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Clueless politicians

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Queen's Economics Department Working Paper No. 1341

Clueless Politicians

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CLUELESS POLITICIANS

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ABSTRACT. We develop a model of policymaking in which a politician decides how much expertise to acquire or how informed to become about issues before interest groups engage in monetary lobbying. For a range of issues, the policymaker prefers to remain clueless about the merits of reform, even when acquiring expertise or better information is costless. Such a strategy leads to intense lobbying competition and larger political contributions. We identify a novel benefit of campaign finance reform, showing how contribution limits decrease the incentives that policymakers have to remain uninformed or ignorant of the issues on which they vote.

“In politics, stupidity is not a handicap.”

– Napoleon Bonaparte

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1. INTRODUCTION

There is a popular belief that politicians are often “uninformed” or “clueless,” unwilling or unable to weigh the costs and benefits of alternative policies. Anecdotal evidence suggests that policymakers frequently do not fully understand the details of legislation on which they vote. This view is consistent with U.S. House Judiciary Chairman John Conyers’ argument when discussing health care reform in 2009: “What good is reading the bill if it’s a thousand pages and you don’t have two days and two lawyers to find out what it means after you read the bill?”¹ It is also consistent with politicians claiming ignorance of science when justifying their position on an issue. Among others, U.S. House Speaker John Boehner claimed, “I’m not qualified to debate the science over climate change.”² Empirical evidence further suggests that politicians often have inaccurate beliefs about constituent preferences (Broockman and Skovronz 2013). The lack of expertise may simply be the result of a policymaking environment where officials face severe time and resource constraints and find it infeasible to fully understand each of the many complex issues on which they vote (e.g. Bauer, Dexter and de Sola Pool 1963, Hansen 1991, Hall 1996). We show how this may, however, not be the whole story.

We present a game theoretic model of policymaking and lobbying, showing how political contributions can decrease as politicians become more informed about policy. In our model, politicians may have an incentive to remain strategically uninformed, ignorant about the policies on which they vote. This is because political contributions flow in greater quantity to clueless politicians than to those who believe that one policy is best. A clueless politician, unable to distinguish policies based on their merits, may choose policy based solely on political contributions. With a clueless politician, lobbying competition is most fierce, and as a result, payments from special interest groups are maximized. In contrast, an informed politician who knows one policy is best requires fewer political contributions to vote in its favor. Such a politician faces less intense lobbying, and collects fewer political contributions. Because of this, for a range of issues, a politician is better off being clueless than informed.

Our model involves a three stage game, played between one interest group in support of a policy reform, one interest group in support of the status quo, and a policymaker

¹Additionally, in 2013, after observing 14 senators take the step of recalling a bill a day after voting for it, Texas State Senator Kel Seliger said “I would be very reluctant to stand up and say that I was poorly informed and ill-prepared and clueless, which is exactly what we’re talking about happened here.” See Batheja (2013).

²During the U.S. 2014 midterm elections, a number of politicians made the “I’m not a scientist” argument to justify their opposition to climate change policy. These include then Senate Minority Leader Mitch McConnell, governors Rick Scott (FL) and Bobby Jindal (LA), and others. See Colbert (2014) and Cama (2015). Former U.S. Vice President Al Gore argued that the politicians were making such claims to maintain the support of deep pocketed special interests. See, Isquith (2014).

who cares about both the merits of implemented policy and collecting political contributions. In the first stage, the policymaker chooses an information collection strategy, through which he learns about the merits of the reform. In the second stage, the special interest groups, each favoring an alternative policy outcome, engage in a standard monetary lobbying game. The interest groups simultaneously provide lobbying offers to the policymaker. An offer specifies how large of political contribution a group provides when the policymaker implements its favored policy. In the third stage, the policymaker chooses the policy that offers the greatest weighted combination of expected policy benefits and promised political contributions.

The analysis begins with a simple information structure. The policymaker chooses between becoming fully informed about the benefits of reform, and remaining uninformed, left to make a decision based only on his priors. For important enough issues, the policymaker prefers to become fully informed, in which case the equilibrium involves him implementing the best policy with probability 1. This is likely the case with the issues that matter most for constituents and are most likely to influence future elections. The more interesting behavior involves less politically important issues, where the policymaker may sacrifice the quality of policy in order to attract more political contributions. On these issues, the policymaker prefers to remain uninformed, which leads to higher payments from interest groups in the monetary lobbying stage of the game. These may be issues that are not central to an election, or where interest group willingness to pay is sufficiently large (e.g. technology, finance or energy sectors).

After illustrating the basic tradeoff between better informed policy and political contributions under the simple information structure, we then allow for much more complex information collection strategies. Throughout the majority of the paper, our treatment of the information collection process is general, following a Bayesian persuasion approach. The policymaker designs a signal, which reveals information about a reforms type. In order to focus on the strategic incentives for remaining less informed, we abstract from the costs of information acquisition: It is costless for the policymaker to become completely informed (in which case he perfectly observes the quality of reform), to remain completely uninformed (in which his beliefs are determined by his priors), or to choose any intermediate signal. The choice of information collection strategy lends itself to a variety of reasonable interpretations. First, it may represent the expertise a politician acquires about an issue, either individually or by hiring expert staff. A politician with greater expertise can better judge the merits of different policy proposals, and more accurately compare the quality of alternative proposals given available evidence. Second, the choice of information collection strategy may represent a politician's evidence collection efforts. For example, it may capture the size and methodology of a poll measuring constituent

support for the reform. It may also represent the amount of time spent and the direction of inquiry when discussing policy with experts, or studying the issue through one's own staff or the Congressional Research Service.

In the general analysis, a policymaker not only chooses *whether* to collect information; he also chooses the type and informativeness of the information he collects. For issues of high enough political importance, the policymaker still prefers to become fully informed. For other issues, however, collecting no information may no longer be ideal. Instead, the politician may prefer to look for evidence that works against any prior he has in favor of or against reform. When he fails to find such evidence, his beliefs in favor or against reform become stronger. But when he finds such evidence, he is left completely indifferent between implementing and not implementing the status quo. In other words, it is a clueless politician who collects the most political contributions, and the policymaker's ideal information strategy maximizes the probability that he is clueless when choosing policy.³

The tradeoff between information and policy is best highlighted in the special case where the policymaker is *ex ante* indifferent between reform and the status quo. In this case, the policymaker starts off clueless. We show how increasing the Blackwell informativeness of the policymaker's signal simultaneously leads to better policy and a decrease in political contributions. Here, the policymaker prefers to either become fully informed, or to remain clueless about policy.

Finally, we consider the implications of our analysis for campaign finance reform. Our analysis identifies a novel benefit of campaign contribution limits: they decrease the incentives policymakers have to remain strategically ignorant or uninformed. This is because a contribution limit constrains the financial gain associated with being clueless, and encourages the policymaker to become informed about a larger range of issues. By encouraging politicians to become better informed, contribution limits can lead to better policy choices and higher constituent welfare.

The rest of the paper is organized as follows. Section 2 reviews the literature. Section 3 introduces the formal model. Section 4 solves for equilibrium and presents the main results. Section 5 considers the impact of a contribution limit. Section 6 concludes.

2. LITERATURE REVIEW

Traditional models of lobbying fall into one of two categories. First are the models in which interest groups provide political contributions to politicians in exchange for policy outcomes. These include seminal work by Tullock (1980), Hillman and Riley (1989)

³Such a strategy is consistent with politicians claiming that they are "not scientists" and completely unable to assess the merits of certain policies.

and Grossman and Helpman (1994). Second are the persuasion models in which interest groups produce or communicate relevant information about the merits of alternative policies. These include seminal work by Milgrom and Roberts (1986), Austen-Smith and Wright (1992) and Austen-Smith (1994). More recently, the literature has developed models in which lobbying involves the provision of both political contributions and information. Austen-Smith (1995) and Lohmann (1995) develop models in which political contributions provide a costly means of signaling one's private, unverifiable information about the state of the world. In Austen-Smith (1998) and Cotton (2009, 2012), political contributions buy access to a politician, where access is required in order to share private information.

