Informational Lobbying and Agenda Distortion

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Abstract

This paper challenges the prevailing view in the literature that informational lobbying is socially beneficial. Key to our analysis is the fact that policymakers are constrained on the number of issues they can address, which forces them to prioritize issues. Under reasonable conditions, interest groups advocating less-salient reforms produce information, inducing policymakers to prioritize those reforms instead of more-salient ones. Such distortion of the policy agenda reduces social welfare. Our story is consistent with empirical accounts of the lobbying process.

Keywords: Informational lobbying, agenda setting, information collection, persuasion

JEL: D72, D78, D83

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1 INTRODUCTION

The popular press and American public often view the interactions between special interest groups (hereafter IGs), their lobbyists, and elected officials negatively. They interpret the interactions as an indication that IGs, lobbyists, and politicians are extracting rent from the policy making process at the expense of social welfare. Lobbyists and politicians, unsurprisingly, argue that these interactions help politicians better understand issues and lead to better-informed policy decisions. The academic literature largely supports this claim.\(^1\) In a variety of models in which IGs provide expertise or evidence, IG influence is harmful only when IGs and politicians move away from information provision to other avenues of influence, e.g., the quid pro quo exchange of contributions for policy favors.\(^2\) In the absence of such influences, the literature agrees, informational lobbying is socially beneficial.

This paper focuses on information provision by IGs, and challenges the standard view in the literature that it is socially beneficial. Our paper illustrates how unbiased informational lobbying can lead to worse policy. Key to our analysis is the fact that policymakers are constrained on the number of issues they can address, forcing them to prioritize issues. We show how information production by IGs can alter policymakers’ incentives to collect information on their own (e.g., through staff or government agencies) and shift their attention toward issues with active lobbies. This results in an alignment of the legislative agenda with the lobbying agenda instead of with the policy priorities of the public. Such agenda distortion can lower social welfare if the most active IGs are those with less-salient issues, which happens in our model under reasonable conditions and is supported by casual evidence.

Although our story is consistent with the empirical accounts of the lobbying process, the argument has never been formally made and its implications studied. Specifically, various accounts of the lobbying process make clear that the primary role of IGs in the legislative process is influencing the legislative agenda, typically through the provision of information or expertise (Hansen 1991, Hall 1996, Dexter, Bauer and de Sola Pool 2007). Baumgartner et al. (2009) show that the most-active special interests are not involved with the issues the public views as most important.\(^3\) Cohen-Eliya and Hammer (2011, p280) describe how “lobbying distorts the democratic process by manipulating the overcrowded public agenda and prioritizing specific issues that are determined by lobbyists,” helping IGs “jump the queue” on the legislative agenda. Lessig (2011) provides an example of agenda distortion; in the spring of 2011, the most-consuming issue for lobbyists and Congress was a bill limiting bank fees on debit cards, while the people of the US were most con-

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\(^1\) As Bennedsen and Feldmann (2002, p920) remark: “For most IGs the dissemination of information in one form or another absorbs a far greater share of groups’ resources than political contributions do.” Moreover, information provision is often considered an effective way to influence policy. As Baumgartner et al. (2009, p124) write: “There is evidence that organizational advocates are often successful in getting Congress to make policy decisions that are informed by research and the technical expertise that they provide.”

\(^2\) This trade off is made explicit in a number of the models, including Bennedsen and Feldmann (2002) and Cotton (2009).

\(^3\) The policy priorities of the public are found to be the issues of crime and the economy, whereas health issues are found to top the lobbying agenda.
cerned about issues of the economy and unemployment. These accounts are highly consistent with our model in which the IGs involved with less-salient issues lobby in an effort to change the order in which policymakers address issues and alter the legislative agenda.

Our model incorporates two notable features of the policymaking process that are often excluded by formal models of lobbying. First, the policymaker is unable to address all issues, and second, he can collect information on his own (e.g., through his staff, government agencies or legislative hearings) when it is not supplied by IGs. Although the first key feature—that the policymaker is unable to implement reform on all issues—is consistent with the realities of the policymaking process, it is not included in other models of informational lobbying. This is a realistic consideration, as policymakers typically lack the time and resources to attend to all issues that deserve attention. As Baumgartner et al. (2009, p7) observe: “In the case of Congress and administrative agencies, policymakers must choose to allocate their time among the myriad of different issues they are called upon to address.” Policymakers must prioritize issues, choosing which issues to address and which to leave unattended; that is, they must set their agenda.

The presence of agenda setting considerations have implications for the role of IGs, who can provide information in an effort to change the set of issues policymakers address. In his seminal study of the US farm lobby, Hansen (1991, p2) argues that this is the most important way IGs influence policies: “Limited in time, attention and resources, lawmakers cannot attend to all [problems], but they must attend to some. The decisive stage of interest group influence, therefore, is the choice of the problems and pressures to which to respond.” Hall (1996) and Dexter, Bauer and de Sola Pool (2007) draw similar conclusions. We show that these agenda setting considerations are necessary for undistorted information production by IGs to be socially detrimental.

The argument is developed using a simple model of informational lobbying where a policymaker must decide for each of two issues whether to implement a proposed reform or keep the status quo. There are two IG advocates, each involved with a separate issue. Prior to making a decision on a reform, both the policymaker and the issue’s IG can acquire costly information on the social desirability of the reform proposals. In order to abstract from already well-studied strategic information transmission considerations and to stack the deck in favor of informational lobbying being socially beneficial, we follow the persuasion literature and assume that any information produced is publicly observed. That is, information is symmetric.\(^4\) Initially, we allow issues to differ in their salience (i.e., their relative weight in the policymaker’s payoff function), and the prior beliefs that their reform is socially desirable. In extensions, we consider differences in the costs of information collection (which capture possible asymmetries in IGs’ access to funds and resources), and in the informativeness of available evidence.

We start by identifying two necessary conditions for informational lobbying to be socially detrimental. One condition is that the policymaker must be limited in the number of reform proposals he can implement. The second condition is that there must be underlying differences between the

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\(^4\)The model is equivalent to a setting in which the policymaker can only observe whether IGs choose to collect verifiable information. In this case, IGs rationally disclose any beneficial information in equilibrium since the policymaker will believe that any IG that does not disclose its information must have collected unfavorable information.
two issues that lead the policymaker to have preferences over which issue to prioritize. This means that the issues must differ in their salience, in the ex ante probability their reform is desirable, or in the quality of available information that may be collected. Together, these conditions introduce the possibility that informational lobbying provides an informational subsidy, which leads the policymaker to distort his agenda and prioritize issues with active lobbies. We go on to characterize circumstances in which in equilibrium informational lobbying leads to such agenda distortions and results in an aggregate welfare loss. The analysis identifies implications for the relationship between informational lobbying and the probability the policymaker makes a fully informed policy choice (i.e., a choice he would make if he were informed on the social desirability of every reform proposal), the motive behind informational lobbying (i.e., distort the legislative agenda and/or persuade the policymaker), the preference alignment between the policymaker and active lobbies (i.e., whether the policymaker is lobbied by groups he is predisposed to support or by groups he is predisposed to oppose), and the policymaker’s own capacity to produce information. We show that each of these implications depends on the extent to which issues differ in their salience or in the ex ante probability their reform is socially desirable.

Our paper is related to the formal literature on informational lobbying and persuasion. Potters and van Winden (1992), Austen-Smith (1995) and Lohmann (1995) present models of informational lobbying in which IGs have private, non-verifiable information, which they may be able to convey to a policymaker through a combination of cheap talk and signaling through political contributions. In our framework, information is verifiable and we do not consider payments. In Milgrom and Roberts (1986), special interests with opposing policy preferences are endowed with verifiable information about the state of the world, and engage in a game of strategic information provision. In Cotton (2009, 2012), IGs make payments to a policymaker before being given access to disclose their private, verifiable information. More similar to our paper are the works in which interest groups must first collect verifiable information (e.g., a signal that corresponds to the true state with some probability) before disclosing it to a policymaker. Austen-Smith and Wright (1992), Austen-Smith (1998), Bennedsen and Feldmann (2002, 2006), and Dahm and Porteiro (2008) consider such models in the context of lobbying and policymaking. These papers differ from ours in at least two fundamental ways. First, they assume that the policymaker has no firsthand access to information. Second, they consider a policy choice on a single issue. Brocas and Carrillo (2007), Brocas, Carrillo and Palfrey (in press), Kamenica and Gentzkow (2011), Gentzkow and Kamenica (2011), Boleslavsky and Cotton (2012) and Gul and Pesendorfer (2012) present models of persuasion in which agents decide how much public information to produce before a decision maker takes an action. In addition to focusing on a different set of questions than us, these papers also differ from ours in that they do not allow for firsthand evidence collection by the decision maker and they consider a single (policy) decision.\footnote{An exception to this is Boleslavsky and Cotton (2012) who show that limited capacity may incentivize agents to produce better information. Like the other papers in the literature, however, the policymaker is unable to collect firsthand evidence and must rely only on evidence produced by IGs.}

Rasmusen (1993) studies strategic information transmission as well, and like us assumes that
the policymaker can acquire firsthand information. Rasmusen considers a single issue and therefore cannot capture the agenda-setting considerations that are key to our analysis. He still finds that informational lobbying may be socially detrimental if IGs can sometimes deceive the policymaker. Deception, however, rarely occurs in practice. This is because as Berry (1997, p121) notes “credibility comes first” for IGs, and Hansen (1991) describes how IGs must maintain a reputation for reliability in order to maintain access to policymakers. Deception is absent in our framework.

