they are non-corrupt, or 'sincere,' by taking a combative stance toward interest groups even when this adversely affects their ability to govern.

Specifically, we develop a game-theoretic model of electoral competition in which two candidates vie for office, committing themselves to either banning or granting interest group access should they win. Candidate choices over group access can provide valuable information to voters in terms of politician type – 'sincere' or 'corrupt.' Sincere politicians simply want to implement 'good' policies that benefit the public. Corrupt politicians, in contrast, seek to extract benefits from interest groups and are therefore susceptible to bribery or capture. Once a politician wins office an interest group, if access was granted, interacts with the winning candidate. The group can engage in two types of lobbying by either providing policy-relevant information through signaling or engaging in vote-buying through direct transfers. The type of politician in office dictates which lobbying tactic is most effective. The best case scenario from voters' perspective is to elect a honest politician that grants interest group access to allow for more informed policymaking. However, the voters are uncertain about which politicians are honest and which are corrupt and therefore use access decisions to attempt to 'screen out' corrupt candidates. This, unfortunately, comes at the cost of information as sincere politicians will often ban interest group access to attempt to communicate their sincerity to voters. Thus, ironically, sincere politicians will often maximize their chances of winning, which benefits voters, by precluding their ability to acquire policy-relevant information from lobbyists once they take office, which harms voters through the sincere politician's decreased

ability to govern effectively.

To illustrate our argument, consider a hypothetical election in which banking regulation is a central issue. During the campaign, the candidates can commit themselves to a policy which either allows or denies access to Wall Street interest groups. For instance, some candidates may indicate a need to work with the industry while others may emphasize a belief that the regulatory process is rigged in favor of moneyed interests and promise a closed-door policy toward industry lobbyists. These candidates may even support similar regulations while maintaining different positions toward interest group participation. Now suppose that some proportion of politicians seek office as a means of securing lucrative revolving-door jobs on Wall Street. These politicians will always grant access to interest groups and will ultimately act in the interests of the industry. The problem is that voters cannot tell the difference between politicians who grant access because they are corrupt and those who grant access in search of information that could help them act in the voters' best interests. Thus, sincere politicians may deny themselves the information needed to make good policy by shutting out interest groups in order to convince voters that they are not corrupt.

This article contributes to the political economy literatures on special interest politics and on electoral accountability more generally. Theories of interest group influence can be categorized into contribution-based and information-based models. In contribution-based models, groups receive political favors in return for contributing resources to politicians. This may occur as a form of exchange between politicians and interest groups as in the money-for-favors models of Persson and Tabellini (2000) or Grossman and Helpman (2001).[1] In information-based models, interest groups are influential to the extent that they transmit policy-relevant information to policymakers (Austen-Smith, 1995; Cotton, 2012; Schnakenberg, 2016; Bennedsen and E. Feldmann, 2002; Wright, 1996; Austen-Smith and Wright, 1992, 1994; Potters and Van Winden, 1990, 1992).[2] This

[1] More optimistically, contributions may lead to influence because they serve as a legislative subsidy, relaxing the time constraints of like-minded politicians and allowing them to return their attention to policy (Hall and Deardorff, 2006). We do not directly address legislative subsidy here. However, the essential components of our model are simply that multiple lobbying tactics are available, some of which are good for voters and some of which are not. Thus, a version of legislative subsidy could be included in our theory without fundamentally altering our argument.

[2] Contributions-based and information-based models are not mutually exclusive. In Austen-Smith (1995) and Cotton (2012), for instance, financial contributions inform politicians about private information held by the group.

article recognizes that both tactics are available to interest groups at any given time and analyzes how the interplay between contribution-based and information-based influence may affect policymaking.

At least two other papers juxtapose multiple lobbying tactics within a single game-theoretic model. In Wolton (2016), groups may give political contributions and also engage in grassroots lobbying. In some equilibria, contributions serve as signals of the interest group's strength at grassroots lobbying. Thus, influence through contributions is indirect: contributions cause politicians to believe they will face grassroots opposition if they choose a policy that is contrary to the group's preferred policy. In Ellis and Groll (2017), the interest groups can engage in informational lobbying or give contributions in the form of legislative subsidy. The choice of tactic depends on the prior beliefs of the policymaker as well as on the interest group's informational advantage. In contrast to both of these studies, we do not focus primarily on the interest group's choice of tactic, which in our model is a simple matter of matching the tactic to the type of politician. Instead, we focus on how the voter's uncertainty about the type of lobbying solicited by the politicians can distort policymaking by discouraging productive interactions with interest groups.

This article also relates to the recent political economy literature on over-accountability, which emphasizes the potential for perverse unintended consequences of electoral accountability mechanisms.[3] This literature shows that, when voters are uncertain about policies as well as characteristics of the candidates, electoral accountability may incentivize politicians to choose suboptimal policies in order to signal their types.[4] For instance, work on pandering shows that politicians may disregard private information that discourages adoption of popular policies in order to avoid looking incompetent (Ashworth and Shotts, 2010; Canes-Wrone, Herron and Shotts, 2001; Prat, 2005). Similar concerns may also lead to posturing, a situation in which politicians attempt to signal competence by attempting bold but ill-advised policies (Canes-Wrone, Herron and Shotts, 2001; Fox and Stephenson, 2011; Levy, 2004, 2005). Finally, politicians are incentivized to be overly persistent if voters interpret reversing course by choosing a different policy as a signal of

[3]Gersen and Stephenson (2014) provide a useful overview of the over-accountability problem in political economy.
[4]See Ashworth (2012) for a recent review of work focused on electoral accountability.

incompetence (Majumdar and Mukand, 2004; Prendergast and Stole, 1996).[5]

In all of the over-accountability models reviewed above, the unknown characteristic of the politicians is competence, usually operationalized as the politicians' ability to learn policy-relevant information. In our model, this type of competence is endogenous and is modeled as the result of interactions between interest groups and honest politicians. Instead, voters are uncertain about whether or not a politician is sincere. Sincere politicians may be reluctant to acquire competence from interest groups when doing so leads the voter to believe that the politician is corrupt and is allowing access to interest groups for personal gain.[6]

1 Access and Reform

Our model considers candidates choices between a policy which grants access to lobbyists and a "reform" policy that effectively denies access. In some cases, politicians quite literally make this choice. Barack Obama's campaign promise that lobbyists would not run his White House led to an executive order eliminating lobbyists' influence in the executive branch and banning them from serving in certain government positions.[7] Similarly, in 2016 Senator Elizabeth Warren pushed to add a "no bankers" pledge to the Democratic platform, which would keep Wall Street bankers out of regulatory jobs (Warmbrodt, 2016). This pledge is an apparent response to the perception that regulated industries had too much access to the rulemaking process.

Interpreted less literally, the "reform" position in our model may be interpreted as the pursuit

[5] Patty and Turner (2017) also highlight a similar accountability pathology in which agents disregard (their superior) policy-relevant information by exaggerating the extremity of policy-environmental conditions when facing ex post review. While they focus on general ex post review mechanisms such as judicial or executive review, their results are relevant for electoral models.

[6] Some recent work argues that voters may not benefit from competence of politicians when that competence can also be used for activities that are not productive for the voter. For instance, Buisseret and Prato (2016) use a principal-agent model with multiple agents and multiple tasks to show that increased competence may weaken electoral control for the voters. Our argument diverges from this work in that, for much of the parameter space, the voters would be better off if the sincere politicians would grant access to interest groups and acquire competence, but the politicians fail to do so because of informational problems.

[7] See Thurber (2011) for an overview of these reforms. Though many have observed that this ban was less limiting than appearances suggested because of loopholes in the Lobbying Disclosure Act, these rules are generally agreed to have reduced access of lobbyists to the executive branch. Leech's (2013) interviews with Washington lobbyists include several discussions of this point. For instance, the President of the American League of Lobbyists (ALL), a trade association for the lobbying industry, laments that these rules made it more difficult for qualified individuals to hold important posts (Leech, 2013, Chapter 1).

of a populist, outsider-style campaign that emphasizes the candidate's distaste or disregard for lobbyists in contrast to politics as usual, which presumably takes place at the behest of lobbyists and donors. Such pronouncements raise the costs to that politician of taking meetings with lobbyists while in office, and therefore may be interpreted by voters as implicit commitments to reduce lobbyists' access. Furthermore, when policy relevant to a particular industry is at stake, a candidate may take such a strong stand against that industry that cooperation with industry lobbyists is unlikely. For instance, a candidate who builds his or her electoral identity around taking on big banks is an unlikely target of lobbyists from the banking industries. Notably, two candidates advocating the same policy on industry regulation could take on very different styles with respect to interactions with industry representatives. Our broader point is that a number of decisions made by candidates during a campaign serve as implicit or explicit commitments to either limit or preserve potential interactions with interest groups.