More similar to the current paper are the models of Bennesen and Feldmann (2006) and Dahm and Porteiro (2008*a,b*), in which interest groups first produce information about the merits of policy, and then engage in monetary lobbying. The key difference between these papers and ours is that in the earlier papers, interest groups determined how informed the policymaker became about policies. In our framework, the politician chooses how informed to become. In many ways, ours is a more realistic assumption; interest groups will not be able to force a policymaker to become an expert on an issue if the policymaker himself chooses not to take the necessary time and effort to do so. Additionally, we show that when the policymaker chooses how informed to become, campaign finance reform often has the opposite effect as it does in Dahm and Porteiro (2008*b*), the one paper in this literature to consider political contribution limits. When interest groups control policymaker information, contribution limits can discourage information provision by the interest groups and lead to worse policy outcomes. In our framework where the policymaker himself determines how informed to become, contribution limits tend to encourage the collection of more information and lead to better policy.

Our approach to incorporating information into a lobbying game is unique compared to the rest of the literature. We assume that the politician chooses how informed to become prior to a standard monetary lobbying game. The assumption that policymakers themselves can collect information is consistent with qualitative accounts of the policy-making process (e.g. Bauer, Dexter and de Sola Pool 1963, Hansen 1991), although it is rarely incorporated into formal models of lobbying. An exception is Cotton and Dellis (2015), in which a policymaker can rely on interest groups for information or collect information on his own. That model, however, does not consider political contributions or monetary influence.

The academic literature has not reached a consensus on the welfare effect of campaign finance reform. The literature shows how campaign contribution limits may be

detrimental because they reduce the incentives that interest groups have to produce evidence (Dahm and Porteiro 2008*b*), decrease the signaling value of political contributions (Cotton 2009), reduce campaign advertising budgets that are necessary to inform voters about candidate quality (Coate 2004*b*), or encouraging the policymaker to engage in additional rent seeking activity (Riezman and Wilson 1997, Drazen, Limao and Stratmann 2007). The literature also shows how limits may be beneficial because they discourage corrupt behavior by policymakers (Prat 2002*a,b*, Coate 2004*a*, Cotton 2009), or incentivize information provision by interest groups (Austen-Smith 1998, Cotton 2012). Our paper identifies a novel benefit of campaign finance reform, showing that contribution limits decrease the incentives that policymakers have to remain uninformed or ignorant of the issues on which they vote.

Finally, our paper is related to other agency models in which a principal may be better off remaining less informed. Kessler (1998) illustrates this possibility in a standard principal agent framework. Our analysis shows how the intensity of lobbying competition between interest groups is reduced as the policymaker becomes more informed. This has a similar flavor to results found in other literatures. For example, Moscarini and Ottaviani (2001) show how price competition between firms is reduced as consumers become better informed and better able to distinguish products, and Boleslavsky and Cotton (2015*b*) show how policy moderation by political candidates is reduced as voters becomes more informed about candidate quality.

3. MODEL

A policymaker (PM) must choose whether to keep the status quo ($p = 0$) or implement reform ($p = 1$) on a given policy issue. Keeping the status quo guarantees the policymaker a policy payoff of $u_0 = 0$. Implementing reform provides the PM a positive policy payoff equal to $1 - \theta \in (0, 1)$ in state $\tau = 1$ when reform is “good,” and provides the PM a negative policy payoff equal to $-\theta$ in state $\tau = 0$ when reform is “bad.” Thus,

$$u_1(\tau) = (1 - \theta)\tau - \theta(1 - \tau).$$

The reform is good with probability $\alpha \in (0, 1)$ and bad with probability $1 - \alpha$. The PM is ex ante uncertain about τ , although α is common knowledge. Denote the ex ante expected benefit of implementing reform by

$$\hat{q} \equiv (1 - \theta)\alpha - \theta(1 - \alpha) = \alpha - \theta.$$

In the initial stage of the game, the PM can acquire information about the benefit of implementing reform. Following a Bayesian Persuasion approach, we model the PM’s information collection strategy as a design of the random variable S , jointly distributed with reform type τ . Prior to the PM choosing policy, his signal S produces a public

realization s that is informative about the benefit of implementing reform. The PM's choice of S may be interpreted as a choice of how extensively to search for evidence in favor of or against reform. The type and intensity of information collection procedure (e.g. hearings, surveys, polls, meetings, research) determines the likelihood of different posterior belief realizations.

A "clueless" PM has beliefs that make him indifferent between the reform and the status quo. Such a PM is fully unable to distinguish the policies based on merit.

There are two interest groups (IGs), who can engage in monetary lobbying following the realization s and prior to the PM implementing policy. The lobbying game is standard for the literature (e.g. a simplified version of Grossman and Helpman (1994)). The IGs are advocates for different policies. We denote an IG by the policy it supports, with $j \in \{0, 1\}$. IG_j receives policy utility v whenever $p = j$, and receives policy utility 0 otherwise. The two IGs simultaneously offer payments to the PM in exchange for policy outcomes. IG_j offers payment c_j , which it commits to pay the PM if he implements $p = j$. The PM observes the payment offers c_0 and c_1 , and chooses a policy to maximize his overall utility from payments and policy.

Initially, we consider a setting in which any contributions $c_j \geq 0$ is feasible. In later sections, we consider the impact of a contribution limit \bar{c} , which imposes a limit on the maximum contribution, restricting $c_j \in [0, \bar{c}]$.

Overall utility of the three players depends on policy and payments. The PM earns

$$U_{PM}(p, c_0, c_1 | \tau) = (\lambda u_1(\tau) + c_1)p + c_0(1 - p).$$

Parameter $\lambda > 0$ captures issue importance. IG_0 and IG_1 respectively earn

$$U_0(p, c_0) = (v - c_0)(1 - p) \quad \text{and} \quad U_1(p, c_1) = (v - c_1)p.$$

In summary, the game takes place in the following order. First, the PM chooses an information collection strategy, represented by the design of a random variable S . He then observes a realization of S . His choice of S and the realization are publicly observed. Second, the IGs simultaneously offer c_0 and c_1 . Third, the PM chooses policy.

We solve for the Perfect Bayesian Equilibrium of the game. We assume that a PM who is indifferent between reform and the status quo implements the policy supported by the priors.

3.1. General representation of the information collection process. We first consider a setting in which the PM chooses between becoming fully informed or remaining uninformed. We then consider a general information environment where we place minimal structure on the PM's choice of S . For that analysis, it is helpful to represent the game as one of Bayesian persuasion.

Without loss of generality, the choice of random variable S may be represented by the choice of two independent random variables S_G and S_B , where an independent realization of S_τ is observed when the state is τ . We place no restrictions on the design of S_G and S_B , except that for technical reasons we assume that both signals have a finite number of discontinuities and mass points, and that except at mass points, S_G and S_B have differential densities and support over an interval. We focus on pairs of random variables that satisfy the monotone likelihood ratio property, which restricts attention to random variables where higher realizations are more likely to be generated in state $\tau = G$. Any random variable S satisfying these restrictions is *valid*. This characterization of the PM's information collection process is fully general. It allows for the PM choosing to collect no information (which is equivalent to setting $S_G = S_B$), choosing to become fully informed (which is equivalent to choosing S_G and S_B with disjoint support), or anything in between.

