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## Subpoena Power and Information Transmission

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This paper studies the role of subpoena power in enabling a policymaker to make better informed decisions. In particular, we take into account the effect of subpoena power on the information voluntarily supplied by interest groups as well as the information obtained by the policymaker via the subpoena process. To this end, we develop a model of informational lobbying in which interest groups seek access to the policymaker in order to provide him verifiable evidence about the desirability of implementing reforms they care about. The policymaker is access-constrained, i.e., he lacks time/resources to verify the evidence provided by all interest groups. The policymaker may also be agenda-constrained, i.e., he may lack time/resources to reform all issues. We find that if a policymaker is agenda-constrained, then he is *better off* by having subpoena power. On the other hand, if a policymaker is not agenda-constrained, he is made *worse off* by having subpoena power. The key insight behind these findings is that subpoena power influences interest groups' incentives to provide information voluntarily, and that this influence differs depending on whether or not the policymaker is agenda-constrained.

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*Key Words:* Lobbying; Information transmission; Subpoena; Agenda.

*Subject Classification:* D72; D78; D83.

## 1. INTRODUCTION

In making policy decisions, policymakers often stand to benefit from obtaining information held by various interest groups.<sup>1</sup> However, these interest groups, while better informed than policymakers, need not share the objectives of policymakers and, as a result, may not always be forthcoming with their information. The extent to, and circumstances under, which information is transmitted from interest groups to policymakers is the subject of a literature on informational lobbying and, at a

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<sup>1</sup>For empirical evidence on the influential role of lobbying on policy choices, see, among others, Gawande, Maloney and Montes-Rojas (2009), Tovar (2011), Belloc (2015), and Kang (2016).

more general level, of a literature on strategic information transmission.<sup>2</sup> The focus of this literature is, for a large part, on the *voluntary* provision of information by potentially biased sources.

Policymakers also have, to a varying degree, the ability to compel different parties to provide information. For instance, in the U.S., both the House and the Senate grant power to their various committees to subpoena witnesses and documents. Subpoena power is defined as “[t]he authority granted to committees by the rules of their respective houses to issue legal orders requiring individuals to appear and testify, or to produce documents pertinent to the committee’s functions, or both.” (Kravitz, 2001; p. 250) Furthermore, subpoena power is enforced by the Congress’s ‘contempt powers’ which impose penalties for noncompliance with the subpoena such as refusing to testify, withholding information, or misrepresenting information supplied to the Congress under oath.

This paper investigates whether endowing policymakers with subpoena power allows them to make better informed policy choices. While it may appear obvious that endowing policymakers with greater means to acquire information would improve the quality of policymaking, one needs to carefully analyze the incentive effects such power would have on the behavior of the informed interest groups. In particular, one needs to take into account how such power affects the extent of voluntary information provision via costly lobbying.

In order to formally investigate this question, we develop a simple model of policymaking over two issues. On each issue, the policymaker (hereafter PM) can either choose a reform or maintain the status quo. His optimal choice depends on the state of the world which is not known to him. Each issue is advocated by a different interest group (hereafter IG) which has verifiable evidence on the state of the world for this issue. However, contrary to the PM, each IG wants its issue to be reformed irrespective of the state of the world. IGs can engage in costly lobbying, offering to provide the PM the information in their possession. The PM can then choose whether to verify the information presented by the IGs. We call this act ‘granting access’ to IGs.

We consider two policymaking regimes: one with subpoena power, and another without. In the regime without subpoena power, the PM can grant access to an IG only if it lobbies. To put it differently, in this regime the PM can open the door to an IG that comes knocking at his door or read a policy brief an IG has prepared for his perusal, but he cannot force an IG to come through his door or to prepare a policy brief. By contrast, in the regime with subpoena power the PM has the option to grant access to an IG irrespective of whether it lobbies or not. Thus, subpoena power provides the PM the right to force IGs to disclose their information, which he cannot do in the absence of subpoena power where he must rely on IGs to voluntarily offer their information via lobbying. A key feature of our model is that lobbying is costly for IGs since it involves spending time and resources (such as lobbyists’ fees). On the other hand, being subpoenaed involves none of the lobbying costs. This feature implies that IGs may have weaker incentives to lobby in the regime with subpoena power than in the regime without since they have the option to save on lobbying costs and instead wait for the PM to issue

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<sup>2</sup>Several key contributions in these literatures are: on signalling, Potters and van Winden (1992), Lohmann (1993; 1995), Rasmusen (1993); on cheap talk, Crawford and Sobel (1982), Austen-Smith (1993); on persuasion, Milgrom (1981), Milgrom and Roberts (1986), Kamenica and Gentzkow (2011), Alonso and Câmara (2016). See Grossman and Helpman (2001) for further references.

subpoena. Thus subpoena power can have two opposite effects, a direct effect and an indirect one. The direct effect is that the PM’s ability to use subpoena power grants him access to information that would otherwise not be available to him; this effect is positive. The indirect effect comes from the change in the informativeness of IGs’ lobbying behavior; we show that, in equilibrium, this effect is never positive. Whether subpoena power leads to better-informed policy choices therefore depends on which effect dominates.

Another key feature of our model is that the PM is faced with limited time and resources, which restricts his ability to subpoena or grant access to IGs.<sup>3</sup> We call this constraint, the *access constraint*. In particular, we assume that the PM has time to subpoena or grant access to only one IG. In addition to the access constraint, the PM may also face further time and resource constraints which may restrict his ability to reform issues. We call this constraint, the *agenda constraint*. We consider two cases: one with an agenda constraint, where the PM cannot reform more than one issue; and another case with no agenda constraint, where the PM can reform both issues, if he wishes to. The presence of the access and agenda constraints affects IGs’ incentives to lobby and the PM’s policy choice. Moreover, the extent to which these constraints are operative plays a key role in determining whether or not subpoena power results in better informed policy choices and improves welfare.

Thus, our analysis considers two cases: one where the PM is agenda constrained, and the other one where he is not. Under each case we study two policy regimes: one with subpoena power, and one without. Our analysis yields several interesting results.

We find that in either case and policy regime, the equilibrium lobbying strategy of an IG must be one of three types: 1) truthful lobbying, i.e., lobby if and only if there is *favorable information*, i.e., information that the state of the world is pro-reform; 2) overlobbying, i.e., lobby when there is favorable information, and randomize between lobbying and not lobbying when there is *unfavorable information*, i.e., information that the state of the world is pro-status quo; 3) underlobbying, i.e., do not lobby irrespective of favorable or unfavorable information.

First, we study the case with no agenda constraint. In this case, if the PM does not have subpoena power, then in equilibrium, depending on parameter values, either both IGs lobby truthfully (a separating lobbying equilibrium) or IGs overlobby (a semi-separating lobbying equilibrium). When an IG overlobbies, it does so anticipating that the PM interprets the act of lobbying as the state being favorable to reform while hoping that its ‘bluff’ is not called due to the access constraint faced by the PM. Notice that, in both cases—when lobbying is perfectly informative and when IGs overlobby—an IG that has unfavorable information does not lobby, meaning that the act of *not* lobbying is perfectly informative.

We then show that in the absence of agenda constraint, endowing the PM with subpoena power results in weakly less-informed policy choices. This happens because the granting of subpoena power either leaves IGs’ lobbying behavior unchanged or results in less informative lobbying. In either case we show that the weakly less informative lobbying behavior is not compensated by a direct informational benefit associated with the PM’s ability to subpoena a non-lobbying IG. This happens because subpoena power serves to force a non-lobbying IG to reveal its

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<sup>3</sup>The existence of time constraints in public policymaking has been extensively documented. See, for example, Bauer, Dexter and De Sola Pool (1963), Hansen (1991), Hall (1996), and Jones and Baumgartner (2005). Daley and Snowberg (2011), and Cotton and Dellis (2016) illustrate how time constraints in public policymaking can lead to inefficient outcomes.

information but, as was noted above, the act of not lobbying was already perfectly informative in the absence of subpoena power.

Second, we consider the case with agenda constraint, i.e., the case in which the PM can reform at most one issue. We show that, irrespective of whether or not the PM is endowed with subpoena power, depending on parameter values, equilibrium lobbying is either perfectly informative or one of the two IGs underlobbies. Importantly, the equilibrium lobbying behavior of the IG advocating the issue that the PM considers to be the more important is perfectly informative. In contrast to the case with no agenda constraint, this is here possible because the agenda constraint implies that when the PM knows that reforming the more important issue is profitable, the information on the other issue has no longer any value for him (since he will reform the more important issue and, given the agenda constraint, will be unable to reform the other issue). This allows the PM to credibly choose a strategy that deters the IG advocating the more important issue from deviating from this perfectly informative lobbying. That strategy is as follows: grant access to the IG advocating the more important issue and reform this issue if and only if this IG lobbies and, when granted access, provides pro-reform information. Since the lobbying behavior of this IG is perfectly informative, the PM always makes an informed policy choice on that issue. Moreover, when the PM chooses to keep the status quo on this issue, he can use his subpoena power, if he has one, to get the other IG's information, and make an informed policy choice on that issue as well. It follows that with subpoena power, the PM always makes the same equilibrium policy choice as the one he would make under complete information. This is not true however in the absence of subpoena power since, in that case, he cannot get or infer the information owned by an IG that underlobbies.

Third, we consider the welfare implications of endowing the PM with subpoena power. It follows from the above discussion that endowing the PM with subpoena power leads to weakly *less* informed policy choices in the case without agenda constraint, and to weakly *better* informed policy choices in the case with agenda constraint. Hence, the granting of subpoena power decreases the PM's welfare in the case without agenda constraint, and improves it in the case with agenda constraint. We further show that whether there is an agenda constraint or not, each IG is at least as well off when the PM is endowed with subpoena power as when he is not. This follows because the granting of subpoena power allows IGs to save on lobbying costs by relying on the PM to issue subpoena. Interestingly, we then get that endowing the PM with subpoena power generates a Pareto improvement if and only if the PM is agenda-constrained.

The remainder of the paper is organized as follows: in Section 2 we review the related literature; in Section 3 we develop a simple model of information transmission and policymaking; Section 4 provides an illustrative example that captures the basic flavor of our general results, which are formally analyzed in Section 5; Section 6 discusses the intuition behind our main findings and concludes. All proofs are contained in the Appendix.

## 2. RELATED LITERATURE

Our paper contributes to the literature on the informational role of lobbying. Within this literature, a small set of papers looks at lobbying as means of obtaining access to the PM. In particular, Austen-Smith (1995; 1998) and Cotton (2009; 2012) consider models in which IGs make monetary contributions to the PM in the hope of

securing access and present him their information.<sup>4,5</sup> To the best of our knowledge, ours is the first paper to look at the effect of subpoena power on lobbying behavior and information transmission. Moreover, our model has two other key differences vis-à-vis these papers. First, all these papers endogenize the cost of access which takes the form either of monetary contributions that IGs choose to make to the PM in the hope of securing access, or of an access price set by the PM. By contrast, in our setting the cost that an IG must incur in the hope of gaining access to the PM takes the form of a lobbying cost that is exogenously given (e.g., the cost of setting an office in D.C. or hiring a lobbyist); hence, in our setting, there is no payment of monetary contributions to the PM. Second, and related to the first difference, in all these papers access has a monetary value for the PM while, in our setting, access has only an informational value since IGs are not allowed to make monetary contributions to the PM.

Our approach is also related to the literature on the effect of mandatory versus voluntary product quality disclosure laws.<sup>6</sup> For instance, Matthews and Postlewaite (1985) studies the effect of mandatory disclosure of product quality on the seller's incentive to test product quality. The authors show that mandatory disclosure laws destroy the seller's incentives to test for product quality and can therefore reduce consumer's utility. Similarly, Polinsky and Shavell (2012) shows that while mandatory disclosure is superior to voluntary disclosure given the information about product risks that has value to consumers, firms acquire more information about product risks under voluntary disclosure because they can keep silent if the information is unfavorable. This effect could lead to higher social welfare under voluntary disclosure. Schweizer (2017) shows similar disincentive effect of mandatory disclosure in the context of a bargaining game.

Our paper differs from this literature in two ways. First, the papers discussed above focus on the detrimental incentive of mandatory disclosure on the *production* of information. We, on the other hand, show that even when the information is readily available, but costly to transmit, subpoena power can reduce the extent of transmission.<sup>7</sup> Second, the papers discussed above focus on the decision of one information provider (the firm) and its impact on the recipient (the consumers). Our model, on the other hand, studies the strategic interaction between different providers of information whose decisions are interrelated due to the receiver's access and agenda constraints.

Finally, Fishman and Hagerty (1990) investigates how much discretion should be granted to an agent with private, verifiable information in his choice of which pieces of information to disclose. Contrary to our setting in which the PM is the one facing

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<sup>4</sup>These papers differ, among other things, in the nature of information they consider. In Austen-Smith (1995) information is non-verifiable. In Cotton (2009) information can be withheld from the PM, but cannot be tampered with. In Austen-Smith (1998) and in Cotton (2012), as in our paper, information consists of hard evidence that can be neither tampered with nor withheld once access is granted.

<sup>5</sup>Langbein (1986) and Wright (1990), among others, provide evidence consistent with the idea that monetary contributions by IGs serve to buy access, with the purpose of presenting information to lawmakers. Kalla and Broockman (2016) provides field experimental evidence that monetary contributions facilitate access to lawmakers.

<sup>6</sup>See Dranove and Jin (2010) for a survey of the literature on quality disclosure.

<sup>7</sup>As in our paper, several contributions in this literature consider the case where the information is readily available, and show that mandatory disclosure can lead to higher social welfare if: 1) sellers are duopolists and do not voluntarily disclose their information because it would intensify price competition (Board 2009); or 2) some consumers are not fully rational (Fishman and Hagerty 2003; Saak 2016). Neither of these two mechanisms are present in our paper.

access and agenda constraints, in Fishman and Hagerty (1990) this is the agent who is limited in the number of pieces of information he can disclose. These authors show that under certain conditions, limiting discretion leads to better informed decisions. Our paper differs in two important ways. First, in our setting an IG reveals all its evidence when granted access. Second, Fishman and Hagerty do not consider competition between informed agents and a decisionmaker facing access and agenda constraints.

### 3. MODEL

We develop our argument using a simple model of access.<sup>8</sup> Consider a PM who must choose policy on two issues, indexed by  $i = 1, 2$ . For each issue, the PM can either reform the issue or keep the status quo.<sup>9</sup> We denote the policy adopted on issue  $i$  by  $p_i \in \{0, 1\}$ , where  $p_i = 1$  if the PM reforms issue  $i$  and  $p_i = 0$  if he keeps the status quo.

There are two possible states of the world for issue  $i$ :  $\theta_i \in \{0, 1\}$ . State  $\theta_i = 1$  (resp.  $\theta_i = 0$ ) corresponds to circumstances in which the PM gains (resp. loses) from reforming issue  $i$ . The state of the world  $\theta = (\theta_1, \theta_2)$  is unknown to the PM, but its distribution is common knowledge:

$$\theta_i = \begin{cases} 1 & \text{with probability } \pi_i \in (0, \frac{1}{2}) \\ 0 & \text{with probability } 1 - \pi_i. \end{cases}^{10}$$

States are independent between issues.

The PM has state-contingent preferences over policy. Specifically, given state  $\theta = (\theta_1, \theta_2)$ , the PM gets utility

$$U(p, \theta) = \alpha \cdot u_1(p_1, \theta_1) + u_2(p_2, \theta_2)$$

from policy  $p = (p_1, p_2)$ , where  $\alpha \geq 1$  measures the importance of issue 1 relative to issue 2, and

$$u_i(p_i, \theta_i) = \begin{cases} 1 & \text{if } p_i = \theta_i \\ 0 & \text{if } p_i \neq \theta_i \end{cases}$$

is the PM's utility over the policy on issue  $i$ .