In the next section we present the electoral model we use to develop our argument. Then we turn to analysis of interest group and policymaking interactions. Following that we analyze how those interactions, combined with voters' voting strategies, structure the incentives for candidates to institute reform by banning interest group access. Once we characterize the equilibria to the game, we analyze voter welfare conditional on the type of equilibrium. We also discuss how the results speak to voters' ability to commit to behavioral strategies to attempt to improve their welfare, and extend the model to explore the conditions under which the interest group may benefit from public policy banning the potential for vote-buying bribery. The final section concludes. All formal proofs can be found in the appendix.

2 The model

We model a four player game between two candidates (A and B), a representative voter V, and an interest group G. Candidates are either sincere or corrupt. Voters prefer sincere candidates but do not know the type of any particular candidate. During the campaign, the candidates commit

to either allow or deny access to the interest group.[8] Once the winning candidate takes office, he decides whether to enact a new policy. If the interest group has access to the politician, it may attempt to influence this choice either by paying a bribe or by engaging in informational lobbying.

2.1 Sequence of play

The sequence of play is as follows. First, Nature draws each candidate's type $\tau_i \in \{S, C\}$. The prior probability that each candidate is sincere is $\pi \equiv \Pr[\tau_i = S]$. Nature also draws a state of the world $\theta \in \{0, 1\}$ that determines which policy will be best for the voter. For instance, if the policy is a banking regulation, θ may represent information on how the new regulation will affect lending practices. The voter prefers the regulation to pass if it will not severely limit access to credit but prefers the regulation to fail if it would make it too difficult for consumers to borrow money. Prior beliefs are that $\Pr[\theta = 0] = q > \frac{1}{2}$. The value of θ is private information to the interest group, which specializes in the policy area at hand. Next, both politicians publicly announce whether they will grant access to special interests should they win the election. This choice is denoted by $a \in \{0, 1\}$ where $a = 0$ represents no interest group access and $a = 1$ represents access being granted. Following candidate access announcements a representative voter elects candidate A or candidate B, $v \in \{A, B\}$.

If the winning candidate did not grant access to the interest group, that candidate will simply choose a policy $x \in \{0, 1\}$ to implement. If the winning candidate does grant access, lobbying occurs before a policy is chosen. In the lobbying stage, the interest group learns the candidates type and then chooses between two different lobbying tactics. The interest group can pay a bribe ($b = 1$) or engage in substantive lobbying ($m = 1$). If it chooses to do neither, or is denied access

[8] Our assumption that candidates can commit to access decisions during the campaign stage is in line with many existing electoral models (see e.g., Calvert, 1985; Downs, 1957; Hotelling, 1929; Wittman, 1983). In many of these models candidates are able to commit to platforms, while in our model candidates commit to interest group access strategies, which, in equilibrium, may affect policy choice. There is considerable empirical support that politicians generally do follow through on, or feel constrained by, their campaign promises lest they face electoral punishment from voters. For examples across different political environments see, for example, Claibourn (2011); Fishel (1985); Krukones (1984); Pétry and Collette (2009); Sulkin (2009, 2011); Tomz and Van Houweling (2012*a*,*b*). In section B.1 of the online appendix we briefly discuss empirical literature supporting this assumption as a reasonable approximation of real elections. In addition, in section B.2 we analyze a model without commitment and show that our main substantive result – the threat of corruption can lead sincere politicians to ban access in order to signal type even though it harms their ability to govern effectively – is robust to that alternative specification.

by the winning politician, then $b = 0$ and $m = 0$. The bribe may be interpreted as a literal bribe, an implied revolving door job offer, or anything else that materially benefits the politician but does not aid in policymaking. Substantive lobbying is interpreted as an attempt to persuade the politician that its preferred policy is in the best interests of the voter by mobilizing members, writing letters, conducting research, or writing briefs. Once the interest group's lobbying choice is made, the politician updates her beliefs about θ and chooses a policy $x \in \{0,1\}$.

2.2 Preferences and equilibrium

The preferences of the voter are represented by the utility function

$$u_V(x,\theta) = -|x-\theta|. \tag{1}$$

That is, the voter is better off when the chosen policy matches the state of the world. In contrast, the interest group's policy preferences are independent of the state: the interest group always prefers $x = 1$ whether or not that policy is good for the voter. Furthermore, the interest group pays a cost for both lobbying tactics. The interest group's preferences are represented by the utility function,

$$u_G(x,\theta,m,b) = \begin{cases} x - \alpha_1 m - \kappa b & \text{if } \theta = 1 \\ x - \alpha_0 m - \kappa b & \text{if } \theta = 0, \end{cases} \tag{2}$$

where $0 < \alpha_1 < 1 < \alpha_0$ and $\kappa \in (0,1)$.[9] Equation 2 also illustrates a key difference between substantive lobbying and bribes: substantive lobbying is less costly when the interest group's preferred policy is better for the voter (as represented by our restrictions on α_1 and α_0). The candidates' preferences depend on their types. Our assumptions about candidate preferences are designed to make the contrast between types as stark as possible: sincere types only want to choose the policy that is best for the voter and corrupt types only want to solicit contributions in exchange for policy.

[9] We could have modeled continuous informational lobbying (i.e., $m \geq 0$) and then all the results follow with the alternative assumption that lobbying in unfavorable states is simply relatively more costly than lobbying in favorable ones (i.e., $\alpha_0 > \alpha_1$). In section B.3 of the online appendix we provide analysis to illustrate that our results are robust to this alternative form of state-dependent lobbying costs.

Candidates' preferences are represented by the utility function,[10]

$$u_i(\theta, x, b) = \begin{cases} -|x-\theta| & \text{if } \tau_i = S \\ bx-(1-b)x & \text{if } \tau_i = C. \end{cases} \tag{3}$$

We analyze symmetric pure strategy perfect Bayesian equilibria in weakly undominated strategies, which requires that all players are maximizing their payoffs given other players' strategies, and beliefs are consistent with Bayes' rule where applicable.[11] Additionally, we focus on equilibria that satisfy the Intuitive Criterion (Cho and Kreps, 1987). We will refer to equilibria that meet the above requirements as simply 'equilibrium' or 'equilibria.'

3 Interest group access and informed policymaking

In this section we analyze the policymaking game between the interest group and winning politician. The winning candidate's policy choice depends on whether interest group access was granted during the electoral stage and on the group's lobbying strategy. The group's lobbying strategy, in turn, depends on the policy that a given type of politician will choose in response.

First, note that any time interest group access was banned all candidates will set $x = 0$. Corrupt politicians choose $x = 0$ because they only respond to bribes and absent that have no incentive to choose $x = 1$ instead. Sincere politicians are not influenced by potential bribes, but they can be influenced through informational lobbying. Since the interest group cannot engage in lobbying sincere politicians do not learn anything new about θ. In response, they simply set policy in accordance with their prior information, which suggests it is more likely that $x = 0$ is the correct choice. Thus, any time interest group access is banned policy outcomes do not vary since $x = 0$

[10] For the sake of simplicity, we model a very stark contrast between sincere and corrupt types of politicians: sincere politicians care only about matching the policy to the state and corrupt politicians care only about opportunities for exchange with interest groups. The key assumption needed to support our argument is less restrictive. If candidates' preferences vary by type enough that types respond differently to each style of lobbying then candidates are incentivized to signal to voters that they are more sincere.

[11] In section A.1 of the online appendix we show that our results are robust to allowing asymmetric probabilities of corruption and allowing candidates to play asymmetric strategies.

regardless of which politician won office.[12] This further implies that with probability $1-q$ the wrong policy, from the voter's and sincere candidate's perspective, will be implemented.