Our paper is also related to a series of papers that view informational lobbying as seeking to mobilize friendly legislators, rather than to change their policy preferences. Hall and Wayman (1990) and Hall (1996) argue that legislators lack time and that IGs offer political contributions to friendly legislators in exchange for them investing time on the IG’s issue. In the same spirit, Hall and Deardorff (2006) argue that IGs act as ‘service bureaus’ for friendly legislators with the purpose of relaxing the time and resource constraints they face. These papers focus on explaining the lobbying of friendly legislators, not on studying the socially detrimental nature of informational lobbying. Moreover, these papers view informational lobbying as a way to mobilize legislators, whereas our paper views informational lobbying as a way to mobilize issues.

Finally, our paper is related to an emerging literature on issue salience and endogenous agenda formation. Dellis (2009) and Pollak (2011) consider an incumbent who must decide how to allocate a limited amount of time and resources to multiple issues, which endogenously determines the salience of issues in the next election. Glazer and Rubinstein (2001) and Demange and Van der Straeten (2009) consider debaters who must decide how to allocate a limited amount of time in order to explain their position over multiple issues. Cotton (2009) and Levy and Razin (2012) model the competition between two debaters who seek to capture the limited attention of a decision maker. These papers focus on a different set of questions, abstracting from questions of information acquisition.

The remainder of the paper is organized as follows. Section 2 presents the model. Section 3 illustrates the main intuition for the results using a simple example. Section 4 derives and discusses our main results. Section 5 considers several extensions of our model. Section 6 concludes. All proofs are in the Appendix.

2 A MODEL OF INFORMATIONAL LOBBYING

We develop our argument using a simple model of informational lobbying (hereafter IL). We discuss in Section 5 how our results and their underlying intuition extend to more general settings.

A risk-neutral legislator has to take actions on two independent issues. On each issue $n \in \{1, 2\}$ the legislator can implement a proposed reform or project $R_n$, or maintain the status quo $S_n$. We denote a policy by $p = (p_1, p_2)$, where $p_n \in \{R_n, S_n\}$ is the policy on issue $n$.

The legislator’s preferences for the reform proposal on issue $n$ depend on the issue-specific state of the world, $\theta_n$. The state of the world may indicate the quality of a project or the necessity of

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6See also Ainsworth (2002, p132), (Rosenthal 1993, p121), and Ornstein and Elder (1978, p77).
reform. Alternatively, it may indicate the support for or impact of the reform within the legislator’s district. There are two possible states on each issue n, namely, \( \theta_n \in \{ R_n, S_n \} \). The probability of state \( R_n \) is \( \pi_n \in (0, 1) \). For each issue n the legislator prefers implementing the reform proposal in state \( R_n \) and maintaining the status quo in state \( S_n \). Given a policy \( p = (p_1, p_2) \) and a state \( \theta = (\theta_1, \theta_2) \), the legislator’s utility is given by \( u(p, \theta) = \alpha u_1 + u_2 \), where

\[
   u_n = \begin{cases} 
   1 & \text{if } p_n = \theta_n \\
   0 & \text{if } p_n \neq \theta_n 
   \end{cases}
\]

for each issue n and \( \alpha \) is the salience weight of issue 1. If the reform proposals are projects that benefit separate localities or social groups, then \( \alpha \) can alternatively be interpreted as the relative weight of the citizens belonging to the first social group or locality. Without loss of generality, assume \( \alpha \geq 1 \). To stack the deck against IL being socially detrimental, we shall view the legislator as a benevolent dictator whose preferences coincide with the policy preferences of the public. In this way, \( u(p, \theta) \) serves also to capture social welfare.

For each issue, there is an IG advocate. The IG for issue n (hereafter \( IG_n \)) prefers the reform proposal \( R_n \) to the status quo \( S_n \) regardless of the state \( \theta_n \). The utility to \( IG_n \) from a policy \( p_n \) is

\[
   v_n(p_n) = \begin{cases} 
   1 & \text{if } p_n = R_n \\
   0 & \text{if } p_n = S_n.
   \end{cases}
\]

The assumption that there is only one IG per issue is a first pass. In Section 5 we relax this assumption and consider a situation where there are two IGs per issue, one in favor of the reform proposal and another in favor of the status quo.

The realized state of the world is unknown to all. However, \( IG_n \) can collect information on the state \( \theta_n \) at a utility cost \( c_n > 0 \). As a first pass we let \( c_1 = c_2 \equiv c \), so to abstract from asymmetries in information collection costs, and focus instead on considerations related to issue salience and prior beliefs. We relax this assumption in Section 5. If \( IG_n \) collects information, it will receive a message \( m_n \) which reveals the true state \( \theta_n \), i.e., \( m_n = \theta_n \) with probability one. (In Section 5, we consider an alternative version of the model in which the message reflects the true state of the world with probability less than one, and where this probability may differ across issues.) The message is hard evidence that cannot be distorted or concealed from the legislator.\(^7\) This assumption allows us to abstract from issues of information transmission (on which most of the formal literature on IL is focused) and concentrate instead on the agenda setting implications of IL. Moreover, this assumption allows us to consider a situation that is biased in favor of IL being socially beneficial, and still show that it can be socially detrimental.

The legislator can collect firsthand information on the state of the world. If the legislator chooses to collect information on issue n, he faces a utility cost \( d_n > 0 \) and receives a message \( m^L_n \)

\(^7\)This setting is equivalent to one in which the legislator observes the IG’s decision to collect verifiable information and the IG decides whether to reveal the information, as the IG will always choose to reveal favorable information in equilibrium.
about \( \theta_n \), the state on issue \( n \). As was also the case when IGs collected the information, a message \( m^L_n \) reveals the true state. As a first pass we let \( d_1 = d_2 = d \). We relax these assumptions in Section 5.

The legislator may face time and resource constraints. We incorporate two types of constraints. The first involves the number of issues the legislator can address. Specifically, we assume that the legislator can implement a reform on up to \( M \in \{1, 2\} \) issues. When \( M = 2 \), the legislator can address all issues, and agenda-setting considerations are irrelevant. In contrast, when \( M = 1 \) the legislator cannot implement more than one reform. This constraint may reflect the fact that it takes time to prepare and pass a piece of legislation. Alternatively, it may reflect the fact that a reform may strain the budget by requiring additional public expenditures. This type of constraint is fundamental for our analysis since it makes agenda-setting considerations relevant, forcing the legislator to prioritize issues. The second constraint involves the number of issues on which the legislator can collect firsthand information (e.g., through staff research or government agencies). Specifically, we assume that the legislator can himself collect information about the state of the world on up to \( K \in \{1, 2\} \) issues. When \( K = 2 \), the legislator has access to enough information resources so that he can always choose to become fully informed, even in the absence of lobbying. When \( K = 1 \), the legislator has access to limited resources and cannot become fully informed without informational lobbying.\(^8\)

The policy-making process has four stages. In stage 1, Nature chooses the state \( \theta_n \) for each issue \( n \). States are uncorrelated across issues. The state \( \theta_n \) is initially unknown to all players, but it is common knowledge that the probability of state \( R_n \) is \( \pi_n \). In stage 2, IGs decide simultaneously and non-cooperatively whether to collect information. If an IG collects information, the issue-specific state is observed by the IG and the legislator. In stage 3, the legislator decides whether to collect firsthand information on any issue for which an IG did not produce information. When \( K = 2 \) the legislator collects information sequentially. Specifically, the legislator first chooses whether to collect information on an issue (and if so, which one). If he decides to collect information on an issue, he observes a message that reveals the state on this issue and then decides whether to collect information on the other issue. We discuss in Section 5 how our results are affected if instead the legislator must choose simultaneously on which issue(s) to collect information. In stage 4, the legislator chooses a policy. For every issue on which the legislator does not implement the reform proposal, the status quo is maintained. We describe below the structure of each stage of the policy making process, working backwards.

