# Online Supporting Information

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

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# A Baseline model

## A.1 Baseline model proofs

**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,* $b = 1$*, if possible.*
- *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 they learn* $\theta = 1$ *and implement* $x = 0$ *otherwise.*

*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 information we need only analyze whether it is optimal for the group to bribe. 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 information, but not bribery. Suppose that a sincere politician wins office. Then $\theta$ is revealed due to the interest group possessing verifiable information. The sincere politician's payoff for matching policy to the state is,

$$\begin{aligned} u_i(x(\theta)=\theta|\tau_i=S,\theta) &= -|\theta-\theta|, \\ &= 0. \end{aligned}$$

His analogous payoff for choosing $x(\theta) \neq \theta$ is given by,

$$u_i(x(\theta)\neq\theta|\tau_i=S,\theta) = -1.$$

Clearly, it is optimal for the sincere politician to set $x(\theta)=\theta$ when he learns $\theta$. Now consider the politician's analogous payoff if he does not learn $\theta$ (i.e., does not interact with the interest group) and sets $x=0$:

$$\begin{aligned} u_i(x=0|\tau_i=S,q) &= q(-|0-0|)+(1-q)(-|0-1|), \\ &= -(1-q). \end{aligned}$$

His payoff for instead setting $x=1$ when he does not learn $\theta$ is given by,

$$\begin{aligned} u_i(x=1|\tau_i=S,q) &= q(-|1-0|)+(1-q)(-|1-1|), \\ &= -q. \end{aligned}$$

Since $q>\frac{1}{2}$, $u_i(x=0|\tau_i=S,a_G=0)=-(1-q)>u_i(x=1|\tau_i=S,a_G=0)=-q$ implying that the sincere politician optimally sets $x=0$ any time he does not learn $\theta$. ■

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

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

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

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

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

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

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

Thus, it is incentive compatible to elect politician $A$ if,

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

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

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

Her expected payoff for electing $B$ is,

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

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 politician's platform announcement the voter never wants to deviate from electing him.

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

**Lemma A.2.** *Corrupt politicians always run on access platforms in weakly undominated strate-*

*gies.*

*Proof of Lemma A.2.* When a corrupt politician runs on 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 run on reform and 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. ■

**Proposition 2.** *Define* $q^{Reform}(\pi) := \frac{2}{3}$ *and* $q^{Access}(\pi) := \frac{2}{3-\pi}$. *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.*

*Proof of Proposition 2.* Lemma A.2 shows that corrupt politicians always prefer to run on access. Thus, we only need to characterize the conditions in which sincere politicians prefer to separate by running on reform and banning group access and pool by running on access. Consider the first case in which sincere politicians run on reform, $p_i^* = 0$. His expected payoff in that case is given by,

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

In contrast, consider a sincere politician's expected payoff if he deviates to $p = 1$,

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

Given that corrupt politicians choose $p = 1$ and sincere politicians play symmetric strategies, a sincere politician will run on access ($p = 0$) 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 $q^{\text{Reform}}(\pi) := \frac{2}{3}$. $q \geq q^{\text{Reform}}(\pi)$ is necessary and sufficient to support a (separating) reform equilibrium.

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

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

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

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

The sincere politician will pool if,

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

which is satisfied for all $\pi \in (0,1)$ when $q \in \left(\frac{1}{2}, \frac{2}{3-\pi}\right]$. Define $q^{\text{Access}}(\pi) := \frac{2}{3-\pi}$. 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 running on reform and 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 reform and denying access if doing so convinces the voter that he 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 access equilibrium can be supported. ■

**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 $q \geq \frac{2}{3}$.*

*Proof of Corollary 1.* As $\pi \to 0$, $q^{\text{Access}} \to \frac{2}{3} := q^{\text{Reform}}$. 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 $q \in (\frac{2}{3}, 1]$. ■

**Proposition 3.** *Define $q^{Welfare}(\pi) := \frac{\pi-2}{2\pi-3}$. 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, $\frac{d}{d\pi}\left(q^{Welfare}(\pi)\right) > 0$.*

*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,

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

In an access equilibrium the voter cannot differentiate between politicians. In this case sincere politicians, if elected, will always set $x = \theta$. Corrupt politicians always implement $x = 1$. Since the voter elects either politician 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:

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

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 $q^{\text{Welfare}}(\pi) := \frac{\pi-2}{2\pi-3}$. 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 $\pi$. ■

## A.2 Interest group self-regulation

In this section we explore whether and when the interest group may benefit from self-regulation. That is, when will the interest group benefit from committing ex ante to not bribing corrupt politicians? We explore this question from the perspective of interest group ex ante welfare.

Suppose that the interest group has committed to no longer bribe corrupt politicians that win office, but it can still engage in substantive lobbying. So $b = 0$ always. Nothing in the policymaking stage of the game changes *except* that the interest group can no longer bribe corrupt politicians that have won office. Thus, corrupt politicians always implement $x = 0$ since $b = 0$, sincere politicians always implement $x(\theta) = \theta$ when they learn $\theta$ and $x = 0$ otherwise. Similarly, the voter's voting strategy still does not change: she votes for the politician most likely to be sincere and elects either politician with equal probability when each politician is equally likely to be sincere.

To begin the analysis we first show that the interest group never benefits from committing to no bribery when the politicians play access equilibrium strategies.

**Lemma A.3.** *The interest group never benefits from self-regulating by committing to no bribery when politicians play access equilibrium strategies.*

*Proof of Lemma A.3.* First, consider the interest group's welfare when there is no bribery and all politicians run on access. In this case each politician wins the election with equal probability since the voter cannot differentiate politician types. If the group cannot bribe corrupt politicians then its ex ante expected welfare in a pooling access equilibrium is given by,

$$\begin{aligned} W_G(\text{No bribes}|\text{Access}) &= \pi(q(0)+(1-q)1)+(1-\pi)(0), \\ &= \pi(1-q)). \end{aligned}$$

With probability $\pi$ the winning politician is sincere. In this case the group receives zero if $\theta = 0$ and one if $\theta = 1$ since $\theta$ is revealed to the politician and sets $x(\theta) = \theta$ in equilibrium. With probability $1-\pi$ the winner is corrupt, but since bribery has been banned the group can not affect the politician's implementation of $x = 0$, which yields a payoff of zero. Compare this with the interest group's welfare in the pooling access equilibrium when bribing corrupt politicians is possible:

$$\begin{aligned} W_G(\text{Bribes}|\text{Access}) &= \pi(q(0)+(1-q)1)+(1-\pi)(1-\kappa), \\ &= \pi(1-q)+(1-\pi)(1-\kappa). \end{aligned}$$

The group's expected payoffs when a sincere politician wins are the same as above. When the winning politician is corrupt the group pays a bribe $b = 1$ at cost $\kappa$, the politician implements $x = 1$, and the group receives $1-\kappa$. This last component of group welfare is the difference between bribery and no bribery. That is, the net welfare from the interest group's perspective when bribery is banned is given by,

$$\begin{aligned} W_G(\text{No bribes}|\text{Access}) - W_G(\text{Bribes}|\text{Access}) &= \pi(1-q)-\pi(1-q)-(1-\pi)(1-\kappa), \\ &= -(1-\pi)(1-\kappa). \end{aligned}$$

The group derives a net benefit from being able to bribe corrupt politicians equal to $(1-\pi)(1-\kappa)$ relative to not being able to bribe when all politicians run on access. Thus, the group always prefers to retain its ability to bribe when politicians will play access equilibrium strategies for sure. ■

Next, we establish that when the interest group has self-regulated by committing to no bribery sincere politicians no longer have incentives to separate by running on reform platforms.

**Lemma A.4.** *Suppose that the interest group has committed to no bribery. Then all politicians run on access platforms.*

*Proof of Lemma A.4.* Corrupt politicians continue to grant group access by the argument in Lemma A.2. However, the incentives for sincere politicians to separate by banning access have changed. Consider a sincere politician's expected payoff for running on reform and banning access, given that corrupt politicians run on access:

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

If politician $i$ faces another sincere politician then no matter who wins $x = 0$ is implemented and fails to match the state with probability $1-q$. Similarly, if $i$ faces a corrupt politician then he wins for sure, but since access was banned implements $x = 0$ and fails to match policy to the state with probability $1-q$. In contrast, if a sincere politician $i$ deviates to running on access then his expected payoff is given by,

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

With probability $\pi$ the sincere politician loses for sure because he is facing another sincere politician (who is still separating) and receives an expected payoff of $-(1-q)$. With probability $1-\pi$ the other politician is corrupt and the sincere politician wins half of the time and gets to match policy to the state, but half the time he loses and because bribery is banned the corrupt winner implements $x = 0$, which yields an expected payoff of $-(1-q)$. We can no longer support sincere politicians optimally separating however since,

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

for all $q \in \left(\frac{1}{2}, 1\right)$ and $\pi \in (0,1)$. Thus, now that the group committed to no bribery sincere politicians will no longer separate by running on reform and banning interest group access.

To complete the proof we show that when the interest group cannot bribe, sincere politicians prefer to pool on access. If a sincere politician who is running on access faces another sincere politician also granting access then each win with probability one-half, but no matter who wins policy will ultimately match the state, yielding zero policy loss. If a sincere politician running on access faces a corrupt politician also running on access then each win with probability one-half. If the sincere politician wins he matches policy to the state. If the corrupt politician wins he implements $x = 0$ since there is no bribery. This will fail to match the state with probability $1-q$.

The sincere politician's expected payoff for pooling by running on access is then,

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

A deviation to running on reform and banning access leads the sincere politician to win with certainty regardless of his opponents type, but because he banned access he always implements $x = 0$ which fails to match the state with probability $1-q$. This yields an expected payoff of $EU_i(a_i = 0|\tau_i = S, a_{-i}, \pi) = -(1-q)$. Thus, sincere politicians will always run on access so long as $-\frac{1}{2}(1-\pi)(1-q) > -(1-q)$, which is satisfied for all $q \in \left(\frac{1}{2}, 1\right)$ and $\pi \in (0,1)$. ■

Now suppose that we are in an environment in which politicians play a separating reform equilibrium. The following result is presented in the main text – proposition 4 – and characterizes when the interest group benefits from committing ex ante to not bribing corrupt politicians that win office. Lemma A.4 implies that in that case the politicians instead play a pooling access equilibrium. Thus, the trade-off for the interest group is between continuing to be able to bribe corrupt politicians but having sincere politicians identify themselves by banning access and self-regulating so they cannot bribe corrupt winners but inducing sincere politicians to grant them access.

**Proposition 4.** *Suppose politicians play reform equilibrium strategies when the interest group can bribe. The interest group benefits from self-regulation if* $\pi > \pi_G^{Regulate}(q,\kappa)$. *Moreover,* $\pi_G^{Regulate}(q,\kappa)$ *is increasing in* $q$ *and decreasing in* $\kappa$.