Policy choices do vary when the interest group has the opportunity to engage in bribery or informational lobbying. Consider the case of a corrupt candidate who granted interest group access and won office. He is solely motivated by rent-seeking and therefore will choose the interest group's preferred policy, $x = 1$, only if he receives a bribe from the group. It is strictly dominant for corrupt politicians to set $x = 0$ any time $b = 0$ and $x = 1$ when $b = 1$. The interest group understands corrupt politicians' incentives and therefore also knows that a bribe will lead to its most preferred policy, $x = 1$, being implemented and that any lobbying expenditure ($m = 1$) is a waste of resources since corrupt politicians do not respond to that form of influence. In equilibrium, the interest group prefers to follow this strategy and thus when it learns that a corrupt candidate has won office it pays the bribe. This strategy is optimal regardless of the value of θ.

In contrast to corrupt candidates, sincere candidates' policy choices potentially respond to lobbying, but not bribery. This implies that the interest group has no incentive to engage in bribery with sincere politicians. They do not respond to b, and therefore this would generate a net loss from the interest group's perspective since it is costly and garners no influence. If the interest group chooses the same lobbying expenditure regardless of θ (either $m(\theta) = 0$ or $m(\theta) = 1, \forall\theta$) then the politician learns nothing new about the state of the world. In this case he follows his prior information just as in the case of banning group access. This implies that any time the interest group pools on one lobbying message sincere politicians choose $x = 0$ based on their prior information.

However, the interest group can instead reveal θ to the politician by separating with its lobbying choices so that $m(\theta) = \theta$. In response, sincere politicians match policy to the state ($x(m) = m(\theta) = \theta$). This is clearly optimal from the politician's perspective given his payoffs: he can ensure zero policy loss by following the signal provided by the interest group's lobbying choice. Any time $\theta = 1$ the interest group can induce the politician to set its most preferred policy, $x = 1$, by

[12] We show below that sincere politicians are the only ones that choose to ban access on the equilibrium path.

utilizing informational lobbying to reveal the state. The group's payoff for spending $m = 1$ on lobbying, which induces $x = 1$, is $1 - \alpha_1 > 0$. If it were to instead forego lobbying so that $m = 0$ the politician chooses $x = 0$ and the group's payoff is simply zero. Therefore, if the interest group observes $\theta = 1$ then it strictly prefers to engage in lobbying to induce its most preferred policy. Of course, in order to support this lobbying strategy it must also be the case that when the interest group observes $\theta = 0$ it prefers $m = 0$ to acting as if it observed $\theta = 1$ by lobbying ($m = 1$). To see why this lobbying behavior can be supported in equilibrium, recall that it is more costly to lobby when the group learns the state of the world is unfavorable to their preferred policy (i.e., $\theta = 0$). If the group chooses $m = 0$ following observation of $\theta = 0$ the politician will set $x = 0$ and the group simply receives zero. If the group instead signals $m = 1$ the politician will set $x = 1$ but the group will then receive a negative payoff of $1 - \alpha_0 < 0$ since the state is unfavorable to group interests. Upon observing $\theta = 0$ the interest group strictly prefers $m = 0$ while when $\theta = 1$ it strictly prefers $m = 1$. Thus, we have the conditions necessary to support this separating lobbying behavior in equilibrium. Finally, the interest group prefers this separating lobbying strategy to pooling on either signal when a sincere candidate wins office since in the former case its most preferred policy, $x = 1$, will be implemented in equilibrium whereas the pooling lobbying strategy precludes $x = 1$ from ever being implemented in equilibrium.

The analysis above yields a unique equilibrium to the stage of the game involving the interest group and winning candidate, which is formalized in the following proposition.

Proposition 1. *The unique equilibrium to the interest group–politician policymaking stage consists of the following collection of strategies when access was granted.*

- *The interest group always bribes corrupt politicians, $b = 1$, and chooses to lobby ($m = 1$) sincere politicians in favorable states ($\theta = 1$) and forego lobbying ($m = 0$) in unfavorable states ($\theta = 0$).*

- *Corrupt politicians implement the interest group's preferred policy, $x = 1$, only if $b = 1$ and implement $x = 0$ otherwise.*

- *Sincere politicians implement the interest group's preferred policy, $x = 1$, only if $m = 1$ and implement $x = 0$ otherwise.*

To summarize Proposition 1, policy choices only vary when access was granted by the winning candidate. If access was banned then all politicians implement $x = 0$. However, if access was granted then it depends on both the type of politician that won office and, conditional on politician type, whether the state of the world is favorable from the interest group's perspective. Corrupt politicians are bribed by the group and always implement its most-preferred policy, $x = 1$. This is a case where information plays no role in policymaking, only rent-seeking and corruption do. In contrast, sincere politicians are able to implement policy to match the state. In this case policymaking is well-informed due to the interest group's lobbying of sincere politicians. In the next section we characterize when each type of policymaking occurs in equilibrium.

4 Signaling with reform

In this section we characterize candidate access decisions, which are structured in part by the voter's equilibrium voting behavior. There are two types of (pure strategy) equilibria presented below: (1) *reform equilibrium* and (2) *access equilibrium*. A reform equilibrium is a separating equilibrium in which different types of candidates differ in their access decisions. Sincere candidates always institute reform by announcing they will ban interest group access should they win the election. Corrupt candidates always announce that they will grant interest group access. Voters are able to infer sincerity in this case and can screen out corrupt politicians, but sincere candidates sacrifice policy-relevant information by banning group participation. An access equilibrium is a pooling equilibrium in which both types of candidate grant interest group access and forego reform. In this case the voter cannot infer politician types, but *if* a sincere candidate wins the election he is able to make better informed policy choices. Therein lies the fundamental trade-off at the heart of this article: improved screening for corruption comes at the cost of informed policymaking.

Equilibrium voting behavior. The voter attempts to elect sincere over corrupt candidates. In a reform equilibrium she can perfectly infer politician types. If both candidates institute reform and

ban group access then she is indifferent since both are sincere and $x = 0$ is implemented regardless of who she elects. If both candidates grant access then she knows that both are corrupt and is again indifferent since $x = 1$ will ultimately be implemented by either. Finally, in the case in which one candidate is sincere and bans access and one is corrupt and grants access she votes for the sincere politician that will implement $x = 0$ over the corrupt candidate that will implement $x = 1$. Since $\theta = 0$ is ex ante more likely this choice yields higher expected utility than electing a corrupt candidate that has granted group access (since $q > 1/2$).

In an access equilibrium the voter cannot infer politician types and retains her prior belief that either candidate is equally likely to be sincere (or corrupt). In that case the voter can do no better than voting for either candidate with equal probability. She can expect to lose nothing on policy with probability π since in that case the politician is sincere, the interest group reveals θ, and policy is implemented to match the state. In contrast, with probability $1 - \pi$ the winning politician is corrupt and $x = 1$ is implemented for sure, leading to an expected policy loss proportional to the probability that $\theta = 0$.

This again highlights the fundamental trade-off we are interested in. In a reform equilibrium the voter is able to perfectly infer whether a candidate is corrupt and elect sincere politicians (if they are available). However, in order to identify themselves as sincere, politicians give up their ability to acquire policy-relevant information from the interest group since they had to ban access to credibly signal their type. In the access equilibrium sincere candidates are well-informed when they win office and implement policy perfectly in line with voter preferences. However, the voter is unable to differentiate candidate types and therefore risks election of a corrupt politician, which leads to policy losses proportional to the probability that $\theta = 0$.

Equilibrium interest group access. To illuminate the issues at stake when considering interest group access decisions, consider again the case of banking regulation discussed in the introduction. For corrupt types of politicians in this model, public office is seen as an avenue for revolving door jobs in the banking industry and therefore this type of politician will always grant access to banking groups and will always choose policy that is favorable to those groups. For sincere types, there is a

trade-off involved. Granting access to banking groups (i.e., enlisting their advice in crafting policy) may carry significant informational benefits. In fact, the informational advantage of those in the banking industry over lawmakers is seen as an important reason for these groups to be included in the regulatory process (e.g., Omarova, 2010). On the other hand, agreeing to consult with interest groups may lead voters to believe that the politician is a corrupt type. This may motivate campaign behavior such as the "no bankers" pledge to drive bankers out of the lawmaking process. When will sincere candidates eschew the potential to acquire policy-relevant information by banning interest group access in pursuit of revealing that they are not corrupt to win office? Conversely, when do sincere candidates prefer allowing access and keeping the avenue for information acquisition even if it sends a bad signal to voters?

To begin answering these questions first consider the incentives for corrupt candidates to commit to interest group access during the campaign. Since they only respond to bribes corrupt candidates' maximum payoff for banning group access is zero when they preclude the group's ability to pay bribes. In contrast, if corrupt candidates always grant interest group access then, depending on the type and strategy of their opponent, there is a positive probability that they will win office and receive a bribe from the group. Thus, it is always beneficial for corrupt candidates to always grant interest group access.