There are no direct costs associated with collecting information. The PM can choose a fully uninformative signal, a fully informative signal, or anything in between at zero costs. This allows us to abstract from issues of costly information, and focus instead of the strategic incentives for remaining uninformed. When the PM in our framework chooses to remain less than fully informed, it is not because becoming informed is costly. Although we abstract from the costs associated with information, it is unlikely that the PM can acquire information at the last minute before a vote. As (Stratmann 1998, 2005) shows, political contributions often are made around or soon after the passage of legislation. This suggests that the timing of our game, in which the PM acquires information prior to political contributions being made, is accurate. For now, we assume that the PM's signal realization is publicly observed. This is consistent with the idea that the realization is the outcome of public polls, studies, or hearings.

Any choice of S corresponds to an expected posterior belief distribution Q . This posterior belief random variable summarizes the informational content of signal S : any signals generating the same posterior belief random variable are payoff equivalent for all players.

A posterior belief random variable generated by a signal must have certain properties. First, because its realization represents the benefit of implementing reform, the support of Q is a subset of the unit interval $[-\theta, 1 - \theta]$. Second, according to the law of total expectation, the expected value of posterior belief must be equal to the prior belief, i.e. $E[Q] = \hat{q}$. According to Kamenica and Gentzkow (2011), this is the only restriction on the random variable Q .⁴

⁴See Boleslavsky and Cotton (2015a) for the adaptation of the Kamenica and Gentzkow (2011) proof for a binary environment.

Lemma 1. *For any random variable Q with support in the unit interval $[-\theta, 1 - \theta]$ and expected value \hat{q} , there exists a valid signal S for which Q is the distribution of the PM's posterior belief. For any valid signal S , there exists a unique random variable Q with support $[-\theta, 1 - \theta]$ and expected value \hat{q} representing the distribution over posterior beliefs generated by S .*

Lemma 1 considerably simplifies the analysis of this game. Instead of focusing on the PM's choice of signals S_G and S_B , we can instead focus on the choice of random variable Q , with support in the unit interval $[-\theta, 1 - \theta]$ and expectation \hat{q} . This choice represents the ex ante distribution of the PM's posterior beliefs about the benefits of reform, and is equivalent to a choice of one of many signals that generate the same distribution of posterior beliefs. Given that only Q , and not the specific choice of S , is important for the analysis, we can reinterpret the game as one in which the PM chooses Q .

4. ANALYSIS

We first determine the equilibrium of the monetary lobbying subgame, and then consider the PM's information strategy accounting for its impact on lobbying.

4.1. Monetary lobbying. Let q denote the PM's posterior beliefs about the benefits of reform following information collection (i.e. the realization of Q). The subgame equilibrium of the monetary lobbying game involves

$$\begin{aligned} c_0 &= v, \quad c_1 = \max\{v - q\lambda, 0\}, \quad p = 1 \quad \text{when } q > 0 \\ c_0 &= \max\{v + q\lambda, 0\}, \quad c_1 = v, \quad p = 0 \quad \text{when } q < 0. \end{aligned}$$

When $q = 0$, both IGs offer $c_0 = c_1 = v$, and our tie breaking assumption leads the PM to implement the policy supported by his priors.

When $q = 0$, the PM is clueless, indifferent between policy, and he chooses policy in favor of the IG that offers the largest monetary contribution. In this case, monetary competition between the IGs is most intense, and in equilibrium the IGs compete away their policy rents, with the PM collecting the highest feasible payment of v .

As q moves away from 0, the PM begins to favor one of the policies. He favors reform when q is positive, and the status quo when q is negative. In these cases, the equilibrium involves the IG involved with the policy not supported by the posterior beliefs offering v for their policy to be implemented, and the favored IG offering just enough to keep the PM in favor of their policy. Because the PM starts off in favor of their policy, the favored IG is able to maintain the PM's support with an offer less than v . The further from 0 is q , the bigger the favored group's advantage, and the smaller its needed contribution in order to have its policy implemented.

When the potential monetary payment is sufficiently large or the importance of policy is low (i.e. when $v/\lambda \geq |q|$), the PM collects political contributions in equilibrium.

For more important issues, and cases where the potential payments are small, the PM always prefers to implement the policy supported by the evidence, even if the favored IG offers no contribution, as long as one group's advantage is sufficiently large (i.e. when $|q| \geq v/\lambda$).

4.2. Full information or no information. Before determining the PM's optimal information collection strategy, we consider a simple environment in which the PM chooses between becoming fully informed or collecting no information.

If the PM chooses to remain uninformed, the expected payoffs from reform equal the prior \hat{q} . When $\hat{q} \geq 0$, the PM expects to implement reform, and anticipates policy payoffs following the monetary lobbying stage of $EU_{PM} = \lambda\hat{q} + \max\{v - \lambda\hat{q}, 0\}$. Similarly, when $\hat{q} < 0$, the PM expects not to implement reform, and anticipates payoffs following the monetary lobbying stage of $EU_{PM} = \max\{v + \lambda\hat{q}, 0\}$.

If the PM becomes fully informed about the merits of reform, then the equilibrium involves him implementing the policy that corresponds to the true state of the world. In equilibrium,

$$EU_{PM}^{\text{full info}} = \alpha[\lambda(1 - \theta) + \max\{v - \lambda(1 - \theta), 0\}] + (1 - \alpha)[\max\{v - \lambda\theta, 0\}].$$

The PM earns the maximum possible policy utility of $\lambda\alpha(1 - \theta)$ under full information. This compares positively to his policy utility of either $\lambda\hat{q}$ or 0 when he remains uninformed. This represents the benefit of full information.

At the same time, becoming fully informed can decrease the incentives that IGs have to provide political contributions. To see this, consider the case where $v/\lambda > \max\{1 - \theta, \theta\}$. Here, becoming fully informed results in contributions $\alpha(v - \lambda(1 - \theta)) + (1 - \alpha)(v - \lambda\theta)$ and remaining uninformed results in payments of $v - \lambda|\hat{q}|$. Substituting in for $\hat{q} = \alpha - \theta$ and simplifying the expressions shows that expected payments are strictly higher when the PM remains uninformed.⁵ This represents the costs of full information.

Proposition 1. *Consider the game in which the PM chooses between no information and full information. The PM collects no information when the potential monetary payments are sufficiently high relative to his potential policy utility. There exists a unique threshold $T > 0$ such that in equilibrium the PM collects no information if $v/\lambda \geq T$, and becomes fully informed when $v/\lambda < T$.*

When choosing whether to become fully informed, the PM trades off the policy benefits with the potential costs from a reduction in political contributions. When the PM

⁵When $\theta = 1/2$, and the potential upside and downside of reform are equal, the PM always expects higher payoffs when he remains uninformed. In other cases, there are parameters under which the PM may collect fewer contributions when uninformed. If $\theta < v/\lambda < \hat{q} < 1 - \theta$, for example, then the PM collects no contributions when he remains uninformed, but expects to collect positive contributions if he becomes informed.

cares enough about policy relative to the potential monetary payments from the IGs, he prefers to become fully informed. In other cases, where the returns to higher monetary contributions outweigh the costs of worse policy, the PM prefers to remain uninformed.

4.3. Optimal information strategy. In this section, we do not restrict the PM's information strategy. In the first stage, he chooses a distribution over posterior beliefs, Q . The only restrictions on Q are that it has support within the range of feasible posteriors, $[-\theta, 1 - \theta]$, and that the expected value of Q equals the prior \hat{q} . As Lemma 1 established, such a choice of Q captures all valid information processes.

The PM chooses Q , represented by density f , to maximize his expected utility, while anticipating how IG contributions, and his future policy choice will respond to different realizations of information.