*Proof of Proposition 4.* Recall from the proof of Lemma A.4 that the group's welfare from self-regulating and inducing access equilibrium politician behavior is given by,

$$
\begin{aligned}
W_G(\text{No bribes}|\text{Access}) &= \pi(q(0) + (1-q)1) + (1-\pi)(0), \\
&= \pi(1-q).
\end{aligned}
$$

Suppose instead that the interest group were to choose to keep the ability to bribe. In this environment, when bribery is allowed, and sincere politicians run on reform and ban access, any time a sincere politician is running the voter learns who is sincere and corrupt and a sincere politician wins office. The only time a reform equilibrium with bribery aids the interest group is when two corrupt politicians run against one another since this is the only instance in which the voter will elect a corrupt politician. The group's ex ante expected welfare when bribery is allowed and politicians separate with their platform decisions, revealing their types, is given by,

$$\begin{aligned} W_G(\text{Bribes}|\text{Reform}) &= \pi^2(0)+(2(1-\pi)\pi)(0)+(1-\pi)^2(1-\kappa), \\ &= (1-\pi)^2(1-\kappa). \end{aligned}$$

With probability $(\pi^2+2(1-\pi)\pi)$ a sincere politician runs for and wins office, but since that politician won office by separating and effectively banning access the group cannot lobby and therefore, $x=0$ always and the group receives zero no matter what. With probability $(1-\pi)^2$ both politicians running are corrupt and therefore the winning politician will be corrupt. In this case the group pays the bribe at cost $\kappa$ in exchange for implementing $x=1$, leading to a payoff of $1-\kappa$. Comparing the two welfare expressions in this case yields,

$$W_G(\text{No bribes}|\text{Access})-W_G(\text{Bribes}|\text{Reform}) = \pi(1-q)-(1-\pi)^2(1-\kappa)$$

Thus, an interest group would prefer to self-regulate and "tie its own hands" by ex ante committing to no bribery in a separating reform equilibrium environment so long as,

$$\pi(1-q)-(1-\pi)^2(1-\kappa)>0, \tag{1}$$

which is satisfied for all $q\in\left(\frac{2}{3},1\right)$ when $\frac{1}{2}\left(\frac{2\kappa+q-3}{\kappa-1}-\sqrt{\frac{(q-1)(4\kappa+q-5)}{(\kappa-1)^2}}\right):=\pi_G^{\text{Regulate}}(q,\kappa)<\pi<1$. Therefore, an interest group benefits from self-regulation in a reform equilibrium environment so long as $\pi$ is sufficiently high.

Moreover,

$$\frac{\partial\pi_G^{\text{Regulate}}(q,\kappa)}{\partial q}=\frac{1}{2}\left(\frac{1}{\kappa-1}-\frac{\frac{q-1}{(\kappa-1)^2}+\frac{4\kappa+q-5}{(\kappa-1)^2}}{2\sqrt{\frac{(q-1)(4\kappa+q-5)}{(\kappa-1)^2}}}\right)>0,$$

and

$$\frac{\partial\pi_G^{\text{Regulate}}(q,\kappa)}{\partial\kappa}=\frac{1}{2}\left(\frac{2}{\kappa-1}-\frac{2\kappa+q-3}{(\kappa-1)^2}-\frac{\frac{4(q-1)}{(\kappa-1)^2}-\frac{2(q-1)(4\kappa+1-5)}{(\kappa-1)^3}}{2\sqrt{\frac{(q-1)(4\kappa+q-5)}{(\kappa-1)^2}}}\right)<0,$$

as stated in the result. ■

The result in proposition 4 only directly applies when politicians play a separating reform equilibrium for sure. Much of the region in which equation (1) is satisfied is also the region in which both the reform and access equilibrium are possible. We also know that in a pooling access environment the interest group always benefits from being allowed to bribe (from lemma A.3). Thus, committing to no bribery can be beneficial in a separating equilibrium but it is costly in a pooling access equilibrium. So to fully explore when the interest group benefits from committing to no bribery we must take into account both possibilities. There is no *prima facie* reason to expect one equilibrium is more likely to obtain than the other when both are possible so we take an agnostic view and simply assign complementary probabilities to each one to represent the interest group's beliefs about which equilibrium would be played.

**Corollary A.1.** *Suppose both the reform equilibrium and access equilibrium are possible. Define $\beta \equiv Pr(\text{Reform equilibrium})$ and $1-\beta \equiv Pr(\text{Access equilbrium})$. So long as the reform equilibrium is sufficiently likely relative to the access equilibrium the interest group will self-regulate by committing to not bribing corrupt politicians.*

*Proof of Corollary A.1.* Lemma A.3 shows that the interest group never wants to self-regulate when politicians play access equilibrium strategies for sure. Proposition 4 shows that there are conditions in which the interest group would prefer to self-regulate and commit to no bribery when politicians play reform equilibrium strategies for sure. Continuity of the interest group's expected utilities with respect to probabilities, derived in the proof of Proposition 4, implies that if the reform equilibrium is sufficiently likely relative to the access equilibrium – i.e., $\frac{\beta}{1-\beta}$ is sufficiently large – then the interest group will still prefer to self-regulate. ■

## A.3 Asymmetric corruption

In this section we relax the assumption that each politician is equally likely to be sincere. We prove analogous results to those presented in the main body of the paper. The main difference is that we relax our focus on symmetric strategies to mirror our relaxation of model symmetry.

Suppose that politician $A$ is more likely to be corrupt than politician $B$: $\pi_A < \pi_B$. This means that politician $B$ has an ex ante electoral advantage. That is, in the absence of new information the voter retains her prior beliefs that $A$ and $B$ are sincere/corrupt and therefore elects politician $B$ in that case (as opposed to each politician being elected with equal probability in the symmetric corruption model). Note also that the policymaking strategies of winning politicians and the interest group strategies are equivalent because at that point of the game politician type is revealed to the group. So nothing changes from Proposition 1 in the baseline symmetric corruption model presented in text: corrupt politicians implement $x = 1$ if $b = 1$ and $x = 0$ otherwise, sincere politicians implement $x(\theta) = \theta$ if they learn $\theta$ and $x = 0$ otherwise, and the interest group always bribes corrupt politicians when given the opportunity. Moreover, it is still optimal for the voter to elect the politician most likely to be sincere and elect either politician with equal probability when they are both equally likely to be sincere.

The results do change when analyzing politician platform decisions. We proceed in a similar manner from the analysis of the symmetric corruption model presented in the main body of the paper. Notice first that Lemma A.2 still holds in this setting. Corrupt politicians have no incentive to run on reform and ban access by the argument in the proof of Lemma A.2. This is true regardless of the asymmetry between $\pi_A$ and $\pi_B$ since both are still positive and less than one. We proceed by establishing the conditions for a separating reform equilibrium, a pooling access equilibrium, and equilibria in asymmetric strategies in which one politician pools on access and one separates.

**Separating reform equilibrium.** The following result provides the conditions required to support a reform equilibrium when $\pi_A < \pi_B$.

**Proposition A.1.** *Suppose $\pi_A < \pi_B$. The conditions to support a separating reform equilibrium are the same as in Proposition 2 (i.e., when $\pi_A = \pi_B = \pi$).*

*Proof of Proposition A.1.* Notice first that the argument in Lemma A.2 implies that corrupt politicians always run on access. So we need to show the conditions that support sincere politicians running on reform and banning access. If politician $A$ is sincere and plays the posited strategy (banning access) then he wins with probability $\frac{1}{2}$ when $B$ is sincere since both play the same separating strategy and the voter correctly believes both to be sincere. If $B$ is corrupt then $A$ wins for sure. This yields the following expected utility for banning access,

$$\begin{aligned} EU_A(p_A = 0 | \tau_A = S, \pi_B) &= -\pi_B\left(\frac{1}{2}(1-q) + \frac{1}{2}(1-q)\right) - (1-\pi_B)(1-q), \\ &= -(1-q). \end{aligned}$$

In contrast, if $A$ deviates to $p_A = 1$ then he loses for sure when $B$ is sincere since the voter believes he is corrupt and wins with probability one-half if $B$ is corrupt since the voter believes both are corrupt.

$$\begin{aligned} EU_A(p_A = 1 | \tau_A = S, \pi_B) &= -\pi_B((1-q)) - (1-\pi_B)\left(\frac{1}{2}(0) + \frac{1}{2}q\right), \\ &= -\pi_B(1-q) - \frac{1}{2}(1-\pi_B)q. \end{aligned}$$

This yields the following incentive compatibility condition for politician $A$ to continue to run on reform when sincere (given $B$ does the same):

$$-(1-q) > -\pi_B(1-q) - \frac{1}{2}(1-\pi_B)q,$$

which is satisfied for all $\pi_B \in (0,1)$ when $q \in \left(\frac{2}{3}, 1\right)$.

Expected utility calculations for politician $B$ are exactly the same once we substitute in $\pi_A$ for $\pi_B$. This is because we are assuming that both politicians play symmetric strategies in this equilibrium even though the probabilities of being corrupt are asymmetric across politicians.

Thus, for all $\pi_A, \pi_B \in (0,1)$ we can support a separating equilibrium where sincere politicians ban access and corrupt politicians grant access, the voter learns politician types with certainty, and elects the politician identified as sincere or elects either politician with equal probability when both are of the same type so long as $q \in \left(\frac{2}{3}, 1\right)$. This is the same condition as in the case in which both politicians are sincere with equal probability: $q > q^{\text{Reform}}(\pi)$. ■

**Pooling access equilibrium.** The following result provides the conditions required to support an access equilibrium when $\pi_A < \pi_B$. In this case the conditions to support a pooling equilibrium in which all politicians grant interest group access regardless of type are more demanding.

**Proposition A.2.** *Suppose $\pi_A < \pi_B$. Then the conditions to support an access equilibrium are more demanding than when $\pi_A = \pi_B = \pi$. Specifically, instead of $q \in \left(\frac{1}{2}, \frac{2}{3-\pi}\right)$, the relevant condition is $q \in \left(\frac{1}{2}, \frac{1}{2-\pi_B}\right)$ for all $\pi_B \in (0,1)$.*

*Proof of Proposition A.2.* $A$ is ex ante disadvantaged: $\pi_A < \pi_B$. This implies that politician $B$ wins the election for sure when both politicians pool on access platforms because the voter retains her prior about each politician and elects politician $B$ since he is ex ante more likely to be sincere. Lemma A.2 shows that corrupt politicians always want to run on access so we show the conditions for sincere politicians to also run on access.

politician $B$'s expected utility for running on access given that $A$ also does so regardless of type is given by,

$$\begin{aligned} EU_B(p_B^* = 1 | \tau_B = S, \pi_A) &= -\pi_A(0) - (1-\pi_A)(0), \\ &= 0. \end{aligned}$$

$B$ wins the election and, because he gains access to the group, learns $\theta$, implements policy accordingly and loses nothing in utility. His expected utility for deviating to $p_B = 0$ is given by (assuming that the voter believes deviations of this sort signal sincerity),

$$\begin{aligned} EU_B(p_B = 0 | \tau_B = S, \pi_A) &= -\pi_A(1-q) - (1-\pi_A)(1-q), \\ &= -(1-q). \end{aligned}$$

In this case, $B$ still wins the election for sure,[1] but now because interest group access was banned through reform does not receive information regarding $\theta$, implements $x = 0$, and in expectation loses one with probability $(1-q)$. Obviously in this case politician $B$ always wants to pool on $p_B = 1$ since $0 > -(1-q)$ for all $q \in \left(\frac{1}{2}, 1\right)$.