### 2.1 POLICY SELECTION

We begin with the policy selection by the legislator. When the time comes to select a policy the legislator may have observed a message on both, on one, or on neither issue. Let \( \beta_n (m_n, m^L_n) \)

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\(^8\)Limits on government capacity to produce its own information has been underlined by Kempf (2011, p77) when citing Jean-Christophe Alquier, president of Harrison and Wolf: “In the 1970s, lobbies contributed financially to electoral campaigns. In the 1980s, they became providers of expertise, compensating for the limited expertise capacity of the State.” (Authors’ translation from French.)
denote the legislator’s belief that \( \theta_n = R_n \) conditional on having received message \( m^L_n \) on issue \( n \) and having observed message \( m_n \) received by IG\(_n\). By convention we write \( m_n = \emptyset \) (\( m^L_n = \emptyset \)) if IG\(_n\) (the legislator) chose not to collect information on issue \( n \). Since in our baseline model messages reveal the true state of the world, we have \( \beta_n (R_n, m^L_n) = \beta_n (m_n, R_n) = 1 \) and \( \beta_n (S_n, m^L_n) = \beta_n (m_n, S_n) = 0 \). If nobody collected information on issue \( n \), then \( \beta_n (\emptyset, \emptyset) = \pi_n \).

When at most one reform proposal can be implemented (i.e., \( M = 1 \)), the legislator can choose between three policies. Specifically, he can choose to implement the reform on issue 1, in which case the policy is \( p = (R_1, S_2) \) and the legislator’s expected utility is \( u (R_1, S_2) = \beta_1 \alpha + (1 - \beta_2) \), where \( \beta_n \) is a shorthand for \( \beta_n (m_n, m^L_n) \). Alternatively, the legislator can choose to implement the reform on issue 2, in which case the policy is \( p = (S_1, R_2) \) and the legislator’s expected utility is \( u (S_1, R_2) = (1 - \beta_1) \alpha + \beta_2 \). Finally, the legislator can choose to maintain the status quo on both issues, in which case the policy is \( p = (S_1, S_2) \) and the legislator’s expected utility \( u (S_1, S_2) = (1 - \beta_1) \alpha + (1 - \beta_2) \). Thus, for a given vector of observed messages \( (m, m^L) = (m_1, m_2, m^L_1, m^L_2) \), the legislator chooses policy

\[
p (m, m^L) = \begin{cases} (R_1, S_2) & \text{if } \beta_1 \geq 1/2 \text{ and } (\beta_1 - \frac{1}{2}) \alpha \geq (\beta_2 - \frac{1}{2}) \\ (S_1, R_2) & \text{if } \beta_2 \geq 1/2 \text{ and } (\beta_1 - \frac{1}{2}) \alpha < (\beta_2 - \frac{1}{2}) \\ (S_1, S_2) & \text{if } \beta_1, \beta_2 < 1/2. \end{cases}
\]

Implicit here is the assumption that when indifferent between policies \((R_1, S_2)\) and \((S_1, R_2)\), the legislator chooses \((R_1, S_2)\). This assumption is made to simplify algebra.

When both reform proposals can be implemented (i.e., \( M = 2 \)), the legislator can choose between four policies: implement the reform on both issues, on issue 1 only, on issue 2 only, or on neither issue. It is easy to see that for each issue \( n \) the legislator chooses to implement the reform if and only if \( \beta_n \geq 1/2 \).

### 2.2 Legislator’s Information Collection

We now turn to the information collection behavior of the legislator. Having observed the messages \( m_1 \) and \( m_2 \) received by the IGs, the legislator chooses whether to collect information himself. Let \( \gamma_n (m_n) \) denote the legislator’s belief that \( \theta_n = R_n \) conditional on having observed a message \( m_n \in \{R_n, S_n, \emptyset\} \). By the same argument as for \( \beta_n (\cdot) \), we have \( \gamma_n (R_n) = 1 \), \( \gamma_n (S_n) = 0 \) and \( \gamma_n (\emptyset) = \pi_n \).

When the legislator can choose to collect information on up to \( K = 2 \) issues, information collection is sequential. Specifically, in step 1 the legislator chooses whether to collect information on an issue and, if so, on which issue. He makes his decision based on his beliefs \( \gamma (m) \) and the salience weight \( \alpha \). We denote the first-step information collection strategy by \( \sigma^1 (m) = (\sigma^1_1, \sigma^1_2, \sigma^1_\emptyset) \in \{0, 1\}^3 \) with \( \sum_{i \in \{1, 2, \emptyset\}} \sigma^1_i = 1 \), where \( \sigma^1_1 = 1 \) if the legislator collects information on issue \( n \in \{1, 2\} \) and \( \sigma^1_\emptyset = 1 \) if he collects no information. If the legislator first chooses to collect information on issue \( n \), he then receives a message \( m^L_n = \theta_n \) and in step 2 decides whether to collect information on the other issue. We denote the second-step information collection strategy by \( \sigma^2 (m, m^L) = (\sigma^2_1, \sigma^2_2, \sigma^2_\emptyset) \in \{0, 1\}^3 \) with \( \sum_{i \in \{1, 2, \emptyset\}} \sigma^2_i = 1 \).
\{0,1\}^3$, with the same interpretation and restriction as for $\sigma^1$. In addition, we let $\sigma_0^1 = 1$ if either $\sigma_0^1 = 1$ or $K = 1$.

The legislator chooses an information collection strategy $\sigma = (\sigma^1, \sigma^2)$ so as to maximize his expected utility

$$U(\sigma; p(.)) = Eu(p(m, m^L(\sigma)), \theta) - \sum_{i,t \in \{1,2\}} \sigma^t_i d_i,$$

where $Eu(.)$ is the legislator’s (interim) expected utility over policies.

Since a message reveals the true state of the world, the legislator never collects information on the same issue in both steps or collects information on an issue for which the IG has produced information. To simplify algebra, we assume the legislator chooses to collect information when indifferent between collecting and not collecting information. Likewise, we assume the legislator chooses to collect information on issue 1 when indifferent between collecting information on issue 1 or issue 2.

### 2.3 INTEREST GROUPS’ INFORMATION COLLECTION

We now turn to IGs’ information collection decisions. IGs decide simultaneously whether to collect information about the state on their respective issue. $IG_n$’s (pure) strategy is $\lambda_n \in \{0,1\}$, where $\lambda_n = 1$ indicates that $IG_n$ collects information. A (pure) strategy profile is $\lambda = (\lambda_1, \lambda_2)$. Given the legislator’s strategies $\sigma(.)$ and $p(.)$, $\lambda_n$ must be a best response to $\lambda_{-n}$ for both $n \in \{1,2\}$, i.e., $IG_n$ chooses a strategy that maximizes its expected utility

$$V_n(\lambda_n, \lambda_{-n}; \sigma(.), p(.)) = Ev_n(p_n(m(\lambda), m^L(\lambda, \sigma(.)))) - \lambda_n c,$$

where $Ev_n(.)$ is $IG_n$’s expected utility over policies.

As with the legislator, we assume that an indifferent IG collects information.

### 2.4 EQUILIBRIUM AND SOCIAL WELFARE

We solve for the Perfect Bayesian Equilibrium. Loosely speaking, an equilibrium consists of strategies $- \lambda^*, \sigma^* (.)$ and $p^* (.)$ — and beliefs $- \gamma^* (.)$ and $\beta^* (.)$ — such that (1) at every decision stage each agent takes an action that maximizes its expected utility given its beliefs and others’ behavior, and (2) beliefs are derived from Bayes’ rule and are consistent with equilibrium strategies.