If sincere politicians always institute reform and ban access then corrupt politicians will lose the election with certainty should they face off against a sincere candidate. In that case the corrupt politician's expected payoff for continuing to grant access is given by,

$$\begin{aligned} EU_i(a_i^* = 1 | \tau_i = C, a_{-i}^*, b^*, x^*) &= \pi(0) + (1-\pi)\left(\frac{1}{2}(b^*) + \frac{1}{2}(0)\right), \\ &= \frac{1}{2}(1-\pi)b^*. \end{aligned}$$

With probability π the corrupt candidate faces a sincere candidate and loses the election, garnering zero payoff in the process. If instead he faces another corrupt politician then the voter elects either with equal probability and in the event he wins he will receive a bribe, $b = 1$, from the interest group

and implement $x = 1$. Further, notice that $\frac{1}{2}(1-\pi)b^* > 0$ since $b^* = 1$ and $\pi < 1$. If the corrupt politician were to instead deviate by banning access, $a = 0$, then, holding equilibrium strategies and beliefs of the other players fixed, he would win the election for sure should he face another corrupt type but since he denied access cannot receive a bribe, and if he faces a sincere candidate the voter will elect either with equal probability but again if he should win cannot receive a bribe since group access was banned. Therefore, he receives zero payoff from deviating to $a = 0$. Since $\frac{1}{2}(1-\pi)b^* > 0$ the corrupt candidate strictly prefers to continue granting interest group access in the environment of a reform equilibrium.

Sincere candidates have different incentives since they pursue policy rather than bribes. Consider the reform equilibrium environment in which candidates separate with their access decisions. Corrupt candidates grant group access while sincere candidates ban access. A sincere candidate i's expected payoff for banning access in this environment is given by,

$$\begin{aligned} EU_i(a_i^* = 0 | \tau_i = S, a_{-i}^*, m^*, x^*) &= \pi(-(1-q)) + (1-\pi)(-(1-q)), \\ &= -(1-q). \end{aligned}$$

The implemented policy outcome when two sincere candidates compete against one another is the same: either will implement $x = 0$ without any further information provided from the interest group. This yields an expected policy loss of $-(1-q)$ (i.e., the probability that $x \neq \theta$ given $x = 0$), which occurs with probability π.[13] If instead he faces a corrupt candidate he wins the election for sure since his access choice credibly revealed his type, but again he does not gain any additional information since the interest group is banned from lobbying. Again, the sincere candidate implements $x = 0$ which yields an expected payoff of $-(1-q)$. Overall, then, a sincere candidate's expected payoff for banning interest group access as in the reform equilibrium yields an expected payoff of $-(1-q)$.

If instead sincere candidate i chose to deviate from the posited strategy and grant interest group

[13] Because sincere politicians only care about policy they also gain and lose utility based on the policy chosen by their opponent following an electoral loss.

access his expected payoff would be,

$$\begin{aligned} EU_i(a_i = 1 | \tau_i = S, a^*_{-i}, m^*, x^*) &= \pi(-(1-q)) + (1-\pi)\left(\frac{1}{2}(0) + \frac{1}{2}(-q)\right), \\ &= -\pi(1-q) - \frac{1}{2}(1-\pi)q. \end{aligned}$$

In this case the politician loses the election for sure if he runs against another sincere candidate since now his access choice signals to the voter that he is a corrupt type. In this case the politician expects to lose $-(1-q)$ since that is the likelihood that the uninformed sincere candidate that won office will fail to match policy to the state. If he faces a corrupt candidate then the voter elects either candidate with equal probability since she believes both are corrupt. If the sincere candidate wins then he is able to perfectly match policy to the state since he granted access and the interest group will reveal θ through informational lobbying. If he loses then the corrupt winner will implement $x = 1$ which, in expectation, will fail to match the state with probability q.

For a sincere politician to stick with the equilibrium access strategy of banning group access, given that corrupt politicians will always grant access, incentive compatibility requires that,

$$-(1-q) \geq -\pi(1-q) - \frac{1}{2}(1-\pi)q.$$

This inequality is satisfied for all $\pi \in (0,1)$ when $q \geq \frac{2}{3}$. Combined with the fact that corrupt politicians always prefer to grant interest group access in this environment, this yields the necessary and sufficient condition to support a reform equilibrium. Define this condition as $q^{\text{Reform}}(\pi) \equiv \frac{2}{3}$. So long as $q \geq q^{\text{Reform}}(\pi)$ — i.e., the ex ante probability that $\theta = 0$ is sufficiently high — there is a separating equilibrium in which different politician types make different access commitments, the voter elects the sincere politician if one is available and votes for either candidate with equal likelihood when both are of the same type, and interest group and policymaking behavior are as described in Proposition 1.

Now consider the access environment in which all politicians commit to granting interest group

access. The upside to this situation is that sincere politicians, if they win, are able to make fully informed policy. The downside is that the voter cannot differentiate candidates and may elect a corrupt politician in light of that uncertainty. Corrupt candidates have even stronger incentives to stick with granting interest group access in this case since they will no longer lose with certainty when facing a sincere politician.

Sincere candidates would prefer to grant interest group access for its informational value conditional on winning the election. However, doing so precludes the sincere candidate from revealing he is sincere and therefore he risks losing the election to a corrupt politician. A sincere candidate i's expected payoff from continuing to grant group access, given that corrupt politicians do also, is

$$\begin{aligned} EU_i(a_i^* = 1 | \tau_i = S, a_{-i}^*, m^*, x^*) &= \pi\left(\frac{1}{2}(0) + \frac{1}{2}(0)\right) + (1-\pi)\left(\frac{1}{2}(0) + \frac{1}{2}(-q)\right), \\ &= -\frac{1}{2}(1-\pi)q. \end{aligned}$$

If he faces another sincere politician (which occurs with probability π) then regardless of who wins policy is implemented to match the state and he receives zero. If he runs against a corrupt politician (which occurs with probability $1-\pi$) then he runs the risk of losing and having $x = 1$ implemented for sure, which will not match the state with probability q, yielding his expected policy losses in that case. If a sincere candidate instead deviates to banning interest group access he foregoes the opportunity to make informed policy should he win, but ensures that he will win the election with certainty since the voter correctly believes he is sincere.[14] This deviation yields the following expected payoff,

$$\begin{aligned} EU_i(a_i = 0 | \tau_i = S, a_{-i}^*, m^*, x^*) &= \pi(-(1-q)) + (1-\pi)(-(1-q)), \\ &= -(1-q). \end{aligned}$$

Regardless of what type of politician his opponent is, the sincere candidate will win the election

[14] This is the only off-path voter belief that survives Intuitive Criterion refinement.

but by virtue of banning group access learn nothing about θ. Thus, he will follow his prior information, implement $x = 0$, and policy will not match the state with probability $1 - q$, yielding his expected policy loss for deviation. To support the posited sincere candidate behavior in the access equilibrium incentive compatibility requires that,

$$-\frac{1}{2}(1-\pi)q \geq -(1-q),$$

which is satisfied for all $\pi \in (0,1)$ so long as $q \in \left(\frac{1}{2}, \frac{2}{3-\pi}\right]$. Since corrupt candidates prefer granting interest group access when sincere politicians also do so, this incentive compatibility condition is necessary and sufficient to support an access equilibrium. Define this condition as $q^{\text{Access}}(\pi) \equiv \frac{2}{3-\pi}$. As long as $q \leq q^{\text{Access}}(\pi)$ — the ex ante probability that $\theta = 0$ is sufficiently low — there is a pooling equilibrium in which all candidates commit to interest group access, the voter elects any two candidates with equal probability, and the interest group and winning candidate behave as described in Proposition 1.

These two sets of conditions on q — to support the separating reform and the pooling access equilibria — are not distinct. In fact for any $\pi \in (0,1)$ there exists a region of the parameter space in which both reform and access equilibria are possible. Specifically, for any $q \in \left[q^{\text{Reform}}(\pi), q^{\text{Access}}(\pi)\right]$ both types of equilibria are possible. The following result captures all of these equilibrium conditions.