There are two IGs, each one advocating a separate issue; IG<sub>1</sub> is associated with issue 1 and IG<sub>2</sub> with issue 2. IGs have state-independent preferences over policy, each preferring its issue to be reformed, independently of state  $\theta$ . Specifically, IG <sub>$i$</sub>  gets utility  $v_i(p) = p_i$  from policy  $p$ .

Each IG <sub>$i$</sub>  has private verifiable evidence on  $\theta_i$ , and decides whether to lobby the PM at utility cost  $f_i > 0$ . Upon observing IGs' lobbying decisions, the PM decides whether to grant access to or, if endowed with subpoena powers, to issue subpoena to an IG.<sup>11</sup> If IG <sub>$i$</sub>  is granted access, it must reveal its evidence on  $\theta_i$ .<sup>12</sup> The PM

<sup>8</sup>The basic structure of this model was developed in Dellis and Oak (2017), which we extend here to allow for subpoena power.

<sup>9</sup>Reforming an issue can be interpreted either literally (e.g., legalizing abortion) or as realizing a discrete public investment (e.g., the construction of a new bridge).

<sup>11</sup>From now on, by granting access we shall mean both the act of granting access to a lobbying IG and the act of subpoenaing a non-lobbying IG.

<sup>12</sup>Alternatively, when granted access, IG <sub>$i$</sub>  could decide whether or not to costlessly reveal its evidence. However, as we know from the unraveling result of Grossman (1981) and Milgrom (1981), in equilibrium 1) IG <sub>$i$</sub>  would reveal its evidence whenever it is favorable (i.e.,  $\theta_i = 1$ ), and 2) the PM would infer  $\theta_i = 0$  if IG <sub>$i$</sub>  were choosing against revealing its evidence. Hence this setting would generate a similar equilibrium outcome as when an IG is forced to disclose its evidence when granted access.

faces a time constraint that prevents him from granting access to more than one IG.

We are interested in comparing the implications of two regimes. In one regime, the PM has subpoena power, meaning he can grant access to an IG if it lobbies, and, in case an IG does not lobby, force it to reveal its evidence by issuing subpoena. In the other regime, the PM does not have subpoena power, meaning he can grant access only to a lobbying IG. The former regime corresponds, for example, to situations where lawmakers can force people to produce documents or testify under oath during legislative hearings. Alternatively, this regime could be interpreted as corresponding to situations where lawmakers can choose to gather information on their own (e.g., through governmental agencies, by ordering a scientific report, or by polling his constituents to learn about their position on an issue). In contrast, the latter regime corresponds, for example, to situations where lawmakers are allowed to receive reports and memoranda from lobbyists, but cannot actively request lobbyists to provide them with information. Alternatively, this regime could be interpreted as corresponding to situations where lawmakers can audit the information lobbyists provide, while they cannot gather the information on their own, either because it is prohibitively costly or because they do not have access to the necessary resources to investigate the issue on their own.

We are furthermore interested in studying how the implications of these two regimes depend on whether the PM faces an agenda constraint. We denote by  $N \in \{1, 2\}$  the maximum number of issues the PM can choose to reform. We say that the PM faces an agenda constraint if  $N = 1$ , i.e., when the PM has access to limited time and resources, preventing him from reforming both issues at the same time. By contrast, we say that the PM does not face an agenda constraint if  $N = 2$ , i.e., when the PM has access to enough resources so he can reform both issues, if he wishes to.

Thus, we consider four games that differ on two dimensions, namely, the size of the agenda ( $N$ ) and the availability of subpoena power. We shall call subpoena games the games in which the PM enjoys subpoena power. We shall call no-subpoena games the games in which the PM does not have subpoena power. The following table summarizes our classification of the four games.

	<b>Subpoena power</b>	<b>No subpoena power</b>
<b>N = 1</b>	Subpoena game with agenda constraint	No-subpoena game with agenda constraint
<b>N = 2</b>	Subpoena game without agenda constraint	No-subpoena game without agenda constraint

The policymaking process has four stages. At stage 0, Nature chooses  $\theta_i$  for each issue  $i$ , and reveals  $\theta_i$  only to  $IG_i$ . At stage 1, IGs decide simultaneously and independently whether to lobby the PM. Lobbying decisions are observed by the PM. At stage 2, the PM decides which IG granting access (if any). If  $IG_i$  is granted access, it must reveal  $\theta_i$  to the PM. Finally, at stage 3, the PM chooses policy. We now describe the structure of each stage, working backwards.

### 3.1. Stage 3: Policy Choice

By the time the PM chooses policy, he has observed IGs' lobbying decisions. He has also observed  $\theta_i$  if he did grant access to  $IG_i$ . We denote  $IG_i$ 's lobbying

decision by  $\ell_i \in \{0, 1\}$ , where  $\ell_i = 1$  (resp.  $\ell_i = 0$ ) if  $IG_i$  lobbies (resp. does not lobby). We denote the PM's decision to grant access to  $IG_i$  by  $a_i \in \{0, 1\}$ , where  $a_i = 1$  (resp.  $a_i = 0$ ) if the PM grants access to  $IG_i$  (resp. does not grant access to  $IG_i$ ). Given lobbying profile  $\ell = (\ell_1, \ell_2)$  and access profile  $a = (a_1, a_2)$ , the PM forms belief  $\beta_i(\ell_i, a_i; \theta_i)$  that  $\theta_i = 1$ , using Bayes' rule whenever possible. Since the PM observes the evidence on  $\theta_i$  when he grants access to  $IG_i$ , we have  $\beta_i(\ell_i, 1; \theta_i) = \theta_i$  for all  $\ell_i$  and  $\theta_i$ . In order to lighten notation, we shall write  $\beta_i$  in place of  $\beta_i(\ell_i, a_i; \theta_i)$  whenever this does not create confusion.

A policy strategy for issue  $i$ ,  $\rho_i$ , specifies the probability  $\rho_i(\ell, a; \theta) \in [0, 1]$  that the PM reforms issue  $i$  given lobbying profile  $\ell = (\ell_1, \ell_2)$  and access profile  $a = (a_1, a_2)$ , with, when  $N = 1$ , the additional constraint that  $\sum_{i \in \{1, 2\}} \rho_i(\ell, a; \theta) \leq 1$ .

When  $N = 2$ , the PM maximizes his expected utility with policy strategy  $\rho = (\rho_1, \rho_2)$ , where

$$\rho_i(\ell, a; \theta) \begin{cases} = 1 & \text{if } \beta_i > 1/2 \\ \in [0, 1] & \text{if } \beta_i = 1/2 \\ = 0 & \text{if } \beta_i < 1/2 \end{cases}$$

for each issue  $i$ . In words, the PM reforms issue  $i$  when he believes  $\theta_i = 1$  is more likely than  $\theta_i = 0$ .<sup>13</sup>

When  $N = 1$ , the PM maximizes his expected utility with policy strategy  $\rho = (\rho_1, \rho_2)$ , where

$$\rho_i(\ell, a; \theta) \begin{cases} = 1 & \text{if } \beta_i > 1/2 \text{ and } (\beta_i - 1/2) \cdot \alpha_i > (\beta_{-i} - 1/2) \cdot \alpha_{-i} \\ \in [0, 1] & \text{if } \beta_i \geq 1/2 \text{ and } (\beta_i - 1/2) \cdot \alpha_i \geq (\beta_{-i} - 1/2) \cdot \alpha_{-i} \\ = 0 & \text{otherwise} \end{cases}$$

for each issue  $i$ ,  $\alpha_1 \equiv \alpha$  and  $\alpha_2 \equiv 1$ . In words, the PM reforms issue  $i$  when the following two conditions are satisfied: 1) the PM believes  $\theta_i = 1$  is more likely than  $\theta_i = 0$ , as when  $N = 2$ , and 2) furthermore expects a greater utility gain from reforming issue  $i$  than from reforming the other issue.

### 3.2. Stage 2: Access

By the time the PM chooses to which IG granting access, he has observed IGs' lobbying decisions. Given lobbying profile  $\ell = (\ell_1, \ell_2)$ , the PM forms belief  $\beta_i^{Acc}(\ell_i)$  that  $\theta_i = 1$ , using Bayes' rule whenever possible.<sup>14</sup>

An access strategy for the PM,  $\gamma = (\gamma_1, \gamma_2)$ , specifies the probability  $\gamma_i(\ell) \in [0, 1]$  that the PM grants access to  $IG_i$  given lobbying profile  $\ell = (\ell_1, \ell_2)$ . Since the PM cannot grant access to more than one IG, we have  $\sum_{i \in \{1, 2\}} \gamma_i(\ell) \leq 1$ .

The PM's expected utility associated with access strategy  $\gamma$  is given by

$$EU(\gamma | \rho) = \sum_{i \in \{1, 2\}} [\gamma_i \cdot W_i(\ell) + (1 - \gamma_i) \cdot Z_i(\ell)] \cdot \alpha_i,$$

where  $W_i(\ell)$  (resp.  $Z_i(\ell)$ ) is the probability that the PM chooses  $p_i = \theta_i$  if he grants access to  $IG_i$  (resp.  $IG_{-i}$ ) given lobbying decisions  $\ell = (\ell_1, \ell_2)$  (and policy choice strategy  $\rho$ ). Granting access to  $IG_i$  instead of  $IG_{-i}$  increases by  $X_i(\ell) \equiv W_i(\ell) - Z_i(\ell)$  the probability that the PM chooses  $p_i = \theta_i$ . The expressions for  $W_i(\ell)$  and  $Z_i(\ell)$  can be found in the Appendix.

<sup>13</sup>In order to further lighten notation, we shall omit  $N$  as a parameter of strategies.

<sup>14</sup>The superscript *Acc* refers to the access stage.

The PM chooses an access strategy  $\gamma$  that solves

$$\begin{cases} \max_{\gamma(\ell) \in [0,1]^2} & EU(\gamma(\ell) \mid \rho) \\ \text{s.t.} & \gamma_1(\ell) + \gamma_2(\ell) \leq 1 \end{cases}$$

with the additional restriction in the no-subpoena games that  $\gamma_1(0, \ell_2) = \gamma_2(\ell_1, 0) = 0$ . Throughout the analysis we maintain the tie-breaking assumption that when indifferent whether or not to grant access to an IG, which happens when lobbying decisions fully reveal  $\theta$ , the PM chooses in favor of granting access.<sup>15</sup> This tie-breaking assumption implies  $\sum_{i \in \{1,2\}} \gamma_i(\ell) = 1$ , except in the no-subpoena game when  $\ell = (0, 0)$  (in which case  $\gamma_i(0, 0) = 0$  for each  $i$ ).

When the PM has subpoena power or when both IGs lobby, the PM chooses access strategy  $\gamma = (\gamma_1, \gamma_2)$  such that for each  $i$ ,

$$\gamma_i(\ell) \begin{cases} = 1 & \text{if } X_i(\ell) \cdot \alpha_i > X_{-i}(\ell) \cdot \alpha_{-i} \\ \in [0, 1] & \text{if } X_i(\ell) \cdot \alpha_i = X_{-i}(\ell) \cdot \alpha_{-i} \\ = 0 & \text{if } X_i(\ell) \cdot \alpha_i < X_{-i}(\ell) \cdot \alpha_{-i}. \end{cases}$$

Note that  $X_i(\ell) \cdot \alpha_i$  corresponds to the PM's expected utility gain on issue  $i$  from granting access to IG $_i$  instead of IG $_{-i}$ . Thus, the access strategy prescribes the PM to grant access to the IG which information he expects to be the most valuable for him.

### 3.3. Stage 1: Lobbying

A lobbying strategy for IG $_i$ ,  $\lambda_i$ , specifies the probability  $\lambda_i(\theta_i) \in [0, 1]$  that IG $_i$  lobbies the PM given state  $\theta_i$ . IG $_i$  chooses a lobbying strategy that solves for each  $\theta_i$

$$\max_{\lambda_i(\theta_i) \in [0,1]} Ep_i(\lambda_i(\theta_i), \lambda_{-i}, \gamma, \rho) - \lambda_i(\theta_i) \cdot f_i,$$

where  $Ep_i(\lambda_i(\theta_i), \lambda_{-i}, \gamma, \rho)$  is the probability that the PM chooses  $p_i = 1$ .

### 3.4. Equilibrium

The solution concept is Perfect Bayesian equilibrium. Roughly speaking, an equilibrium consists of a strategy profile  $\{\lambda(\cdot), \gamma(\cdot), \rho(\cdot)\}$  and a system of beliefs  $\{\beta^{Acc}(\cdot), \beta(\cdot)\}$  such that 1) the strategy profile is sequentially rational given the system of beliefs, and 2) the beliefs are obtained from the strategies using Bayes' rule whenever possible.

The finiteness of the game implies that an equilibrium exists in each of the four games. In case of equilibrium multiplicity, we shall, as is standard in the literature, restrict attention to most-informative equilibria (which, incidentally, correspond to the equilibria preferred by the PM).

## 4. AN ILLUSTRATIVE EXAMPLE

Before presenting a general analysis of the model developed above, we will provide the flavor of our results using a specific example. In particular, assume that  $\alpha > 1$ ,  $\pi_1 = \pi_2 = 0.3$ , and  $f_1 = f_2 = 0.75$ . We will compare the equilibrium

<sup>15</sup>We discuss this tie-breaking assumption in section 5.1.1 below.

outcomes of the games with and without subpoena power in the cases where the agenda constraint is absent, and when it is present. We seek to provide here the intuition for our results, which are rigorously proved in the next section.

#### 4.1. Policymaking with No agenda constraint (i.e. $N = 2$ )

Consider the case where the PM faces no agenda constraint. We will first look at the sub-case where the PM has no subpoena power. We claim in this case that, for the given parameters values, there exists an equilibrium in which each IG lobbies truthfully ( $\lambda_i(\theta_i) = \theta_i$ ), i.e., lobbies if and only if it has favorable information. To verify our claim, consider the following strategy by the PM:  $\gamma_i(1, 1) = 0.5$  for each  $i$ ,  $\rho_i(0, \cdot) = 0$ ,  $\rho_i(1, 0) = 1$  and  $\rho_i(1, 1) = \theta_i$ . In words, when they both lobby, the PM grants access to each IG with probability  $1/2$ ; if  $IG_i$  does not lobby, the PM maintains the status quo on issue  $i$ ; if  $IG_i$  lobbies but is not granted access, the PM reforms issue  $i$ ; if  $IG_i$  lobbies and is granted access, the PM chooses the optimal policy for state  $\theta_i$ . The PM's interim beliefs are  $\beta_i^{Acc} = \ell_i$ ; in words, the PM believes  $\theta_i = 1$  (resp.  $\theta_i = 0$ ) if  $IG_i$  lobbies (resp. does not lobby).

To verify that these strategies and beliefs are part of an equilibrium, note that the PM's beliefs are consistent with the lobbying and access strategies, and that the PM's policy choice is optimal given his beliefs. Since the gain from reform, which is equal to the gain from lobbying when  $\theta_i = 1$ , is greater than the cost of lobbying ( $1 > 0.75$ ), it is optimal for each  $IG_i$  to lobby when  $\theta_i = 1$ . Would  $IG_i$  want to deviate to lobby when  $\theta_i = 0$ ? Such deviation will lead to issue  $i$  being reformed only if  $IG_i$  is *not* granted access. The probability of that event is  $(0.3)(0.5) = 0.15$ , i.e., the probability that the other IG lobbies and is granted access. Hence, in state  $\theta_i = 0$  the expected gain from deviating to lobby is  $0.15 - 0.75 = -0.6$ , implying the deviation is not profitable. As a result, there exists an equilibrium of the game with no agenda constraint and without subpoena power, in which the first-best policy is implemented.