In equilibrium, following the monetary lobbying subgame, the PM implements the policy supported by his posterior beliefs. He collects political contributions from the IG that supports his favored policy, as long as his posterior beliefs are not so favorable to one policy that IGs are unwilling to pay enough to overturn his priors. When $|q| < v/\lambda$, it is the case that the PM positive contributions in equilibrium. When $|q| > v/\lambda$, no contributions are paid. It follows that the PM expects total payoffs EU_{PM} from the ensuring subgame equal to 0 if $q \in [-\theta, -v/\lambda]$, equal to $v + \lambda q$ if $q \in [-v/\lambda, 0]$, equal to $\lambda q + v - \lambda q = v$ if $q \in [0, v/\lambda]$, and equal to λq if $q \in [v/\lambda, 1 - \theta]$.

Therefore, the PM chooses Q , which defines f , to maximize

$$\int_{\max\{-\theta, -v/\lambda\}}^0 f(q)(v + q\lambda) dq + \int_0^{\min\{1-\theta, v/\lambda\}} f(q)v dq + \int_{\min\{1-\theta, v/\lambda\}}^{1-\theta} f(q)q\lambda dq \quad (1)$$

subject to the constraints that

$$\int_{-\theta}^{1-\theta} f(q)q dq = \hat{q} \quad \text{and} \quad \int_{-\theta}^{1-\theta} f(q) dq = 1.$$

We first consider the case where the PM cares little about policy relative to the potential value of contributions, i.e. when $v/\lambda \geq \max\{\theta, 1 - \theta\}$. In this case, Eq. (1) simplifies to

$$v + \lambda \int_{-\theta}^0 f(q)q dq \quad (2)$$

or equivalently

$$v + \lambda \hat{q} - \lambda \int_0^{1-\theta} f(q)q dq. \quad (3)$$

From Eq. (2), we see that the PM expects payoff v whenever his information strategy generates posterior beliefs that favor reform, and he expects a lower payoff whenever this posterior beliefs favor the status quo. When $\hat{q} \geq 0$, it is feasible to choose a belief

distribution Q such that $f(q) > 0$ if and only if $q \geq 0$. The PM is indifferent between all such information strategies.

When the priors favor the status quo, such a strategy is not feasible, given that the constraint $EQ = \hat{q}$ necessitates at least some negative realizations of Q when $\hat{q} < 0$. For this case, Eq. (3) shows that the PM expects payoff $v - \lambda\hat{q} < v$ whenever the information strategy generates posterior beliefs that favor the status quo, and he expects a lower payoff whenever his posterior beliefs favor reform. Therefore, in the case when the priors favor the status quo, the PM prefers a belief distribution Q such that $f(q) > 0$ if and only if $q \leq 0$. The PM is indifferent between all such information strategies.

Thus, when the PM cares sufficiently little about policy, he is indifferent between all information collection strategies that always lead to posterior beliefs with the same sign as his priors. There are many such strategies that fail to overturn the priors, the most straightforward being no information collection.⁶

Next, we consider the case where the PM cares more about policy, but not so much about policy that he always prefers to become fully informed about the quality of reform. When the priors support reform, $\hat{q} \geq 0$, and $v/\lambda < 1 - \theta$, a realization of $q \in [0, v/\lambda]$ results in an expected payoff to the PM of v . A realization of $q \in [v/\lambda, 1 - \theta]$, however, results in a larger expected payoff to the PM of $q\lambda > v$. In this case, the PM is no longer indifferent between any information collection strategy that is guaranteed to produce beliefs consistent with the priors and leave him favoring reform. Instead, the PM prefers Q that returns realizations $q = 0$ or $q = 1 - \theta$, where

$$Pr(q = 0) = 1 - \hat{q}/(1 - \theta) \quad \text{and} \quad Pr(q = 1 - \theta) = \hat{q}/(1 - \theta).$$

Similarly, when the priors support the status quo, $\hat{q} < 0$, and $v/\lambda < \theta$, the PM prefers an information collection strategy Q that returns realizations $q = -\theta$ or $q = 0$, where

$$Pr(q = -\theta) = -\hat{q}/\theta \quad \text{and} \quad Pr(q = 0) = 1 + \hat{q}/\theta.$$

In these situations, the PM's optimal information strategy maximizes the probability of $q = 0$, leaving him clueless when choosing policy. When the priors favor reform, this strategy is not driven by a desire to be clueless, per say, but is rather driven by the fact that an information strategy that leads him to be clueless more often is able to simultaneously put higher probability on belief realizations $q > v/\lambda$ which result in higher expected payoffs to the PM. In contrast, when priors favor the status quo, the PM prefers to be clueless as often as possible because being clueless results in higher payoffs than having stronger beliefs in favor of the status quo.

⁶However, many other strategies, including strategies in which the PM maximizes the probability of being clueless, are also consistent.

One interpretation of such information strategies is that they represent a partial search for evidence in favor of the policy supported by the prior. When the PM finds the evidence, he becomes certain that the policy supported by the prior is best. When he does not find the evidence, he remains uncertain, but updates his beliefs to be more favorable to the other policy. His optimal search intensity is just enough that not finding evidence leaves him perfectly indifferent between the two policies, a situation that maximizes political contributions.

Finally, when the PM cares even more about policy, i.e. when $v/\lambda \leq \theta(1 - \theta)$, the PM always prefers to become fully informed, which ensures that he implements the best policy. When he chooses this strategy, he collects expects no political contributions in equilibrium.

The following proposition summarizes the PM's information collection strategy.

Proposition 2. *In equilibrium:*

- *When the PM cares sufficiently little about policy, he is indifferent between all information collection strategies that with probability 1 lead to the implementation of the policy supported by his priors, including a strategy of collecting no information. This is the case when $0 \leq \hat{q}$ and $1 - \theta \leq v/\lambda$, or $\hat{q} < 0$ and $\theta \leq v/\lambda$.*
- *For intermediate levels of policy importance, the PM chooses an information strategy that maximizes the probability $q = 0$, and he is clueless when choosing policy. This is the case when $0 \leq \hat{q}$ and $\theta(1 - \theta) < v/\lambda < 1 - \theta$, or $\hat{q} < 0$ and $\theta(1 - \theta) < v/\lambda < \theta$.*
- *When the PM cares enough about policy, he becomes fully informed and implements the best policy. This is the case when $v/\lambda \leq \theta(1 - \theta)$.*

When $v/\lambda > \theta(1 - \theta)$, the PM's concerns over collecting politician contributions leads him to remain less than fully informed. In equilibrium, the PM always implements the policy supported by the priors, and his ability to (costlessly) collect information has no effect on equilibrium policy outcomes. Only when the PM cares enough about policy (i.e. $v/\lambda \leq \theta(1 - \theta)$) does he collect information that that has a potential to overturn the priors. In equilibrium, the PM becomes fully informed and implements the best policy and no payments are made from either IG to the PM.

When the PM prefers to remain less than fully uninformed about the benefits of reform, he often prefers to collect information in a way that maximizes the probability of generating information that offsets any favoritism inherent in his priors, and leaves him completely indifferent between the policies. That is, he chooses an information collection strategy that leaves him clueless when comparing the policies. In other situations, he is indifferent between a strategy that maximizes the probability of being clueless, and one that involves no information collection.

4.4. A special case: When priors are unbiased. The general analysis considered above allows for the policymaker to initially favor one policy over the other. In this subsection, we focus on the case where $\theta = \alpha = 1/2$. Here, the benefits of implementing a good reform equal the costs of implementing a bad reform, and the reform is just as likely good as bad. It follows that $\hat{q} = 0$.

In this case, the analysis is simplified by the fact that the PM is initially indifferent between the policies (i.e. clueless) and any information collection will introduce ex post asymmetries. When the PM collects no information, lobbying competition and political contributions are maximized. An increase in information strictly decreases expected political contributions, and strictly increases the PM's expected policy payoff.