Proposition 2. *Define $q^{Reform}(\pi) \equiv \frac{2}{3}$ and $q^{Access}(\pi) \equiv \frac{2}{3-\pi}$. Then for all $\pi \in (0,1)$ we have the following equilibria conditional on the magnitude of q.*

- *If $q^{Reform}(\pi) \leq q^{Access}(\pi) < q$ then the separating reform equilibrium is unique.*
- *If $q < q^{Reform}(\pi) \leq q^{Access}(\pi)$ then the pooling access equilibrium is unique.*
- *If $q^{Reform}(\pi) < q < q^{Access}(\pi)$ then both the separating reform and the pooling access equilibria can be supported.*

The range of q in which reform and access equilibria both exist also varies in the likelihood

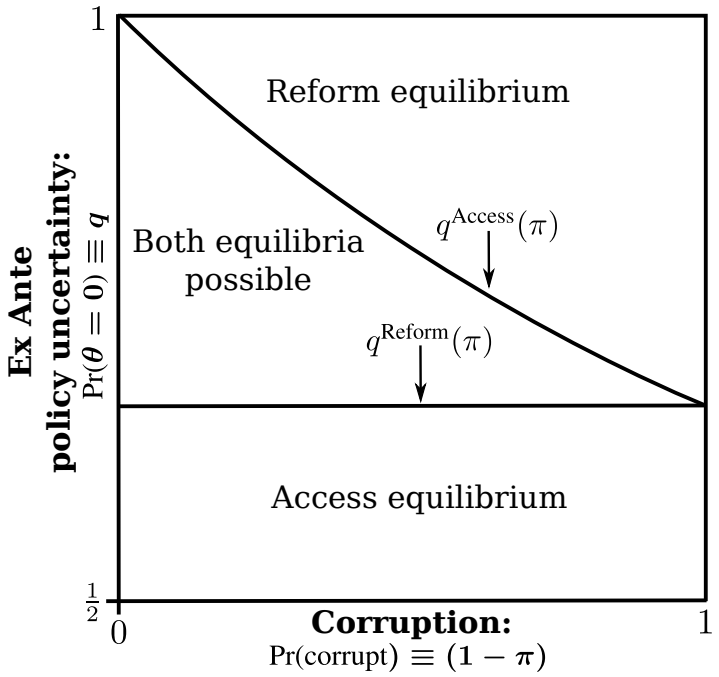

Figure 1: Equilibrium regions based on π and q.

Note: The y-axis denotes q, the ex ante probability that $\theta = 0$. From the politicians' ex ante perspective, as q decreases there is more policy uncertainty and as q increases there is less policy uncertainty. The x-axis denotes the probability a given candidate is corrupt, $(1-\pi)$. When π is high there is a low likelihood of corruption and when π is low there is a high likelihood of corruption. The likelihood of corruption is *increasing* left-to-right. Additionally, $q^{\text{Access}}(\pi) \equiv \frac{2}{3-\pi}$ and $q^{\text{Reform}}(\pi) \equiv \frac{2}{3}$.

of corruption, π. Specifically, the upper bound of the region, $q^{\text{Access}}(\pi)$, is increasing in π. This implies that the range in which both equilibria exist, $[q^{\text{Reform}}(\pi), q^{\text{Access}}(\pi)]$, is also increasing in π. As the threat of corruption in the political system decreases (high π) both equilibria exist for a wider range of q. Conversely, if the political system is replete with corruption (low π) then which type of equilibrium can be supported is based simply on the likelihood that $\theta = 0$, q. These comparative statics yield the following corollary.

Corollary 1. *As $\pi \to 0$ corruption is almost certain and we have either a reform equilibrium or an access equilibrium depending on whether $q \gtrless \frac{2}{3}$. As $\pi \to 1$ there is little chance of corruption and an access equilibrium always exists, whereas a reform equilibrium only exists if $q \geq \frac{2}{3}$.*

As corruption becomes increasingly likely there is little overlap in the regions that support

both reform and access equilibria. That is, when it is almost certain that politicians are corrupt either there is a reform equilibrium, if q is sufficiently high, or an access equilibrium, if q is sufficiently low. Substantively, this implies that when information is highly valuable all politicians prefer to grant interest group access while when information is not particularly valuable, sincere politicians prefer to identify themselves as sincere by instituting reform and banning group access. Conversely, as corruption becomes highly unlikely there is almost always an access equilibrium while the conditions to support a reform equilibrium remain unchanged. As it becomes more likely that all politicians are sincere there are weaker incentives to signal sincerity through reform. All players, politicians and the voter, prefer access to be granted for informational purposes conditional on there being no corruption in the political system. Figure 1 displays the results from Proposition 2 and Corollary 1 graphically.

5 Voter welfare: when is reform better than access?

Our analysis so far suggests that, for many situations, there are two plausible equilibria with very different behavior by candidates. In one equilibrium, all candidates grant access to interest groups, so sincere politicians will have good information if they are elected but voters cannot distinguish sincere politicians from corrupt ones. In another equilibrium, sincere politicians signal their types to voters by denying access to interest groups, so voters know whether or not candidates are sincere but the sincere politicians lack valuable information that they could have obtained from interest groups. Multiple equilibria are often seen as a disadvantage from a positive perspective since they do not allow point predictions. However, from a normative perspective multiple equilibria can be seen as an opportunity since the model may be used to think about how to select among multiple plausible outcomes in order to maximize voter welfare. Thus, we turn our attention to a key normative question: under what circumstances will one type of equilibrium improve voter welfare relative to the other?

The welfare implications of the equilibria are not immediately obvious because both types of equilibria provide different advantages to voters. In the case of banking regulation for instance,

the voter has two interests. First, the voter may want help in distinguishing between candidates who are truly interested in which regulations most benefit consumers from those seeking lucrative jobs after holding office. In this way, the reform equilibrium is good for the voter because it perfectly sorts these types of politicians. Second, the voter is interested in the sincere type of politician's ability to make good policy once in office. For this purpose, the voter would benefit from having sincere politicians and banking industry representatives in the same room to discuss market conditions and match the right regulations to the current economic climate. In this way, the access equilibrium is good for the voter because it allows sincere types of politicians to take full advantage of industry expertise when making decisions. The welfare implications of a reform versus an access equilibrium depend on the relative weight placed on these two forces, as we further explain below.

To begin the analysis, consider the voter's ex ante welfare from the reform equilibrium:

$$W_V^{\text{Reform}}(a,x) = -(\pi^2 + 2(1-\pi)\pi)(1-q) - (1-\pi)^2 q.$$

Since the reform equilibrium is a separating equilibrium in which the voter can perfectly infer sincerity the voter's ex ante welfare simply depends on whether a sincere politician is running for office. This occurs with probability $\pi^2 + 2(1-\pi)\pi$. In this case the voter elects a sincere politician, but still expects policy to mismatch the state with probability $1-q$, since access was denied and the interest group cannot lobby and reveal θ. With probability $(1-\pi)^2$ both candidates are corrupt, in which case the winner will receive a bribe and implement $x = 1$ for sure. When this happens policy does not match the state with probability q.

In comparison, the voter's ex ante welfare in an access equilibrium is given by,

$$W_V^{\text{Access}}(a,x) = -(1-\pi)q.$$

Since the voter cannot differentiate between sincere and corrupt candidates in this environment she elects either candidate with equal probability. Any given politician is sincere with probability π,

which leads to zero policy loss since in this case a sincere politician that wins office learns θ from the interest group and sets policy accordingly. However, with probability $1-\pi$ the winning candidate will be corrupt. In this case, since access was granted, the interest group bribes the corrupt politician to implement $x = 1$, which in expectation does not match the state with probability q. Thus, the voter can expect to lose utility equal to the product of the probability a given politician is corrupt and the probability that policy will not match the state in that case.

Taken together, these two expressions imply that a reform equilibrium is preferred to an access equilbrium from the perspective of voter welfare if,

$$-(\pi^2+2\pi(1-\pi))(1-q)-(1-\pi)^2 q > -(1-\pi)q. \tag{4}$$

If inequality 4 is satisfied then the voter benefits from the reform equilibrium instead of the access equilibrium. If the inequality is reversed then the access equilibrium is preferred to the reform equilibrium. Which equilibrium is preferred depends on the relative importance of screening out corruption compared to the value of information in policymaking.

Proposition 3. *Define* $q^{Welfare}(\pi) \equiv \frac{\pi-2}{2\pi-3}$. *From the perspective of ex ante voter welfare, the reform equilibrium is preferred to the access equilibrium if* $q > q^{Welfare}(\pi)$*, otherwise the access equilibrium is welfare-preferred to the reform equilibrium. Moreover,* $\frac{d}{d\pi}\left(q^{Welfare}(\pi)\right) > 0$.