Now consider the sub-case where the PM has subpoena power. Would there be a truthful lobbying equilibrium in this case? Were such an equilibrium to exist, it would have both IGs lobbying truthfully, the PM holding beliefs consistent with such strategies and choosing his access and policy choices optimally. Under these strategies, when  $\theta_i = 1$ ,  $IG_i$  lobbies and gets its issue reformed, which yields net payoff of  $1 - 0.75 = 0.25$ . If it deviates to not lobby, then with probability  $0.7$  neither IG will be lobbying, in which case  $IG_i$  will be subpoenaed with probability  $\gamma_i^*(0, 0)$ . Hence,  $IG_i$ 's expected payoff from not lobbying when  $\theta_i = 1$  is  $(0.7) \cdot \gamma_i^*(0, 0)$ . Similarly,  $IG_j$ 's expected payoff from not lobbying when  $\theta_j = 1$  is  $(0.7) \cdot [1 - \gamma_i^*(0, 0)]$ . For both IGs to not want to lobby when both have favorable information, it must be the case that  $(0.7) \cdot \gamma_i^*(0, 0) < 0.25$  and  $(0.7) \cdot [1 - \gamma_i^*(0, 0)] < 0.25$ , both of which cannot be simultaneously true. Hence, subpoena power destroys IGs' incentive to lobby truthfully since they are better off abstaining from lobbying and waiting for the PM to subpoena them, in this way getting access without having to bear the lobbying costs. As we prove in the next section, in any equilibrium of the game under subpoena power, one IG abstains from lobbying while the other does not lobby truthfully. This leads to loss of voluntarily provided information, which we show cannot be made up for by the subpoena power. As a result, in any equilibrium of the game without agenda constraint but with subpoena power, the PM cannot implement the first-best policy.

Putting together the two sub-cases, the example illustrates that in the absence

of agenda constraint, subpoena power makes the PM worse off. In Section 5, we show this result to hold weakly over the entire range of parameters values, i.e., subpoena power can never make the PM better off, and does sometimes, as for the parameters values considered in this example, makes him worse off.

#### 4.2. Policymaking with an agenda constraint (i.e. $N = 1$ )

Now consider the case where the PM can implement reform on at most one issue. Let's first look at the sub-case where the PM has no subpoena power. As shown in Lemma 3 in the following section, the most informative equilibrium in this sub-case is as follows.  $IG_1$ —which advocates the PM's most-important issue—lobbies truthfully, while  $IG_2$  abstains from lobbying. The PM's beliefs are that  $\theta_1 = 1$  (resp. 0) when  $\ell_1 = 1$  (resp. 0) and that  $\theta_2 = 1$  with probability 0.3. The PM *prioritizes* issue 1, i.e., he grants access to  $IG_1$  whenever it lobbies, and reforms this issue if and only if  $\theta_1 = 1$ .  $IG_2$  is granted access only if it lobbies and  $IG_1$  does not. In this case, issue 2 is reformed if and only if  $\theta_2 = 1$ . This access strategy of the PM is possible when  $N = 1$ , even though it was not when  $N = 2$ , since, once he infers from  $IG_1$ 's lobbying decision that  $\theta_1 = 1$ , the PM no longer need information on  $\theta_2$  given that he will want to reform issue 1 and will not be able, due to the agenda constraint, to reform issue 2. Under this strategy by the PM, it is easy to verify that  $IG_1$  will lobby truthfully, and that  $IG_2$  will not lobby when  $\theta_2 = 0$ . It remains to verify that not lobbying is  $IG_2$ 's optimal strategy even when  $\theta_2 = 1$ . Under this strategy  $IG_2$ 's payoff is 0. If it were to deviate to lobby, it will be granted access with probability 0.7 (i.e., when  $IG_1$  does not lobby) and hence will receive expected payoff  $(0.7)(1) - 0.75 = -0.05$ , which is lower than its payoff if it does not lobby. This establishes that the strategies described above constitute an equilibrium. Note therefore that the equilibrium of the game with agenda constraint but without subpoena power cannot implement the first-best policy.

Turning to the case where the PM is endowed with subpoena power, we show in Lemma 4 that the most informative equilibrium consists of the same strategies as in the game without subpoena power, with one difference: when neither  $IG$  lobbies, the PM subpoenas  $IG_2$ . Under these strategies, the PM gets perfectly informed about  $\theta_1$ . Moreover, when  $\theta_1 = 0$ , the case in which the PM considers the possibility of reforming issue 2, he learns  $\theta_2$  by issuing subpoena to  $IG_2$ . In other words, subpoena power does not decrease voluntary provision of information, implying subpoena power has benefits but no costs. Thus, in the case where there is an agenda constraint and the PM has subpoena power, he makes the same policy choices as he would if he were perfectly informed about the state of the world, i.e., the equilibrium outcome coincides with the first best policy choice.

Putting together the two sub-cases, the example illustrates that in the presence of an agenda constraint, subpoena power makes the PM better off. In Section 5, our general analysis shows this result to hold weakly over the entire range of parameters values, i.e., subpoena power can never make the PM worse off, and does sometimes, as for the parameters values considered in this example, make him better off.

## 5. GENERAL ANALYSIS

We now proceed with the analysis of the model. First, we describe (most-informative) equilibria in each of the four different games. Second, for each value of

$N$  we compare each player's equilibrium ex ante expected payoffs in the subpoena and the no-subpoena games. We show that IGs are always at least as well off when the PM has subpoena power as when he has not. At the same time, we show that a PM who faces no agenda constraint can never be better off being awarded subpoena power, while a PM who faces an agenda constraint is always at least as well off with subpoena power as without.

### 5.1. Equilibrium

In this section, we describe equilibria, starting with the games with no agenda constraint, and then continuing with the games with agenda constraint.

#### 5.1.1. Games with No agenda constraint (i.e. $N = 2$ )

We start by describing equilibria of the No-subpoena game.<sup>16</sup>

LEMMA 1 (Dellis and Oak 2017). *Consider the no-subpoena game with no agenda constraint.*

1. *An equilibrium exists in which  $\beta_i \in \{0, 1\}$  for every  $i$  if and only if  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1$ . In this equilibrium,  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ , and the PM chooses  $p = \theta$  for every  $\theta$ .*
2. *If  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ , a unique equilibrium exists. In this equilibrium, we have for each  $i$*

$$\left\{ \begin{array}{l} \lambda_i(1) = 1 \text{ and } \lambda_i(0) = \frac{\pi_i}{1-\pi_i} \frac{1}{2\alpha_i-1} \in (0, 1) \\ \gamma_2(1, 1) = 1 - \gamma_1(1, 1) = \frac{f_1}{2\pi_2} \in (0, 1), \gamma_1(1, 0) = \gamma_2(0, 1) = 1 \text{ \& } \gamma_i(0, 0) = 0 \\ \rho_i(0, 0; \theta_i) = 0, \rho_1(1, 0; \theta_1) = 1 \text{ \& } \rho_2(1, 0; \theta_2) = \frac{\pi_2 f_2 \cdot (2\alpha-1)}{\pi_1 \alpha \cdot (2\pi_2 - f_1)} \in (0, 1) \\ \beta_i^{Acc}(0) = \beta_i(0, 0; \theta_i) = 0 \\ \beta_2^{Acc}(1) = \beta_2(1, 0; \theta_2) = \frac{1}{2} < \beta_1^{Acc}(1) = \beta_1(1, 0; \theta_1) < 1. \end{array} \right.$$

We say that a lobbying strategy is *truthful* for  $IG_i$  if  $|\lambda_i(1) - \lambda_i(0)| = 1$ , i.e.,  $IG_i$ 's lobbying decision reveals  $\theta_i$ . An *equilibrium with truthful lobbying* is an equilibrium in which every IG lobbies truthfully. Notice that since lobbying is costly, an equilibrium truthful lobbying strategy for  $IG_i$  takes the following form:  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$ , i.e.,  $IG_i$  lobbies when it has favorable information ( $\theta_i = 1$ ), and abstains from lobbying when it has unfavorable information ( $\theta_i = 0$ ). Notice furthermore that in an equilibrium with truthful lobbying, lobbying decisions reveal  $\theta$ , implying  $\beta_i^{Acc}, \beta_i \in \{0, 1\}$  for every issue  $i$ , and, since there is no agenda constraint, the PM chooses policy  $p = \theta$ .

The first part of lemma 1 establishes that an equilibrium with truthful lobbying exists if and only if lobbying is costly enough (in the sense that  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1$ ). Let's first go over the intuition underlying the *necessity* of this condition. Consider an equilibrium with truthful lobbying. Since we are in equilibrium, neither IG with unfavorable information wants to deviate to lobby. If  $IG_i$  does not lobby, its equilibrium payoff equals 0 since the PM infers  $\theta_i = 0$  and then chooses  $p_i = 0$ . If  $IG_i$  were to deviate to lobby, the PM would believe  $\theta_i = 1$  and choose  $p_i = 1$  if and only if he does not grant  $IG_i$  access and check its evidence. Since the PM does not have subpoena power, the latter event requires that the other IG,  $IG_{-i}$ , lobbies as well and that the PM grants it access, which happens with probability

<sup>16</sup>For expositional purposes, we state only the strategies and beliefs that are necessary to compute equilibrium payoffs. All other strategies and beliefs can be found in the proof of the lemma.

$\pi_{-i} \cdot \gamma_{-i}(1, 1)$ .  $\text{IG}_i$ 's expected payoff from deviating to lobby would then be equal to  $\pi_{-i} \cdot \gamma_{-i}(1, 1) - f_i$ . Hence  $\text{IG}_i$  does not want to deviate from truthful lobbying when  $\theta_i = 0$  only if  $0 \geq \pi_{-i} \cdot \gamma_{-i}(1, 1) - f_i$ . This condition is satisfied for every  $\text{IG}$  if and only if

$$1 - \gamma_2(1, 1) = \gamma_1(1, 1) \in \left[1 - \frac{f_1}{\pi_2}, \frac{f_2}{\pi_1}\right],$$

i.e., each  $\text{IG}$  is granted access with a sufficiently high probability. This interval is non-empty if and only if  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1$ .

Let's now go over the intuition underlying the *sufficiency* of the condition  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1$  for the existence of an equilibrium with truthful lobbying. By the same argument as above, we get that if the condition holds, both  $\text{IG}$ s can be deterred to deviate from truthful lobbying when they have unfavorable information. We argue further that neither  $\text{IG}$  with favorable information wants to deviate from truthful lobbying. To see why, suppose again that  $\text{IG}$ s lobby truthfully.  $\text{IG}_i$ 's payoff from lobbying is in this case equal to  $1 - f_i$  since the PM infers  $\theta_i = 1$  from  $\text{IG}_i$ 's decision to lobby, and chooses  $p_i = 1$ . If  $\text{IG}_i$  were to deviate and not lobby, its payoff would be equal to zero since the PM would infer  $\theta_i = 0$  and choose  $p_i = 0$ . Given  $f_i < 1$ ,  $\text{IG}_i$  does not want to deviate.

The second part of lemma 1 considers the case where  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ . In this case, there is a unique equilibrium, in which each  $\text{IG}$  lobbies when it has favorable information, and randomizes between lobbying and not lobbying when it has unfavorable information. Since  $\text{IG}_i$  abstains from lobbying only when  $\theta_i = 0$ , the PM infers  $\theta_i = 0$  from  $\text{IG}_i$ 's decision to not lobby, and chooses  $p_i = 0$ . By contrast, the PM cannot perfectly infer  $\theta_i$  from  $\text{IG}_i$ 's decision to lobby. If  $\text{IG}_i$  is the only lobbying  $\text{IG}$ , the PM grants it access and learns  $\theta_i$ , in which case he gets perfectly informed about  $\theta$  and chooses  $p = \theta$ . Otherwise, if both  $\text{IG}$ s lobby, the PM randomizes between granting  $\text{IG}_1$  access and granting  $\text{IG}_2$  access. The PM learns  $\theta_i$  from the  $\text{IG}_i$  to whom he grants access ( $\beta_i \in \{0, 1\}$ ), but remains imperfectly informed about  $\theta_{-i}$  ( $\beta_{-i} \in [1/2, 1)$ ). In this event, the PM chooses  $p \neq \theta$  with positive probability.

We continue with the subpoena game.

LEMMA 2. *Consider the subpoena game with no agenda constraint.*

1. *An equilibrium in which  $\beta_i \in \{0, 1\}$  for each  $i$  exists if and only if*

$$\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1 - \pi_1) \cdot f_1 + (1 - \pi_2) \cdot f_2}{1 - \pi_1 \pi_2}.$$

*In this equilibrium,  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ , and the PM chooses  $p = \theta$  for every  $\theta$ .*

2. *If  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ , the strategies and beliefs of the unique equilibrium of the no-subpoena game (part 2 of lemma 1) still constitute an equilibrium in the subpoena game, with the exception of  $\gamma_i(0, 0) = 0$  for each  $i$  which is replaced with  $\gamma(0, 0)$  satisfying  $\sum_{i \in \{1, 2\}} \gamma_i(0, 0) = 1$ .<sup>17</sup>*

<sup>17</sup>In the proof of the lemma, we show that another equilibrium with lobbying  $\text{IG}$ s exists if and only if  $2\pi_1 \alpha > 1$  (in addition to  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ ). In this equilibrium, strategies and beliefs are

3. If  $\frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2} > 1$ , an equilibrium exists in which

$$\left\{ \begin{array}{l} \lambda_1(1) = 1 \text{ and } \lambda_1(0) = \frac{\pi_1\pi_2}{(1-\pi_1)(\alpha-\pi_2)} \in (0, 1) \\ \lambda_2(1) = \lambda_2(0) = 0 \\ \gamma_1(0, 0) = 1 - \gamma_2(0, 0) = 0 \\ \gamma_1(1, 0) = 1 - \gamma_2(1, 0) = (1 - f_1) \in (0, 1) \\ \beta_1^{Acc}(0) = 0 < \beta_2^{Acc}(0) = \pi_2 < \frac{1}{2} < (1 - \frac{\pi_2}{\alpha}) = \beta_1^{Acc}(1) < 1 \\ \rho_1(1, 0; \theta_1) = 1 \text{ and } \rho_i(0, 0; \theta_i) = 0 \text{ for each } i. \end{array} \right.$$