[1] The same Intuitive Criterion argument in the proof of Proposition 2 applies here: the voter believes that this deviation identifies the politician as sincere.

Now consider the incentives for politician $A$. $A$'s expected utility for continuing to pool on $p_A = 1$ is given by,

$$\begin{aligned} EU_A(p_A^* = 1 | \tau_A = S, \pi_B) &= -\pi_B(0) - (1-\pi_B)(q), \\ &= -q(1-\pi_B). \end{aligned}$$

In this case, $A$ always loses the election, but if $B$ is a sincere type $A$ loses nothing from a policy perspective since $B$ matches policy to the state. However, when $B$ is corrupt (with probability $1-\pi_B$) $A$ expects to lose on policy with probability $q$ since $B$ will always implement $x = 1$. If $A$ deviates to $p_A = 0$, and the voter accordingly updates that $A$ is sincere and therefore $A$ will win (again this is the only off-path belief that satisfies the Intuitive Criterion as in Proposition 2), he receives the following expected utility,

$$\begin{aligned} EU_A(p_A = 0 | \tau_A = S, \pi_B) &= -\pi_B(1-q) - (1-\pi_B)(1-q), \\ &= -(1-q). \end{aligned}$$

In this case politician $A$ can win the election, but this comes at the cost of information once he has won since he had to ban group access to do so. Therefore, he implements $x = 0$ since $q > \frac{1}{2}$ and expects to lose on policy with probability $1-q$. Combining these two expected utility expressions yields the incentive compatibility condition for $A$ to continue to pool on the access platform:

$$-q(1-\pi_B) > -(1-q),$$

which is satisfied for all $\pi_B \in (0,1)$ so long as $q \in \left(\frac{1}{2}, \frac{1}{2-\pi_B}\right)$.

Now, the upper bound has changed from the case of symmetric corruption pooling. In that case, $q < \frac{2}{3-\pi}$ supported pooling and in this case $q < \frac{1}{2-\pi_B}$ is (necessary and) sufficient. Obviously, $\frac{2}{3-\pi} > \frac{1}{2-\pi_B}$, which highlights the fact that the conditions on $q$ to support the access equilibrium are more demanding when $\pi_A < \pi_B$. In both cases this upper bound is increasing in $\pi_i$. Also notice that since in this case $B$ always wants to pool when $A$ does that $\pi_A$ makes no difference (it does not restrict the range of parameters in which this pooling on access behavior is an equilibrium), so $\pi_B$ is the relevant corruption probability due to how it restricts $A$'s behavior. That is, only the probability of $B$ being corrupt is relevant to support pooling since $A$ is the politician with the incentive to deviate to a separating strategy. ■

**Asymmetric strategy equilibria.** The following result characterizes the conditions under which the two politicians play different strategies. That is, one politician pools on the access platform while the other separates by instituting reform when sincere. We state and prove the result without reference to particular politician identity because the result holds for any ordering of politician identity and corruption probabilities by substituting $A$ or $B$ for $i$ or $j$. Notice that this has to do with relaxation of the symmetric strategies assumption in the model presented in the main body of the paper. This result does not depend on whether probabilities of corruption are symmetric or asymmetric. Thus, this result would also hold in the main analysis.

**Proposition A.3.** *Suppose politicians can play asymmetric strategies. Then when* $q \in \left(\frac{1}{2-\pi_j}, 1\right)$ *we can support an equilibrium in which politician i separates (as in a reform equilibrium) and politician j pools (as in an access equilibrium), for all* $i \neq j$.

*Proof of Proposition A.3.* Lemma A.2 implies that corrupt politicians always run on access so we focus on the incentives for sincere politicians. Suppose first that politician $i$ separates by choosing $p_i^*(\tau_i) = 0$ when $\tau_i = S$ and $p_A^*(\tau_i) = 1$ when $\tau_i = C$. Further, suppose that politician $j$ pools on access so that $p_B^*(\tau_j) = 1$ for all $\tau_j \in \{S, C\}$. The voter best responds by electing politician $i$ following observation of $p_i^* = 0$ and electing politician $j$ if both politicians grant access since in this case the voter correctly believes politician $i$ is corrupt while politician $j$, by virtue of pooling, is sincere with probability $\pi_j > 0$ (i.e., the voter's prior that $j$ is sincere). If both $i$ and $j$ choose to ban access then the voter elects either with equal probability.[2]

First, consider politician $i$'s expected utility for running on reform and banning access when he is sincere:

$$\begin{aligned} EU_i(p_i^* = 0 | \tau_i = S, \pi_j) &= -\pi_j(1-q) - (1-\pi_j)(1-q), \\ &= -(1-q). \end{aligned}$$

In this case $i$ always wins the election since $j$ is pooling on access and therefore $i$ is more likely to be sincere from the voter's perspective. However, since $i$ ran on reform he does not receive any information about $\theta$ from the group, implements $x = 0$, and mismatches policy and the state with probability $1-q$. In contrast, politician $i$'s expected utility for deviating to access is given by,

$$\begin{aligned} EU_i(p_i = 1 | \tau_i = S, \pi_j) &= -\pi_j(0) - (1-\pi_j)(q), \\ &= -(1-\pi_j)q. \end{aligned}$$

In this case $i$ loses the election for sure because the voter infers he is corrupt. He loses nothing on policy if politician $j$ is sincere, since in that case $j$ matches policy to the state. If instead politician $j$ is corrupt, then the group bribes $j$ and he implements $x = 1$ for sure, which in expectation leads to a policy loss with probability $q$. Thus, politician $i$ will continue to separate when politician $j$

[2] The Intuitive Criterion argument in the proof of Proposition 2 implies that if $j$ deviates and runs on reform then the voter places full mass on $j$ being a sincere type.

pools if,

$$-(1-q) > -(1-\pi_j)q,$$

which is satisfied for all $\pi_j \in (0,1)$ so long as $q \in \left(\frac{1}{2-\pi_j}, 1\right)$.

Now, given that politician $i$ is separating what are the conditions that support politician $j$'s pooling on access? First, consider $j$'s expected utility when sincere of granting access given that $i$ is separating:

$$\begin{aligned} EU_j(p_j^* = 1|\tau_j = S, \pi_i) &= -\pi_i(1-q) - (1-\pi_i)(0), \\ &= -\pi_i(1-q). \end{aligned}$$

In this case, if $i$ is sincere $j$ will lose the election and lose policy utility according to the probability that $i$ mismatches policy to the state given that he will get no further information from the group since access was banned. If $i$ is corrupt then $j$ wins and will match policy to the state thereby losing zero in utility. In contrast, if $j$ deviates and signals $p_j = 0$ his expected utility is,

$$\begin{aligned} EU_j(p_j = 0|\tau_j = S, \pi_i) &= -\pi_i\left(\frac{1}{2}(1-q) + \frac{1}{2}(1-q)\right) - (1-\pi_i)(1-q), \\ &= -(1-q). \end{aligned}$$

The voter updates that $j$ is sincere (since this is the only off-path belief that survives the Intuitive Criterion) and therefore elects $i$ and $j$ with equal probability when $i$ is sincere and also runs on reform. In this case whoever wins will mismatch policy to the state with probability $1-q$. If $i$ is corrupt and grants access then $j$ will win for sure but will not learn anything about $\theta$, implement $x = 0$, and this will lead to a loss of one with probability $1-q$. Thus, when $j$ is sincere he always wants to stick to pooling on access given that $i$ is separating since $-\pi_i(1-q) > -(1-q)$ for all $\pi_i \in (0,1)$.

Overall, we have an equilibrium in which $i$ separates with platform decisions and $j$ pools on access any time that $q > \frac{1}{2-\pi_j}$, as stated in the result. ■

# B Costly campaign announcements

In this section we analyze an alternative model that relaxes platform commitment from the baseline model. To do so we model platforms as *costly campaign announcements*. That is, in this model there is no commitment to banning interest group access should a politician run on a reform platform and win office. Instead, this platform choice affects the costs interest groups must pay to access politicians that win office. Specifically, when a politician runs on a reform platform interest group access costs are higher than when the politician in office ran on an access platform.[3] In this sense, politician platform announcements are costly.

## B.1 The model

**Sequence of play.** The *costly campaign announcements game* is similar to the baseline model. Nature first draws politician types and the state of the world: $\tau_i \in \{S,C\}$, $i \in \{A,B\}$ and $\theta \in \{0,1\}$. Prior probabilities of sincerity and that the state is zero are the same as the baseline: $\pi = Pr(\tau_i = S)$ and $q = Pr(\theta = 0) > 1/2$. Then politicians announce reform or access platforms, $p_i \in \{0,1\}, i \in \{A.B\}$, respectively. The voter then elects one of the politicians.

The difference between the baseline and this model occurs after the election. Once a politician takes office Nature chooses a cost of access, $\alpha_G \sim U[0,\overline{\alpha}]$ where $\overline{\alpha} > 1$. This stochastic cost allows the interest group to buy access to politicians even if they ran on reform platforms. The interest group chooses to access the politician, $a_G \in \{0,1\}$, and if it does, $a_G = 1$, then it pays the cost $(1-p_i)\alpha_G$. If the politician ran on an access platform, $p_i = 1$, then the group can access the politician without paying $\alpha_G$ and if the politician ran on a reform platform then the group must pay $\alpha_G$ to access the politician. Thus, politicians do not commit to banning access as in the baseline model. Instead, running on a reform platform makes it more costly for the group to interact with the politician.

The ex ante likelihood that access costs will be realized sufficiently low for the group to access a politician that ran on a reform platform depends on the magnitude of the upper bound of the $\alpha_G$ distribution, $\overline{\alpha}$. In the limit, when $\overline{\alpha} \to \infty$ this model is equivalent to the baseline model with full platform commitment. When $\overline{\alpha}$ is sufficiently low the group can always access politicians that run on reform platforms.

If the interest group pays $\alpha_G$ and accesses the politician, whose type the group knows, the group's private information about $\theta$ is revealed and the group can also choose to offer a bribe, as before. Following this interaction (or lack of interaction) the politician in office sets policy, $x \in \{0,1\}$, the game ends, and payoffs are realized.

**Preferences and equilibrium.** Only the group's utility function is altered in this set-up. Since the group now makes a choice to access politicians for a potential cost its payoff function is,

$$u_G(x,\theta,b,\alpha_G) = x - a_i(1-p_i)\alpha_G - \kappa b.$$

All other players retain their utility functions from the baseline model. We again analyze symmetric pure strategy perfect Bayesian equilibrium in weakly undominated strategies.

[3]As will be seen below, we normalize access costs to zero when the politician in office ran on an access platform. The important point is that it is more costly for interest groups to access politicians that ran on reform platforms than those that did not.

## B.2 Access and policymaking

Policymaking behavior is the same as in the baseline model, and stated in B.1.

**Lemma B.1.** *Corrupt politicians implement $x = 1$ if they are bribed and $x = 0$ otherwise. Sincere politicians match policy to the state when they learn $\theta$, $x(\theta) = \theta$, and implement $x = 0$ otherwise.*

*Proof of Lemma B.1.* Suppose a corrupt politician wins office. If he receives a bribe then his payoffs for implementing $x = 1$ and $x = 0$ are given by the following expressions:

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

Thus, corrupt politicians always choose $x = 1$ when $b = 1$. If $b = 0$ then the politician's analogous payoffs are given by,

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

Thus, the corrupt politician always chooses $x = 0$ when $b = 0$.