Lemma 2. *In the case when $\theta = \alpha = 1/2$, consider two alternative information strategies Q and Q' , where Q second order stochastic dominates Q' over support $[-1/2, 1/2]$. Here,*

- (1) *the PM's information collection strategy is more Blackwell informative under Q' than under Q ,*
- (2) *the PM's expected policy utility $E[\max\{q, 0\}]$ is strictly higher under Q' than under Q ,*
and
- (3) *the PM's expected payment is strictly lower under Q' than under Q .*

This result clearly illustrates the tradeoff between better policy outcomes and higher revenue that often prevents the PM from becoming fully informed.

As the quality of his information increases, there are two direct effects. First, better information makes it more likely that he has correct beliefs about which policy alternative is highest quality. Second, better information tends to increase *how much* better one policy looks compared to the other. In this way, more information increases the ex post asymmetries between the expected qualities of the policy alternatives. As the difference between the policy alternatives increases, it effectively becomes less expensive for an interest group to ensure that the policymaker implements the ex post more promising policy. In this way, asymmetry decreases the competitive pressures between the interest groups and decreases total political contributions. Increasing the policymaker's ability to distinguish policies strictly increases his ability to identify and implement the better policy, but also strictly decreases political contributions. When the policymaker chooses how informed to become on the issue, he weighs the expected tradeoff between worse policy outcomes and higher political contributions.

When the priors favor neither policy, the PM always prefers to either remain fully uninformed, or to become fully informed. The incentive to conduct a partial search for evidence no longer exists, as the benefit of such an information collection strategy came from it maximizing the probability the PM is indifferent between the policies. When the

PM starts off indifferent, collecting no information maximizes the probability of being clueless.

Proposition 3. *Assume $\hat{q} = 0$. The PM remains uninformed and sells policy to the highest bidder when $v/\lambda > \theta(1 - \theta)$. The PM becomes fully informed and always implements the best policy when $v/\lambda \leq \theta(1 - \theta)$.*

5. CONTRIBUTION LIMITS

In this section, we consider a contribution limit \bar{c} . When the limit is higher than v , it is never binding and does not change equilibrium behavior. When $\bar{c} < v$, neither IG can offer a contribution in excess of \bar{c} . This changes the above analysis only in that throughout we replace v , which indicates an IG's maximum willingness to pay for policy, with \bar{c} , which indicates the IG's maximum allowed payment. This implies that the PM now becomes fully informed if and only if $\bar{c}/\lambda \leq \theta(1 - \theta)$.

Proposition 4. *Any contribution limit $\bar{c} \leq \theta(1 - \theta)\lambda$, leads to the PM becoming fully informed and implementing the first best policy. When $\bar{c} > \theta(1 - \theta)\lambda$, the PM becomes less than fully informed, and always implements the policy supported by his priors in equilibrium.*

If $v/\lambda > \theta(1 - \theta)$, then without a contribution limit, the PM's desire to collect political contributions provides a disincentive for information collection, and in equilibrium PM always implements the policy supported by the priors. When this is the case, a contribution limit of $\bar{c} \leq \theta(1 - \theta)\lambda$ strictly improves policy outcomes by reducing the disincentive for information collection. Under such a limit, the PM chooses to become fully informed, which results in the first best policy being implemented in equilibrium.

We may imagine a policymaking environment in which the PM faces an array of issues, which may differ in terms of potential policy payoffs $\theta \in [0, 1]$, the likelihood $\alpha \in (0, 1)$ of reform being beneficial, or issue importance $\lambda > 0$ and $v > 0$. Any combination of these parameters may be feasible. In such an environment, decreasing \bar{c} increases the range of issues for which $\bar{c} \leq \theta(1 - \theta)\lambda$ is satisfied and thus the PM decides to become fully informed.

To formalize this point, assume that at the time a contribution limit is implemented, there is uncertainty about which issue (or issues) the PM will need to make a decision on in the future. Suppose the potential issues differ in λ , which is distributed on \mathbb{R}_+ according to some continuous distribution. λ is realized after \bar{c} is set, but before the PM chooses how much information to acquire. We refer to this as the game with multiple issues.

Corollary 1. *In the game with multiple issues, imposing a stricter contribution limit (decreasing \bar{c}) strictly increases the share of issues on which the PM becomes fully informed.*

6. DISCUSSION

In this paper, we take a new approach when incorporating information into a model of lobbying. Instead of assuming that interest groups are responsible for creating or communicating information to a policymaker, we instead assume that the policymaker himself chooses how much expertise or information to acquire. A policymaker who chooses to remain ignorant, will not become informed, no matter how badly an interest group wants to communicate evidence in favor of its policy. After the policymaker chooses an information collection strategy, interest groups engage in a traditional monetary lobbying game.

We show how a policymaker may prefer to remain uninformed about policy, even when it is costless to develop expertise or collect more information. This is because a policymaker who cannot distinguish between alternative policies expects to collect more political contributions from interest groups who offer payments in exchange for policy outcomes. This provides the policymaker with an incentive for ignorance.

Within this context, we identify a novel argument in favor of campaign finance reform: Contribution limits decrease the incentive that politicians have to remain uninformed or clueless. By limiting the potential monetary return to remaining uninformed, a contribution limit encourages a policymaker to acquire expertise or collect information on an issue in order to improve policy outcomes. On the flip side, these results highlight a novel cost associated with the U.S. Supreme Court's 2010 decision in *Citizens United v. Federal Elections Commission*, which allowed unlimited private spending on behalf of a political campaign. In many ways, this ruling weakens the effects of contribution limits, and may, as our model predicts, lead to less informed policymaking.

Our analysis suggests that the incentives that policymakers have to become informed on issues is maximized when campaign contributions are banned. However, our paper does not consider reasons that some contributions may be beneficial, such as providing politicians with a means to fund their campaigns and communicate with voters.

The main results of our analysis are robust to a variety of alternative assumptions. In unreported analysis, we have considered alternative versions of the game in which we generalize other aspects of our model, while focusing on the case in which the policymaker is ex ante unbiased, and the signal structure is less general.⁷ For example, we allow the policymaker to privately learn about the state of the world, and for a continuum of potential policy choices. Future work may extend our analysis to consider

⁷In other extensions we consider costly information acquisition, alternative monetary lobbying frameworks, and the possibility that the politician can hide his information collection efforts or the level of expertise he acquires. The cases are included in Li (2015)'s dissertation.

settings in which interest groups also have the potential to produce information, and where a legislature of policymakers work together to implement policy.

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APPENDIX A. MATHEMATICAL APPENDIX

Here, we walk through the analysis from Section 4 for the case where $\hat{q} \geq 0$, and derive additional results for the case where $\hat{q} = 0$. An Online Appendix walks through the proof for Lemma 1, which is a straightforward adaption from the Bayesian Persuasion literature, Proposition 1, which is straightforward but tedious, and the analysis for the case where $\hat{q} < 0$, which is largely similar to the case presented here.

A.1. Analysis for the case where $\hat{q} \geq 0$. If $v/\lambda \geq 1 - \theta$, then PM chooses Q to maximize

$$\int_{\max\{-\theta, -\frac{v}{\lambda}\}}^0 f(q)(v + q\lambda) dq + \int_0^{1-\theta} f(q)(q\lambda + v - q\lambda) dq =$$

$$(1 - F(\max\{-\theta, -\frac{v}{\lambda}\}))v + \lambda \int_{\max\{-\theta, -\frac{v}{\lambda}\}}^0 f(q)q dq$$

subject to the constraint that $EQ = \hat{q}$.

Notice that $\lambda \int f(q)q dq$ is strictly negative when integrated over $q < 0$. Thus, PM utility is maximized when Q puts no probability on realizations of $q < 0$. All distributions Q such that $EQ = \hat{q}$ and $f(q) > 0$ only if $q \geq 0$ are feasible and return the same $EU_{PM} = v$. Any such distribution is in the set of preferred distributions.