Moreover, in any equilibrium, lobbying strategies are such that

$$|\lambda_i(1) - \lambda_i(0)| < 1 \text{ for each } i,$$

with

$$\lambda_i(1) = \lambda_i(0) = 0 \text{ for some } i.$$

Thus, an equilibrium with truthful lobbying exists if and only if lobbying is sufficiently cheap (in the sense that  $\frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2} \leq 1$ ), but not too cheap (in the sense that  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1$ ). The latter is identical to the necessary and sufficient condition for the existence of an equilibrium with truthful lobbying in the no-subpoena game (lemma 1). As in the no-subpoena game, this restriction is necessary for deterring IGs with unfavorable information from deviating to lobby. However, in the subpoena game this restriction is no longer sufficient to guarantee existence of an equilibrium with truthful lobbying; it must be furthermore that lobbying is cheap enough so that IGs with favorable information are deterred from deviating to not lobby. To understand the necessity of this condition, consider an equilibrium with truthful lobbying, and suppose  $\theta_i = 1$ . In equilibrium the PM infers  $\theta_i = 1$  from  $IG_i$ 's decision to lobby, and chooses  $p_i = 1$ .  $IG_i$ 's equilibrium payoff is then equal to  $1 - f_i$ . If  $IG_i$  were to deviate to not lobby, the PM would believe  $\theta_i = 0$  and choose  $p_i = 0$ , except if he were to subpoena  $IG_i$ . The latter would occur with probability  $\Gamma_i \equiv \pi_{-i}\cdot\gamma_i(0; 1) + (1 - \pi_{-i})\cdot\gamma_i(0; 0)$ , where  $\gamma_i(0; \ell_{-i})$  is the probability the PM subpoenas  $IG_i$  given  $\ell_i = 0$  and  $IG_{-i}$ 's lobbying decision  $\ell_{-i}$ .  $IG_i$ 's expected payoff would then be equal to  $\Gamma_i$ . Thus,  $IG_i$  does not want to deviate from truthful lobbying when  $\theta_i = 1$  only if  $1 - f_i \geq \Gamma_i$  or, equivalently,  $f_i \leq 1 - \Gamma_i$ . Now, let  $\gamma_i(0; 1) = 0$  for each  $i$ , which 1) by reducing  $\Gamma_i$  without increasing  $\Gamma_{-i}$ , makes it easier to satisfy the condition  $f_i \leq 1 - \Gamma_i$  for each  $i$ , and 2) is possible since truthful lobbying implies  $X_i(\ell) = 0$  for each  $i$ . It follows that  $f_i \leq 1 - \Gamma_i$  for each  $IG_i$  if and only if

$$1 - \gamma_2(0; 0) = \gamma_1(0; 0) \in \left[ \frac{f_2 - \pi_1}{1 - \pi_1}, \frac{1 - f_1}{1 - \pi_2} \right]$$

given by

$$\left\{ \begin{array}{l} \lambda_1(1) = \frac{(2\pi_1\alpha-1)\cdot(2\alpha-1)}{4\alpha\cdot(\alpha-1)\cdot\pi_1} \text{ and } \lambda_1(0) = \frac{2\pi_1\alpha-1}{4\alpha\cdot(\alpha-1)\cdot(1-\pi_1)} \\ \lambda_2(1) = 1 \text{ and } \lambda_2(0) = \frac{\pi_2}{1-\pi_2} \\ 0 = \beta_2^{Acc}(0) < \beta_1^{Acc}(0) < \frac{1}{2} = \beta_2^{Acc}(1) < \beta_1^{Acc}(1) < 1 \\ \gamma_1(\ell_1, 0) = 1 \text{ and } \gamma_1(\ell_1, 1) = \left(1 - \frac{f_1}{2\pi_2}\right) \text{ for each } \ell_1 \\ \rho_1(1, 0; \theta_1) = 1 \text{ and } \rho_2(1, 0; \theta_2) = \frac{2\pi_2 f_2}{2\pi_2 - f_1} \\ \rho_i(0, 0; \theta_i) = 0 \text{ for each } i. \end{array} \right.$$

We furthermore establish that there is no other equilibrium with lobbying IGs. Finally, we show that 1) the above equilibrium is less informative than the one in the no-subpoena game, the probability the PM chooses  $p_i = \theta_i$  being strictly smaller for every issue  $i$ , and 2) it is dominated in the sense that, while  $IG_1$  gets the same ex ante expected payoff in the two equilibria, both the PM and  $IG_2$  get each a strictly higher expected payoff in the equilibrium of the no-subpoena game than in the above equilibrium.

i.e., neither IG is issued subpoena with too high a probability. The condition for this interval to be non-empty is that  $\frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2} \leq 1$ .<sup>18</sup>

It is worth mentioning that the necessity of this condition depends on our tie-breaking assumption that  $\sum_{i \in \{1,2\}} \gamma_i(\ell_1, \ell_2) = 1$  for all  $(\ell_1, \ell_2) \in \{0,1\}^2$ . As we have just argued, if  $\frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2} > 1$ , an IG with favorable information would deviate from truthful lobbying and abstain from lobbying, since it would be subpoenaed, and then get its issue reformed, with a high enough probability, while saving on the lobbying cost. This restriction would not be necessary if we were to allow  $\sum_{i \in \{1,2\}} \gamma_i(\ell_1, \ell_2) \leq 1$ . To see why, suppose  $IG_i$  were to deviate from truthful lobbying when  $\theta_i = 1$ . Anticipating truthful lobbying, the PM would be indifferent whether or not to subpoena  $IG_i$  (since  $X_i(\ell) = 0$ ), and therefore could choose against subpoenaing  $IG_i$  ( $\gamma_i(0; \ell_{-i}) = 0$ ). Since, furthermore, he would infer  $\theta_i = 0$  from  $IG_i$ 's decision to not lobby, the PM would then choose  $p_i = 0$ . In other words,  $IG_i$  would no longer be able to get its issue reformed without having to bear the lobbying cost, and therefore, would no longer want to deviate from truthful lobbying when  $\theta_i = 1$ . Having said this, it is however important to emphasize that our main conclusions, which appear in proposition 1 below, do not depend on this tie-breaking assumption. Specifically, whether we make this tie-breaking assumption or not, we get that 1) when there is no agenda constraint, the PM cannot be better off with than without subpoena power, and 2) when there is an agenda constraint, he cannot be worse off with than without subpoena power.<sup>19</sup>

Since  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} > \frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2}$ , we can partition the parameters space into three regions. One region corresponds to the part of the parameters space where  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2}$ , i.e., where lobbying costs are intermediate. The first part of lemma 2 establishes that, for every configuration of parameters values in this region, an equilibrium with truthful lobbying exists. Given the absence of agenda constraint, the PM then chooses  $p = \theta$ .

The second part of lemma 2 considers the region of the parameters space where  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ , i.e., where lobbying is cheap enough that an IG with unfavorable information would want to deviate from truthful lobbying and lobby, hoping that the PM will not grant it access and, believing  $\theta_i = 1$ , will reform issue  $i$ . In this region of the parameters space, the unique equilibrium policy outcome from the no-subpoena game is still the (most-informative) equilibrium policy outcome in the subpoena game. This is essentially because in this equilibrium, only an  $IG_i$  with unfavorable information does not lobby, meaning that the PM can infer  $\theta_i = 0$  from  $IG_i$ 's decision to not lobby, and therefore does not get any further information about  $\theta_i$  by issuing subpoena to  $IG_i$ .

Finally, the third part of lemma 2 considers the region of the parameters space where  $\frac{(1-\pi_1)\cdot f_1+(1-\pi_2)\cdot f_2}{1-\pi_1\pi_2} > 1$ , i.e., where lobbying is costly enough that an IG with favorable information would want to deviate from truthful lobbying and abstain from lobbying, hoping to be subpoenaed and then be able to present its evidence and get its issue reformed without having to bear the lobbying cost. The third part

<sup>18</sup>As was mentioned above, this condition is not necessary in the no-subpoena game. This is because the PM having no subpoena power, we have  $\Gamma_i = 0$  for each  $i$ , which implies that  $f_i \leq 1 - \Gamma_i$  is trivially satisfied and, therefore, that neither IG with favorable information wants to deviate from truthful lobbying.

<sup>19</sup>Observe furthermore that equilibria with truthful lobbying that rely on  $\sum_{i \in \{1,2\}} \gamma_i(\ell_1, \ell_2) < 1$  for some  $(\ell_1, \ell_2)$  are not robust to the introduction of trembles in IGs' lobbying. Indeed, with trembles, subpoenaing would always be informative, implying that in equilibrium,  $\sum_{i \in \{1,2\}} \gamma_i(\ell_1, \ell_2) = 1$  for all  $(\ell_1, \ell_2)$ , including  $(\ell_1, \ell_2) = (0, 0)$ .

of lemma 2 establishes that in this region of the parameters space, equilibria involve at least one IG always abstaining from lobbying. Moreover, if an  $IG_i$  lobbies, it does so ‘untruthfully’, in the sense that  $|\lambda_i(1) - \lambda_i(0)| < 1$ . This is because if an  $IG_i$  were lobbying truthfully, the PM would subpoena the other IG,  $IG_{-i}$ , since he would infer  $\theta_i = \ell_i$  from  $IG_i$ ’s lobbying decision, but would be uncertain about  $\theta_{-i}$ ; formally,  $X_i(\ell) = 0 < \pi_{-i} = X_{-i}(\ell)$ . The PM would then choose  $p_i = \ell_i$  without granting  $IG_i$  access, meaning that  $IG_i$  would be better off lobbying even when  $\theta_i = 0$ .

### 5.1.2. Games with an agenda constraint (i.e. $N = 1$ )

We start by describing equilibria of the No-subpoena game.

LEMMA 3 (Dellis and Oak 2017). *Consider the no-subpoena game with an agenda constraint.*

1. *If  $f_2 > 1 - \pi_1$ , an equilibrium exists in which lobbying strategies are given by*

$$\begin{cases} \lambda_1(1) = 1 \text{ and } \lambda_1(0) = 0 \\ \lambda_2(1) = \lambda_2(0) = 0. \end{cases}$$

*Moreover, in any equilibrium, lobbying strategies are given by*

$$\begin{cases} \lambda_i(1) = 1 \text{ and } \lambda_i(0) = 0 \\ \lambda_{-i}(1) = \lambda_{-i}(0) = 0 \end{cases}$$

*for some  $i$ .*

2. *If  $f_2 \leq 1 - \pi_1$ , an equilibrium exists in which  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ . If, in addition,  $f_i < 1 - \pi_i$  for each  $i$ , then in any equilibrium lobbying strategies are given by  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ .*

Thus, an equilibrium with truthful lobbying exists if and only if lobbying is sufficiently cheap for  $IG_2$  (in the sense that  $f_2 \leq 1 - \pi_1$ ). The key difference to the no-subpoena game with no agenda constraint is that the agenda constraint allows the PM to deter from lobbying IGs with unfavorable information. To see why, suppose IGs lobby truthfully. When both IGs lobby, the PM infers  $\theta = (1, 1)$  and is indifferent granting  $IG_1$  or  $IG_2$  access. This indifference makes it possible for the PM to adopt the following strategy: grant  $IG_1$  access and reform its issue whenever it lobbies and shows evidence that  $\theta_1 = 1$ ; grant  $IG_2$  access and reform its issue whenever it is the only lobbying IG and shows evidence that  $\theta_2 = 1$ .  $IG_1$  has clearly no incentive to deviate from truthful lobbying since 1) it is granted access whenever it lobbies and 2) the PM believes  $\theta_1 = 0$  whenever it does not lobby. Likewise,  $IG_2$  has clearly no incentive to deviate from truthful lobbying when  $\theta_2 = 0$  since, along the equilibrium path, the PM reforms issue 2 only after having granted  $IG_2$  access. Likewise,  $IG_2$  has no incentive to deviate from truthful lobbying when  $\theta_2 = 1$  since its issue is then reformed with probability  $1 - \pi_1$  (i.e., the probability  $\theta_1 = 0$ ), giving an expected payoff equal to  $1 - \pi_1 - f_2$ , which is bigger than 0, its payoff if it does not lobby (the PM then inferring  $\theta_2 = 0$  and choosing  $p_2 = 0$ ). Hence the existence of an equilibrium with truthful lobbying when  $f_2 \leq 1 - \pi_1$ .<sup>20</sup> The

<sup>20</sup>As shown in the discussion following lemma 1, the ‘lexicographic’ strategy we have just described cannot be part of an equilibrium with truthful lobbying in the no-subpoena game *with no agenda constraint* when  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ . This is because the PM would then want to reform both issues when both IGs lobby. As a result, the PM would have to grant each IG access with

second part of the lemma establishes furthermore that when  $f_i < 1 - \pi_i$  for each  $IG_i$ , equilibrium lobbying is truthful.

The first part of lemma 3 considers the case where  $f_2 > 1 - \pi_1$ . In this case, lobbying is too costly to support an equilibrium with truthful lobbying since  $IG_2$  is better off abstaining from lobbying when  $\theta_2 = 1$ , and this even though the PM would then believe  $\theta_2 = 0$  and choose  $p_2 = 0$ . Although an equilibrium with truthful lobbying cannot be supported in this case, the first part of lemma 3 shows that in equilibrium, one IG lobbies truthfully while the other abstains completely from lobbying. Thus, the PM chooses  $p_i = \theta_i$  on the issue advocated by the lobbying  $IG_i$  and, since  $\beta_{-i} = \pi_{-i} < 1/2$ , chooses  $p_{-i} = 0$  on the other issue.

It remains to consider the subpoena game.

LEMMA 4. *Consider the subpoena game with an agenda constraint. There always exists an equilibrium in which*

$$p = \begin{cases} (1, 0) & \text{if } \theta = (1, 1) \\ (\theta_1, \theta_2) & \text{if } \theta \neq (1, 1). \end{cases}$$

Thus, an equilibrium always exists in which the PM makes the same policy choice as the one he would make if he were completely informed about  $\theta$ , namely, he reforms issue 1 when the agenda constraint is binding (i.e., when  $\theta = (1, 1)$ ), and chooses the policy that coincides with the state  $\theta$  when the agenda constraint is not binding (i.e., when  $\theta \neq (1, 1)$ ).

In this equilibrium,  $IG_1$  lobbies truthfully and  $IG_2$  always abstains from lobbying. To understand why each IG can be deterred from deviating, observe that: 1) since  $N = 1$ , the PM does not value evidence on  $\theta_2$  once he believes  $\theta_1 = 1$  with probability one (formally,  $X_2(\ell) = 0$ ); and 2) when  $IG_1$  lobbies truthfully, the PM does not get any new information by granting  $IG_1$  access (formally,  $X_1(\ell) = 0$ ). These allow the PM to adopt the following strategy: grant  $IG_1$  access and choose  $p = (\theta_1, 0)$  whenever  $IG_1$  lobbies; subpoena  $IG_2$  and choose  $p = (0, \theta_2)$  whenever  $IG_1$  does not lobby.  $IG_1$  has therefore no incentive to deviate from truthful lobbying since the PM reforms its issue only when it lobbies and  $\theta_1 = 1$ . Likewise,  $IG_2$  has no incentive to deviate to lobby since it gets subpoenaed in the very event where the PM considers reforming its issue (i.e., when  $\theta_1 = 0$ ).

Interestingly, these lobbying strategies are the same as the ones described in the first part of lemma 3. However, the key difference is that in the no-subpoena game of lemma 3, the PM does not always make the same policy choice as if he were perfectly informed about  $\theta$ . Specifically, the PM chooses  $p = (0, 0)$  in state  $\theta = (0, 1)$  since his posterior belief on  $\theta_2$  is  $\beta_2 = \pi_2 < 1/2$  ( $IG_2$  always abstains from lobbying and the PM is unable to subpoena  $IG_2$ ). By contrast, in the subpoena game of lemma 4, the PM can subpoena  $IG_2$ , observe  $IG_2$ 's evidence that  $\theta_2 = 1$  and choose  $p = (0, 1)$ .

## 5.2. Payoff comparison

We are now ready to answer the question of who gains and who loses from the PM being endowed with subpoena power? To answer this question, for each possible

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a sufficiently high probability to deter them from deviating to lobby when they have unfavorable information. When  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ , these probabilities would have to be so large that their sum would exceed one.

value of  $N$  we compare equilibrium ex ante expected payoffs in the subpoena game with the corresponding equilibrium payoffs in the no-subpoena game.