Now consider a sincere politician. Clearly he strictly prefers to match policy to the state when he learns $\theta$ since $u_i(x(\theta) = \theta|\tau_i = S,\theta) = 0 > u_i(x(\theta) = \theta|\tau_i = S,\theta) = -1$. If he does not learn $\theta$ then his expected payoffs for implementing $x = 0$ and $x = 1$ are given by,

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

Since $q > 1/2$ the sincere politician strictly prefers to set $x = 0$ when he does not learn $\theta$. ■

In contrast to the baseline model, politicians that ran on reform platforms may interact with the interest group upon winning the election. Whether it is incentive compatible for the interest group to pay for access depends on the politician's type and the realized access cost $\alpha_G$. Lemma B.2 characterizes the group's equilibrium access strategy.

**Lemma B.2.** *Suppose a type $\tau_i$ politician wins office after running on platform $p_i$. In equilibrium, the interest group makes access decisions according to the following strategy:*

$$a^*_G(\tau_i,p_i,\theta,\alpha_G,\kappa) = \begin{cases} 1 \text{ (Access)} & \text{if } \tau_i = S \text{ and either } p_i = 1 \text{ or } p_i = 0, \theta = 1, \text{ and } 1 \geq \alpha_G, \\ & \text{or } \tau_i = C \text{ and either } p_i = 1 \text{ or } p_i = 0 \text{ and } 1 \geq \alpha_G + \kappa, \\ 0 \text{ (No access)} & \text{otherwise.} \end{cases}$$

*Proof of Lemma B.2.* Suppose a sincere politician won office after running on an access platform. If $\theta = 0$ then the group's payoffs for paying for access and not are given by,

$$\begin{aligned} u_G(a_G = 1|\tau_i = S, p_i = 1, \theta = 0, \alpha_G, x^*(\theta)) &= 0 - 1(1-1)\alpha_G - \kappa(0) = 0, \\ u_G(a_G = 0|\tau_i = S, p_i = 1, \theta = 0, \alpha_G, x^*(\theta)) &= 0 - 0(1-1)\alpha_G - \kappa(0) = 0. \end{aligned}$$

Thus, when $\theta = 0$ and a sincere politician won office after running on an access platform the group is indifferent between paying for access and not and we can support $a_G = 1$. Now consider the same situation with $\theta = 1$. In that case the group's analogous payoffs are,

$$\begin{aligned} u_G(a_G = 1|\tau_i = S, p_i = 1, \theta = 1, \alpha_G, x^*(\theta)) &= 1 - 1(1-1)\alpha_G - \kappa(0) = 1, \\ u_G(a_G = 0|\tau_i = S, p_i = 1, \theta = 1, \alpha_G, x^*(\theta)) &= 0 - 0(1-1)\alpha_G - \kappa(0) = 0. \end{aligned}$$

Thus, when $\theta = 1$ the group strictly prefers to access a sincere politician that won office after running on an access platform.

Now suppose that a sincere politician won office after winning on a reform platform. If the group pays for access when $\theta = 1$ but not when $\theta = 0$, as suggested in the result, the politician learns $\theta$ and will match policy to the state, per lemma B.1. Thus, the group's payoffs when $\theta = 0$ for paying for access and not are given by,

$$\begin{aligned} u_G(a_G = 1|\tau_i = S, p_i = 0, \theta = 0, \alpha_G, x^*(\theta)) &= 0 - 1(1-0)\alpha_G - \kappa(0) = -\alpha_G, \\ u_G(a_G = 0|\tau_i = S, p_i = 0, \theta = 0, \alpha_G, x^*(\theta)) &= 0 - 0(1-0)\alpha_G - \kappa(0) = 0. \end{aligned}$$

Thus, the group never pays for access when $\theta = 0$ with a sincere politician in office that ran on a reform platform. When $\theta = 1$ the group's analogous payoffs are given by,

$$\begin{aligned} u_G(a_G = 1|\tau_i = S, p_i = 0, \theta = 1, \alpha_G, x^*(\theta)) &= 1 - 1(1-0)\alpha_G - \kappa(0) = 1 - \alpha_G, \\ u_G(a_G = 0|\tau_i = S, p_i = 0, \theta = 1, \alpha_G, x^*(\theta)) &= 0 - 0(1-0)\alpha_G - \kappa(0) = 0 \end{aligned}$$

Thus, the group strictly prefers to pay for access when $\theta = 1$ if a sincere politician won office after running on reform when $1 - \alpha_G \geq 0$ or $1 \geq \alpha_G$. Taken together this implies that the group reveals $\theta$ to sincere politicians whenever the condition is satisfied.

Now suppose a corrupt politician takes office. Regardless of platform the group will not pay for access unless it would subsequently bribe the politician. If the group did not pay for access then the politician will implement $x = 0$, yielding the group a payoff of zero. If the group did pay for access but then did not bribe then the politician would still implement $x = 0$ but the group would still have to (potentially) pay for access yielding a payoff of either zero (if $p_i = 1$) or $-\alpha_G$

(if $p_i = 0$). Clearly it is weakly dominant for the group to only pay for access to corrupt politicians if they will subsequently bribe them to implement $x = 1$.

Now consider the group's choice to pay for access to a corrupt politician that ran on an access platform. In this case, $\theta$ does not matter as the corrupt politician does not respond to information about the state. The group's payoff for access, given it will subsequently bribe, and not, are,

$$\begin{aligned} u_G(a_G = 1|\tau_i = C, p_i = 1, \alpha_G, x^*(\theta), b = 1) &= 1 - 1(1-1)\alpha_G - \kappa = 1 - \kappa, \\ u_G(a_G = 0|\tau_i = S, p_i = 1, \alpha_G, x^*(\theta), b = 0) &= 0 - 0(1-1)\alpha_G - \kappa(0) = 0. \end{aligned}$$

Thus, the group will pay for access and bribe a corrupt politician that ran on an access platform if and only if $1 \geq \kappa$, which is always satisfied since $\kappa \in (0,1)$.

Finally, consider a corrupt politician that ran on a reform platform. The group's analogous payoffs for paying for access and not are given by,

$$\begin{aligned} u_G(a_G = 1|\tau_i = C, p_i = 0, \alpha_G, x^*(\theta), b = 1) &= 1 - 1(1-0)\alpha_G - \kappa = 1 - \alpha_G - \kappa, \\ u_G(a_G = 0|\tau_i = S, p_i = 0, \alpha_G, x^*(\theta), b = 0) &= 0 - 0(1-0)\alpha_G - \kappa(0) = 0. \end{aligned}$$

Thus, the group will pay for access and bribe a corrupt politician that ran on a reform platform if and only if $1 \geq \alpha_G + \kappa$. ■

Lemma B.2 characterizes when the interest group, given policymaking behavior in Lemma B.1, will pay for access. This choice is conditional on politician type, campaign platforms, cost of access, cost of bribery and, in the case of sincere politicians, the state of the world. The essence of Lemma B.2 is that the group will pay for access whenever the realized cost $\alpha_G$ does not exceed the potential benefits of doing so. If $\alpha_G$ is too large then the group will not seek access to any politicians that ran on a reform platform, regardless of type. Since the cost is stochastic we can also utilize the results in Lemma B.2 to derive ex ante probabilities of politician-interest group interactions even when the politicians ran on reform platforms, which is important for the platform decisions analyzed below.

**Corollary B.1.** *The ex ante probability that sincere politicians that ran on reform platforms will still learn $\theta$ is $1/\overline{\alpha}$ and the ex ante probability that corrupt politicians that ran on reform platforms will still be bribed is $(1-\kappa)/\overline{\alpha}$.*

These ex ante probabilities follow directly from the fact that access costs $\alpha_G$ are distributed uniform over the interval $[0, \overline{\alpha}]$ and the group's incentive compatibility conditions. That is, $\frac{1}{\overline{\alpha}} = Pr(\alpha_G \leq 1|\overline{\alpha})$, which is required for the group to pay for access to the sincere politician that ran on reform, and $\frac{1-\kappa}{\overline{\alpha}} = Pr(\alpha_G \leq (1-\kappa)|\overline{\alpha}, \kappa)$, which is required for the group to pay for access to a corrupt politician that ran on reform. For a sincere politician this means that there is a positive probability he will learn $\theta$ even though he ran on a reform platform and for a corrupt politician it means there is a positive probability he will receive a bribe even if he ran on reform. As $\overline{\alpha}$ increases (decreases) these probabilities decrease (increase). On the extremes, as $\overline{\alpha} \to \infty$ this model approaches the baseline model in that the ex ante probability the politicians will meaningfully interact with the group if they ran on reform platforms approaches zero. As $\overline{\alpha}$ approaches its lower bound of one sincere politicians are assured to learn $\theta$ even when they ran on reform. The corrupt politician that ran on reform is never guaranteed to be able to access the group since there is still a positive probability that $\alpha_G > 1 - \kappa$ even when $\overline{\alpha} = 1$. That said, the ex ante probability is maximized in that case (holding $\kappa$ fixed).

Overall, the policymaking stage of this game is similar to the baseline model. Sincere politicians still match policy to the state when they learn $\theta$ and set $x = 0$ otherwise, while corrupt politicians set $x = 1$ only when they are bribed. The key difference is that even when politicians run on reform platforms they may interact with the interest group following an electoral victory. The interest group is able to pay an access cost to interact with politicians, though that cost is higher when the politician in office ran on a reform platform. The group is willing to pay the costs for access if those costs are exceeded by the policy benefits the group derives from doing so.

## B.3 Signaling with reform

In this section we analyze platform choices. The two types of pure strategy equilibria presented in the baseline model continue to exist in this model: *reform equilibrium* and *access equilibrium*. In addition, there is another pooling equilibrium in this model that did not exist in the baseline model in which both types of politicians run on reform platforms: the *anti-interest group equilibrium*.

**Equilibrium voting behavior.** Equivalent to the baseline model the voter attempts to elect sincere politicians.

**Lemma B.3.** *The voter chooses a politician according to the following strategy,*

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

*Proof of Lemma B.3.* There are two cases to show: (1) the voter does not want to deviate from voting for the politician that is more likely to be sincere, and (2) the voter does not want to deviate from voting for each politician with equal probability when she believes both are equally likely to be sincere. Denote $\hat{\pi}_i \equiv Pr[\tau_i = S|p_i]$.