Figure 2 displays the result in Proposition 3 graphically. Which type of equilibrium most benefits the voter depends on the relationship between q and π. To see the intuition behind the result consider what q and π jointly represent from the voter's perspective. When q is sufficiently high $\left(\text{i.e., } q > q^{\text{Welfare}}(\pi)\right)$ information about the state is relatively less valuable and therefore the voter benefits from improved ability to differentiate between sincere and corrupt politicians in the election. Thus, the separating reform equilibrium is welfare-preferred. However, when q is not high enough $\left(\text{i.e., } q < q^{\text{Welfare}}(\pi)\right)$ information is relatively more valuable and the voter benefits from risking election of corrupt politicians in exchange for improved policymaking when sincere candidates take office. Moreover, $q^{\text{Welfare}}(\pi)$ is increasing in π. This implies that the value

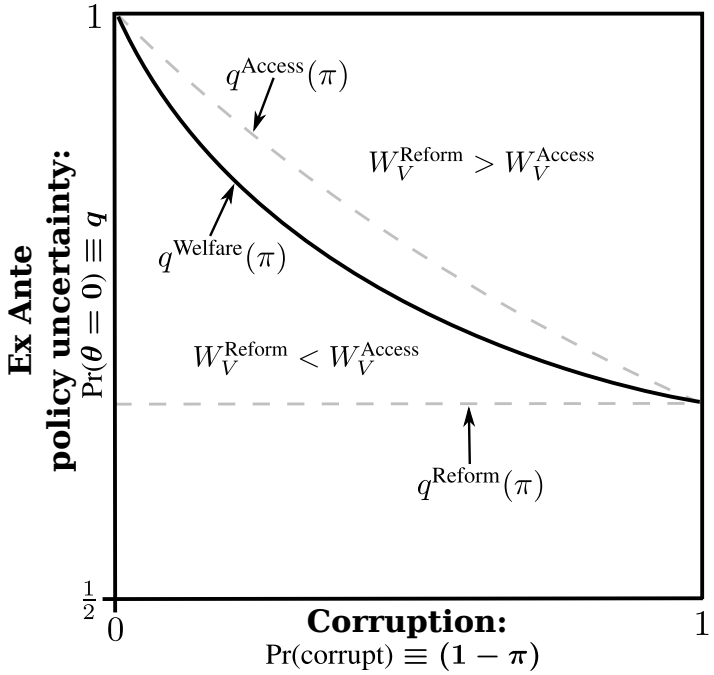

Figure 2: Voter welfare in reform versus access equilibria, conditional on q and π.

Note: The solid black line is $q^{\text{Welfare}}(\pi) \equiv \frac{\pi-2}{2\pi-3}$. If q is above the line then the voter prefers the reform equilibrium and if q is below the line the voter prefers the access equilibrium. The gray dashed lines are $q^{\text{Reform}}(\pi)$ and $q^{\text{Access}}(\pi)$, the thresholds for supporting separating and pooling equilibria as described in Figure 1. As in Figure 1, the probability a given candidate is corrupt is *increasing* left-to-right on the x-axis.

of information has to decrease as the threat of corruption increases for the benefits of improved screening to outweigh the benefits from potentially better informed policymaking.

6 Strategies for improving welfare

We now consider ways that voter and interest group welfare might be improved if some players are allowed to pre-commit to playing certain strategies. For instance, undesirable reform equilibria may be avoided if the voter simply refused to pay attention to the events of the campaign. Furthermore, we describe situations in which the interest group may prefer to unilaterally pre-commit to banning quid pro quo lobbying strategies.[15]

[15] We provide detailed analysis for interest group self-regulation in section A.2 of the online appendix.

6.1 Rational ignorance

We first consider the scenario in which, though multiple equilibria exist, the players find themselves in the reform equilibrium when the voter would prefer the access equilibrium. The problem in these cases is that, in the reform equilibrium, politicians have overpowered incentives to communicate to the voter. If the voter could pre-commit to the strategy associated with the access equilibrium then the politicians' incentives would be in line with the strategies preferred by the voter.

One way for the voter to pre-commit to the voting strategy associated with the access equilibrium is for the voter to simply not pay attention to the access decisions of the candidates. If the voter does not notice whether or not the candidates allowed access to interest groups, the voter's beliefs and voting strategy will not depend on the access decisions of the candidates. Thus, both types of candidates should grant access to the interest group and the voter would remain indifferent between the candidates as in the access equilibrium. Voters may exhibit rational ignorance in such situations.[16] This is generally in line with the observation that voters have trouble recalling campaign pronouncements of candidates and with other theoretical work showing that voters may benefit from inattentiveness (Ashworth and de Mesquita, 2014; Prato and Wolton, 2016, 2017).

The opposite situation is also possible: Though multiple equilibria exist, the players find themselves in the access equilibrium when voters would prefer the reform equilibrium. In this situation the voter cannot force the candidates to play a more desirable equilibrium by changing her own behavior. To see why consider the following. The access equilibrium is already supported by the assumption that the candidates believe that the voter would, off the path of play, select any candidate who chose to ban access. This off-path voter strategy is the same as the on-path strategy supporting the reform equilibrium. Thus, shifting from the access to the reform equilibrium is not a simple matter of the voter shifting strategies since her reform equilibrium strategy is already implicit in her access equilibrium strategy.

[16] A similar strategy would be for the voter to ignore 'flip-flopping' by candidates who banned access during the campaign and reneged following election by granting access. In that scenario the voter would induce sincere candidates to grant access even though they promised not to during the campaign. In both cases the voter induces outcomes in line with the access equilibrium.

6.2 Interest group self-regulation

Is there a scenario in which the interest group may benefit from self-regulating by committing to *not* bribing corrupt politicians? We answer this question by comparing an interest group's ex ante expected welfare from keeping its option to bribe open and committing to never bribing corrupt politicians. Whether the group benefits depends on whether the environment is conducive to a reform equilibrium or an access equilibrium.

In an access equilibrium the interest group never benefits from self-regulation. If a sincere candidate wins then the group substantively lobbies and its most-preferred policy, $x = 1$, is implemented if and only if $\theta = 1$. However, if a corrupt politician wins office and the group has committed itself to not bribing then the group incurs a net loss since in that case the corrupt politician always implements $x = 0$. Thus, when all candidates grant access the interest group cannot benefit from self-regulation since it precludes its most-preferred policy from ever being implemented when a corrupt politician wins office.

An interest group can benefit from self-regulation in reform equilibrium environments. An ex ante commitment by the group to not bribing corrupt politicians alters the subsequent access behavior by sincere candidates. While corrupt candidates still benefit from always granting access, sincere candidates now have weaker incentives to deny group access for signaling purposes. In fact, sincere candidates now prefer to grant access to the interest group as well. Thus, the interest group weighs its welfare from continuing to be able to bribe, which will sustain a reform equilibrium, against committing to no bribery, which will induce all candidates to grant access.

The group benefits from self-regulation when the probability of sincere candidates, π, is sufficiently high. The key trade-off for the group is having sincere candidates grant access, which allows them to lobby and induce implementation of their preferred policy when the state is favorable, versus precluding their ability to bribe corrupt politicians. The less likely it is that a given candidate is corrupt, the more the group benefits from self-regulation because it induces sincere candidates to grant access. Thus, so long as the probability of a candidate being corrupt is sufficiently low the group will tie its own hands so that sincere candidates will grant them access.

7 Conclusions

We have analyzed a model in which interest group influence may take two forms. If lobbying is directed toward sincere politicians then it may provide valuable policy information that benefits the voter. If lobbying is directed toward corrupt politicians then it may take the form of an economic exchange that tempts the politician away from the policy most likely to benefit the voter. The voter's problem is that she does not know whether a given politician is sincere or corrupt and therefore cannot always predict whether lobbying will be beneficial or harmful. This informational problem gives sincere politicians an incentive to signal their type by denying access to interest groups. Notably, equilibria in which candidates deny access to interest groups may exist even when the probability of corruption is extremely small. Thus, our model describes one rationale for why politicians may run campaigns on their freedom from lobbyists' influence even in cases where lobbyists' influence is primarily positive. Put another way, the substantive insights we provide in this article suggest one explanation for why politicians seem to find it beneficial to run against special interests: they benefit from signaling they are not the sort of politicians who will be corrupted by those interests and that they share voters' concerns about the corrupting influence of those interests. Furthermore, the model shows why some reform-themed campaigns for getting money out of politics may work to the detriment of voters while others may improve their welfare by helping them select sincere candidates.