If $\theta \leq v/\lambda < 1 - \theta$, then the PM chooses Q to maximize

$$\int_{-\theta}^0 f(q)(v + q\lambda) dq + \int_0^{v/\lambda} f(q)(q\lambda + v - q\lambda) dq + \int_{v/\lambda}^{1-\theta} f(q)(q\lambda) dq =$$

$$v + \lambda \int_{-\theta}^0 f(q)q dq + \lambda \int_{v/\lambda}^{1-\theta} f(q)(q - v/\lambda) dq = \tag{4}$$

$$F(v/\lambda)v + \lambda\hat{q} - \lambda \int_0^{v/\lambda} f(q)q dq \tag{5}$$

subject to $EQ = \hat{q}$.

Choosing any Q such that $f(q) > 0$ iff $q \in [0, v/\lambda]$ results in $\int_0^{v/\lambda} f(q)q dq = \hat{q}$, and in the PM earning expected payoff of v .

From Eq. (4), we can see that the PM will do even better if he can shift probability weight from realizations $q \in [0, v/\lambda]$ to realizations greater than v/λ while maintaining $EQ = \hat{q}$. The PM will be better off shifting any probability mass from realizations $q \in (0, v/\lambda]$ to an alternative distribution that produces realizations $q = 0$ and $q > v/\lambda$. Concentrating probability mass on realizations on $[0, v/\lambda]$ on $q = 0$, allows for the greatest shift in weight to values $q > v/\lambda$ while maintaining $EQ = \hat{q}$. By shifting to a probability distribution with realizations $q = 0$ and $q > v/\lambda$, the PM can achieve expected utility $v + \lambda \int_{v/\lambda}^{1-\theta} f(q)(q - v/\lambda) dq > v$. We can write the PM's optimization problem over such distributions in terms of expected q conditional on $q > v/\lambda$, denoted $\tilde{q} = E(q|q > 0)$, and the probability of $q > v/\lambda$, denoted r :

$$\max_{r, \tilde{q}} (1-r)v + r\lambda\tilde{q} \quad \text{s.t.} \quad r\tilde{q} = \hat{q}.$$

The problem is maximized when $\tilde{q} = 1 - \theta$ and $r = \hat{q}/(1 - \theta)$. Thus, the PM prefers the binary distribution where

$$Pr(q = 0) = 1 - \hat{q}/(1 - \theta) \quad \text{and} \quad Pr(q = 1 - \theta) = \hat{q}/(1 - \theta) \quad (6)$$

to all other distributions over $q \geq 0$.

Finally, the PM could shift probability mass to realizations of $q < 0$ in order to increase the mass he can put on values of $q > \hat{q}$ (including $q = 1 - \theta$) while maintaining $EQ = \hat{q}$. However, from Eq. (5) we see that such a shift in probability distribution will decrease the expected payoff, as it will reduce the probability mass under v/λ without decreasing the probability mass on $(0, v/\lambda)$.

Thus, when $\theta \leq v/\lambda < 1 - \theta$, Eq. (6) gives the preferred Q over all distributions of $q \in [-\theta, 1 - \theta]$ conditional on $EQ = \hat{q}$. This results in expected payoff

$$v(1 - \alpha)/(1 - \theta) + \lambda(\alpha - \theta).$$

If $v/\lambda < \min\{\theta, 1 - \theta\}$, then the PM chooses Q to maximize

$$\begin{aligned} & \int_{-v/\lambda}^0 f(q)(v + q\lambda) dq + \int_0^{v/\lambda} f(q)(q\lambda + v - q\lambda) dq + \int_{v/\lambda}^{1-\theta} f(q)(q\lambda) dq = \\ & v(1 - F(-v/\lambda)) + \lambda \int_{-v/\lambda}^0 f(q)q dq + \lambda \int_{v/\lambda}^{1-\theta} f(q)(q - v/\lambda) dq \end{aligned} \quad (7)$$

subject to $EQ = \hat{q}$.

When choosing a distribution over $q \geq -v/\lambda$, the PM faces the same incentives as he did in the case where $\theta \leq v/\lambda < 1 - \theta$. The PM will still prefer a distribution over $q = 0$ and $q = 1 - \theta$ to all other distributions on this support. The difference in this case is that

the PM may prefer to shift probability mass to some $q < -v/\lambda$, which was not feasible when $v/\lambda > \theta$.

From Eq. (7), it follows that the PM would never put probability mass on $q \in [-v/\lambda, 0)$, as he could shift this mass to values of $q \geq 0$ while maintaining $EQ = \hat{q}$ and improve his expected payoff. Additionally, it follows that the PM would prefer to shift probability mass from $q \in (-\theta, -v/\lambda)$ to $q = -\theta$ and $q = 1 - \theta$ while maintaining $EQ = \hat{q}$, as this will also increase the PM's expected payoff. This, combined with the analysis of $q \geq 0$ from the case where $\theta \leq v/\lambda < 1 - \theta$, implies that the PM chooses between the distribution given by Eq. (6), and a distribution that shifts probability mass from $q = 0$ to $q = -\theta$ and $q = 1 - \theta$. If this later option is preferred, the PM engages in the collection of full information and earns expected payoff $EU_{PM} = \alpha(1 - \theta)\lambda$. The PM prefers to become fully informed when

$$\alpha(1 - \theta)\lambda > \frac{1 - \alpha}{1 - \theta}v + \lambda(\alpha - \theta) \iff v/\lambda < \theta(1 - \theta).$$

Notice that $\theta \in [0, 1]$ means that $v/\lambda < \theta(1 - \theta)$ implies that $v/\lambda < \min\{\theta, 1 - \theta\}$.

A.2. When priors are unbiased. Here, we walk through the additional analysis for the case analyzed in Section 4.4 where $\theta = \alpha = 1/2$. In this case, the PM's expected equilibrium policy payoff is

$$E[\max\{q, 0\}] = \int_0^{1/2} f(q)q dq = \int_{-1/2}^{1/2} qf(q) dq - \int_{-1/2}^0 qf(q) dq = \hat{q} + \int_{-1/2}^0 F(q) dq,$$

noting that the final transformation follows from integration by parts.

Suppose that the PM chooses a posterior belief random variable Q' with CDF $F'(q)$, and Q' is second order stochastic dominated by Q . By the definition of second order stochastic dominance, we have $\int_{-1/2}^0 F(q) dq \leq \int_{-1/2}^0 F'(q) dq$. This implies that the PM expects higher policy payoff with Q' . Ganuza and Penalva (2010) establishes that for the case of binary states, if two posterior belief random variables have the same mean and one posterior belief random variable second order stochastically dominates the other, then the dominated posterior belief random variable is more informative in the sense of Blackwell. This implies that when the PM becomes more informed about the reform, he expects a higher policy payoff.

Acquiring more information, however, also decreases political contributions. For example, when $v/\lambda \geq 1/2$, the expected political contributions equal

$$\begin{aligned} \int_{-1/2}^0 f(q)(v + q\lambda) dq + \int_0^{1/2} f(q)(v - q\lambda) dq &= v + \lambda \int_{-1/2}^0 f(q)q dq - \lambda \int_0^{1/2} f(q)q dq \\ &= v - 2\lambda \int_{-1/2}^0 F(q) dq - \lambda \hat{q} \end{aligned}$$

Suppose that the PM chooses a posterior belief random variable Q' with CDF $F'(q)$, and Q' is second order stochastic dominated by Q . By the definition of second order stochastic dominance, we have $\int_{-1/2}^0 F(q) dq \leq \int_{-1/2}^0 F'(q) dq$. This implies that the PM expects lower political contributions with Q' .