**Case (1).** In this case the voter believes that one politician is more likely to be sincere. Without loss of generality let politician $A$ be the politician the voter believes is more likely to be sincere. This implies that $p_A \neq p_B$ since if $p_A = p_B$ the voter would have learned nothing about politician types. Moreover, since $p_i \in \{0,1\}$ and we have restricted attention to pure strategies, the voter must believe that the politician more likely to be sincere is sincere with probability one while the other politician is corrupt with probability one. Thus, in this case $Pr(\tau_A = S|p_A, p_B) = 1$ and $Pr(\tau_B = S|p_A, p_B) = 0$. Suppose first that politician $A$ chose $p_A = 0$ and politician $B$ chose $p_B = 1$. Thus, politician $A$ will learn $\theta$ if $\alpha_G \leq 1$, which occur with probability $\frac{1}{\overline{\alpha}}$. The voter's expected payoff for electing $A$ over $B$ is then,

$$\begin{aligned} EU_V(v = A|\hat{\pi}_A, x_A^*) &= \frac{1}{\overline{\alpha}}(q(-|0-0|) + (1-q)(-|1-1|)) \\ &+ \left(1 - \frac{1}{\overline{\alpha}}\right)(q(-|0-0|) + (1-q)(-|0-1|)), \\ &= -\frac{(\overline{\alpha}-1)(1-q)}{\overline{\alpha}}. \end{aligned}$$

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

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

Thus, it is incentive compatible to elect politician $A$ if,

$$-\frac{(\overline{\alpha}-1)(1-q)}{\overline{\alpha}} \geq -q,$$

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

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

Her expected payoff for electing $B$ given that $B$ will be bribed even though he ran on reform with probability $\frac{1-\kappa}{\overline{\alpha}}$ is,

$$\begin{aligned} EU_V(v=B|\hat{\pi}_B,x_B^*) &= \frac{1-\kappa}{\overline{\alpha}}(q(-|1-0|)+(1-q)(|-|1-1|)) \\ &+ \left(1-\frac{1-\kappa}{\overline{\alpha}}\right)(q(-|0-0|)+(1-q)(|0-1|)), \\ &= -\left(\frac{1-\kappa}{\overline{\alpha}}\right)q-\left(\frac{\overline{\alpha}+\kappa-1}{\overline{\alpha}}\right)(1-q). \end{aligned}$$

It is incentive compatible to elect politician $A$ if,

$$0 \geq -\frac{(1-\kappa)q}{\overline{\alpha}}-\frac{(\overline{\alpha}+\kappa-1)(1-q)}{\overline{\alpha}},$$

which is always satisfied since $\kappa \in (0,1)$, $\overline{\alpha} \geq 1$ and $q \in \left(\frac{1}{2},1\right]$. Thus, regardless of the sincere politician's platform the voter never wants to deviate from electing him.

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

**Equilibrium campaign platforms.** Proposition 5 states the conditions for equilibrium existence. Ultimately, proposition 5 shows that we can support equilibria that are qualitatively similar to those in the baseline model in a similar model without platform commitment.

**Proposition 5.** *Define* $q_{CC}^{Reform}(\overline{\alpha}) := \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2}$, $\pi_{CC}^{Reform}(\overline{\alpha},\kappa) := \frac{\overline{\alpha}+2\kappa-2}{\overline{\alpha}+\kappa-1}$, $\kappa_{CC}^{Reform}(\overline{\alpha}) := \frac{2-\overline{\alpha}}{\overline{\alpha}}$, $\overline{\alpha}_{CC}^{Access}(\pi) := \frac{2}{1+\pi}$, $q_{CC}^{Access}(\overline{\alpha},\pi) := \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2-\overline{\alpha}\pi}$, *and* $\kappa_{CC}^{Access}(\overline{\alpha}) := \frac{2-\overline{\alpha}}{2}$.

- *A separating reform equilibrium to the costly campaign announcements game exists if* $q \geq q^{Reform}(\overline{\alpha})$, $\pi \leq \pi^{Reform}(\overline{\alpha},\kappa)$, *and* $\kappa > \kappa^{Reform}(\overline{\alpha})$.
- *A pooling access equilibrium to the costly campaign announcements game exists if* $\overline{\alpha} \geq \overline{\alpha}^{Access}(\pi)$, $q < q_{CC}^{Access}(\overline{\alpha},\pi)$, *and* $\kappa \geq \kappa^{Access}(\overline{\alpha})$.

*Additionally, a pooling anti-interest group equilibrium in which both sincere and corrupt politicians run on reform platforms always exists in the costly campaign announcements game.*

*Proof of Proposition 5.* Consider the environment in the reform equilibrium. Sincere politicians run on reform platforms and corrupt politicians run on access platforms. The voter can infer politician types perfectly and elects a sincere politician when one is running.

With this in mind, the corrupt politician's payoff for running on access is,

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

If the corrupt politician is running against a sincere politician he will lose for sure and receive zero since he can not be bribed. If instead he is running against another corrupt politician then he wins with probability one-half and is subsequently bribed to set $x = 1$, while with complementary probability he loses and receives zero.

If the corrupt politician deviates and runs on a reform platform then his expected payoff is,

$$\begin{aligned} EU_i(p_i = 0 | \tau_i = C, b^*, \pi) &= \pi\left(\frac{1}{2}\left(\frac{1-\kappa}{\overline{\alpha}}(b^*)\right) + \frac{1}{2}(0)\right) + (1-\pi)\left(\frac{1-\kappa}{\overline{\alpha}}(b^*)\right), \\ &= \frac{(1-\kappa)(2-\pi)}{2\overline{\alpha}}. \end{aligned}$$

If he faces a sincere politician he wins with probability one-half, in which case he will still receive a bribe with probability $(1-\kappa)/\overline{\alpha}$ and with probability one-half he loses and receives nothing. If he faces another corrupt politician he wins for sure, but is only bribed with probability $\frac{(1-\kappa)}{\overline{\alpha}}$. Combining these expected payoffs yields the incentive compatibility condition that must be satisfied for a corrupt politician to run on an access platform given that sincere politicians run on reform,

$$\frac{1}{2}(1-\pi) \geq \frac{(1-\kappa)(2-\pi)}{2\overline{\alpha}}.$$

This condition is satisfied for all $\overline{\alpha} > 1$ so long as $\kappa > \frac{2-\overline{\alpha}}{2}$ and $\pi \leq \frac{\overline{\alpha}+2\kappa-2}{\overline{\alpha}+\kappa-1}$. Define $\kappa^{\text{Reform}}(\overline{\alpha}) := \frac{2-\overline{\alpha}}{2}$ and $\pi^{\text{Reform}}(\overline{\alpha}, \kappa) := \frac{\overline{\alpha}+2\kappa-2}{\overline{\alpha}+\kappa-1}$. When $\kappa > \kappa^{\text{Reform}}(\overline{\alpha})$ and $\pi \leq \pi^{\text{Reform}}(\overline{\alpha}, \kappa)$ it is incentive compatible for a corrupt politician to run on access when sincere politicians run on reform. As $\kappa$ increases the corrupt politician's incentives to deviate weaken since even if he were to win by running on reform it is less likely the interest group will find bribery incentive compatible (lemma B.2). Holding other parameters fixed, as $\pi$ decreases the incentives for the corrupt politician to deviate also weaken since it is less likely he will be running against a sincere politician (which leads to electoral loss). Conversely, as $\pi$ increases the corrupt politician has stronger incentives to deviate and mimic sincere politicians since that is the only way he could win (and receive a bribe) with positive probability.

Now consider the incentives for a sincere politician. Running on a reform platform does not rule out the possibility that he will still learn $\theta$. Compared to the baseline model this leads to stronger incentives for sincere politicians to run on reform when corrupt politicians run on access.

A sincere politician's expected payoff for running on reform is given by,

$$\begin{aligned} EU_i(p_i = 0|\tau_i = S, \theta, p_j, \pi) &= \pi\left(\frac{1}{2}\left(q(0) + (1-q)\left(\frac{1}{\overline{\alpha}}(0) + \frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right)\right. \\ &+ \left.\frac{1}{2}\left(q(0) + (1-q)\left(\frac{1}{\overline{\alpha}}(0) + \frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right)\right) \\ &+ (1-\pi)\left(q(0) + (1-q)\left(\frac{1}{\overline{\alpha}}(0) + \frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right) \\ &= \frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}. \end{aligned}$$

If he faces another sincere politician then he wins the election with probability one-half. Should he win he will always match policy correctly when $\theta = 0$ regardless of whether he learns $\theta$ from the group. If $\theta = 1$ then he may learn $\theta$ from the group (with probability $\frac{1}{\overline{\alpha}}$) in which case he will match policy to the state and lose nothing, but he may not learn $\theta$ and instead set $x = 0$ by following his prior about $\theta$ and lose one from that mismatch. With probability one-half he will lose to another sincere politician, but since a sincere politician takes office he receives the same expected utility as if he had won. Finally, if the sincere politician running on reform faces a corrupt politician running on access then he will win the election for sure and have the same policy payoffs as when he wins against another sincere politician.

If the sincere politician deviates and runs on access then his expected payoffs are given by,

$$\begin{aligned} EU_i(p_i = 1|\tau_i = S, \theta, p_j, \pi) &= \pi\left(q(0) + (1-q)\left(\frac{1}{\overline{\alpha}}(0) + \frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right) \\ &+ (1-\pi)\left(\frac{1}{2}\left(q(0) + (1-q)(0)\right) + \frac{1}{2}\left(q(-1) + (1-q)(0)\right)\right) \\ &= \pi\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right) - \frac{1}{2}(1-\pi)q. \end{aligned}$$

When the sincere politician faces another sincere politician he loses for sure and receives policy payoffs analogous to those when he runs on his equilibrium reform platform. When he faces a corrupt politician he wins with probability one-half, in which case he learns $\theta$ and can match policy to the state since he ran on an access platform. However, he may lose to a corrupt politician, in which case the winner is bribed and the sincere politician loses one when $\theta = 0$. Combining these yields the incentive compatibility condition that must be satisfied for sincere politicians to stick with running on reform when corrupt politicians run on access,

$$\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}} \geq \pi\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right) - \frac{1}{2}(1-\pi)q.$$

This condition is satisfied when $q \geq \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2}$. Define $q^{\text{Reform}}(\overline{\alpha}) := \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2}$ as the lower bound on $q$ such that a sincere politician will continue to run on reform when corrupt politicians run on access.

Note that $\frac{dq^{\text{Reform}}(\overline{\alpha})}{d\overline{\alpha}} > 0$ so the lower bound on $q$ that supports sincere politician's running on reform is increasing in $\overline{\alpha}$, which implies that it is increasing as the likelihood of learning $\theta$ even after running on reform decreases. Moreover, $q^{\text{Reform}}(\overline{\alpha}) \to 2/3$ as $\overline{\alpha} \to \infty$, which highlights that as $\overline{\alpha}$ grows arbitrarily large the reform equilibrium in this model is equivalent to the analogous equilibrium of the baseline model.

Now consider the other equilibrium from the baseline model: the pooling access equilibrium. Both types of politicians run on access platforms, which implies that the voter is unable to distinguish politician types and therefore elects either politician with equal probability. Additionally, the off-path beliefs that support this equilibrium are such that a deviation to a reform platform leads the voter to place full mass on the deviating politician being a sincere type. This implies that a deviation to reform leads the deviating politician to be elected with certainty.

First consider a corrupt politician. Given that sincere politicians also run on access platforms, a corrupt politician's expected payoff for running on access is given by,

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

Regardless of whether he runs against a sincere politician or another corrupt politician he wins with probability one-half since the voter does not learn politician types. If he wins then he is bribed, implements $x = 1$, and receives a payoff of one. If he loses then he is not bribed and receives nothing. Thus, his expected payoff is just the ex ante probability he wins, which is one-half.