We are interested in identifying situations in which IL is a source of welfare loss. The notion of social welfare used here is the legislator’s ex ante expected utility over policies. Formally, social welfare is $W = Eu(p(.), \theta)$, where $Eu(.)$ is the legislator’s (ex ante) expected utility over policies. This representation can be justified on a number of grounds. First, it captures a situation where the legislator is a benevolent social planner who seeks to implement a policy that maximizes social welfare. This interpretation allows us to abstract from inefficiencies related to political failures, and focus instead on inefficiencies resulting from the agenda-setting implications of IL. Similarly, the omission of information collection costs from aggregate welfare is made to abstract from inefficiencies
that would result from information over-production by IGs (e.g., Lagerlöf 1997). Finally, IGs’
expected payoffs do not enter directly the social welfare function. This is justified based on the
often-made argument that by leading to better-informed policy choices, IL can be beneficial not
only to IGs, but also to the rest of the community. Our notion of social welfare is meant to capture
the welfare of the rest of the community, and establish that IL can actually reduce the welfare of
the rest of the community. Alternatively, one could argue that IGs’ expected payoffs are captured
in the legislator’s utility and thus enter indirectly the social welfare function.

Throughout the analysis, we denote social welfare in the absence of IGs and IL by \( W \) and social
welfare in the presence of IGs by \( W^{IG} \).

3 AN EXAMPLE

We begin the analysis with an example to illustrate the intuition underlying our main results. To
do so, we present a situation in which issues differ only in their salience and the legislator cannot
implement more than one reform (\( M = 1 \)). In this situation, we illustrate how the presence of IGs
and IL can distort the legislative agenda and reduce social welfare. For this purpose, we choose
specific parameter values that make the example as straightforward as possible. Specifically, we
consider a case in which: (1) \( \pi_1 = \pi_2 = 2/5 \), i.e., keeping the status quo is ex ante socially preferable
to implementing a reform; (2) \( \alpha = 3 \), i.e., issue 1 is substantially more important than issue 2; and
(3) information collection costs are \( c = 1/3 \) for IGs and \( d = 1 \) for the legislator. We chose \( d \) high
enough that the legislator never collects information on issue 2; the legislator’s benefit of collecting
information on issue 2 is less than one. For example, issue 1 may be crime and issue 2 may be
health, the issues Baumgartner et al. (2009) identify as respectively topping the public agenda and
the lobbying agenda.

Consider first what happens in the absence of IGs and IL. Without lobbying, the legislator pri-
oritizes the more-salient issue, issue 1, first researching the reform on issue 1 and then implementing
it when his review produces favorable evidence. In this way, the legislative agenda is aligned with
the public agenda, giving priority to issue 1. To see why, recall that the legislator does not collect
information on issue 2 and, given \( \pi_2 < 1/2 \), does not implement the reform on issue 2. At the same
time, the legislator collects information on issue 1 since the expected benefit, equal to \( \pi_1 \alpha = 6/5 \)
(when \( \theta_1 = R_1 \), the legislator adopts the reform on issue 1 instead of keeping the status quo)
exceeds the information collection cost \( d = 1 \). Thus, the legislator prioritizes issue 1 and ignores
issue 2.

Consider next what happens in the presence of IGs. The IGs recognize that without lobbying,
the legislator will never implement the reform on the less-salient issue, issue 2. In response, \( IG_2 \)
engages in IL (i.e., produces information about its reform) in an attempt to persuade the legislator
that the reform on issue 2 is worthwhile, and induce the legislator to address issue 2. At the same
time, \( IG_1 \) does not engage in costly lobbying, knowing that the legislator will still consider its issue
in the event that \( IG_2 \) fails to persuade the legislator of the beneficial nature of its reform. After
\( IG_2 \) lobbies and \( IG_1 \) does not, the legislator adopts the reform on issue 2 in the event that \( IG_2 \)
produces favorable evidence. Otherwise, the legislator internally researches the reform on issue 1, and adopts this reform when his review produces favorable evidence. In this way, the legislative agenda gets aligned with the lobbying agenda, giving priority to the issue that actively engages in lobbying, even though this is the less-salient issue.

Formally, when \( IG_2 \)'s lobbying efforts produce unfavorable evidence, i.e., when they reveal that \( \theta_2 = S_2 \), the legislator goes on to collect information on issue 1 himself for the same reason that he collected information on issue 1 in the absence of IGs. On the other hand, when \( IG_2 \)'s lobbying efforts produce favorable evidence, i.e., when they reveal that \( \theta_2 = R_2 \), the legislator prefers to simply implement the reform on issue 2 rather than collect information on the more-salient issue. This is because his expected benefit from collecting information on issue 1, now equal to only \( \pi (\alpha - 1) = 4/5 \) (if the legislator were to learn that \( \theta_1 = R_1 \), then he would adopt the reform on issue 1 rather than implement the reform on issue 2) is smaller than the information collection cost \( d = 1 \). Next, we consider IG behavior. \( IG_2 \) prefers to lobby because its expected benefit from producing information, equal to \( \pi_2 = 2/5 \) (recall, when \( \theta_2 = R_2 \), \( IG_2 \) gets its reform implemented instead of the status quo), exceeds its information collection cost \( c = 1/3 \). That \( IG_1 \) does not lobby follows because it has a lower expected benefit from producing information. To see this, recall that the legislator collects information on issue 1 in the event that \( IG_2 \) produces unfavorable evidence about its reform. As a result, the expected benefit for \( IG_1 \) to produce information in an attempt to counteract the agenda distortion created by \( IG_2 \) is equal to \( \pi_1 \pi_2 = 4/25 \) (when \( (\theta_1, \theta_2) = (R_1, R_2) \), which occurs with probability \( \pi_1 \pi_2 \), the legislator would adopt the reform on issue 1 instead of the reform on issue 2), which is smaller than its information collection cost \( c = 1/3 \).

In summary, if there were no IGs, the legislator would take it upon himself (e.g., his staff or a government agency) to learn about the more-salient issue before choosing whether to adopt the reform on that issue. He never considers reforming the less-salient issue. Ex ante social welfare is equal to \( W = 3 + (3/5) = 90/25 \). In the presence of IGs, only the IG involved with the less-salient issue lobbies. When the IG produces evidence that the less-salient reform is beneficial, the legislator no longer finds it worthwhile to devote resources towards reviewing the reform on the more-salient issue, and chooses directly to adopt the reform on the less-salient issue. Only when the IG’s efforts reveal that the reform on the less-salient issue is not beneficial does the legislator go on to review the more-salient issue. This means that the presence of IGs leads the legislator to be more-often informed about the less-salient reform, and less-often informed about the more-salient reform. Ex ante social welfare is equal to \( W^{IG} = 3((3/5) + (2/5)(3/5)) + 1 = 88/25 \). Comparing social welfare without IGs (\( W = 90/25 \)) and social welfare with IGs (\( W^{IG} = 88/25 \)) establishes that IL can be socially detrimental by distorting the legislative agenda.

In the analysis that follows, we generalize this argument for the case where the issues differ only

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9 The legislator’s off-equilibrium-path strategies are straightforward: when both IGs lobby and produce favorable evidence, the legislator collects no information and implements reform on issue 1; when both IGs lobby and at least one produces unfavorable evidence, the legislator acquires no information and chooses the policy which is congruent with the evidence; when only \( IG_1 \) lobbies, the legislator acquires no information and adopts the reform on issue 1 if \( IG_1 \) produces favorable evidence, and keeps the status quo otherwise; and, finally, when neither IG lobbies, the legislator acts as he did in the case without IGs.
in their salience, and we present similar general results for the complementary case where issues are equally salient but differ in the ex ante probability that reform is socially beneficial.

4 ANALYSIS

In this section, we solve for the Perfect Bayesian Equilibria of the game described in Section 2. We start by identifying two conditions that are necessary for IL to be socially detrimental, namely, that the legislator is constrained on the number of reforms he can implement (i.e., $M = 1$) and that issues differ in their salience or their priors (i.e., $\pi_1 \neq \pi_2$ or $\alpha > 1$). We then analyze two polar cases, one in which issues differ only in salience and another in which issues differ only in priors. Focusing on the two polar cases allows us to isolate the implications of differences in salience from the implications of differences in priors. In each case we characterize the set of equilibria in which IL is socially detrimental. Finally, we discuss several implications of socially detrimental IL.