One can show that this analysis carries over for the case where $v/\lambda < 1/2$. The difference is that for realizations of q such that $|q| \in [v/\lambda, 1/2]$, revenue is 0.

ONLINE SUPPLEMENTARY MATERIAL
FOR “CLUELESS POLITICIANS”

CHRISTOPHER COTTON AND CHENG LI

This document provides formal proofs to Lemma 1 and Proposition 1, and walks through the main analysis for the case where $\hat{q} < 0$. The proof to Lemma 1 is adapted from Boleslavsky and Cotton (2015a), which itself is a binary state space adaption of the related proof from Kamenica and Gentzkow (2011). The proof to Proposition 1 is straightforward, but a bit tedious when comparing payoffs in different cases. The analysis of the case where $\hat{q} < 0$ is very similar to the analysis for the case where $\hat{q} \geq 0$ that is found in the paper.

A.3. Proof of Lemma 1. Consider random variable Q , with support on the unit interval and density $f(x)$, and expected value $\hat{q} = -\theta(1 - \alpha) + (1 - \theta)\alpha = \alpha - \theta$. Consider also two random variables S_G and S_B , with densities $f_G(x)$ and $f_B(x)$, where

$$f_G(x) = \frac{x + \theta}{\hat{q} + \theta} f(x) = \frac{x + \theta}{\alpha} f(x), \quad f_B(x) = \frac{1 - \theta - x}{1 - \theta - \hat{q}} f(x) = \frac{1 - \theta - x}{1 - \alpha} f(x)$$

for all $x \in [-\theta, 1 - \theta]$, and $f_G(x) = f_B(x) = 0$ for all other x . Furthermore, $\int f_G(x) dx = \int f_B(x) dx = 1$.

The posterior belief that $\tau = G$ generated by realization x of joint distribution $S = (S_G, S_B)$:

$$\Pr(G|x) = \frac{\alpha f_G(x)}{\alpha f_G(x) + (1 - \alpha) f_B(x)} = \frac{(x + \theta) f(x)}{(x + \theta) f(x) + (1 - \theta - x) f(x)} = x + \theta$$

Therefore, the expectation that $\tau = G$ given x is simply $x + \theta$. The likelihood ratio is monotone because $\Pr(G|x)$ is monotone in x . The density of Q is given by

$$f(x) = \alpha f_G(x) + (1 - \alpha) f_B(x)$$

For the information collection strategy S , the posterior belief about the expected value of reform has density $f(x)$. Thus for the information collection strategy constructed, Q is the ex ante distribution over posterior beliefs. Thus, for any Q , we can construct an information collection strategy S which generates it.

Next, consider any valid random variable $S = (S_G, S_B)$ with densities $f_G(x)$ and $f_B(x)$, and supports X_G and X_B . For all x in X_G but not in X_B , $\Pr(G|x) = 1$ and $E(q|x) = 1 - \theta$. For all x in X_B but not in X_G , $\Pr(G|x) = 0$ and $E(q|x) = -\theta$. For all x in both X_G and

X_B ,

$$\Pr(G|x) = \frac{\alpha f_G(x)}{\alpha f_G(x) + (1 - \alpha)f_B(x)} \in (0, 1),$$

and

$$E(q|x) = \Pr(G|x)(1 - \theta) - (1 - \Pr(G|x))\theta = \Pr(G|x) - \theta \in (-\theta, 1 - \theta).$$

Let Q be the distribution over all $E(q|x)$ generated by S . It follows that

$$\begin{aligned} E[Q|S] &= \int (\alpha f_G(x) + (1 - \alpha)f_B(x))(Pr(G|x) - \theta)dx \\ &= \int (\alpha f_G(x) + (1 - \alpha)f_B(x)) \frac{\alpha f_G(x)}{\alpha f_G(x) + (1 - \alpha)f_B(x)} dx - \theta \\ &= \int \alpha f_G(x) dx - \theta = \alpha - \theta = (1 - \theta)\alpha - \theta(1 - \alpha) \\ &= \hat{q}. \end{aligned}$$

Hence, any valid S generates a posterior belief realization with support $[-\theta, 1 - \theta]$ and expected value \hat{q} .

A.4. Proof to Proposition 1. If the PM remains uninformed, he expects equilibrium payoffs of:

- A. v when $\hat{q} \geq 0$ and $\hat{q} \leq v/\lambda$.
- B. $\lambda\hat{q} = \lambda(\alpha - \theta)$ when $\hat{q} \geq 0$ and $\hat{q} > v/\lambda$.
- C. $v + \hat{q} = v - \lambda(\theta - \alpha)$ when $\hat{q} < 0$ and $\hat{q} \leq v/\lambda$.
- D. 0 when $\hat{q} < 0$ and $-\hat{q} > v/\lambda$.

At $\lambda = 0$, $EU_{PM} = v$. When $\hat{q} \geq 0$, the PM's expected payoff is first constant at v and eventually strictly increasing in issue importance λ . When $\hat{q} < 0$, the PM's expected payoff is first decreasing in issue importance λ falling from v to 0 , and then it remains constant at 0 .

If the PM becomes fully informed, he implements the first best policy in equilibrium. When $\tau = 1$, then his payoff is v if $\lambda(1 - \theta) \leq v$ (in which case he collects contributions), or $\lambda(1 - \theta)$ if $\lambda(1 - \theta) > v$ (in which case he collects no contributions). When $\tau = 0$, then his payoff is $v - \lambda\theta$ if $\lambda\theta < v$ (in which case he collects contributions), or 0 if $\lambda\theta > v$ (in which case he collects no contributions). He expects equilibrium payoffs of:

1. $\alpha v + (1 - \alpha)(v - \lambda\theta) = v - (1 - \alpha)\lambda\theta$ when $v/\lambda \geq \max\{\theta, 1 - \theta\}$.
2. αv when $v/\lambda < \theta$ and $v/\lambda \geq 1 - \theta$.
3. $\alpha\lambda(1 - \theta) + (1 - \alpha)(v - \lambda\theta) = (1 - \alpha)v + \lambda(\alpha - \theta)$ when $v/\lambda \geq \theta$ and $v/\lambda < 1 - \theta$.
4. $\alpha\lambda(1 - \theta)$ when $v/\lambda < \theta$ and $v/\lambda < 1 - \theta$.

Payoff 1. is strictly increasing in v and strictly decreasing in λ . Payoff 2. is strictly increasing in v and independent of λ . Payoff 3. is strictly increasing in v and strictly

increasing in λ when $\hat{q} > 0$, and strictly decreasing in λ when $\hat{q} < 0$. Payoff 4. is strictly increasing in λ and independent of v .

When $\theta > 1 - \theta$, payoffs 1., 2. and 4. are relevant. In this case, the PM's expected payoff starts off at v when $\lambda = 0$, and then falls to αv as λ increases from 0 to v/θ . It remains constant at αv as λ continues to increase until $\lambda = v/(1 - \theta)$, after which the PM's expected payoff is strictly increasing in λ . The payoffs are continuous in all $\lambda > 0$.

When $\theta < 1 - \theta$, payoffs 1., 3. and 4. are relevant. In this case, the PM's expected payoff starts off at v when $\lambda = 0$, and is decreasing in λ up until $\lambda = v/(1 - \theta)$. For all λ from $v/(1 - \theta)$ to v/θ , the PM's expected payoff is strictly increasing in λ if $\hat{q} > 0$ and strictly decreasing in λ if $\hat{q} < 0$. The PM's expected payoff is strictly increasing in all $\lambda > v/\theta$. The payoffs are continuous in all $\lambda > 0$.

When $\theta = 1 - \theta$, only payoffs 1. and 4. are relevant, with the PM's payoffs first decreasing and then increasing in λ .

Notice that the PM's payoff 1. when fully informed is strictly less than either payoff A. or C. when uninformed. This means that whenever λ is close enough (but not equal to) to 0, the PM prefers to remain uninformed.