If instead the corrupt politician deviates to running on reform then the voter updates that he is sincere and he wins the election with certainty. However, he has decreased the likelihood that he will be bribed by running on reform, which yields an expected payoff of,

$$\begin{aligned} EU_i(p_i = 0 | \tau_i = C, p_j^*, \kappa, \overline{\alpha}) &= \pi\left(\frac{1-\kappa}{\overline{\alpha}}(b^*) + \frac{\overline{\alpha}+\kappa-1}{\overline{\alpha}}(0)\right) + (1-\pi)\left(\frac{1-\kappa}{\overline{\alpha}}(b^*) + \frac{\overline{\alpha}+\kappa-1}{\overline{\alpha}}(0)\right), \\ &= \frac{1-\kappa}{\overline{\alpha}}. \end{aligned}$$

Regardless of the other politician's type the corrupt politician wins the election since he ran on reform and the voter believes he is sincere. However, he can only be bribed if the group's access costs, combined with the cost of bribery $\kappa$, is realized sufficiently low, which, from Lemma B.2, occurs with ex ante probability $\frac{1-\kappa}{\overline{\alpha}}$. The product of this probability and the benefit from being bribed, which is one, yields the corrupt politician's expected payoff for this deviation. Combining these expected payoffs provides the incentive compatibility condition that must hold for the corrupt politician to stick with running on access when sincere politicians also run on access,

$$\frac{1}{2} \geq \frac{1-\kappa}{\overline{\alpha}}.$$

This condition is satisfied so long as $\kappa \geq \frac{2-\overline{\alpha}}{2}$. Define $\kappa^{\text{Access}}(\overline{\alpha}) := \frac{2-\overline{\alpha}}{2}$ as the threshold on $\kappa$ such that if $\kappa \geq \kappa^{\text{Access}}(\overline{\alpha})$ then a corrupt politician will continue to run on access when sincere politicians run on access. The likelihood that this condition is satisfied is increasing in both $\overline{\alpha}$, since the lower bound on $\kappa$ is decreasing in $\overline{\alpha}$, and $\kappa$.[4] The intuition for this dynamic is that the likelihood of a corrupt politician being bribed after running on reform is decreasing in both $\overline{\alpha}$ and $\kappa$. A larger $\overline{\alpha}$ raises the probability that realized access costs $\alpha_G$ will be too large for the group to pay. A larger $\kappa$ directly reduces the likelihood that the group will bribe a corrupt politician that ran on reform due to increasing costs of doing so. Thus, once either $\overline{\alpha}$ or $\kappa$ becomes too large ($\overline{\alpha} > 2$ or $\kappa > 1/2$) there is no incentive for the corrupt politician to deviate to reform even though that would lead to his taking office for sure. Once again, this highlights the fact that this model without platform commitment approximates the baseline model with full commitment as $\overline{\alpha}$ increases and, in the case of corrupt politicians in particular, as bribery becomes more expensive.

Now consider the incentives for sincere politicians in this environment. The upside for sincere politicians is that if they win they will learn $\theta$ for sure since they ran on access platforms. The downside risk is that since they have not identified themselves as sincere to the voter that a corrupt politician may take office. A sincere politician's expected payoff for running on access given that all other politicians do as well is given by,

$$\begin{aligned} EU_i(p_i = 1 | \tau_i = S, p_j^*, \theta, \pi) &= \pi\left(\frac{1}{2}(0) + \frac{1}{2}(0)\right) + (1-\pi)\left(\frac{1}{2}(0) + \frac{1}{2}(q(-1) + (1-q)(0))\right), \\ &= -\frac{1}{2}(1-\pi)q. \end{aligned}$$

If the sincere politician faces another sincere politician then regardless of who wins, they learn $\theta$ and match policy to the state, yielding no policy losses. If instead he faces a corrupt politician then when he wins (with probability one-half) he learns $\theta$ and loses nothing, but if the corrupt politician takes office and gets bribed then the sincere politician loses utility when $\theta = 0$, which yields overall expected losses of $\frac{1}{2}(1-\pi)q$.

If instead the sincere politician deviates to running on reform then he will win the election with certainty, but will also lower the likelihood that he learns $\theta$ from the interest group. His expected

[4] In fact, once $\overline{\alpha}$ is larger than two the condition is trivially satisfied since $\kappa > 0$. Similarly, once $\kappa > \frac{1}{2}$ the condition is trivially satisfied since $\frac{2-\overline{\alpha}}{2} \to 1/2$ as $\overline{\alpha} \to 1$ (its lower bound).

payoffs in this case are given by,

$$\begin{aligned} EU_i(p_i=0|\tau_i=S,p_j^*,\theta,\overline{\alpha}) &= \pi\left(q(0)+(1-q)\left(\frac{1}{\overline{\alpha}}(0)+\frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right) \\ &+ (1-\pi)\left(q(0)+(1-q)\left(\frac{1}{\overline{\alpha}}(0)+\frac{\overline{\alpha}-1}{\overline{\alpha}}(-1)\right)\right), \\ &= \frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}. \end{aligned}$$

Regardless of the type of opponent, the sincere politician that deviates to reform wins with certainty. When $\theta=0$ policy will match the state whether or not he learns $\theta$ since he either follows his information or, when he does not learn $\theta$, he always sets $x=0$ following his prior. When $\theta=1$ he only matches policy to the state if he learns $\theta$, which happens with probability $1/\overline{\alpha}$, and otherwise he mismatches and loses one. Combining these expected payoffs yields the incentive compatibility condition that must be satisfied for the sincere politician to stick with access:

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

This condition is satisfied when $q<\frac{2\overline{\alpha}-2}{3\overline{\alpha}-2-\overline{\alpha}\pi}$ and $\overline{\alpha}\geq\frac{2}{1+\pi}$. Define the thresholds $q^{\text{Access}}(\overline{\alpha},\pi):=\frac{2(1-\overline{\alpha})}{2-\overline{\alpha}(3-\pi)}$ and $\overline{\alpha}^{\text{Access}}(\pi):=\frac{2}{1+\pi}$. So long as $q<q^{\text{Access}}(\overline{\alpha},\pi)$ and $\overline{\alpha}\geq\overline{\alpha}^{\text{Access}}(\pi)$ then sincere politicians will run on access when corrupt politicians run on access. The upper bound on $q$ is increasing in both $\overline{\alpha}$ and $\pi$. As $\overline{\alpha}$ increases the probability that $\alpha_G$ will be realized such that the sincere politician will still learn $\theta$ after running on reform decreases. This implies that the politician's beliefs that $\theta=0$ must be stronger (i.e., $q$ must be higher) to induce the politician to deviate to reform since it is more likely that if he does so he will not learn $\theta$ and implement $x=0$ once he wins office. Similarly, as $\pi$ increases it is more likely that even if the sincere politician loses the election he will lose to another sincere politician, who will learn $\theta$ and match policy to the state. This implies that the incentives to deviate to reform to ensure winning are weaker and therefore the threshold on $q$ to support running on access is less stringent (i.e., the upper bound on $q$ is higher). Additionally, notice that $\frac{2(1-\overline{\alpha})}{2-\overline{\alpha}(3-\pi)}\to\frac{2}{3-\pi}$ as $\overline{\alpha}\to\infty$, which is exactly the relevant condition in the baseline model with full commitment. The lower bound on $\overline{\alpha}$ to support pooling on access platforms is decreasing in $\pi$. Thus, as the likelihood of running against another sincere politician increases the probability that the politician would learn $\theta$ should he deviate to reform and win can be higher (i.e., $\overline{\alpha}$ can be lower) and he would still forego that possibility and run on an access platform when corrupt politicians also run on access, since the likelihood of losing to a corrupt politician, should he lose, is lower.[5]

[5] Notice also that once $\overline{\alpha}>2$ the condition on $\overline{\alpha}$ is always trivially satisfied since $\pi>0$.

Finally, consider the anti-interest group equilibrium in which all politicians run on reform platforms. In this case the voter can not discern politician types and the probability that sincere (corrupt) politicians learn $\theta$ (are bribed) if they win the election is lower than if they had run on access platforms. The off-path beliefs that support this equilibrium are such that a deviation to access leads the voter to believe the deviating politician is corrupt with probability one. This implies that a deviation to an access platform leads the deviating politician to lose the election with certainty. For sincere politicians, then, there is no incentive to deviate to an access platform as they would lose the election for sure while sticking with reform preserves a positive probability of winning the election and learning $\theta$. Corrupt politicians also have no incentive to deviate since in that case they lose with certainty, can not be bribed, and receive nothing whereas if they stick with reform then there is a positive probability of winning the election and being bribed. Thus, when there is a positive probability of either still learning $\theta$, in the case of sincere politicians, or still being bribed, in the case of corrupt politicians, no politicians have an incentive to deviate from a reform platform when all other politicians are also running on reform. ■

## B.4 Voter welfare

Proposition 6 states the main welfare results. The dynamics for voter welfare are largely the same as in the baseline model.

**Proposition 6.** *Define* $q^{Welfare}_{Access}(\overline{\alpha}) := \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2}$, $\pi^{Welfare}_{Access}(\overline{\alpha}, q) := \frac{2(1-\overline{\alpha})+q(3\overline{\alpha}-2)}{1-\overline{\alpha}+q(2\overline{\alpha}-1)}$, *and* $\pi^{Welfare}_{Anti\text{-}IG}(\overline{\alpha}, q, \kappa) := \frac{1+2q(\overline{\alpha}+\kappa-1)-\overline{\alpha}-\kappa}{1+q(2\overline{\alpha}-1)-\overline{\alpha}}$. *In terms of ex ante voter welfare, reform equilibrium is preferred to access equilibrium if* $q > q^{Welfare}_{Access}(\overline{\alpha})$ *and* $\pi < \pi^{Welfare}_{Access}(\overline{\alpha}, q)$ *when both exist and reform equilibrium is preferred to anti-interest group equilibrium if* $\pi > \pi^{Welfare}_{Anti\text{-}IG}(\overline{\alpha}, q, \kappa)$ *when both exist.*

*Proof of Proposition 6.* Consider the voter's ex ante welfare from the reform equilibrium,

$$W_V^{\text{Reform}}(p,x) = (\pi^2 + 2(1-\pi)\pi)\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right) - q(1-\pi)^2.$$

The voter is able to perfectly infer politician types in a reform equilibrium. If a sincere politician is running – which occurs with probability $\pi^2 + 2(1-\pi)\pi$ – then the voter elects a sincere politician for sure. However, because that politician ran on a reform platform they may not learn $\theta$, which yields an expected payoff that is decreasing in $\overline{\alpha}$. If instead no sincere politician is running then a corrupt politician is elected – which occurs with probability $(1-\pi)^2$ – and since he ran on access will be bribed and set $x = 1$, yielding expected losses $q$ (the probability $x = 1$ mismatches the state).