4.1 TWO NECESSARY CONDITIONS

We start by considering the benchmark case in which the legislator is not constrained on the number of issues for which he can implement a reform, i.e., $M = 2$. In this case, agenda-setting considerations are irrelevant. The key to note is that for every issue, the legislator’s reform choice depends on his beliefs and preferences for that issue only, not on his beliefs or preferences regarding the other issue. This has two important implications. First, the better informed on an issue the legislator is, the higher is social welfare. Second, an IG’s decision to collect information does not impact decisions to collect information on the other issue. It follows from these two implications that the presence of IGs results in the legislator being (weakly) better informed on every issue and IL being socially beneficial. To see this, notice that on each issue two types of situations are possible. In the first, the legislator does not collect information on the issue in the absence of IL. Regardless of whether the IG produces information, the legislator is no less informed on such an issue. In the second, the legislator does collect information on the issue in the absence of IL. When the IG does not produce information, the legislator still chooses to collect information on the issue. When the IG produces information, it potentially frees resources that the legislator may use to collect information on the other issue. Thus, in any case the presence of IGs triggers a (weak) expansion of the set of issues on which the legislator gets informed. This leads to the following lemma, showing that without restrictions on the number of issues that can be addressed, IL cannot be socially detrimental. This suggests that IL could not be socially detrimental in previous models in which there is no constraint on the number of issues the legislator could address.

Lemma 1 Let $M = 2$. In any equilibrium, we have $W^{IG} \geq W$, where $W^{IG} (W)$ denotes the social welfare in the presence (absence) of IGs.

Observe that although our analysis assumes only two issues, the result generalizes to any arbitrary finite number of issues.
We now consider a second benchmark case in which issues share the same priors and are equally salient, i.e., $\pi_1 = \pi_2$ and $\alpha = 1$. In this case, information on each issue is equally valuable for the legislator. For IL to be socially detrimental, it must then be that in expectation the legislator gets informed on fewer issues in the presence of IGs than in their absence. For this to be true, it must be that in the absence of IGs, the legislator sometimes collects information on both issues and that the decision by one IG to produce information always deters the legislator from collecting information on the other issue. But this cannot be. Hence the following lemma.

**Lemma 2** Let $\pi_1 = \pi_2$ and $\alpha = 1$. In any equilibrium, we have $W^{IG} \geq W$.

Throughout the rest of the analysis, we maintain the assumptions that $M = 1$ and that $\pi_1 \neq \pi_2$ or $\alpha > 1$, as we have shown these are necessary conditions for IL to be socially detrimental.

### 4.2 Difference in Salience

We now analyze the polar case in which issues differ only in their salience. Specifically, we let $\pi_1 = \pi_2$ and $\alpha > 1$. In this setting, IL can be socially detrimental if it causes the legislator to switch priority from the more-salient to the less-salient issue. This happens when the IG involved with the less-salient issue lobbies, and, when it produces favorable information, induces the legislator to implement the less-salient reform without collecting information on the more-salient issue. (Knowing that the reform on the less-salient issue is beneficial, he no longer finds it worthwhile to collect information on the more-salient issue.) As a result, the legislator may forgo a beneficial reform on the more-salient issue, something he would not have done in the absence of lobbying, where he collects information on the more-salient issue.

We begin with the following preliminary observation.

**Fact 1** In any equilibrium in which $W > W^{IG}$, we have

1. $\sigma_1 = 1$ in the absence of (information from) IGs, and
2. $(\lambda_1, \lambda_2) = (0, 1)$.

For IL to be socially detrimental it must be that in the absence of IGs, the legislator would collect information on at least one issue; otherwise he would necessarily be (weakly) better informed with IL. Furthermore, it must be that the legislator would start by collecting information on issue 1, i.e., the more-salient issue. This is the content of Condition 1.

Condition 2 says that $IG_2$ must be the only IG producing information. It is obvious that at least one IG must be collecting information; otherwise $W^{IG} = W$ since the presence of IGs would be irrelevant. It is likewise obvious that not all IGs must be producing information; otherwise $W^{IG} \geq W$ since the legislator would get fully informed by IGs. Finally, that $IG_2$ must be the one producing information follows because socially detrimental IL requires agenda distortion and, in the absence of IGs and IL, the legislator would start by collecting information on issue 1 ($\sigma_1 = 1$).
We have now all the elements to characterize the set of equilibria in which IL is socially detrimental.

**Proposition 1** Let $\pi_1 = \pi_2 \equiv \pi$ and $\alpha > 1$. An equilibrium in which $W > W^{IG}$ exists if and only if

1. $1/2 > \pi$,
2. $\pi \alpha \geq d > \pi (\alpha - 1)$,
3. $\pi \geq c > \pi^2$, and
4. $\pi \alpha > 1$.

Condition 1 guarantees that the incentives to produce information are stronger for $IG_2$ than for $IG_1$. To understand the necessity of this condition, note that $\pi_1 = \pi_2$ implies that the agenda motive for $IG_2$ to produce information (in an attempt to distort the agenda) is the same as the agenda motive for $IG_1$ to produce information counteractively (in an attempt to prevent a distortion of the agenda). Note also that $\pi \geq 1/2$ would imply that $IG_1$ and $IG_2$ would have only an agenda motive for producing information; there would be no persuasion motive since without further information, the legislator would believe both reforms to be socially beneficial. As a result, $IG_1$ and $IG_2$ would have the same incentives to produce information, which would contradict Condition 2 of Fact 1.

Condition 2 imposes restrictions on the legislator’s information collection strategy. Specifically, the weak inequality applies to a situation without (information from) IGs. It guarantees that the legislator collects information on issue 1 following a message $m_2 = S_2$, which requires that the expected gain for the legislator (equal to $\pi \alpha$) exceeds the information collection cost $d$. The necessity of this condition follows because otherwise $IG_1$ would have both an agenda motive and a persuasion motive for collecting information counteractively. Given $\pi_1 = \pi_2$, these motives would be the same as the agenda and persuasion motives for $IG_2$. As a result, both IGs would face the same incentives to collect information, which would contradict Condition 2 of Fact 1.

The strict inequality in Condition 2 applies to a situation where $IG_2$, but not $IG_1$, produces information. Specifically, it guarantees that following a message $m_2 = R_2$, the legislator does not want to collect information on issue 1 since the cost of doing so, $d$, exceeds the expected gain (equal to $\pi (\alpha - 1)$). That is, after observing $m_2 = R_2$ the legislator prefers to implement $R_2$ without researching the reform on issue 1. The necessity of this condition follows since the legislator collects information on issue 1 following a message $m_2 = S_2$; if he were to collect information on issue 1 following a message $m_2 = R_2$ as well, he would always be fully informed and, by necessity, IL would be socially beneficial.

Observe that for IL to be socially detrimental in equilibrium, it must also be that without (information from) IGs, the legislator does not collect information on issue 2 following a message $m_1^L = S_1$. This condition is trivially satisfied if $K = 1$. If instead $K = 2$, it must be that the
expected gain from doing so (equal to \( \pi \)) is smaller than its cost \( d \). This condition is necessarily satisfied given Conditions 1, 2 and 4. To understand the necessity of this condition, recall from above that \( \pi_1 = \pi_2 \) implies the agenda motive is the same for both groups. Also, note that if the legislator were to collect information on issue 2 following a message \( m_1^L = S_1 \), then \( IG_2 \) would have no persuasion motive for collecting information. Consequently, the incentive for producing information would be (weakly) stronger for \( IG_1 \) than for \( IG_2 \), which would contradict Condition 2 of Fact 1.

Condition 3 guarantees that \( IG_2 \) wants to produce information and that \( IG_1 \) does not. The necessity of this condition follows from Condition 2 of Fact 1.

Finally, Condition 4 guarantees that the expected social cost of the agenda distortion caused by IL exceeds the expected social benefit from the information produced by \( IG_2 \). Specifically, the above conditions imply the following equilibrium strategies

\[
(I) \begin{cases} 
\sigma^L_1 = \sigma^L_2 (m^L_1) = 1 \text{ for all } m^L_1 \in \{R_1, S_1\}, \\
(\lambda_1, \lambda_2) = (0, 1), \text{ and} \\
\sigma^IG_0 (m_2 = R_2) = \sigma^IG_1 (m_2 = S_2) = 1, 
\end{cases}
\]

where the superscript IG on \( \sigma \) refers to the situation with information from \( IG_2 \) and the absence of a superscript IG to the situation without (information from) IGs. From these strategies, it is easy to infer that IL alters the policy choice in only two cases. In one case, \((\theta_1, \theta_2) = (R_1, R_2)\) and IL induces the legislator to implement the reform on issue 2 rather than on issue 1. This implies a social cost equal to \((\alpha - 1)\). In the other case, \((\theta_1, \theta_2) = (S_1, R_2)\). Here IL induces the legislator to implement the reform on issue 2 rather than keeping the status quo on both issues, which implies a social benefit equal to 1. Since the former case occurs with probability \( \pi_2 \) and the latter with probability \( \pi (1 - \pi) \), this implies Condition 4.

It is straightforward to check that taken together, Conditions 1-4 are sufficient for the existence of an equilibrium in which \( W > W^{IG} \) and for this equilibrium to be unique.