First, we introduce some extra notation. Let  $EU_k^S$  (resp.  $EU_k^{\sim S}$ ) denote the equilibrium ex ante expected payoff of player  $k \in \{1, 2, PM\}$  in the subpoena game (resp. no-subpoena game), where  $k = 1$  (resp.  $k = 2, k = PM$ ) stands for  $IG_1$  (resp.  $IG_2$ , the PM).

PROPOSITION 1. *We have:*

1. *When  $N = 2$ ,*

$$\begin{cases} EU_{PM}^S \leq EU_{PM}^{\sim S} \text{ with a strict inequality if and only if } \frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1\pi_2} > 1. \\ EU_k^S \geq EU_k^{\sim S} \text{ for } k = 1, 2. \end{cases}$$

2. *When  $N = 1$ ,*

$$\begin{cases} EU_{PM}^S \geq EU_{PM}^{\sim S} \text{ with a strict inequality if and only if } f_2 > 1 - \pi_1. \\ EU_k^S \geq EU_k^{\sim S} \text{ for } k = 1, 2, \text{ with a strict inequality for at least one IG.} \end{cases}$$

Thus, each IG is weakly better off, and is strictly better off for some configurations of parameters values, when the PM is endowed with subpoena power than when he is not. By contrast, the PM can be either better off or worse off from being endowed with subpoena power, depending on whether or not he faces an agenda constraint. With no constraint on the agenda, the PM can never be better off with subpoena power than without, and is strictly worse off when lobbying costs are high. With a constraint on the agenda, the reverse is true, i.e., the PM is always at least as well off with as without subpoena power, and is strictly better off when  $IG_2$ 's lobbying cost is high. Notice that endowing the PM with subpoena power generates an ex ante Pareto improvement if and only if the PM faces a constraint on the agenda.

We start by discussing the intuition underlying the case with no agenda constraint. Notice from lemmata 1 and 2 that we can partition the parameters space into three regions, depending on lobbying costs.

1. When lobbying is cheap (in the sense that  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ ), equilibrium lobbying strategies and policy outcomes are identical in the subpoena and the no-subpoena games, meaning each player's ex ante expected payoff is the same whether the PM is endowed with subpoena power or not. This happens for essentially two related reasons. One is that lobbying is cheap enough that, even when the PM is endowed with subpoena power, an IG with favorable information prefers to lobby than wait to be issued subpoena. The second reason is that, since only an  $IG_i$  with unfavorable information abstains from lobbying, the PM can infer  $\theta_i = 0$  from  $IG_i$ 's decision to not lobby, implying the PM obtains no further information by issuing subpoena to  $IG_i$ .
2. When lobbying costs are intermediate (in the sense that  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1\pi_2}$ ), equilibrium lobbying is truthful, independently of whether the PM has subpoena power or not. Thus, each player is as well off when the PM is endowed with subpoena power as when he is not.
3. When lobbying costs are high (in the sense that  $\frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1\pi_2} > 1$ ), equilibrium lobbying is truthful when the PM does not have subpoena power. This is not true however when the PM is endowed with subpoena power. In the latter case, one IG lobbies 'untruthfully', while the other IG always abstains from lobbying in an effort at saving on lobbying costs, knowing it

will be issued subpoena and be able to show its evidence with a sufficiently high probability. Thus, the PM is in this case strictly better off without than with subpoena power. By contrast, thanks to savings on lobbying costs, IGs are each at least as well off when the PM is endowed with subpoena power as when he is not.

It remains to discuss the intuition underlying the case with an agenda constraint. Notice from lemmata 3 and 4 that we can partition the parameters space into two regions, depending on IG<sub>2</sub>'s lobbying cost.

1. When IG<sub>2</sub>'s lobbying cost is low (in the sense that  $f_2 \leq 1 - \pi_1$ ), the PM makes the same equilibrium policy choice as under complete information, independently of whether he has subpoena power or not. Thus, the PM is as well off with as without subpoena power. The same applies to IG<sub>1</sub> since in both cases it lobbies truthfully and has its issue prioritized. Finally, IG<sub>2</sub> is strictly better off when the PM is endowed with subpoena power than when he is not. This is because, on the one hand, the PM reforms issue 2 with the same probability in both cases, namely,  $(1 - \pi_1) \cdot \pi_2$ . On the other hand, IG<sub>2</sub> lobbies truthfully in the no-subpoena game, while it abstains from lobbying in the subpoena game, thereby spending less on lobbying in the latter game. In other words, IG<sub>2</sub> gets its issue reformed with the same probability, but at a lower cost.
2. When IG<sub>2</sub>'s lobbying cost is high (in the sense that  $f_2 > 1 - \pi_1$ ), equilibrium lobbying strategies are the same whether the PM has subpoena power or not: IG<sub>1</sub> lobbies truthfully, while IG<sub>2</sub> abstains from lobbying. It follows that IG<sub>1</sub> is again indifferent whether or not the PM is endowed with subpoena power. By contrast, both the PM and IG<sub>2</sub> are each strictly better off when the PM is endowed with subpoena power than when he is not. This is because lobbying strategies are the same in both cases, but in the subpoena game the PM can subpoena IG<sub>2</sub> and observe when  $\theta_2 = 1$ , which he cannot do in the no-subpoena game.

To sum up, subpoena power increases IGs' incentives to abstain from lobbying and wait to be issued subpoena, in which case they can present their evidence without bearing the lobbying costs. When there is no agenda constraint, the PM extracts (weakly) less information about  $\theta$ , and is therefore (weakly) less likely to choose policy  $p = \theta$ , when he is endowed with subpoena power than when he is not. By contrast, when there is an agenda constraint, the PM can use this constraint to discipline the lobbying behavior of one IG, the one advocating the more important issue if  $\alpha > 1$ , extracting from this IG's lobbying decision all the information about the state for this issue, and, whenever useful for his policy choice, can make use of his subpoena power to get information about the state for the other issue. In this case, the PM is (weakly) more likely to make fully-informed policy choices when he is endowed with subpoena power than when he is not.

## 6. CONCLUSION

In this paper we have developed a two-issue model of policymaking featuring informed but biased IGs. The verifiable information possessed by the IGs can be transmitted to the PM in two ways; one, by IGs lobbying the PM, and two, by the PM granting access to IGs so he can obtain and verify their information. A key feature of our model is that the PM faces time and resource constraints when granting access to the IGs (i.e., an *access constraint*), and may face further

constraints in reforming issues (i.e., an *agenda constraint*). We have employed this model to study the extent of information transmission between the IGs and the PM under two regimes; one, a regime without subpoena power, and two, a regime with subpoena power. In the first regime, the PM can grant access to an IG only if it lobbies. In the second regime, the PM has the option to grant access or issue subpoena to an IG, irrespective of whether the IG lobbies.

We found that IGs are always weakly better off under subpoena power, since it allows them to save on lobbying costs. We further found that the PM can be either better off or worse off under subpoena power depending on the effect subpoena power has on IGs' incentives to lobby, which themselves depend on the PM's agenda constraint. Since lobbying is costly, subpoena power creates an incentive for the IGs to abstain from lobbying in an effort to save on lobbying costs, in the hope that the PM will subpoena them to obtain the information. This effect is counterbalanced by the PM's ability to use his subpoena power to access information which otherwise would not have been provided. The net effect depends on the severity of the agenda constraint. In a nutshell, if the PM does not face an agenda constraint, the first effect weakly dominates the second, implying the PM is (weakly) worse off with subpoena power. On the other hand, when there is an agenda constraint, the second effect weakly dominates the first one, implying the PM is (weakly) better off with subpoena power. Finally, we found that endowing the PM with subpoena power generates a Pareto improvement if and only if there is a constraint on the agenda.

In order to make our point in a succinct way we made a number of simplifying assumptions. In particular, we assumed only two issues. Our model can be extended to consider multiple issues. We believe that our qualitative results will be unaffected since the main forces driving our results are 1) the inability of the PM to give access to all IGs, and 2) the possibility subpoena power offers IGs to reveal their information without having to bear lobbying costs. Similarly, the assumption that an IG is perfectly informed about the state of the world can be relaxed; the main point that we wish to capture is that an IG has better information than the PM, that such information is useful to the PM, and that such information can be obtained and verified by granting IGs access.

There are still aspects to be explored about the main topic of interest of this paper, viz. the role played by subpoena power in the policymaking process. Among the rationale for subpoena power, one idea worth exploring is that subpoena power enables the PM to 'demonstrate' to the public (say, voters) the basis on which he/she has chosen a particular policy (since testimonies are typically public information). Whether having such transparency is a good idea depends on its effect on the availability of other channels of influence (unobservable to the public) as well as on the PM's incentive to pander to the public in light of publicly observed information. We leave this topic for future research.

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## APPENDIX

EXPRESSIONS FOR  $W_i(\ell)$  AND  $Z_i(\ell)$ . We start by considering the case where  $N = 2$ . Here the PM chooses  $p_i$  based only on his belief for issue  $i$ ,  $\beta_i(\ell_i, a_i; \theta_i)$ . If the PM grants access to/subpoenas  $IG_i$ , he anticipates to make the correct policy choice for issue  $i$  with probability one. Hence  $W_i(\ell) = 1$ . If the PM grants access to  $IG_{-i}$ , he anticipates to make the correct policy choice for issue  $i$  with probability

$$Z_i(\ell) = \beta_i^{Acc}(\ell_i) \cdot \rho_i(\ell_i, 0; \theta_i) + \left(1 - \beta_i^{Acc}(\ell_i)\right) \cdot [1 - \rho_i(\ell_i, 0; \theta_i)]$$

where  $\rho_i(\ell_i, 0; \theta_i)$  denotes the probability that the PM chooses  $p_i = 1$  given  $\ell_i$  and  $a_i = 0$ . Hence, we get the following expression for  $X_i(\ell)$ :

$$\begin{aligned} X_i(\ell) &\equiv W_i(\ell) - Z_i(\ell) \\ &= \rho_i(\ell_i, 0; \theta_i) \cdot \left(1 - \beta_i^{Acc}\right) + [1 - \rho_i(\ell_i, 0; \theta_i)] \cdot \beta_i^{Acc}, \end{aligned}$$

which corresponds to the PM's belief that he will choose  $p_i \neq \theta_i$  if he does not grant access to/subpoena  $IG_i$ .

We continue with the case where  $N = 1$ . Here the PM's policy choice depends on his beliefs for both issues,  $\beta_1(\ell_1, a_1; \theta_1)$  and  $\beta_2(\ell_2, a_2; \theta_2)$ . After some manipulations, we get the following expressions for  $W_i(\ell)$  and  $Z_i(\ell)$ :

$$\left\{ \begin{array}{l} W_i(\ell) = \beta_i^{Acc}(\ell_i) \cdot \rho_i(\theta_i = 1; \ell_{-i}) + \left(1 - \beta_i^{Acc}(\ell_i)\right) \\ Z_i(\ell) = \left(1 - \beta_i^{Acc}(\ell_i)\right) \\ \quad + \left(2\beta_i^{Acc}(\ell_i) - 1\right) \cdot \left[\beta_{-i}^{Acc}(\ell_{-i}) \cdot \rho_i(\theta_{-i} = 1; \ell_i) + \left(1 - \beta_{-i}^{Acc}(\ell_{-i})\right) \cdot \rho_i(\theta_{-i} = 0; \ell_i)\right], \end{array} \right.$$

where  $\rho_i(\theta_i; \ell_{-i})$  (resp.  $\rho_i(\theta_{-i}; \ell_i)$ ) denotes the probability that the PM chooses  $p_i = 1$  given that he granted access to/subpoenaed  $IG_i$  (resp.  $IG_{-i}$ ) and observed  $\theta_i$  (resp.  $\theta_{-i}$ ), while  $IG_{-i}$ 's lobbying decision is  $\ell_{-i}$  (resp.  $IG_i$ 's lobbying decision is  $\ell_i$ ). After some manipulations, we get

$$\begin{aligned} X_i(\ell) &= \beta_i^{Acc}(\ell_i) \cdot \rho_i(\theta_i = 1; \ell_{-i}) \\ &\quad - \left(2\beta_i^{Acc}(\ell_i) - 1\right) \cdot \left[\beta_{-i}^{Acc}(\ell_{-i}) \cdot \rho_i(\theta_{-i} = 1; \ell_i) + \left(1 - \beta_{-i}^{Acc}(\ell_{-i})\right) \cdot \rho_i(\theta_{-i} = 0; \ell_i)\right], \end{aligned}$$

which corresponds to

1. the PM's belief that the state is  $\theta_i = 1$  and that he will choose  $p_i = 1$  if he grants access to/subpoenas  $IG_i$  (first term on the r.h.s),
2. from which we subtract the PM's belief that the state is  $\theta_i = 1$  and that he will choose  $p_i = 1$  if he grants access to/subpoenas  $IG_{-i}$  ( $\beta_i^{Acc}(\ell_i)$  times the term in square brackets),
3. to which we add the PM's belief that the state is  $\theta_i = 0$  and that he will choose  $p_i = 1$  if he grants access to/subpoenas  $IG_{-i}$  ( $(1 - \beta_i^{Acc}(\ell_i))$  times the term in square brackets).

The first two parts correspond to the change in the probability of choosing  $p_i = \theta_i$  when  $\theta_i = 1$  due to granting access to/subpoenaing  $IG_i$ . The third part corresponds to the corresponding change in the probability of choosing  $p_i \neq \theta_i$  when  $\theta_i = 0$ .

PROOF OF LEMMA 1. See proof of lemma 1 in Dellis and Oak (2016).

PROOF OF LEMMA 2. We start by introducing extra notation. Let  $\delta_i \equiv \pi_i \cdot \lambda_i(1) + (1 - \pi_i) \cdot \lambda_i(0)$  be the probability that  $IG_i$  lobbies. We denote the probability that  $IG_i$  is granted access/subpoenaed, given its lobbying decision  $\ell_i \in \{0, 1\}$ , by

$$\Gamma_i(\ell_i) \equiv \delta_{-i} \cdot \gamma_i(\ell_i; 1) + (1 - \delta_{-i}) \cdot \gamma_i(\ell_i; 0),$$

where  $\gamma_i(\ell_i; \ell_{-i})$  denotes the probability  $IG_i$  is granted access/subpoenaed given lobbying decisions  $\ell_i$  and  $\ell_{-i}$  by  $IG_i$  and  $IG_{-i}$ , respectively.

In order to lighten notation, we write  $\rho_i(\ell_i)$  as a shorthand for  $\rho_i(\ell_i, a_i = 0; \theta_i)$ . We shall furthermore write  $X_i(\ell_i)$ , which is without loss of generality since, given  $N = 2$ ,  $X_i(\ell)$  is anyway independent of  $\ell_{-i}$ .

We are now ready to state  $IG_i$ 's lobbying problem. Given  $\theta_i$ ,  $IG_i$  chooses  $\lambda_i(\theta_i)$  that solves

$$\max_{\lambda_i(\theta_i) \in [0, 1]} Ev_i(\lambda_i(\theta_i))$$

where

$$\begin{aligned} Ev_i(\lambda_i(\theta_i)) &= \lambda_i(\theta_i) \cdot [\Gamma_i(1) \cdot \theta_i + (1 - \Gamma_i(1)) \cdot \rho_i(1) - f_i] \\ &\quad + (1 - \lambda_i(\theta_i)) \cdot [\Gamma_i(0) \cdot \theta_i + (1 - \Gamma_i(0)) \cdot \rho_i(0)] \end{aligned}$$

is  $IG_i$ 's expected payoff given  $\lambda_i(\theta_i)$ .