Notice also that payoff 4. when fully informed is strictly higher than payoff B. or D. when uninformed. This means that whenever λ is high enough, the PM prefers to become fully informed.

Next, we show that for $\lambda > 0$ there is single crossing of the payoff functions in the cases of full information and the case of no information.

Consider the case where $\hat{q} < 0$. For this case, the PM's payoff is strictly decreasing in λ and then 0 when uninformed, and first strictly decreasing in λ and then strictly increasing in λ when fully informed. We know from the above analysis that payoff C. is greater than payoff 1. for any λ . Therefore, the payoff from remaining uninformed starts off above the payoff from full information. Single crossing of the two functions is guaranteed from the fact that the payoff from being uninformed starts out above and ends up below the payoff function under full information, the fact that the payoff function when uninformed is linear in λ , and the fact that the payoff from full information is convex.

Next, consider the case where $\hat{q} \geq 0$. When the PM is uninformed, his payoff is constant at v until $\lambda = v/\max\{\theta, 1 - \theta\}$. Payoff v is greater than his payoff from full information when λ is low, and below his payoff from full information when $\lambda = v/\max\{\theta, 1 - \theta\}$. For all $\lambda > v/\max\{\theta, 1 - \theta\}$, his payoff from being uninformed remains below his payoff from full information. This implies that the payoff functions

cross between λ small and $\lambda = v/\max\{\theta, 1 - \theta\}$. The constant utility from no information and the concavity of the payoff function from full information on this range implies single crossing.

A.5. Analysis for case where $\hat{q} < 0$. If $v/\lambda \geq \max\{\theta, 1 - \theta\}$, then PM chooses Q to maximize

$$\int_{-\theta}^0 f(q)(v + q\lambda) dq + \int_0^{1-\theta} f(q)(q\lambda + v - q\lambda) dq = v + \lambda \int_{-\theta}^0 f(q)q dq = v + \lambda \hat{q} - \int_0^{1-\theta} f(q)q dq.$$

subject to the constraint that $EQ = \hat{q}$.

Given $\hat{q} < 0$, the PM earns $v + \lambda \hat{q}$ from any distribution Q such that $f(q) > 0$ only if $q \leq 0$. Any such distribution is optimal for the PM when $\hat{q} < 0$. Any distribution putting probability on $q > 0$ reduces EU_{PM} .

If $\theta \leq v/\lambda < 1 - \theta$, then PM chooses Q to maximize

$$\int_{-\theta}^0 f(q)(v + q\lambda) dq + \int_0^{v/\theta} f(q)(q\lambda + v - q\lambda) dq + \int_{v/\theta}^{1-\theta} f(q)q\lambda dq = \hat{q}\lambda + vF(v/\lambda) - \lambda \int_0^{v/\lambda} f(q)q dq.$$

subject to the constraint that $EQ = \hat{q}$.

For the above expression for EU_{PM} , we see that the PM can earn $v + \hat{q}$ from any Q such that $f(q) > 0$ only if $q \leq 0$. A distribution that puts positive mass on realizations $q > 0$ results in a lower payoff. Thus, the PM prefers to concentrate all probability mass on $q \leq 0$.

If $(1 - \theta) \leq v/\lambda < \theta$, then the PM earns $EU_{PM} = 0$ for any realization $q \leq -v/\lambda$, $EU_{PM} = v + q\lambda < v$ for any realization $q \in [-v/\lambda, 0]$, and $EU_{PM} = v$ for any realization $q \geq 0$.

In this case, the PM will never prefer a distribution with positive mass on $q > 0$. If Q involves $q > 0$ with positive probability, then the PM could shift this mass some probability mass from realizations $q < \hat{q}$ to 0, improving EU_{PM} while maintaining $EQ = \hat{q}$. Given this, the PM chooses a distribution Q with support $[-\theta, 0]$ to maximize

$$\int_{-v/\lambda}^0 f(q)(v + q\lambda) dq = v + \hat{q}\lambda - \int_{-\theta}^{-v/\lambda} f(q)(v + q\lambda) dq \quad (8)$$

subject to $EQ = \hat{q}$.

From Eq. (8), we see that the PM will never prefer a distribution with a positive probability of $q \in [-v/\lambda, 0)$. Suppose there is a realization q' with positive probability where $-v/\lambda \leq q' < 0$; then the PM can shift mass from q' to $q = 0$ and $q > -v/\lambda$ to increase EU_{PM} while maintaining $EQ = \hat{q}$.

Thus, the PM's optimal distribution puts probability mass on $q = 0$ and $q > -v/\lambda$. WE can rewrite the PM's optimization problem in terms of $\tilde{q} = E(q|q < -v/\lambda)$ and $r = Pr(q < -v/\lambda)$:

$$\max_{\tilde{q}, r} (1 - r)v \quad \text{s.t.} \quad \tilde{q}r = \hat{q},$$

which is maximized at $\tilde{q} = -\theta$ and $r = -\hat{q}/\theta$. Thus, in the case where $1 - \theta \leq v/\lambda < \theta$, the PM's optimal distribution is

$$Pr(q = -\theta) = -\hat{q}/\theta \quad \text{and} \quad Pr(q = 0) = 1 + \hat{q}/\theta. \quad (9)$$

which returns $EU_{PM} = (1 + \hat{q}/\theta)v$.

If $v/\lambda < \min\{\theta, 1 - \theta\}$, then the PM earns $EU_{PM} = 0$ for any realization $q \leq -v/\lambda$, $EU_{PM} = v + q\lambda < v$ for any realization $q \in [-v/\lambda, 0]$, $EU_{PM} = v$ for any realization $q \in [0, v/\lambda]$, and $EU_{PM} = q\lambda$ for any $q > v/\lambda$.

The analysis of the optimal q is unchanged from the previous case for realizations of $q \leq v/\lambda$. Here, however, there is the possibility of realizations $q > v/\lambda$, which was not a possibility when $v/\lambda > 1 - \theta$. From the above analysis, we know that the PM prefers Eq. (9) to any other distribution over $[-\theta, v/\lambda]$. Here, the PM can choose that distribution, or he can shift probability mass from realizations of $q = 0$ to put additional weight on $q = -\theta$ and weight on $q > v/\lambda$. Keeping the probability mass on 0 results in $EU_{PM} = v$ from these realizations. Shifting it to $q = -\theta$ and $q > v/\lambda$ results in expected payoffs equal to $r\tilde{q}\lambda$, where we redefine $\tilde{q} = E(q|q > v/\lambda)$ and $r = Pr(q > v/\lambda)$. The shift in distribution must maintain the same expected value as the original realization $q = 0$, and thus $r\tilde{q} - (1 - r)\theta = 0$ or $r(\tilde{q} + \theta) = \theta$. Payoff $r\tilde{q}\lambda$ is maximized with respect to the constraint by a choice of $\tilde{q} = 1 - \theta$ and $r = \theta$. Therefore, the PM prefers a full information strategy with $q \in \{-\theta, 1 - \theta\}$ to any distribution in which $q \in [v/\lambda, 1 - \theta]$. The full information strategy again returns expected payoff $EU_{PM} = \alpha(1 - \theta)\lambda$.

The PM prefers full information when it yeilds a higher expected payoff than when Q is defined by Eq. (9), which is the case when

$$\begin{aligned} \alpha(1 - \theta)\lambda > (1 + \hat{q}/\theta)v &\iff \alpha(1 - \theta)\theta > (\theta + \alpha(1 - \theta) - \theta(1 - \alpha))v/\lambda \iff \\ &v/\lambda < \theta(1 - \theta), \end{aligned}$$

the same condition underwhich the PM preferred fully informative signals when $\hat{q} \geq 0$.