### 4.3 Difference in Priors

We turn to the other polar case, i.e., the one in which issues differ only in priors. Specifically, we let \( \pi_1 > \pi_2 \) and \( \alpha = 1 \). In this setting, IL can be socially detrimental when the IG involved with the less-promising reform (i.e., with the lower \( \pi_n \)) produces information and this information crowds out government information production on the more-promising issue. In this case, although the legislator is informed about the less-promising issue, he is no longer informed about the more-promising issue. This can lead, on average, to a less-informed policy decision and lower expected social welfare.

Notice that Fact 1 and the intuition behind it apply to this case as well. The following proposition characterizes the set of equilibria in which IL is socially detrimental.

**Proposition 2** Let \( \pi_1 > \pi_2 \) and \( \alpha = 1 \). An equilibrium in which \( W > W^{IG} \) exists if and only if
1. $K = 2$, 

2. $\min\{\pi_2, 1 - \pi_2, \frac{(1-\pi_1)(1+\pi_2)}{2-\pi_1}\} \geq d > (1 - \pi_1)$, and 

3. $\pi_1 \pi_2 \geq c > \pi_1 + \pi_2 - 1$.

Condition 1 guarantees that the legislator’s own information production capacities are sufficient for the legislator to get fully informed without the assistance of IGs. To understand the necessity of this condition, suppose $K = 1$. We know from Fact 1 that in any equilibrium in which $W > W^{IG}$: (i) in the absence of (information from) IGs, the legislator would collect information on issue 1 only; and (ii) in the presence of IGs, $IG_2$ produces information. Following a message $m_2 = R_2$, the legislator will obviously implement the reform on issue 2 (since $\alpha = 1$) and make a full-information policy choice. Following a message $m_2 = S_2$, either the legislator will collect information on issue 1 and make a full-information policy choice again, or he will not collect information on issue 1. For IL to be socially detrimental, he must be choosing the latter. This happens only if $\pi_2 \geq 1/2$ and, therefore, only if a message on issue 2 is more informative than a message on issue 1 (i.e., the priors lie closer to $1/2$, $|\pi_1 - 1/2| > |\pi_2 - 1/2|$). As a result, the legislator cannot make a less-informed policy choice in the presence of IGs than in their absence, which implies $W^{IG} \geq W$. Hence the necessity for $K = 2$.

Condition 2 parallels Condition 2 of Proposition 1. It imposes restrictions on the legislator’s information collection strategy. Specifically, the weak inequality applies to a situation without (information from) IGs. It guarantees that: (i) the legislator wants to start by collecting information on issue 1; and (ii) following a message $m^L_1 = S_1$, he also wants to collect information on issue 2 since the expected gain from doing so exceeds the cost. The necessity of part (i) follows from Condition 1 of Fact 1. The intuition behind the necessity of part (ii) is similar to the one behind Condition 1 of Proposition 2.

The strict inequality in Condition 2 applies to a situation in which $IG_2$, but not $IG_1$, produces information. It guarantees that following any message $m_2$, the legislator does not want to collect information on issue 1 since the cost exceeds the expected gain. That is, after observing $m_2$ the legislator prefers to implement $R_2$ if $m_2 = R_2$, and to implement $R_1$ if $m_2 = S_2$ without researching the reform on issue 1.\(^{10}\) This condition is necessary for $W > W^{IG}$ since otherwise the legislator would always make a full-information policy choice in the presence of IGs.

Thus, Condition 2 requires that the legislator wants to collect information on issue 2 when he knows $\theta_1 = S_1$, but does not want to collect information on issue 1 when he knows $\theta_2 = S_2$. Given that the information collection cost is the same for both issues (i.e., $d_1 = d_2$), it must be that a message on issue 2 is more informative than a message on issue 1 and, consequently, that the priors are more informative on issue 1 than on issue 2.\(^{11}\) Formally, we have:

\(^{10}\)That the legislator implements $R_1$ when $m_2 = S_2$ follows because he then bases his policy choice for issue 1 on his prior beliefs and Condition 2 implies $\pi_1 \geq 1/2$ (as discussed below).

\(^{11}\)Observe that this applies whenever $d_1 \leq d_2$, and not solely when $d_1 = d_2$. 

Corollary 1 Let $\pi_1 > \pi_2$ and $\alpha = 1$. In any equilibrium in which $W > W^{IG}$, we have $|\pi_1 - 1/2| > |\pi_2 - 1/2|$.

Observe that $\frac{(1-\pi_1)(1+\pi_2)}{2-\pi_1} \geq d > (1 - \pi_1)$ in Condition 2 of Proposition 2 can be satisfied only if $\pi_1 \geq 1/2$. This implies that the legislator would implement the reform on issue 1 if he were to choose policy based solely on his priors. The incentives to produce information are therefore stronger for $IG_2$ than for $IG_1$.

Finally, Condition 3 of Proposition 2 parallels Condition 3 of Proposition 1. It puts restrictions on IGs’ information collection strategies. Specifically, the weak inequality guarantees that for $IG_2$ the expected gain from producing information (in an attempt to distort the agenda) exceeds its cost. The strict inequality guarantees that for $IG_1$ the expected gain from producing information counteractively (in an attempt to prevent a distortion of the agenda) is smaller than its cost. The necessity of this condition follows from Condition 2 of Fact 1.

Taken together, Conditions 1-3 imply the following strategies

$$
\begin{align*}
\sigma_1^1 = 1; & \quad \sigma_2^2 (m_1^L = R_1) = \sigma_2^2 (m_1^L = S_1) = 1, \\
(\lambda_1, \lambda_2) = (0, 1), & \quad \text{and} \\
\sigma_{IG}^2 (m_2) = 1 & \quad \text{for all } m_2 \in \{R_2, S_2\}.
\end{align*}
$$

It is straightforward to check that these are equilibrium strategies, that $W > W^{IG}$ and that the equilibrium is unique.

4.4 DISCUSSION

We now discuss the main implications of the above analysis.

Our first implication discusses how socially detrimental IL affects the probability that the legislator makes a full information policy choice, i.e., chooses a policy he would have chosen had he been informed about the state $\theta = (\theta_1, \theta_2)$. Let $\rho$ denote the ex ante probability of a full information policy choice. A subscript $\pi$ will refer to the case in which issues differ in their priors (hereafter $\pi$-case). A subscript $\alpha$ will refer to the case in which issues differ in their salience (hereafter $\alpha$-case). A superscript IG will refer again to a situation with IGs.

Implication 1. Consider an equilibrium in which $W > W^{IG}$. Then

$$
\begin{align*}
1 = \rho_\pi > \rho^{IG}_\pi = \pi_1 + \pi_2 - \pi_1 \pi_2 \\
1 - \pi^2 = \rho^{IG}_\alpha > \rho_\alpha = 1 - (1 - \pi) \pi.
\end{align*}
$$

Thus, in the $\pi$-case socially detrimental IL reduces the ex ante probability of a full information policy choice. This happens because the legislator is informed, on average, on a smaller number of issues with IGs and IL than without. This follows from a crowding-out effect, whereby information production by $IG_2$ deters the legislator from collecting firsthand information. In contrast, in the
α-case socially detrimental IL increases the ex ante probability of a full information policy choice. This happens because the expected number of issues on which the legislator gets informed is larger in the presence of IGs. This difference between the two polar cases explains the necessity of Condition 4 in Proposition 1 and the absence of an analogous condition in Proposition 2.

Implication 1 begs the question of how IL can be socially detrimental in the α-case while it makes a full information policy choice on average more likely. The key is to note that the legislator is more likely to get informed on issue 2, but less likely to get informed on issue 1. Consequently, IL results in a higher probability of a full information policy choice in the state \((\theta_1, \theta_2) = (S_1, R_2)\)—where the legislator implements the reform on issue 2 rather than keeping the status quo,—but reduces the probability of a full information policy choice in the state \((\theta_1, \theta_2) = (R_1, R_2)\)—where the legislator implements the reform on issue 2 instead of issue 1. IL thus implies a welfare gain in the former state and a welfare loss in the latter state. However, the former state involves the less-salient issue (issue 2), whereas the latter state involves the more-salient issue (issue 1). Thus, a key implication of our analysis is that IL can be socially detrimental even if it induces the legislator to make a full information policy choice on average more often.\(^{12}\)

Our second implication discusses how in equilibria in which IL is socially detrimental, the preferences of the lobbying IG are aligned with the ex ante preferences of the legislator. In our framework, lobbying by \(IG_n\) is said to be friendly if \(\pi_n \geq 1/2\), i.e., the legislator’s ex ante preferences are aligned with those of \(IG_n\). Lobbying by \(IG_n\) is said to be confrontational if instead \(\pi_n < 1/2\).