**Proof of (1).** We first establish the sufficiency of the condition. Suppose that the condition stated in part 1 of the lemma is satisfied. Let  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ . It follows that  $\delta_i = \pi_i$ . Furthermore,  $\beta_i^{Acc}(1) = 1$  and  $\beta_i^{Acc}(0) = 0$  for each  $i$ , implying  $X_i(\ell_i) = 0$  for each  $i$  and every  $\ell_i$ .

We have:

$$\begin{cases} \frac{dEv_i}{d\lambda_i(1)} \geq 0 \Leftrightarrow 1 - \Gamma_i(0) - f_i \geq 0 \\ \frac{dEv_i}{d\lambda_i(0)} \leq 0 \Leftrightarrow 1 - \Gamma_i(1) - f_i \leq 0. \end{cases}$$

Given  $X_i(\ell_i) = 0$  for each  $i$  and  $\ell_i$ , we can set  $\gamma_1(1, 0) = \gamma_2(0, 1) = 1$ , which minimizes  $\Gamma_i(0)$  and maximizes  $\Gamma_i(1)$ . The two inequalities above are therefore satisfied if and only if we set

$$\begin{cases} \gamma_1(1, 1) = [1 - \gamma_2(1, 1)] \in \left[1 - \frac{f_1}{\pi_2}, \frac{f_2}{\pi_1}\right] \\ \gamma_1(0, 0) = [1 - \gamma_2(0, 0)] \in \left[\frac{f_2 - \pi_1}{1 - \pi_1}, \frac{1 - f_1}{1 - \pi_2}\right]. \end{cases}$$

Given  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1 \pi_2}$ , neither of these two intervals is empty. Moreover, the lower-bounds (resp. upper-bounds) of the two intervals are smaller than one (resp. bigger than zero). Hence, there exists an equilibrium with strategy profile  $\{\lambda(\cdot), \gamma(\cdot), \rho(\cdot)\}$ , in which  $\beta_i^{Acc}, \beta_i \in \{0, 1\}$  for each  $i$ , and  $p = \theta$  for every  $\theta$ .

We continue by establishing the necessity of the condition. Suppose that  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1 \pi_2}$  does not hold, and assume by way of contradiction that an equilibrium exists in which  $\beta_i \in \{0, 1\}$  for each  $i$ . Since the PM can grant access to only one IG,  $\beta_i \in \{0, 1\}$  for each  $i$  requires that at least one IG lobbies truthfully, i.e.,  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$ . Observe that  $\lambda_i(0) = 0$  requires

$$\frac{dEv_i}{d\lambda_i(0)} \leq 0 \Leftrightarrow \Gamma_i(1) \geq 1 - f_i.$$

Hence, it must be that  $\Gamma_i(1) > 0$  and, therefore,  $\gamma_i(1; \ell_{-i}) > 0$  for some  $\ell_{-i}$ . However, since IG <sub>$i$</sub>  lobbies truthfully, we have  $X_i(\ell_i) = 0$  for every  $\ell_i$ . It follows that  $\Gamma_i(1) > 0$  requires  $\beta_{-i}^{Acc}(\ell_{-i}) \in \{0, 1\}$  for some  $\ell_{-i}$  and, therefore,  $\lambda_{-i}(1) \neq \lambda_{-i}(0)$  (otherwise  $\beta_{-i}^{Acc}(\ell_{-i}) = \pi_{-i}$ , implying  $X_{-i}(\ell_{-i}) > 0 = X_i(\ell_i)$  and, therefore,  $\Gamma_i(1) = 0$ ). There are three cases to consider:

1.  $\lambda_{-i}(1) = 1$  and  $\lambda_{-i}(0) \in (0, 1)$ . In this case,  $\beta_{-i}^{Acc}(0) = 0$  and  $\beta_{-i}^{Acc}(1) \in (0, 1)$ , implying  $\rho_{-i}(0) = 0$  and  $\Gamma_{-i}(1) = 1$ . It follows that  $\frac{dEv_{-i}}{d\lambda_{-i}(0)} = -f_{-i} < 0$ , contradicting  $\lambda_{-i}(0) > 0$ .
2.  $\lambda_{-i}(1) \in (0, 1)$  and  $\lambda_{-i}(0) = 0$ . In this case,  $\beta_{-i}^{Acc}(1) = 1$  and  $\beta_{-i}^{Acc}(0) \in (0, 1)$ , implying  $\rho_{-i}(1) = 1$  and  $\Gamma_{-i}(0) = 1$ . It follows that  $\frac{dEv_{-i}}{d\lambda_{-i}(1)} = -f_{-i} < 0$ , contradicting  $\lambda_{-i}(1) > 0$ .
3.  $\lambda_{-i}(1) = 1$  and  $\lambda_{-i}(0) = 0$ . In this case, we have  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$  for each  $i$ . Proceeding as in the proof of sufficiency above, we obtain a contradiction since  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1 \pi_2}$  does not hold.

This completes the proof since these three cases exhaust all possibilities.

**Proof of (2).** We start by identifying a series of necessary conditions for the existence of an equilibrium where  $\delta_i > 0$  for each  $i$ . We proceed via a sequence of claims.

CLAIM 1.  $\beta_i^{Acc}(0) < 1/2$  and  $\rho_i(0) = 0$  for each  $i$ .

PROOF OF CLAIM 1. Assume by way of contradiction that  $\beta_i^{Acc}(0) \geq 1/2$  for some  $i$ . Given  $\pi_i < 1/2$ , either  $\lambda_i(1) = \lambda_i(0) = 1$  or  $\lambda_i(0) > \lambda_i(1)$ . In either case,  $\lambda_i(0) > 0$  and  $\beta_i^{Acc}(1) < 1/2$ . The latter implies  $\rho_i(1) = 0$ . It follows that  $\frac{dEv_i}{d\lambda_i(0)} \leq -f_i < 0$ , contradicting  $\lambda_i(0) > 0$ . Hence  $\beta_i^{Acc}(0) < 1/2$  for each  $i$ , implying  $\rho_i(0) = 0$ .

CLAIM 2.  $\beta_i^{Acc}(1) \geq 1/2$  for each  $i$ .

PROOF OF CLAIM 2. Assume by way of contradiction that  $\beta_i^{Acc}(1) < 1/2$  for some  $i$ . It follows that  $\rho_i(1) = 0$  which, together with  $\rho_i(0) = 0$ , implies  $\frac{dEv_i}{d\lambda_i(0)} = -f_i < 0$ . Hence  $\lambda_i(0) = 0$ . Since  $\delta_i > 0$ , we have  $\lambda_i(1) > 0$  and  $\beta_i^{Acc}(1) = 1$ , contradicting  $\beta_i^{Acc}(1) < 1/2$ .

CLAIM 3.  $\beta_1^{Acc}(1) > 1/2$  and  $\rho_1(1) = 1$ .

PROOF OF CLAIM 3. We already know from Claim 2 that  $\beta_1^{Acc}(1) \geq 1/2$ . Assume by way of contradiction that  $\beta_1^{Acc}(1) = 1/2$ , implying  $X_1(1) = 1/2$ . Given  $\alpha > 1$  and  $X_2(\ell_2) \in \left\{1 - \beta_2^{Acc}(1), \beta_2^{Acc}(0)\right\} \leq 1/2$ , we get  $X_1(1) \cdot \alpha > X_2(\ell_2)$  for every  $\ell_2$ , implying  $\Gamma_1(1) = 1$ . It follows that  $\frac{dEv_1}{d\lambda_1(0)} = -f_1 < 0$  and, therefore,  $\lambda_1(0) = 0$ . Since  $\delta_1 > 0$ , we have  $\lambda_1(1) > 0$  and  $\beta_1^{Acc}(1) = 1$ , contradicting  $\beta_1^{Acc}(1) = 1/2$ .

CLAIM 4.  $\lambda_i(0) > 0$  for some  $i$ .

PROOF OF CLAIM 4. Assume by way of contradiction that  $\lambda_i(0) = 0$  for each  $i$ . Given  $\delta_i > 0$ , we have  $\lambda_i(1) > 0$  and, therefore,  $\beta_i^{Acc}(1) = 1$  together with  $\rho_i(1) = 1$ .

We start by showing that  $\lambda_i(1) \in (0, 1)$  for each  $i$ . Assume by way of contradiction that  $\lambda_i(1) = 1$  for some  $i$ . Given  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ , part (1) implies  $\lambda_{-i}(1) \in (0, 1)$ . Hence  $X_{-i}(0) > 0 = X_i(0) = X_i(1)$  and, therefore,  $\Gamma_{-i}(0) = 1$ . It follows that  $\frac{dEv_{-i}}{d\lambda_{-i}(1)} = -f_i < 0$ , contradicting  $\lambda_{-i}(1) \in (0, 1)$ .

We continue with two implications from  $\lambda_i(1) \in (0, 1)$  and  $\lambda_i(0) = 0$  for each  $i$ . First,  $X_i(0) > 0 = X_i(1)$  for each  $i$ , implying  $\gamma_1(0, 1) = \gamma_2(1, 0) = 1$  and  $\Gamma_i(0) \geq \Gamma_i(1)$ . Second, we have for each  $i$

$$\begin{cases} \frac{dEv_i}{d\lambda_i(1)} = 0 \Leftrightarrow \Gamma_i(0) = 1 - f_i \\ \frac{dEv_i}{d\lambda_i(0)} \leq 0 \Leftrightarrow \Gamma_i(1) \geq 1 - f_i, \end{cases}$$

implying  $\Gamma_i(1) \geq \Gamma_i(0)$ . It follows from these two implications that  $\Gamma_i(1) = \Gamma_i(0)$  for each  $i$ . Given  $\gamma_1(0, 1) = \gamma_2(1, 0) = 1$ , it must then be that  $\gamma_i(1, 1) = 1$  and  $\gamma_i(0, 0) = 0$  for each  $i$ , a contradiction.

CLAIM 5.  $\lambda_i(0) > 0$  for each  $i$ .

PROOF OF CLAIM 5. Assume by way of contradiction that  $\lambda_i(0) = 0$  for some  $i$ . This assumption has two implications: 1)  $\lambda_i(1) > 0$ , from which we get  $\beta_i^{Acc}(1) = 1$ ,  $\rho_i(1) = 1$  and  $X_i(1) = 0$ ; and 2)  $\lambda_{-i}(0) > 0$  (by claim 4). Given  $\beta_{-i}^{Acc}(1) \geq 1/2$  and  $\pi_{-i} < 1/2$ , we have  $\lambda_{-i}(1) > \lambda_{-i}(0)$  and  $X_{-i}(1) > 0$ . Hence,  $X_{-i}(1) > 0 = X_i(1)$ , implying  $\gamma_{-i}(1, 1) = 1$ .

We continue by showing that we must have  $\lambda_{-i}(1) = 1$ . Given  $\lambda_i(0) = 0$ , we have

$$\frac{dEv_i}{d\lambda_i(0)} \leq 0 \Leftrightarrow \Gamma_i(1) \geq 1 - f_i,$$

implying  $\Gamma_i(1) > 0$ . Given  $\gamma_{-i}(1, 1) = 1$ , we must have  $\gamma_i(1; 0) > 0$  and, therefore,  $X_i(1) \cdot \alpha_i \geq X_{-i}(0) \cdot \alpha_{-i}$ . Given  $X_i(1) = 0$ , it must be that  $X_{-i}(0) = 0$  and, therefore,  $\lambda_{-i}(1) = 1$ .

Furthermore, we must have  $\lambda_i(1) \in (0, 1)$ . To see this, observe that  $\lambda_{-i}(0) \in (0, 1)$  requires

$$\frac{dEv_{-i}}{d\lambda_{-i}(0)} = 0 \Leftrightarrow [1 - \Gamma_{-i}(1)] \cdot \rho_{-i}(1) = f_{-i},$$

implying  $\Gamma_{-i}(1) < 1$ . Given  $\gamma_{-i}(1, 1) = 1$ , it must be that  $\gamma_{-i}(1; 0) < 1$  and, therefore,  $X_i(0) \cdot \alpha_i \geq X_{-i}(1) \cdot \alpha_{-i}$ . Given  $X_{-i}(1) > 0$ , it must be that  $X_i(0) > 0$  and, therefore,  $\lambda_i(1) < 1$ .

Finally, observe that together  $X_i(0) > 0 = X_i(1)$  and  $X_{-i}(0) = 0 < X_{-i}(1)$  imply  $\gamma_i(0,0) = \gamma_{-i}(1,1) = 1$ . Moreover,  $\lambda_i(1) \in (0,1)$  and  $\lambda_i(0) = 0$  require

$$\begin{cases} \frac{dEv_i}{d\lambda_i(1)} = 0 \Leftrightarrow \Gamma_i(0) = 1 - f_i \\ \frac{dEv_i}{d\lambda_i(0)} \leq 0 \Leftrightarrow \Gamma_i(1) \geq 1 - f_i, \end{cases}$$

implying  $\Gamma_i(1) \geq \Gamma_i(0)$ . Given  $\gamma_i(0,0) = 1$  and  $\gamma_i(1,1) = 0$ , it must then be that  $\gamma_i(1;0) = 1$  and  $\gamma_i(0;1) = 0$ . It follows that  $\Gamma_{-i}(1) = 1$  and, therefore,  $\frac{dEv_{-i}}{d\lambda_{-i}(0)} = -f_{-i} < 0$ , contradicting  $\lambda_{-i}(0) > 0$ .

CLAIM 6.  $\lambda_2(1) = 1$ .

PROOF OF CLAIM 6. Assume by way of contradiction that  $\lambda_2(1) < 1$ . We then have  $1 > \lambda_2(1) > \lambda_2(0) > 0$ . This requires

$$\begin{cases} \frac{dEv_2}{d\lambda_2(1)} = 0 \Leftrightarrow \Gamma_2(1) - \Gamma_2(0) + (1 - \Gamma_2(1)) \cdot \rho_2(1) = f_2 \\ \frac{dEv_2}{d\lambda_2(0)} = 0 \Leftrightarrow (1 - \Gamma_2(1)) \cdot \rho_2(1) = f_2, \end{cases}$$

implying  $\Gamma_2(0) = \Gamma_2(1) < 1$ . This furthermore implies  $X_2(\ell_2) > 0$  for every  $\ell_2$ .

Recall from claims 3 and 5 that  $\rho_1(1) = 1$  and  $\lambda_1(0) \in (0,1)$ , the latter requiring

$$\frac{dEv_1}{d\lambda_1(0)} = 0 \Leftrightarrow \Gamma_1(1) = 1 - f_1.$$

We establish the contradiction in two steps, first for  $\lambda_1(1) = 1$  and then for  $\lambda_1(1) < 1$ .

Suppose  $\lambda_1(1) = 1$ . Given  $\lambda_1(0) \in (0,1)$ , we have  $\beta_1^{Acc}(0) = 0$ , implying  $\rho_1(0) = 0$  and  $X_1(0) = 0$ . Given  $X_2(\ell_2) > 0$  for each  $\ell_2$ , we get  $\gamma_2(0,0) = \gamma_2(0,1) = 1$ . Furthermore, we must have  $\gamma_2(1,0) = \gamma_2(1,1) = f_1 \in (0,1)$  given  $\Gamma_2(0) = \Gamma_2(1)$  (for the first equality) and  $\Gamma_1(1) = 1 - f_1$  (for the second equality). For  $\gamma_2(1,\ell_2) \in (0,1)$ , it must be that  $X_2(0) = X_2(1) = X_1(1) \cdot \alpha$ . Given  $X_2(0) = \beta_2^{Acc}(0) < 1/2$ , we thus get  $X_2(1) < 1/2$ , which is true only if  $\beta_2^{Acc}(1) > 1/2$ , implying  $\rho_2(1) = 1$ . Given  $\frac{dEv_2}{d\lambda_2(0)} = 0$ , we then get  $\Gamma_2(1) = 1 - f_2$  and

$$f_2 = \delta_1 \cdot (1 - f_1) \Leftrightarrow \lambda_1(0) = \frac{1}{1 - \pi_1} \cdot \left[ \frac{f_2}{1 - f_1} - \pi_1 \right].$$

Hence the contradiction since  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$  implies  $\lambda_1(0) < 0$ .