The only difference in voter welfare between this model and the baseline is that the payoff associated with electing a sincere politician is scaled by $\overline{\alpha}$. That is, with costly campaign announcements, but no platform commitment, the voter's trade-off between improved screening and informed policymaking is weaker. Since sincere politicians that run on reform still learn $\theta$ with some positive probability, the voter's ex ante welfare from electing a sincere politician that ran on reform is higher than when there is full platform commitment (so long as $\overline{\alpha}$ is finite). However, the larger $\overline{\alpha}$ becomes the lower the probability of a sincere politician learning $\theta$ once in office and, therefore, welfare in the costly campaign announcements game approaches welfare in the full commitment environment. To see this, note that as $\overline{\alpha} \to \infty$, $\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}} \to -(1-q)$, which is the same payoff as that in the baseline model.

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

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

Since the voter cannot discern politician types in this equilibrium she elects either politician with equal probability and her welfare depends solely on whether the politician elected is sincere or corrupt. If a sincere politician is elected then she loses nothing since that politician will learn $\theta$ and match policy to the state. If instead she happens to elect a corrupt politician, which will be the case with probability $1-\pi$, that politician implements $x=1$, which mismatches the state with probability $q$. In this case, voter welfare is equivalent to access equilibrium welfare in the baseline model since in this case the interest group also gains access to the politician in office with certainty.

Finally, in an anti-interest group equilibrium the voter cannot distinguish politician types and therefore elects either politician with equal probability. Since both politicians run on reform platforms voter welfare depends on whether the winning politician was sincere (probability $\pi$) or corrupt (probability $1-\pi$) as well as the probability that the winning politician learns $\theta$ (probability $1/\overline{\alpha}$) or is bribed (probability $1-\kappa/\overline{\alpha}$), respectively. Sincere politicians that win and do not learn $\theta$ and corrupt politicians that win and are not bribed almost implement $x=0$. Otherwise, if a sincere politician wins and learns $\theta$ then he matches policy to the state and if a corrupt politician wins and is bribed then he implements $x=1$. Thus, the voter's ex ante welfare in an anti-interest group equilibrium is,

$$\begin{aligned} W_V^{\text{Anti-IG}}(p,x) &= \pi\left(\frac{\overline{\alpha}-1}{\overline{\alpha}}(-(1-q))\right) - (1-\pi)\left(\frac{1-\kappa}{\overline{\alpha}}(-q) + \frac{\overline{\alpha}+\kappa-1}{\overline{\alpha}}(-(1-q))\right), \\ &= \pi\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right) + (1-\pi)\left(\frac{q(\kappa-1)}{\overline{\alpha}} + \frac{(1-q)(1-\overline{\alpha}-\kappa)}{\overline{\alpha}}\right). \end{aligned}$$

With the relevant voter welfare expressions in hand we can now turn to equilibrium comparisons. Consider the reform equilibrium and the access equilibrium. Combining the two relevant welfare expressions yields the condition that dictates whether the voter is better off in a reform equilibrium or an access equilibrium when both exist:

$$(\pi^2+2(1-\pi)\pi)\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right)-q(1-\pi)^2 > -(1-\pi)q. \tag{2}$$

If inequality 2 holds then the voter prefers a reform equilibrium to an access equilibrium. If it is reversed then access equilibrium is welfare-preferred. Inequality (2) is satisfied for all $\overline{\alpha} > 1$ whenever $q > \frac{2\overline{\alpha}-2}{3\overline{\alpha}-2} := q^{\text{Welfare}}_{\text{Access}}(\overline{\alpha})$ and $\pi < \frac{2(1-\overline{\alpha})+q(3\overline{\alpha}-2)}{1-\overline{\alpha}+q(2\overline{\alpha}-1)} := \pi^{\text{Welfare}}_{\text{Access}}(\overline{\alpha}, q)$, yielding the result.

Now consider the separating reform equilibrium as compared to the anti-interest group equilibrium. Combining the two relevant expressions from above yields the inequality that dictates when reform equilibrium is welfare-preferred to anti-interest group equilibrium,

$$(\pi^2+2(1-\pi)\pi)\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right)-q(1-\pi)^2 > \pi\left(\frac{(1-\overline{\alpha})(1-q)}{\overline{\alpha}}\right)+(1-\pi)\left(\frac{q(\kappa-1)}{\overline{\alpha}}+\frac{(1-q)(1-\overline{\alpha}-\kappa}{\overline{\alpha}}\right). \tag{3}$$

If this inequality holds then the reform equilibrium is preferred to the anti-interest group equilibrium when both exist. Otherwise, the anti-interest group equilibrium is welfare-preferred. Inequality (3) is satisfied for all $\kappa \in (0,1)$, $\overline{\alpha} > 1$, and $q \in \left(\frac{1}{2}, 1\right)$ if $\pi > \frac{1+2q(\overline{\alpha}+\kappa-1)-\overline{\alpha}-\kappa}{1+q(2\overline{\alpha}-1)-\overline{\alpha}} := \pi^{\text{Welfare}}_{\text{Anti-IG}}(\overline{\alpha}, q, \kappa)$. Taken together, all of these conditions combine to form the result as stated. ■

# C Dynamic political agency

## C.1 Equilibrium existence

**Proposition 7.** *Define* $q_D^{Reform}(\pi,\delta,\varepsilon) := \frac{\delta(\varepsilon-1)+1}{(\delta+1)(\delta(\varepsilon-1)+1)+(\delta-1)\delta\pi}$. *A separating reform equilibrium to the dynamic no-commitment game exists if* $q \geq q_D^{Reform}(\pi,\delta,\varepsilon)$. *Additionally, an access equilibrium always exists.*

*Proof of Proposition 7.* First consider a reform equilibrium in which sincere types choose $p_t = 0$ at all $t$ and corrupt types choose $p_t = 1$. This implies that the voter always learns the incumbent's type on the path of play. Therefore, the voter always retains the incumbent when $p_t = 0$ and never retains the incumbent when $p_t = 1$.

We denote the voter's discounted present value for electing a sincere (corrupt) type as $U_V^R(S)$

($U_V^R(C)$) and the value for a random challenger as $\overline{U}_V^R$. These can be defined recursively as

$$\begin{aligned}
U_V^R(S) =&(1-q)(0+\delta(\varepsilon((1-q)+\delta\overline{U}_V^R)+(1-\varepsilon)U_V^R(S)))+\\
&q(1+\delta(\varepsilon((1-q)+\delta\overline{U}_V^R)+(1-\varepsilon)U_V^R(S)))\\
U_V^R(C) =&(1-q)(1+\delta\overline{U}_V^R)+q(0+\delta\overline{U}_V^R)\\
\overline{U}_V^R =&\pi U_V^R(S)+(1-\pi)U_V^R(C).
\end{aligned}$$

The explanations for these continuation values are as follows. For $U_V^R(S)$ we consider a sincere type taking office. In a reform equilibrium this type denies access and chooses $x_t = 0$. Furthermore, sincere types are always retained. With probability $(1-q)$ the state was $\theta_t = 1$ and the voter gets an instantaneous payoff of zero. The voter still retains the incumbent in this case. In the next period, with probability $\varepsilon$ the sincere type becomes corrupt in the next period after being retained, grants access, and chooses $x = 1$. This gives the voter an expected utility of $(1-q)$ in period $t+1$. This is discounted by $\delta$. This voter will replace the incumbent in $t+1$ following that choice so she gets the payoff $\overline{U}_V^R$ from starting with a random challenger at time $t+2$, discounted again by $\delta$. With probability $(1-\varepsilon)$, the retained incumbent remains sincere and the voter's continuation value remains $U_V^R(S)$, discounted by one period. With probability $q$ the state was $\theta_t = 0$ and the voter gets an instantaneous payoff of 1 rather than 0. Since the incumbent is still retained the voter's utility starting in the next period is the same as above. To explain $U_V^R(C)$ we consider a corrupt politician taking office. This politician always grants access and chooses $x_t = 1$. With probability $(1-q)$ we have $\theta_t = 1$ and the voter gets a payoff of 1. The incumbent is still removed and the voter's continuation value is then $\overline{U}_V^R$, her value from a random challenger, discounted for one period. With probability $q$ the state is $\theta_t = 0$ and the voter gets a payoff of 0, still removes the incumbent, and once again gets a discounted continuation value equal to $\overline{U}_V^R$. Finally, $\overline{U}_V^R$ is computed simply by taking a weighted average of continuation values for electing sincere and corrupt types, weighted by the probability of each type.

We derive reduced forms of the continuation values by solving the system above for each of the continuation values. Solving this system for the three value functions yields

$$U_V^R(S) = \frac{\delta\varepsilon+\delta\pi q-\delta q\varepsilon-\delta q+q}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi+1)} \tag{4}$$

$$U_V^R(C) = \frac{\delta\varepsilon-\delta+\delta\pi q-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi+1)} \tag{5}$$

$$\overline{U}_V^R = \frac{\delta\varepsilon-\delta+\delta\pi-\delta\pi q+2\pi q-\pi-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi+1)}. \tag{6}$$

It is easily verified that $U_V^R(S) > U_V^R(C)$ for any allowed values of the parameters, which implies in this case that the voter has a strict incentive to retain an incumbent believed to be sincere. Since beliefs are degenerate after observing the access choice, the voter retains an incumbent who denies access regardless of her information about the policy choice and outcome. Furthermore, since the game begins with a randomly drawn incumbent $\overline{U_V}^R$ is also the voter's expected welfare in a reform equilibrium.

The corrupt type of politician will always grant access in this equilibrium. The corrupt type of incumbent's equilibrium payoff is equal to $1+\delta\overline{U_V}^R$ since it takes a bribe in the current period and then immediately leaves office. The payoff to deviating in one time period would be $0+\delta 1+\delta^2\overline{U_V}^R$ since it would forgo a bribe in the current period in exchange for a bribe in the next period. This deviation would not be a best response for any discount factor so by the one-stage deviation principle the corrupt type would not deviate from this equilibrium.

To understand the sincere type's decision we recursively define the sincere incumbent's value function from the reform equilibrium, denoted as $U_S^R$ as

$$U_S^R = q+\delta(\varepsilon(1+\delta\overline{U_V}^R)+(1-\varepsilon)U_S^R).$$

Though the sincere type of politician's utility in the current period is identical to the voter's, the sincere type's continuation value differs because of the knowledge that her type may change in the future. The explanation for the sincere type's continuation value is as follows. The sincere type denies access and chooses $x_t=0$. With probability $q$ this choice is correct (i.e. $\theta_t=0$) and the policy payoff is one. Thus, the expected policy payoff in the current period is $q$. Furthermore, the sincere incumbent is always retained. After being retained, she becomes corrupt with probability $\varepsilon$, at which point she takes a bribe valued at 1 and then leaves office in the next period, after which she receives a continuation value identical to the voter's continuation value for electing a random challenger. With probability $(1-\varepsilon)$ she remains sincere and the continuation value in the next period is the same as in the current period.