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A Supporting information

A.1 Proof of results

Proof of Proposition 1. Corrupt politicians' payoffs when $b^* = 1$, are,

$$\begin{aligned} u_i(x|\tau_i = C, b^*) &= bx - (1-b)x, \\ &= x. \end{aligned}$$

$u_i(x_i^*(b^*) = 1|\tau_i = C, b^*) = 1 > u_i(x_i(b^*) = 0|\tau_i = C, b^*) = 0$ so he sets $x = 1$. In contrast, corrupt politicians' payoffs when $b = 0$ are,

$$\begin{aligned} u_i(x|\tau_i = C, b = 0) &= bx - (1-b)x, \\ &= -x. \end{aligned}$$

Clearly it is optimal to set $x_i^*(b) = 0$. Thus, corrupt politicians set $x_i^*(1) = 1$ and $x_i^*(0) = 0$.

Now consider the group's strategy when a corrupt politician wins office. Since corrupt politicians do not respond to substantive lobbying the group sets $m = 0, \forall\theta$ when a corrupt politician takes office. The group's payoff when a corrupt politician is in office is then,

$$u_G(b, m = 0|\tau_i = C, x_i^*) = x - \kappa b.$$

If $b = 1$ then $x_i^*(1) = 1$. This yields $u_G(b = 1, m = 0|\tau_i = C, x_i^*) = x - \kappa b = 1 - \kappa$, which is strictly positive since $\kappa \in (0, 1)$. In contrast, if $b = 0$ then $x_i^*(0) = 0$, yielding $u_G(b = 0, m = 0|\tau_i = C, x_i^*) = x - \kappa b = 0$. Thus, the group will always bribe corrupt politicians, $b^*(\tau_i = C) = 1, \forall\theta$.

Sincere politician's respond to substantive lobbying, but not bribery. Suppose that the interest group lobbies sincere politicians as follows: $m = 1$ if $\theta = 1$ and $m = 0$ if $\theta = 0$, revealing θ. This

implies that sincere politicians' payoffs when $m = 1$ are given by,

$$\begin{aligned} u_i(x|\tau_i = S, m = 1) &= -|x - \theta|, \\ &= -|x - 1|. \end{aligned}$$

Clearly $u_i(x_i^*(m) = 1|\tau_i = S, m = 1) = 0 > u_i(x_i^*(m) = 0|\tau_i = S, m = 1) = -1$ so he optimally sets $x_i^*(m = 1) = 1$. An analogous argument shows the optimality of $x_i^*(m = 0) = 0$.

To verify that it is optimal for the group to separate with its lobbying decisions based on θ as described above first notice that when a sincere candidate has taken office the interest group never bribes, $b^*(\tau_i = S) = 0$. This reduces the group's payoffs when a sincere politician is in office to,

$$u_G(m, b = 0|\tau_i = S, x_i^*, \theta) = \begin{cases} x_i^* - \alpha_1 m & \text{if } \theta = 1, \\ x_i^* - \alpha_0 m & \text{if } \theta = 0. \end{cases}$$

Suppose $\theta = 1$. If the group is separating and it lobbies, $m^*(\theta) = 1$, then $x_i^*(m) = 1$. This yields a payoff of $1 - \alpha_1 > 0$ compared to a payoff of 0 if it instead chose $m = 0$. Thus, the group prefers $m(\theta = 1) = 1$ given separating. Now suppose that $\theta = 0$. If the group foregoes lobbying then $m^*(\theta) = 0$ and $x_i^*(m) = 0$. This yields a payoff of 0. If the group were to deviate and instead message $m(\theta) = 1$ when $\theta = 0$ it would induce $x^*(m) = 1$ but its payoff would be $1 - \alpha_0 < 0$. Thus, the group prefers $m(\theta = 0) = 0$ given separating.

Uniqueness follows from application of the Intuitive Criterion. We must rule out a pooling equilibrium on $m = 0$ (it is already clear that there can be no pooling equilibrium on $m = 1$ since $\theta = 0$ types would always deviate). Both types of G get an equilibrium payoff of 0 in this profile. To apply the Intuitive Criterion we note two things: (1) the $\theta = 0$ type would never deviate from this equilibrium to $m = 1$ because it is dominated by the equilibrium payoff, and (2) the $\theta = 1$ type would deviate to $m = 1$ as long as it persuaded the policymaker that she was not a $\theta = 0$ type. Thus, this pooling equilibrium would fail the Intuitive Criterion. ■

Lemma 1. *The voter chooses a candidate according to the following strategy,*

$$v^*(a_A,a_B)=\begin{cases} A & \text{if } Pr(\tau_A=S|a_A,a_B)>Pr(\tau_B=S|a_A,a_B),\\ B & \text{if } Pr(\tau_A=S|a_A,a_B)<Pr(\tau_B=S|a_A,a_B),\\ \left(\frac{1}{2}A,\frac{1}{2}B\right) & \text{if } Pr(\tau_A=S|a_A,a_B)=Pr(\tau_B=S|a_A,a_B).\end{cases}$$

Proof of Lemma 1. We show two cases: (1) the voter does not want to deviate from voting for the candidate that is more likely to be sincere, and (2) the voter does not want to deviate from voting for each candidate with equal probability when she believes both are equally likely to be sincere. Denote $\hat{\pi}_i \equiv Pr[\tau_i = S|a_i]$.

Case (1). In this case the voter believes that one candidate is more likely to be sincere. Without loss of generality let candidate A be the candidate the voter believes is more likely to be sincere. This implies that $a_A \neq a_B$ since if $a_A = a_B$ the voter would have learned nothing about candidate types. Moreover, since $a_i \in \{0,1\}$ and we have restricted attention to pure strategies, the voter must believe that the candidate more likely to be sincere is sincere with probability one while the other candidate is corrupt with probability one. Thus, in this case $Pr(\tau_A = S|a_A,a_B) = 1$ and $Pr(\tau_B = C|a_A,a_B) = 0$. Suppose first that candidate A chose $a_A = 0$ and candidate B chose $a_B = 1$. The voter's expected payoff for electing A over B is,

$$\begin{aligned} EU_V(v=A|\hat{\pi}_A,x_A^*(m),m^*(\tau,\theta)) &= -(q|0-0|+(1-q)|0-1|),\\ &= -(1-q).\end{aligned}$$

In contrast, her expected payoff for electing B over A is,

$$\begin{aligned} EU_V(v=B|\hat{\pi}_B,x_B^*(m),m^*(\tau,\theta)) &= -|x-\theta|,\\ &= -(q|1-0|+(1-q)|1-1|),\\ &= -q.\end{aligned}$$

Thus, it is incentive compatible to elect candidate A if,

$$-(1-q) \geq -q,$$

which is satisfied since $q > \frac{1}{2}$. Now suppose that $a_A = 1$ and $a_B = 0$. In this case the voter's expected payoff for electing A is,

$$\begin{aligned} EU_V(v = A|\hat{\pi}_A, x_A^*(m), m^*(\tau,\theta)) &= -|\theta - \theta|, \\ &= 0. \end{aligned}$$

Her expected payoff for electing B is,

$$\begin{aligned} EU_V(v = B|\hat{\pi}_B, x_B^*(m), m^*(\tau,\theta)) &= -(q|0-0| + (1-q)|0-1|), \\ &= -(1-q). \end{aligned}$$

The voter elects A if, $0 \geq -(1-q)$, which holds for all $q \in \left(\frac{1}{2}, 1\right]$. Thus, regardless of the sincere candidate's access announcement the voter never wants to deviate from electing him.