Now, suppose  $\lambda_1(1) < 1$ . We thus have  $1 > \lambda_1(1) > \lambda_1(0) > 0$ , requiring

$$\frac{dEv_1}{d\lambda_1(1)} = 0 \Leftrightarrow \Gamma_1(0) = 1 - f_1.$$

Recall from above that  $\lambda_1(0) \in (0,1)$  implies  $\Gamma_1(1) = 1 - f_1$ . It follows that  $\Gamma_1(0) = \Gamma_1(1) = (1 - f_1) \in (0,1)$ .

There are two cases to consider:

1.  $\beta_2^{Acc}(1) > 1/2$ , implying  $\rho_2(1) = 1$  and  $\Gamma_2(0) = \Gamma_2(1) = (1 - f_2)$ . IG<sub>1</sub> (resp. IG<sub>2</sub>) is thus granted access with probability  $1 - f_1$  (resp.  $1 - f_2$ ). Since these two probabilities must sum to 1, we must have  $f_1 + f_2 = 1$ , contradicting  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ .

2.  $\beta_2^{Acc}(1) = 1/2$ , implying  $X_2(1) = 1/2 > \beta_2^{Acc}(0) = X_2(0)$ . For  $\Gamma_1(\ell_1) \in (0, 1)$  for each  $\ell_1$ , it must then be that  $X_2(1) \geq X_1(\ell_1) \cdot \alpha \geq X_2(0)$  for each  $\ell_1$ . We now show that each of these two inequalities must be strict.

Assume by way of contradiction that  $X_2(1) = X_1(\ell_1) \cdot \alpha > X_2(0)$  for some  $\ell_1$ , implying  $\gamma_1(\ell_1, 0) = 1$  and  $\gamma_1(\ell_1, 1) < 1$ , the latter since  $\Gamma_1(\ell_1) < 1$ . Given  $\gamma_1(\ell_1, 1) < 1$  and  $\Gamma_2(0) = \Gamma_2(1)$ , we have furthermore that  $\Gamma_2(0) > 0$ . This, together with  $\gamma_1(\ell_1, 0) = 1$ , implies  $\gamma_2(\sim \ell_1, 0) > 0$  and, therefore,  $X_2(0) \geq X_1(\sim \ell_1) \cdot \alpha$ . It follows that  $X_2(1) > X_1(\sim \ell_1) \cdot \alpha$ , implying  $\gamma_2(\sim \ell_1, 1) = 1$ . The latter, together with  $\gamma_2(\ell_1, 1) > 0$  and  $\gamma_2(\ell_1, 0) = 0$ , implies  $\Gamma_2(1) > \Gamma_2(0)$ , contradicting  $\Gamma_2(1) = \Gamma_2(0)$ .

Assume by way of contradiction that  $X_2(1) > X_1(\ell_1) \cdot \alpha = X_2(0)$  for some  $\ell_1$ , implying  $\gamma_2(\ell_1, 1) = 1$  and  $\gamma_2(\sim \ell_1, 1) < 1$ , the latter since  $\Gamma_2(1) < 1$ . Given  $\gamma_2(\sim \ell_1, 1) < 1$ , we have  $X_1(\sim \ell_1) \cdot \alpha \geq X_2(1)$ . It follows that  $X_1(\sim \ell_1) \cdot \alpha > X_2(0)$ , which implies  $\gamma_2(\sim \ell_1, 0) = 0$ . This, together with  $\gamma_2(\ell_1, 1) = 1$  and  $\Gamma_2(1) = \Gamma_2(0)$ , implies  $\gamma_2(\ell_1, 0) = 1$  and  $\gamma_2(\ell_1, 1) = 0$ . We then get  $\Gamma_1(\ell_1) = 0$  and  $\Gamma_1(\sim \ell_1) = 1$ , which contradicts  $\Gamma_1(\ell_1) = \Gamma_1(\sim \ell_1)$ . Thus, we have  $X_2(1) > X_1(\ell_1) \cdot \alpha > X_2(0)$  for each  $\ell_1$ . It follows that  $\Gamma_2(1) = 1$  and  $\Gamma_2(0) = 0$ , contradicting  $\Gamma_2(0) = \Gamma_2(1)$ .

CLAIM 7.  $\beta_2^{Acc}(1) = 1/2$  and  $\lambda_2(0) = \frac{\pi_2}{1-\pi_2}$ .

PROOF OF CLAIM 7. Assume by way of contradiction that  $\beta_2^{Acc}(1) > 1/2$ , implying  $\rho_2(1) = 1$ . It follows that  $\lambda_2(0) \in (0, 1)$  requires  $\Gamma_2(1) = 1 - f_2$ . At the same time, we already know that  $\lambda_1(0) \in (0, 1)$  requires  $\Gamma_1(1) = 1 - f_1$ . Moreover,  $1 = \lambda_2(1) > \lambda_2(0) > 0$  implies  $X_2(0) = 0$ . At the same time,  $\lambda_1(1) > \lambda_1(0) > 0$  implies  $X_1(1) > 0$ . It follows that  $X_1(1) \cdot \alpha > X_2(0)$  and, therefore, that  $\gamma_1(1, 0) = 1$ .

All the above imply

$$\Gamma_1(1) = 1 - f_1 \Leftrightarrow \gamma_1(1, 1) = 1 - \frac{f_1}{\delta_2}$$

and

$$\Gamma_1(1) + f_1 = \Gamma_2(1) + f_2 \Leftrightarrow 1 = \frac{\delta_1 f_1}{\delta_2} + (1 - \delta_1) \cdot \gamma_2(0, 1) + f_2. \quad (*)$$

There are two cases to consider:

1.  $\lambda_1(1) = 1$ , in which case  $X_1(0) = 0$  and, therefore,  $\gamma_2(0, 1) = 1$  (since  $X_2(1) > 0$ ). Plugging the value of  $\gamma_2(0, 1)$  into (\*) gives  $\frac{\delta_1 f_1 + \delta_2 f_2}{\delta_1 \delta_2} = 1$ , which contradicts  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$  and  $\delta_i > \pi_i$  for each  $i$ .
2.  $\lambda_1(1) < 1$ , in which case  $X_1(0) > 0$  and, therefore,  $\gamma_1(0, 0) = 1$  (since  $X_2(0) = 0$ ). Moreover,  $\lambda_1(1) \in (0, 1)$  requires

$$\frac{dEv_1}{d\lambda_1(1)} = 0 \Leftrightarrow \Gamma_1(0) = 1 - f_1,$$

which implies  $\gamma_2(0, 1) = \frac{f_1}{\delta_2}$  (since  $\gamma_1(0, 0) = 1$ ). Plugging the value of  $\gamma_2(0, 1)$  into (\*) gives  $\frac{f_1}{\delta_2} + f_2 = 1$ , which contradicts  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$  and  $\delta_2 > \pi_2$ .

Hence  $\beta_2^{Acc}(1) = 1/2$ . This, together with  $\lambda_2(1) = 1$ , implies  $\lambda_2(0) = \frac{\pi_2}{1-\pi_2}$ .

To sum up, Claims 1-7 show that in any equilibrium with  $\delta_i > 0$  for each  $i$ ,

$$\begin{cases} 1 \geq \lambda_1(1) > \lambda_1(0) > 0 \\ \lambda_2(1) = 1 \text{ and } \lambda_2(0) = \frac{\pi_2}{1-\pi_2} \\ \beta_1^{Acc}(1) > \beta_2^{Acc}(1) = \frac{1}{2} > \beta_1^{Acc}(0) \geq \beta_2^{Acc}(0) = 0 \\ X_2(0) = 0 \text{ and } X_2(1) = 1/2 \\ \rho_1(1) = 1 \text{ and } \rho_1(0) = \rho_2(0) = 0. \end{cases}$$

We start by considering equilibria with  $\lambda_1(1) = 1$ . Proceeding as for lemma 1, we can establish that: 1) such equilibria exist given  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ ; and 2) the equilibrium strategies and beliefs are the same as in part (2) of lemma 1, except for  $\gamma_i(0,0)$  which can take here any value in  $[0, 1]$  such that  $\sum_{i \in \{1,2\}} \gamma_i(0,0) = 1$ .

It remains to consider the possibility of equilibria where  $\lambda_1(1) < 1$ . We now establish that: 1) such equilibria exist if and only if  $2\pi_1\alpha > 1$ ; and 2) there is at most one such equilibrium.

We know from above that in any equilibrium with  $\lambda_1(1) < 1$ , we have

$$\begin{cases} 1 > \lambda_1(1) > \lambda_1(0) > 0 \\ 1 = \lambda_2(1) > \lambda_2(0) > 0. \end{cases}$$

It follows that  $X_1(\ell_1) > 0 = X_2(0)$  for each  $\ell_1$ , implying  $\gamma_1(\ell_1, 0) = 1$  and

$$\begin{cases} \Gamma_1(1) = 1 - 2\pi_2 \cdot \gamma_2(1, 1) \\ \Gamma_1(0) = 1 - 2\pi_2 \cdot \gamma_2(0, 1) \\ \Gamma_2(0) = 0. \end{cases}$$

Also,  $1 > \lambda_1(1) > \lambda_1(0) > 0$  requires

$$\begin{cases} \frac{dEv_1}{d\lambda_1(1)} = 0 \Leftrightarrow \Gamma_1(0) = 1 - f_1 \\ \frac{dEv_1}{d\lambda_1(0)} = 0 \Leftrightarrow \Gamma_1(1) = 1 - f_1. \end{cases}$$

These two inequalities, together with the above expressions for  $\Gamma_1(0)$  and  $\Gamma_1(1)$ , imply  $\gamma_2(1, 1) = \gamma_2(0, 1) = \frac{f_1}{2\pi_2} \in (0, 1)$  and  $\Gamma_2(1) = f_1/2\pi_2$ .

Since  $\gamma_2(1, 1) \in (0, 1)$ , it must be that  $X_1(1) \cdot \alpha = X_2(1)$ . Likewise,  $\gamma_2(0, 1) \in (0, 1)$  requires  $X_1(0) \cdot \alpha = X_2(1)$ . Given that  $X_1(0) = \beta_1^{Acc}(0)$ ,  $X_1(1) = 1 - \beta_1^{Acc}(1)$  and  $X_2(1) = 1/2$ , we obtain from  $X_1(0) \cdot \alpha = X_1(1) \cdot \alpha = X_2(1)$  that

$$\begin{cases} \lambda_1(1) = \frac{(2\pi_1\alpha-1) \cdot (2\alpha-1)}{4\alpha \cdot (\alpha-1) \cdot \pi_1} \\ \lambda_1(0) = \frac{2\pi_1\alpha-1}{4\alpha \cdot (\alpha-1) \cdot (1-\pi_1)}. \end{cases}$$

Simple algebra establishes that  $1 > \lambda_1(1) > \lambda_1(0) > 0$  if and only if  $2\pi_1\alpha > 1$ .

Using the expressions for  $\lambda_1(1)$  and  $\lambda_1(0)$  just obtained, we get  $\beta_1^{Acc}(1) = \frac{2\alpha-1}{2\alpha} \in (\frac{1}{2}, 1)$  and  $\beta_1^{Acc}(0) = \frac{1}{2\alpha} \in (0, \frac{1}{2})$ .

Finally,  $\lambda_2(0) \in (0, 1)$  requires

$$\frac{dEv_2}{d\lambda_2(0)} = 0 \Leftrightarrow (1 - \Gamma_2(1)) \cdot \rho_2(1) = f_2.$$

Given the expression for  $\Gamma_2(1)$  obtained above, we get  $\rho_2(1) = \frac{2\pi_2 f_2}{2\pi_2 - f_1} \in (0, 1)$ . (Observe that  $\Gamma_2(1) > \Gamma_2(0)$  and  $\frac{dEv_2}{d\lambda_2(0)} = 0$  imply  $\frac{dEv_2}{d\lambda_2(1)} > 0$ , which is consistent with  $\lambda_2(1) = 1$ .)

We conclude by showing that the equilibrium with  $\lambda_1(1) < 1$ , if it exists, is less informative than and is dominated by the equilibrium with  $\lambda_1(1) = 1$ . We establish the former by comparing equilibrium probabilities that the PM chooses  $p = \theta$ . We establish the second by comparing equilibrium ex ante expected payoffs of the different players.

Simple computations establish

$$\begin{cases} \Pr(p_1 = \theta_1 \mid \lambda_1(1) < 1) = 1 - \frac{f_1}{2\alpha} < 1 - \frac{\pi_1 f_1}{2\alpha - 1} = \Pr(p_1 = \theta_1 \mid \lambda_1(1) = 1) \\ \Pr(p_2 = \theta_2 \mid \lambda_1(1) < 1) = 1 - \pi_2 + \frac{f_1}{2} < 1 - \frac{\pi_1 \alpha \cdot (2\pi_2 - f_1)}{2\alpha - 1} = \Pr(p_2 = \theta_2 \mid \lambda_1(1) = 1), \end{cases}$$

where  $\Pr(p_i = \theta_i \mid \lambda_1(1) < 1)$  (resp.  $\Pr(p_i = \theta_i \mid \lambda_1(1) = 1)$ ) is the probability that the PM chooses  $p_i = \theta_i$  in the equilibrium where  $\lambda_1(1) < 1$  (resp.  $\lambda_1(1) = 1$ ).

We denote the ex ante expected payoff of player  $i \in \{1, 2, PM\}$  in the equilibrium with  $\lambda_1(1) < 1$  (resp.  $\lambda_1(1) = 1$ ) by  $EU_i(\lambda_1(1) < 1)$  (resp.  $EU_i(\lambda_1(1) = 1)$ ). Simple computations establish

$$\begin{cases} EU_{PM}(\lambda_1(1) < 1) = \alpha + 1 - \pi_2 < \alpha + 1 - \frac{2\pi_1 \pi_2 \alpha}{2\alpha - 1} = EU_{PM}(\lambda_1(1) = 1) \\ EU_1(\lambda_1(1) < 1) = \pi_1 \cdot (1 - f_1) = EU_1(\lambda_1(1) = 1) \\ EU_2(\lambda_1(1) < 1) = \frac{f_1}{2} < \pi_2 - \frac{\pi_1 \alpha \cdot (2\pi_2 - f_1)}{2\alpha - 1} = EU_2(\lambda_1(1) = 1). \end{cases}$$

**Proof of (3).** It is not difficult to check that the strategies and beliefs in the statement, together with out-of-equilibrium belief  $\beta_2^{Acc}(1) = \beta_2(1, 0; \theta_2) \leq 1 - \pi_2$ , are part of an equilibrium. To save space, computations are not reported here, but are available from the authors.