**Implication 2.** Consider an equilibrium in which \(W > W^{IG}\). Then

1. in the \(\pi\)-case, lobbying can be either friendly or confrontational, but
2. in the α-case, lobbying is confrontational.

That socially detrimental IL is confrontational in the α-case follows directly from \(\pi < 1/2\) (by Condition 1 of Proposition 1). To understand this result, recall that this condition serves to ensure that \(IG_2\) has stronger information collection incentives than \(IG_1\). Also, recall that in this case, both groups have the same agenda motives for collecting information. This implies that \(IG_2\) must also have a persuasion motive, which requires \(\pi < 1/2\). Hence the confrontational nature of lobbying.

That socially detrimental IL can be friendly or confrontational in the π-case is illustrated by the absence in Proposition 2 of a condition on \(\pi_2\) that is analogous to Condition 1 of Proposition 1. To see why, recall that \(IG_1\) has no persuasion motive (given \(\pi_1 \geq 1/2\) by Condition 2 of Proposition 2). Moreover, \(\pi_1 > \pi_2\) implies a weaker agenda motive for \(IG_1\) than for \(IG_2\).\(^{13}\) As a result, there is no need for a persuasion motive for \(IG_2\) to have stronger information production incentives than \(IG_1\). Hence the possibility that lobbying is simultaneously friendly and socially detrimental.

\(^{12}\)This contrasts with the strategic information transmission approach, in which a few contributions (e.g., Rasmusen 1993) have found as well that IL can be socially detrimental. However, in the strategic information transmission approach this happens because the IG sometimes deceives the legislator, which results in the legislator making a full information policy choice on average less often (not more often as in our approach). Deception is not necessary (and not possible) in our model.

\(^{13}\)IG\(_2\) receiving a message \(m_2 = R_2\) is less likely than the legislator receiving a message \(m^L_1 = R_1\).
Thus, an interesting feature of our analysis is that (socially detrimental) IL can be friendly. This implication of our model is consistent with empirical evidence showing that groups sometimes lobby legislators who share their view (e.g., Schlozman and Tierney 1986, Kollman 1997, Dexter, Bauer and de Sola Pool 2007, Hojnacki and Kimball 1998). In our model, this happens because of agenda-setting considerations. Indeed, without any restriction on the number of issues that can be addressed, persuasion would be the sole motive for lobbying, and equilibrium lobbying would be confrontational. Our explanation for friendly lobbying is consistent with the view of lobbying as a legislative subsidy (e.g., Hall and Deardorff 2006).

14 It contrasts however with the explanation proposed by Austen-Smith and Wright (1992), in which IGs lobby legislators who share their view with the sole purpose of counteracting lobbying efforts by IGs holding opposite views. Counteractive lobbying cannot occur in the equilibrium of our setting, given that evidence is verifiable and perfectly informative.

15 Our third implication discusses the motives behind socially detrimental IL. In our model, there are two motives for an IG to collect information, an agenda motive and a persuasion motive. An IG exercises an agenda motive if it seeks to change the order in which the legislator considers addressing issues. Formally, the agenda motive is necessary for IG\(_n\) to lobby if in equilibrium IG\(_n\) would not have collected information had there been no restriction on the number of issues that can be addressed. IG\(_n\) exercises a persuasion motive if it seeks to persuade the legislator that \(\theta_n = R_n\) given priors \(\pi_n < 1/2\). We say that the persuasion motive is necessary for IG\(_n\) to lobby if in equilibrium, IG\(_n\) would not have acquired information had \(\pi_n \geq 1/2\).

Implication 3. Consider an equilibrium in which \(W > W^{IG}\). Then

1. in the \(\pi\)-case, only the agenda motive is necessary, and
2. in the \(\alpha\)-case, only the persuasion motive is necessary.

The intuition runs as follows. Consider first the \(\pi\)-case. Recall that in any equilibrium in which IL is socially detrimental, the expected number of issues on which the legislator gets informed is larger in the absence than in the presence of IGs. This means that without (information from) IGs, the legislator must choose to collect information on issue 2 following a message \(m^L_1 = S_1\). As a result, IG\(_2\) has no persuasion motive. Hence the necessity of only an agenda motive.

Consider now the \(\alpha\)-case. Recall that in this case, both groups have the same agenda motive since \(\pi_1 = \pi_2\). Hence the necessity of a persuasion motive for only IG\(_2\) to collect information. For IG\(_2\) to have a persuasion motive, it must be that in the absence of (information from) IGs, the legislator never collects firsthand information on issue 2. For IG\(_1\) to not have a persuasion motive, it must be that following a message \(m_2 = S_2\), the legislator chooses to collect firsthand information

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14 Observe that contrary to Hall and Deardorff (2006), we find that IL is not always friendly. This follows because we allow for persuasion, which Hall and Deardorff do not.

15 It is worth pointing out that counteractive lobbying on one issue (as in Austen-Smith and Wright) does not occur in an extension to our simple model, where there are two IG advocates per issue holding opposite views on their issue (as shown in Section 5).
on issue 1. These two conditions impose restrictions on $\pi$, $\alpha$ and $d$ that are such that equilibrium information collection strategies are the same whether $M = 1$ or $M = 2$. As a result, $IG_2$ has no agenda motive. Hence the necessity of a persuasion motive only.

We have already established that for IL to be socially detrimental, the legislator must be constrained in the number of reforms he can implement. When the legislator is not constrained and can implement reform on both issues, IL is necessarily driven by a persuasion motive rather than an agenda motive, and IL cannot be socially detrimental (Lemma 1). Implication 3 shows that IL may be socially detrimental even if it is solely driven by a persuasion motive. For IL to be socially detrimental, lobbying must only have the potential to affect the agenda, and does not need to be driven by an agenda motive. To put it otherwise, IL can be socially detrimental when $IG_2$’s persuasion efforts (involuntarily) induce the legislator to invert the agenda, creating a welfare loss.

Implication 3 sheds further light on Implication 2. Note that friendly lobbying requires an agenda motive. It follows from Implication 3 that socially detrimental IL must necessarily be confrontational in the $\alpha$-case, as found in Implication 2.

Our last implication discusses how socially detrimental IL depends on the information production capabilities of the State. These capabilities are here captured by the number $K$ of issues on which the legislator can collect information. Intuitively, we may expect that IL is less likely to be socially detrimental when the information production capabilities of the State are limited. This is because IGs’ information production would then be more likely to complement the information production capabilities of the State, rather than substitute for them. This intuition is confirmed in our next result. Let $E_K$ be the set of parameter lists $(\pi_1, \pi_2, \alpha, d, c)$ for which equilibrium IL is socially detrimental when the legislator can collect information on up to $K$ issues. Also, let $W_K$ denote social welfare given $K$. As before, a superscript IG refers to a situation with IGs.

**Implication 4.** (1) In the $\pi$-case, $E_1 = \emptyset \neq E_2$. For any $e \in E_2$, we have

$$W_1 \leq W_1^{IG} = W_2^{IG} < W_2.$$  

(2) In the $\alpha$-case, $E_1 = E_2 \neq \emptyset$.

Thus, in the $\pi$-case IL is less likely to be socially detrimental when the information production capabilities of the State are limited than not (i.e., $E_1 \subseteq E_2$). The intuition runs as follows. Observe that Condition 1 of Proposition 2 implies $E_1 = \emptyset$ and, therefore, $E_1 \subseteq E_2$. This condition follows because $\alpha = 1$ and $|\pi_1 - 1/2| > |\pi_2 - 1/2|$ imply IL can be socially detrimental only if the legislator gets informed, on average, on a smaller number of issues in the presence of IGs than in their absence. Obviously, this cannot be when $K = 1$. That the subset is proper follows because $E_2 \neq \emptyset$.\textsuperscript{16}

\textsuperscript{16}One might be tempted to interpret Implication 4 as implying that imposing limits on the information production capabilities of the State would increase social welfare. Decreasing $K$ would eliminate the possibility of socially detrimental IL in the $\pi$-case, and would leave the prospects of socially detrimental IL unaffected in the $\alpha$-case. However, the interpretation could be true only if $e \in E_2$ (i.e., IL is socially detrimental when $K = 2$): otherwise, limiting the information production capabilities of the State could reduce social welfare (i.e., $W_1^{IG} < W_2^{IG}$). Moreover,
In the $\alpha$-case the socially detrimental nature of IL is independent of the information production capabilities of the State. This is easily understood by observing that no condition in Proposition 1 depends on $K$.