Case (2). In this case the voter believes both candidates are equally likely to be sincere. This implies $a_A = a_B$. Since the probability of a given candidate being sincere is independent across candidates both candidate are believed to be sincere with probability π. This implies the voter's expected payoff for electing either candidate is equal. Thus, the voter has no incentive to deviate from choosing A or B with equal probability. ■

Lemma 2. *Corrupt politicians always grant access in weakly undominated strategies.*

Proof of Lemma 2. When corrupt politicians grant access there is a positive probability that he will win office, the group will pay the bribe, he will implement $x = 1$, and his payoff will be strictly positive. Suppose that the corrupt politician chooses to ban access. In that case we know $b = 0$ if he wins and he will implement $x = 0$. If he loses his payoff is always zero. Thus, his maximum payoff for banning access is zero, whereas, his maximum payoff for granting access is positive. ■

Proof of Proposition 2. Lemma 2 shows that corrupt candidates always prefer to grant access. Thus, we only need to characterize the conditions in which sincere candidates prefer to separate by banning group access and pool by granting access. Consider the first case in which sincere candidates ban access, $a_i^* = 0$. His expected payoff in that case is given by,

$$\begin{aligned} EU_i(a_i^* = 0 | \tau_i = S, a_{-i}) &= \pi(\frac{1}{2}(q(-|0-0|) + (1-q)(-|0-1|)) \\ &\quad + \frac{1}{2}(q(-|0-0|) + (1-q)(-|0-1|))) \\ &\quad + (1-\pi)(q(-|0-0|) + (1-q)(-|0-1|)) \\ &= -(1-q) \end{aligned}$$

In contrast, consider a sincere candidate's expected payoff that deviates to $a = 1$,

$$\begin{aligned} EU_i(a_i = 1 | \tau_i = S, a_{-i}) &= \pi\,(q(-|0-0|) + (1-q)(-|0-1|)) + (1-\pi)(\frac{1}{2}(q(-|0-0|) \\ &\quad + (1-q)(-|1-1|)) + \frac{1}{2}(q(-|1-0|) + (1-q)(-|1-1|))) \\ &= -\pi(1-q) - \frac{1}{2}q(1-\pi). \end{aligned}$$

Given that corrupt candidates choose $a = 1$ and sincere candidates play symmetric strategies, a sincere candidate will ban access ($a = 0$) if,

$$-(1-q) \geq -\pi(1-q) - \frac{1}{2}q(1-\pi),$$

which holds for all $q \in [\frac{2}{3}, 1]$, $\pi \in (0,1)$. Let $q^{\text{Reform}}(\pi) \equiv \frac{2}{3}$. $q \geq q^{\text{Reform}}(\pi)$ is necessary and sufficient to support a reform (separating) equilibrium.

Now consider the following equilibrium behavior: sincere and corrupt candidates both grant access, $a = 1$. Further, set off-path beliefs so that if the voter observes a deviation to $a = 0$ she places full mass on that deviation being made by a sincere type. A sincere candidate's payoff for

pooling on $a = 1$ is given by,

$$\begin{aligned} EU_i(a_i = 1|\tau_i = S, a_{-1} = 1) &= \pi\left(\frac{1}{2}(0) + \frac{1}{2}(0)\right) \\ &\quad +(1-\pi)\left(\frac{1}{2}(0) + \frac{1}{2}(q(-|1-0|) + (1-q)(-|1-1|))\right), \\ &= -\frac{1}{2}q(1-\pi). \end{aligned}$$

Finally, consider a sincere candidate's payoff for deviating to $a = 0$, which ensures he will win the election with certainty,

$$\begin{aligned} EU_i(a_i = 0|\tau_i = S, a_{-1} = 1) &= \pi(q(-|0-0|) + (1-q)(-|0-1|) \\ &\quad +(1-\pi)(q(-|0-0|) + (1-q)(-|0-1|)), \\ &= -(1-q). \end{aligned}$$

The sincere candidate will pool if,

$$-\frac{1}{2}q(1-\pi) \geq -(1-q),$$

which is satisfied for all $\pi \in (0,1)$, $q \in \left(\frac{1}{2}, \frac{2}{3-\pi}\right]$. Define $q^{\text{Access}}(\pi) \equiv \frac{2}{3-\pi}$. So long as $q \leq q^{\text{Access}}(\pi)$ an access equilibrium is supported. Furthermore, since no type strictly prefers to deviate from this equilibrium to denying access for any voter beliefs, this survives the Intuitive Criterion.

To support the uniqueness of separating equilibrium when $q^{\text{Reform}}(\pi) < q^{\text{Access}}(\pi) < q$ we show that the pooling equilibrium violates the Intuitive Criterion under these circumstances. Note that (1) The corrupt type of politician should never deviate from the access equilibrium to reform since doing so yields a payoff of at most zero, which is lower than that type's expected payoff in the Access pooling equilibrium, which gives that type a bribe with positive probability, (2) The sincere type would be willing to deviate to denying access if doing so convinces the voter that it is not a corrupt type (this follows from the fact that a separating equilibrium exists). Thus, in these

circumstances the pooling equilibrium violates the Intuitive Criterion.

Finally, note that $q^{\text{Access}}(\pi) = \frac{2}{3-\pi} > q^{\text{Reform}}(\pi) = \frac{2}{3}$ for all $\pi \in (0,1)$. Thus, when $q \in [q^{\text{Reform}}(\pi), q^{\text{Access}}(\pi)]$ both the reform and full-access equilibrium can be supported. ■

Proof of Corollary 1. As $\pi \to 0$, $q^{\text{Access}} \to \frac{2}{3} \equiv q^{\text{Reform}}$. This implies that $\left[\frac{2}{3}, \frac{2}{3-\pi}\right] \to \left[\frac{2}{3}, \frac{2}{3}\right]$. In contrast, as $\pi \to 1$, $q^{\text{Access}} \to 1$. This implies that $\left[\frac{2}{3}, \frac{2}{3-\pi}\right] \to \left[\frac{2}{3}, 1\right]$, which further implies that an access equilibrium always exists (since $q < 1$) and a reform equilibrium only exists when $q \in (\frac{2}{3}, 1]$. ■

Proof of Proposition 3. First, in a reform equilibrium the voter is able to identify sincere politicians when there is one running for office. Accordingly, if the voter elects a sincere politician then $x = 0$ is implemented for sure and if she elects a corrupt politician then $x = 1$ for sure. Thus, the voter's ex ante welfare in a reform equilibrium is,

$$\begin{aligned} W_V^{\text{Reform}}(a,x) &= Pr(\tau_A = \tau_B = S)(u_V(x=0)) + Pr(\tau_A = S \text{ or } \tau_B = S)(u_V(x=0)) \\ &\quad + Pr(\tau_A = \tau_B = C)(u_V(x=1)), \\ &= \pi^2(-(1-q)) + 2(1-\pi)\pi(-(1-q)) + (1-\pi)^2(-q), \\ &= -(\pi^2 + 2\pi(1-\pi))(1-q) - (1-\pi)^2 q. \end{aligned}$$

In an access equilibrium the voter cannot differentiate between candidates. In this case sincere politicians, if elected, will always set $x = \theta$. Corrupt politicians always implement $x = 1$. Since the voter elects either candidate with equal probability, and receives $-q$ if a corrupt politician is elected and receives 0 if a sincere politician is elected we have the following welfare expression:

$$\begin{aligned} W_V^{\text{Access}}(a,x) &= Pr(A \text{ wins})(Pr(\tau_A = S)(u_V(x=\theta)) + Pr(\tau_A = C)(u_V(x=1))) \\ &\quad + Pr(B \text{ wins})(Pr(\tau_B = S)(u_V(x=\theta)) + Pr(\tau_B = C)(u_V(x=1))), \\ &= \frac{1}{2}(\pi(0) + (1-\pi)(-q)) + \frac{1}{2}(\pi(0) + (1-\pi)(-q)), \\ &= -(1-\pi)q. \end{aligned}$$

For the reform equilibrium to welfare-dominate the access equilibrium it must be that,

$$-(\pi^2+2\pi(1-\pi))(1-q)-(1-\pi)^2 q > -(1-\pi)q.$$

Re-arranging in terms of q yields the level of q in which reform welfare-dominates access,

$$\begin{aligned} -(\pi^2+2\pi(1-\pi))(1-q)-(1-\pi)^2 q &> -(1-\pi)q, \\ q(2\pi-3)-\pi+2 &\leq 0, \\ q &\geq \frac{\pi-2}{2\pi-3}. \end{aligned}$$

Define $q^{\text{Welfare}}(\pi) \equiv \frac{\pi-2}{2\pi-3}$. Reform equilibrium is welfare-preferred if and only if $q > q^{\text{Welfare}}$. Finally, note that

$$\frac{d}{d\pi}\left(\frac{\pi-2}{2\pi-3}\right) = \frac{1}{(2\pi-3)^2} > 0$$

so $q^{\text{Welfare}}(\pi)$ is increasing in π. ■