Substituting the derived value of $\overline{U_V}^R$ and solving for $U_S^R$ yields

$$U_S^R = \frac{\delta^2\varepsilon-\delta^2\varepsilon^2-\delta\varepsilon+\delta^3\pi q\varepsilon-2\delta^2\pi q\varepsilon+\delta^2\pi q-\delta\pi q+\delta^3 q\varepsilon^2-\delta^3 q\varepsilon+2\delta^2 q\varepsilon-\delta^2 q-\delta q\varepsilon+2\delta q-q}{(\delta-1)(\delta\varepsilon-\delta+1)(\delta\varepsilon-\delta+\delta\pi+1)}. \quad (7)$$

The payoff to deviating by granting access is $1+\delta U_V^R$ since the sincere type's payoff is the same as the voter's when she is out of office. Thus, the sincere type of politician prefers denying access in the reform equilibrium to deviating if

$$U_S^R \geq 1+\delta U_V^R. \quad (8)$$

Substituting (7) and (6) for $U_S^R$ and $U_V^R$ and solving for $q$ yields our condition for supporting the reform equilibrium in this game in the form of a cutoff for $q$.

$$q \geq \frac{\delta(\varepsilon-1)+1}{(\delta+1)(\delta(\varepsilon-1)+1)+(\delta-1)\delta p}. \tag{9}$$

An access equilibrium always exists in the dynamic game. In this equilibrium profile, both types grant access. Furthermore, the voter makes retention decisions solely on the basis of observed outcomes: as long as access is granted she retains the incumbent when she learns her utility in that period is 1 and replaces the incumbent when she learns her utility in that period is 0. If access is granted and she does not learn the policy choice or outcome from that period (which occurs with probability $1-r$), she is indifferent between replacing and retaining the incumbent, so will retain the incumbent in this situation. Finally, if the voter observed an incumbent who denied access off the path of play, she would believe that incumbent to be sincere and would retain the incumbent: this is demanded by the Intuitive Criterion since denying access is equilibrium dominated for the corrupt type.

The reasoning for the existence of the access equilibrium is as follows. First, the argument for the corrupt type in the separating equilibrium implies that the corrupt type would not deviate to denying access even if it guaranteed her reelection. For the sincere type, granting access guarantees the best policy outcome in the current period. Furthermore, since the voter updates solely on policy outcomes (and retains when she learns nothing), this guarantees reelection for the sincere type. Thus, there is no gain to deviating to denying access for either type. ■

In the graphical examples we are interested in the limit of equilibria as $\varepsilon \to 0$. This follows in this case from taking the limit of $q_D^{\text{Reform}}$ as $\varepsilon \to 0$ which yields the next result.

**Corollary C.1.** *In the limit as $\varepsilon \to 0$ there is a reform equilibrium if $q \geq \frac{1}{1+\delta-\pi\delta}$.*

*Proof.* This follows from taking $\lim_{\varepsilon\to 0} \frac{\delta(\varepsilon-1)+1}{(\delta+1)(\delta(\varepsilon-1)+1)+(\delta-1)\delta\pi}$. ■

## C.2 Voter welfare

**Proposition 8.** *There exists a cutoff $q_D^W(\pi,\delta,\varepsilon,r)$ such that the reform equilibrium produces a higher ex ante expected utility to the voter than the access equilibrium if and only if $q \geq q_D^W(\pi,\delta,\varepsilon,r)$. Furthermore, when the reform equilibrium exists, this condition always holds as $r \to 0$ and never holds as $r \to 1$.*

*Proof of Proposition 8.* To compute voter welfare in the access equilibrium, we define the voter's discounted present value for electing a sincere type in the access equilibrium as $U_V^A(S)$, the present value for a corrupt type as $U_V^A(C)$, and the value for a random politician as $\overline{U}_V^A$. These are defined as follows:

$$
\begin{aligned}
U_V^A(S) =& 1+\delta(\varepsilon U_V^A(C)+(1-\varepsilon)U_V^A(S))\\
U_V^A(C) =& (1-q)(1+\delta U_V^A(C))+q(0+\delta(r\overline{U}_V^A+(1-r)U_V^A(C)))\\
\overline{U}_V^A =& \pi U_V^A(S)+(1-\pi)U_V^A(C).
\end{aligned}
$$

Solving this system for the continuation values gives us

$$
\begin{aligned}
U_V^A(S) =& \frac{\delta\varepsilon-\delta+\delta\pi qr-\delta q\varepsilon+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi qr+1)}\\
U_V^A(C) =& \frac{\delta\varepsilon-\delta+\delta\pi qr-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi qr+1)}\\
\overline{U}_V^A =& \frac{\delta\varepsilon-\delta-\delta\pi q+\delta\pi qr+\pi q-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi qr+1)}.
\end{aligned}
$$

The explanation for the continuation values is as follows. $U_V^A(S)$ is the value for electing a sincere type in an access equilibrium. This type always matches the policy to the state of the world so the payoff in the current period is equal to 1. Furthermore, the sincere incumbent is always retained. The sincere incumbent is corrupt in the next period with probability $\varepsilon$ and sincere in the next period with probability $(1-\varepsilon)$, giving the voter the corresponding continuation values discounted by one period. $U_V^A(C)$ is the voter's value for electing a corrupt type in the access equilibrium. The corrupt type grants access and sets policy to $x_t = 1$. With probability $(1-q)$ this policy matches the true state, giving the voter an instantaneous payoff of 1. In this case the voter retains the Incumbent and the game continues once again giving the voter $U_V^A(C)$. With probability $q$ this policy does not match the state and the voter's payoff is zero. With probability $r$ the voter learns this payoff, removes the Incumbent, and gets her value for electing a random challenger, which is $\overline{U}_V^A$. With probability $(1-r)$ she does not learn her payoff, retains the Incumbent, and the game continues giving the voter $U_V^A(C)$ again. Finally, $\overline{U}_V^A$ is a probability-weighted average of values for electing each type. Since the first period begins with a random incumbent, $\overline{U}_V^A$ is also the voter's ex ante expected utility for playing the access equilibrium.

The reform equilibrium is preferred to the access equilibrium if

$$\overline{U}_V^R > \overline{U}_V^A.$$

Substituting the solutions for $\overline{U}_V^R$ and $\overline{U}_V^A$ gives

$$\frac{\delta\varepsilon-\delta+\delta\pi-\delta\pi q+2\pi q-\pi-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi+1)} > \frac{\delta\varepsilon-\delta-\delta\pi q+\delta\pi qr+\pi q-\delta q\varepsilon+\delta q-q+1}{(1-\delta)(\delta\varepsilon-\delta+\delta\pi qr+1)}.$$

Define $\Delta(\pi, q, \delta, r, \varepsilon)$ as the difference in voter values for the reform and access equilibria:

$$\begin{aligned}\Delta(\pi,q,\delta,r,\varepsilon) =& \frac{\delta\varepsilon - \delta + \delta\pi - \delta\pi q + 2\pi q - \pi - \delta q\varepsilon + \delta q - q + 1}{(1-\delta)(\delta\varepsilon - \delta + \delta\pi + 1)} \\ &- \frac{\delta\varepsilon - \delta - \delta\pi q + \delta\pi q r + \pi q - \delta q\varepsilon + \delta q - q + 1}{(1-\delta)(\delta\varepsilon - \delta + \delta\pi q r + 1)}.\end{aligned}$$

Note that $\Delta(\cdot)$ is continuous with respect to q. We now take limits of $\Delta(\cdot)$ for the extreme values of $q$:

$$\begin{aligned}\lim_{q\to 1/2}\Delta(\pi,q,\delta,r,\varepsilon) =& -\frac{\pi(\delta(r-2)+2)}{2(1-\delta)(\delta(\pi r + 2\varepsilon - 2)+2)} < 0 \\ \lim_{q\to 1}\Delta(\pi,q,\delta,r,\varepsilon) =& \frac{\delta\pi(1-r)(\delta(\varepsilon-1)+(\delta-1)\pi+1)}{(1-\delta)(\delta(\pi+\varepsilon-1)+1)(\delta(\pi r+\varepsilon-1)+1)} > 0,\end{aligned}$$

where both inequalities follow easily from the bounds on the parameters. By the Intermediate Value Theorem, there must be some value $q^* \in (1/2, 1)$ making the voter indifferent between equilibria (i.e. a point at which $\Delta(\pi, q^*, \delta, r, \varepsilon) = 0$ for given values of $\pi, \delta, r$ and $\varepsilon$.

Additionally, we have

$$\frac{\partial\Delta(\pi,q,\delta,r,\varepsilon)}{\partial q} = \frac{\pi\left(\frac{2}{\delta(\pi+\varepsilon-1)+1} - \frac{\delta(\delta+qr(\delta(\pi q r-2)+2)+\delta\varepsilon(2qr-1)+\varepsilon-2)+1}{(\delta(\pi q r+\varepsilon-1)+1)^2}\right)}{1-\delta} > 0,$$

which shows that $\Delta(\pi, q, \delta, r, \varepsilon)$ is increasing in $q$. Thus for $q > q^*$ the reform equilibrium is strictly preferred and for $q < q^*$ the access equilibrium is strictly preferred. Setting $q_D^W(\pi, \delta, \varepsilon, r) = q^*$ completes the proof of the first statement.

Next, to prove that the reform equilibrium is always preferred when $r = 0$, we note that

$$\Delta(\pi,q,\delta,0,\varepsilon) = \frac{p(\delta(-\varepsilon)+\delta+q((\delta+1)(\delta(\varepsilon-1)+1)+(\delta-1)\delta p)-1)}{(1-\delta)(\delta(\varepsilon-1)+1)(\delta(p+\varepsilon-1)+1)}.$$

Setting $\Delta(\pi, q, \delta, 0, \varepsilon) > 0$ and solving for $q$ yields $q > \frac{\delta\varepsilon-\delta+1}{\delta^2\varepsilon-\delta^2+\delta\varepsilon+\delta^2\pi-\delta p+1}$ which is implied by the existence conditions in Proposition 7, indicating that when both equilibria exist and $r = 0$ the reform equilibrium is preferred. Since $\Delta$ is continuous in $r$ this also implies that the reform equilibrium is preferred when $r$ is sufficiently close to zero.

Finally, to prove the the access equilibrium is always preferred when $r = 1$, we note that

$$\Delta(\pi,q,\delta,1,\varepsilon) = \frac{\pi(1-q)\left(\delta^2 q(\pi+\varepsilon-1)+\delta(q-2\pi q-\varepsilon+1)-1\right)}{(1-\delta)(\delta(\pi+\varepsilon-1)+1)(\delta(\pi q+\varepsilon-1)+1)}.$$

Setting $\Delta(\pi, q, \delta, 1, \varepsilon) = 0$ and solving for $q$ yields either $q = 1$ or $q = \frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)}$. We show that $q = 1$ is the only valid solution since $\frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)} \notin (1/2, 1)$. First, setting

$$\frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)} > \frac{1}{2}$$

and solving for $\delta$ gives $\delta < \frac{2\pi-1}{\pi+\varepsilon-1}$.[6] Second, setting

$$\frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)} < 1$$

and solving for $\delta$ yields $\delta > \frac{2\pi-1}{\pi+\varepsilon-1}$ which contradicts the requirement for $\frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)} > \frac{1}{2}$. Thus, $\frac{\delta\varepsilon-\delta+1}{\delta(\delta\varepsilon-\delta+\delta\pi-2\pi+1)} \notin (1/2, 1)$ meaning that the only valid solution for $\Delta(\pi, q, \delta, 1, \varepsilon) = 0$ is $q = 1$, which shows that the access equilibrium is always preferred for $q \in (1/2, 1)$. ■

[6] Notably, this is only possible for $\pi < \frac{1}{2}$ given that we must have $\varepsilon < \pi$.