It remains to show that in any equilibrium, lobbying strategies are such that

$$\begin{cases} |\lambda_i(1) - \lambda_i(0)| < 1 \text{ for each } i, \text{ and} \\ \lambda_i(1) = \lambda_i(0) = 0 \text{ for some } i. \end{cases}$$

Proceeding as in the proofs of claims 1-3 above, we get that in any equilibrium: 1)  $\beta_i^{Acc}(0) < 1/2$  for each  $i$ ; and 2)  $\delta_i > 0 \Rightarrow \beta_i^{Acc}(1) \geq 1/2$ , with  $\beta_1^{Acc}(1) > 1/2$  and  $\rho_1(1) = 1$ .

To establish that  $\delta_i = 0$  for some  $i$ , we start with a sequence of claims.

CLAIM 8.  $\delta_i < 1$  for each  $i$ .

PROOF OF CLAIM 8. Assume by way of contradiction that  $\delta_i = 1$  for some  $i$ . We then have  $\beta_i^{Acc}(1) = \beta_i(1, 0; \theta_i) = \pi_i < 1/2$  and  $\rho_i(1) = 0$ . It follows that

$$\frac{dEv_i}{d\lambda_i(0)} = -f_i - [1 - \Gamma_i(0)] \cdot \rho_i(0) < 0,$$

contradicting  $\lambda_i(0) = 1$ .

CLAIM 9.  $|\lambda_i(1) - \lambda_i(0)| = 1 \Rightarrow \delta_{-i} > 0$ .

PROOF OF CLAIM 9. Assume by way of contradiction that an equilibrium exists in which  $|\lambda_i(1) - \lambda_i(0)| = 1$  and  $\delta_{-i} = 0$ . Since  $\delta_i > 0$ , we have  $\beta_i^{Acc}(1) \geq 1/2$ . Given  $\pi_i < 1/2$ , we must then have  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$ .

Observe that  $\delta_{-i} = 0$  implies  $\beta_{-i}^{Acc}(0) = \beta_{-i}(1, 0; \theta_{-i}) = \pi_{-i} < 1/2$  and  $\rho_{-i}(0) = 0$ . It follows that  $X_{-i}(0) = \pi_{-i}$ . At the same time,  $\lambda_i(1) = 1$  and

$\lambda_i(0) = 0$  imply

$$\begin{cases} \beta_i^{Acc}(1) = 1 \Rightarrow \rho_i(1) = 1 \text{ and } X_i(1) = 0 \\ \beta_i^{Acc}(1) = 0 \Rightarrow \rho_i(0) = 0 \text{ and } X_i(0) = 0. \end{cases}$$

Hence  $X_{-i}(0) > 0 = X_i(\ell_i)$  for every  $\ell_i$ , implying  $\Gamma_i(1) = \Gamma_i(0) = 0$ . It follows that

$$\frac{dEv_i}{d\lambda_i(0)} = 1 - f_i > 0,$$

contradicting  $\lambda_i(0) = 0$ .

CLAIM 10. There is no equilibrium in which

$$\begin{cases} |\lambda_i(1) - \lambda_i(0)| = 1 \\ \delta_{-i} > 0 \text{ and } |\lambda_{-i}(1) - \lambda_{-i}(0)| < 1. \end{cases}$$

PROOF OF CLAIM 10. Suppose the contrary. By the same argument as in the proof of Claim 9, we get  $\lambda_i(1) = 1$  and  $\lambda_i(0) = 0$ , implying  $X_i(1) = X_i(0) = 0$ .

We now show that  $\beta_{-i}^{Acc}(1) = 1$ . Recall that  $\delta_{-i} > 0$  implies  $\beta_{-i}^{Acc}(1) \geq 1/2$ . If  $\beta_{-i}^{Acc}(1) \in [1/2, 1)$ , then  $X_{-i}(1) > 0 = X_i(\ell_i)$  for every  $\ell_i$ , implying  $\Gamma_{-i}(1) = 1$  and  $\frac{dEv_{-i}}{d\lambda_{-i}(0)} < 0$ . Hence  $\lambda_{-i}(0) = 0$  and  $\lambda_{-i}(1) \in (0, 1)$ , contradicting  $\beta_{-i}^{Acc}(1) < 1$ .

Given  $\delta_{-i} \in (0, 1)$  (by claim 8 and  $\delta_{-i} > 0$ ) and  $|\lambda_{-i}(1) - \lambda_{-i}(0)| < 1$ ,  $\beta_{-i}^{Acc}(1) = 1$  implies  $\lambda_{-i}(0) = 0$  and  $\lambda_{-i}(1) \in (0, 1)$ . It follows that  $X_{-i}(0) = \beta_{-i}^{Acc}(0) > 0 = \beta_i^{Acc}(\ell_i)$  for every  $\ell_i$ , implying  $\Gamma_{-i}(0) = 1$  and

$$\frac{dEv_{-i}}{d\lambda_{-i}(1)} = -f_{-i} < 0,$$

contradicting  $\lambda_{-i}(1) > 0$ .

CLAIM 11.  $|\lambda_i(1) - \lambda_i(0)| < 1$  for each  $i$ .

PROOF OF CLAIM 11. Follows straightforwardly from  $\frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1\pi_2} > 1$  and claims 8-10.

CLAIM 12.  $\delta_i > 0$  for each  $i$  implies

$$\frac{dEv_i}{d\lambda_i(1)} \geq 0 = \frac{dEv_i}{d\lambda_i(0)}.$$

PROOF OF CLAIM 12. Given Claim 11, we know we cannot have  $\frac{dEv_i}{d\lambda_i(1)} > 0 > \frac{dEv_i}{d\lambda_i(0)}$  or  $\frac{dEv_i}{d\lambda_i(0)} > 0 > \frac{dEv_i}{d\lambda_i(1)}$  for either  $i$ . Likewise, we cannot have  $\frac{dEv_i}{d\lambda_i(\ell_i)} > 0$  (resp.  $\frac{dEv_i}{d\lambda_i(\ell_i)} < 0$ ) for each  $\ell_i$ , otherwise we would have  $\delta_i = 1$  (resp.  $\delta_i = 0$ ).

Assume by way of contradiction that  $\frac{dEv_i}{d\lambda_i(0)} > 0 = \frac{dEv_i}{d\lambda_i(1)}$ , implying  $\lambda_i(0) = 1$  and  $\lambda_i(1) \in [0, 1)$ , the latter given  $\delta_i < 1$ . Hence  $\beta_i^{Acc}(0) = 1$ , contradicting  $\beta_i^{Acc}(0) < 1/2$ .

Assume by way of contradiction that  $\frac{dEv_i}{d\lambda_i(0)} = 0 > \frac{dEv_i}{d\lambda_i(1)}$ , implying  $\lambda_i(1) = 0$  and  $\lambda_i(0) \in (0, 1]$ , the latter given  $\delta_i > 0$ . Hence  $\beta_i^{Acc}(1) = 0$ , contradicting  $\beta_i^{Acc}(1) \geq 1/2$ .

Assume by way of contradiction that  $\frac{dEv_i}{d\lambda_i(1)} = 0 > \frac{dEv_i}{d\lambda_i(0)}$  for some  $i$ , implying  $\lambda_i(0) = 0$  and  $\lambda_i(1) \in (0, 1)$ , the latter given claim 11 and  $\delta_i > 0$ . It follows that:

1)  $\beta_i^{Acc}(1) = 1$ , implying  $\rho_i(1) = 1$  and  $X_i(1) = 0$ ; and 2)  $\beta_i^{Acc}(0) = X_i(0) \in (0, 1/2)$ . Hence  $X_i(0) > X_i(1)$ , implying  $\gamma_i(0; \ell_{-i}) \geq \gamma_i(1; \ell_{-i})$  for each  $\ell_{-i}$ . It follows that  $\Gamma_i(0) \geq \Gamma_i(1)$ . At the same time, we have

$$\begin{cases} \frac{dEv_i}{d\lambda_i(1)} = 0 \Leftrightarrow \Gamma_i(0) = 1 - f_i \\ \frac{dEv_i}{d\lambda_i(0)} < 0 \Leftrightarrow \Gamma_i(1) > 1 - f_i, \end{cases}$$

contradicting  $\Gamma_i(0) \geq \Gamma_i(1)$ .

Hence, the only remaining possibility is  $\frac{dEv_i}{d\lambda_i(1)} \geq 0 = \frac{dEv_i}{d\lambda_i(0)}$ .

We are now ready to establish  $\delta_i = 0$  for some  $i$ . Given claims 8-12, it is sufficient to rule out each of the following four cases: 1)  $\frac{dEv_1}{d\lambda_1(1)} > 0 = \frac{dEv_1}{d\lambda_1(0)}$  and  $\frac{dEv_2}{d\lambda_2(1)} > 0 = \frac{dEv_2}{d\lambda_2(0)}$ ; 2)  $\frac{dEv_1}{d\lambda_1(1)} > 0 = \frac{dEv_1}{d\lambda_1(0)}$  and  $\frac{dEv_2}{d\lambda_2(1)} = 0 = \frac{dEv_2}{d\lambda_2(0)}$ ; 3)  $\frac{dEv_1}{d\lambda_1(1)} = 0 = \frac{dEv_1}{d\lambda_1(0)}$  and  $\frac{dEv_2}{d\lambda_2(1)} > 0 = \frac{dEv_2}{d\lambda_2(0)}$ ; and 4)  $\frac{dEv_1}{d\lambda_1(1)} = 0 = \frac{dEv_1}{d\lambda_1(0)}$  and  $\frac{dEv_2}{d\lambda_2(1)} = 0 = \frac{dEv_2}{d\lambda_2(0)}$ . We do not report this part of the proof here since it is quite tedious and, being mechanical, not particularly informative.<sup>21</sup>

Finally,  $\delta_i = 0$  for some  $i$  implies  $|\lambda_i(1) - \lambda_i(0)| = 0 < 1$ . By the contrapositive of claim 9, we then get  $|\lambda_{-i}(1) - \lambda_{-i}(0)| < 1$ . Hence  $|\lambda_i(1) - \lambda_i(0)| < 1$  for each  $i$ . ■

PROOF OF LEMMA 3. See proof of lemma 2 in Dellis and Oak (2016).

PROOF OF LEMMA 4. We proceed by construction. Let lobbying strategies be

$$\begin{cases} \lambda_1(1) = 1 \text{ and } \lambda_1(0) = 0 \\ \lambda_2(1) = \lambda_2(0) = 0. \end{cases}$$

Using Bayes' rule, we get  $\beta_1^{Acc}(1) = 1$ ,  $\beta_1^{Acc}(0) = 0$  and  $\beta_2^{Acc}(0) = \pi_2$ . We obtain  $X_1(1, 0) = X_1(0, 0) = X_2(1, 0) = 0$  and  $X_2(0, 0) = \pi_2$ . Moreover, for any out-of-equilibrium belief  $\beta_2^{Acc}(1) \in [0, 1]$ , we get  $X_1(0, 1) = 0 \leq X_2(0, 1)$  and  $X_1(1, 1) = X_2(1, 1) = 0$ . Given  $X_i(\ell)$ , let the PM's access strategy  $\gamma(\cdot)$  be such that  $\gamma_1(1, 0) = \gamma_1(1, 1) = 1$  and  $\gamma_2(0, 0) = \gamma_2(0, 1) = 1$ . Hence,  $\Gamma_1(1) = 1$ ,  $\Gamma_1(0) = 0$  and  $\Gamma_2(1) = \Gamma_2(0) = 1 - \pi_1$ . We then get

$$\begin{cases} \frac{dEv_1}{d\lambda_1(1)} = 1 - f_1 > 0 \\ \frac{dEv_1}{d\lambda_1(0)} = -f_1 < 0 \\ \frac{dEv_2}{d\lambda_2(1)} = \frac{dEv_2}{d\lambda_2(0)} = -f_2 < 0, \end{cases}$$

consistent with the lobbying strategies. Finally, let  $\beta(\cdot)$  be obtained from the above strategies using Bayes' rule, whenever possible. Hence, strategies  $\{\lambda(\cdot), \gamma(\cdot), \rho(\cdot)\}$  and beliefs  $\{\beta^{Acc}(\cdot), \beta(\cdot)\}$  constitute an equilibrium of the subpoena game where  $N = 1$ . Moreover, in this equilibrium the PM chooses policy

$$p = \begin{cases} (1, 0) & \text{if } \theta = (1, 1) \\ (\theta_1, \theta_2) & \text{if } \theta \neq (1, 1). \end{cases} \blacksquare$$

PROOF OF PROPOSITION 1. We start by considering the case where  $N = 2$ . Given lemmata 1 and 3, we can partition the parameters space into three regions. Using

<sup>21</sup>All the computations are however available from the authors upon request.

simple algebra and the strategies and beliefs described in the (proofs of the) two lemmata, we obtain the following equilibrium ex ante expected payoffs:

1. If  $\frac{(1-\pi_1) \cdot f_1 + (1-\pi_2) \cdot f_2}{1-\pi_1\pi_2} > 1$ ,

$$\begin{cases} EU_{PM}^{\sim S} = \alpha + 1 > EU_{PM}^S \\ EU_1^{\sim S} = \pi_1 \cdot (1 - f_1) = EU_1^S \\ EU_2^{\sim S} = \pi_2 \cdot (1 - f_2) < \pi_2 \cdot \left[ 1 - \frac{\pi_1 \alpha \cdot (1 - f_1)}{\alpha - \pi_2} \right] = EU_2^S. \end{cases}$$

2. If  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} \geq 1 \geq \frac{(1-\pi_1)f_1 + (1-\pi_2)f_2}{1-\pi_1\pi_2}$ ,

$$\begin{cases} EU_{PM}^{\sim S} = \alpha + 1 = EU_{PM}^S \\ EU_1^{\sim S} = \pi_1 \cdot (1 - f_1) = EU_1^S \\ EU_2^{\sim S} = \pi_2 \cdot (1 - f_2) = EU_2^S. \end{cases}$$

3. If  $\frac{\pi_1 f_1 + \pi_2 f_2}{\pi_1 \pi_2} < 1$ ,

$$\begin{cases} EU_{PM}^{\sim S} = (\alpha + 1) - \frac{2\pi_1\pi_2\alpha}{2\alpha-1} = EU_{PM}^S \\ EU_1^{\sim S} = \pi_1 \cdot (1 - f_1) = EU_1^S \\ EU_2^{\sim S} = \pi_2 - \frac{\pi_1\alpha \cdot (2\pi_2 - f_1)}{2\alpha-1} = EU_2^S. \end{cases}$$

We continue by considering the case where  $N = 1$ . Given lemmata 2 and 4, we can partition the parameters space into two regions. Again, using simple algebra and the strategies and beliefs described in the (proofs of the) two lemmata, we obtain the following equilibrium ex ante expected payoffs:

1. If  $f_2 > 1 - \pi_1$ ,

$$\begin{cases} EU_{PM}^{\sim S} = \alpha + 1 - \pi_2 < \alpha + 1 - \pi_1\pi_2 = EU_{PM}^S \\ EU_1^{\sim S} = \pi_1 \cdot (1 - f_1) = EU_1^S \\ EU_2^{\sim S} = 0 < \pi_2 \cdot (1 - \pi_1) = EU_2^S. \end{cases}$$

2. If  $f_2 \leq 1 - \pi_1$ ,

$$\begin{cases} EU_{PM}^{\sim S} = \alpha + 1 - \pi_1\pi_2 = EU_{PM}^S \\ EU_1^{\sim S} = \pi_1 \cdot (1 - f_1) = EU_1^S \\ EU_2^{\sim S} = \pi_2 \cdot (1 - \pi_1 - f_2) < \pi_2 \cdot (1 - \pi_1) = EU_2^S. \blacksquare \end{cases}$$