5 EXTENSIONS

This section extends the model in a number of ways. In Section 5.1, we consider a situation in which the legislator’s information collection decisions are simultaneous instead of sequential. Section 5.2 considers an alternative information collection protocol, in which the legislator decides whether to collect information before IGs decide whether to produce information (instead of the reverse as in our baseline model). Section 5.3 explores the implications of asymmetries in information collection costs. Section 5.4 considers imperfectly informative messages, and explores the implications of asymmetries in information quality across issues. Section 5.5 considers a situation in which there are two IG advocates per issue, one in favor of the reform proposal and another in favor of the status quo.

Proofs for all extension results are provided in supplementary material available online.

5.1 SIMULTANEOUS INFORMATION COLLECTION

In our analysis we have assumed that the legislator collects information sequentially, one issue at a time (hereafter the “sequential protocol”). This assumption was made so the equilibrium information collection sequencing is similar with and without IGs. In this section, we consider an alternative specification in which the legislator collects information simultaneously, deciding on information collection for all issues at once (hereafter the “simultaneous protocol”). Observe that the two protocols are trivially equivalent when $K = 1$; we therefore assume throughout the rest of the section that $K = 2$.

The key feature of the simultaneous protocol compared to the sequential protocol is that in the absence of IGs and IL, it weakens the legislator’s incentives to collect information. This is because when deciding on collecting information on a second issue, the legislator knows the state of the other issue under the sequential protocol, but not under the simultaneous protocol. As a result, the legislator knows for sure whether the extra information will be decisive for his policy choice under the sequential protocol, but is uncertain under the simultaneous protocol.

This feature of the simultaneous protocol has opposite implications in the $\pi$-case and in the $\alpha$-case. Recall that in the $\pi$-case IL can be socially detrimental only if in the absence of IGs, the legislator collects information on more than one issue on average. By weakening the legislator’s incentives for collecting information, the simultaneous protocol makes it more difficult for this condition to be satisfied. Socially detrimental IL is therefore less likely. Instead, in the $\alpha$-case IL can be socially detrimental only if in the absence of IGs, the legislator collects information on one issue...
only. By weakening the legislator's incentives for collecting information, the simultaneous protocol makes it easier for this condition to be satisfied. Socially detrimental IL is therefore (weakly) more likely.\textsuperscript{17} The following proposition makes this clear. In the statement of the proposition a subscript \(S\) refers to the simultaneous protocol and the absence of a subscript to the sequential protocol.

**Proposition 3** Let \(K = 2\).

1. In the \(\pi\)-case, \(\mathcal{E}_S = \emptyset \neq \mathcal{E}\). For any \(e \in \mathcal{E}\), we have\[W_S \leq W_S^{IG} = W^{IG} < W.\]

2. In the \(\alpha\)-case, \(\mathcal{E}_S = \mathcal{E} \neq \emptyset\).

Notice that simultaneous information collection is no desirable remedy to socially detrimental IL. This is obvious in the \(\alpha\)-case. It is less obvious in the \(\pi\)-case however, where the simultaneous protocol rules out socially detrimental IL. The key is to note that it does so by weakening the legislator's incentives for collecting information \emph{in the absence of IGs and IL}. To put it otherwise, it does so by reducing social welfare in the absence of IGs (i.e., \(W_S < W\)), while leaving social welfare unchanged in the presence of IGs (i.e., \(W_S^{IG} = W^{IG}\)).

Note the similarity of Proposition 3 with Implication 4; the two statements are identical, with the simultaneous protocol standing for \(K = 1\) and the sequential protocol for \(K = 2\). This similarity suggests that simultaneous information collection and a limitation on the information production capabilities of the State have similar implications. This follows because simultaneous information collection weakens the legislator's incentives to collect information and, consequently, to make use of the information production capabilities of the State.

### 5.2 INFORMATION COLLECTION SEQUENCING

In our analysis we have assumed that IGs are the first to collect information, and that their choice is followed by the legislator's own choice of whether to collect information (hereafter the “IG-first protocol”). A key implication of this assumption is that information production by \(IG_2\) may deter the legislator from collecting information on issue 1. As we have seen, this may cause a welfare loss. We now investigate whether the legislator could eliminate socially detrimental IL by moving first, effectively swapping Stages 2 and 3 in the game sequence.

We find that the legislator moving first (hereafter the “legislator-first protocol”) does not eliminate socially detrimental IL. Quite the contrary in the \(\pi\)-case, where IL is more likely to be socially detrimental under the legislator-first protocol than under the IG-first protocol. IL can still be socially detrimental in the \(\alpha\)-case as well. However, in this case the circumstances under which IL is socially detrimental are different under the two protocols. The following proposition makes this clear. In the statement of the proposition a subscript \(K\) indicates the number of issues on which

\textsuperscript{17}Actually, socially detrimental IL turns out to be equally likely under both protocols. This is because Conditions 1, 2 and 4 of Proposition 1 are necessary under the simultaneous protocol as well. These conditions imply that in the absence of IGs, the legislator collects information on issue 1 only.
the legislator can collect information. A superscript $L$ refers to the legislator-first protocol, and the absence of superscript refers to our baseline, IG-first protocol.

**Proposition 4** For any $K \in \{1, 2\}$, the set of parameter lists under which IL is socially detrimental $E^L_K$ is non-empty. Moreover,

1. in the $\pi$-case, $E_K \subseteq E^L_K$, and
2. in the $\alpha$-case, $E_K \cap E^L_K = \emptyset$.

The intuition for the $\pi$-case is the following. For IL to be socially detrimental it must be that in the presence of IGs, only $IG_2$ produces information in equilibrium. This must be true under either protocol. Given others’ information collection strategies, $IG_2$ has (weakly) stronger incentives to collect information under the legislator-first protocol than under the IG-first protocol. This is because under the legislator-first protocol, the legislator has already made his information collection decision—choosing to not collect information—when $IG_2$ decides whether to produce information. As a result, if $IG_2$ does not collect information, the legislator will base his policy choice on his priors and, given $\pi_1 > \pi_2$, will never implement the reform on issue 2. Likewise, the legislator’s incentives to not collect information (on issue 1) in the presence of IGs are stronger under the legislator-first protocol than under the IG-first protocol. This is because the legislator must make his information collection decision (on issue 1) in the presence of IGs are stronger under the legislator-first protocol than under the IG-first protocol. This is because the legislator must make his information collection decision (on issue 1) before observing $IG_2$’s message $m_2$ and, therefore, without knowing for sure whether information on issue 1 will be welfare-enhancing. Finally, $IG_1$’s incentives are the same under both protocols since this group always takes its information collection decision before observing any message. Hence the expansion of the set of parameter lists under which IL is socially detrimental. Interestingly, the strengthening of the legislator’s incentives to not collect information in the presence of IGs makes socially detrimental IL possible even when $K = 1$, something Condition 1 of Proposition 2 rules out under the IG-first protocol.

The intuition for the $\alpha$-case is as follows. Take a parameter list such that IL is socially detrimental under the IG-first protocol, and consider the legislator-first protocol. It follows that in the absence of IGs (where the two protocols are trivially equivalent), the legislator collects information on issue 1 only. For IL to be socially detrimental, it must then be that in the presence of IGs, the legislator does not collect information on issue 1. But then $IG_1$ will want to do so. This is because $\pi < 1/2$ (by Condition 1 of Proposition 1) provides $IG_1$ with a persuasion motive (which he does not have under the IG-first protocol since the legislator collects information on issue 1 following a message $m_2 = S_2$). Moreover, $\pi \geq c$ (by Condition 3 of Proposition 1) implies $IG_1$ wants to exercise this motive (since the expected gain from collecting information exceeds its cost). It follows that the legislator is at least as well informed in the presence than in the absence of IGs. As a result, IL cannot be socially detrimental under the same circumstances as under the IG-first protocol. That there nonetheless exist circumstances in which IL is socially detrimental under the legislator-first protocol is easily seen by constructing parameter lists $e \in E^L_K$.

Thus, the main implication of Proposition 4 is that the legislator moving first is definitely no remedy to socially detrimental IL when issues differ in the priors. In contrast, it may be a solution
when issues differ in their salience. However, in the latter case it may also cause IL to become socially detrimental.

### 5.3 INFORMATION COLLECTION COSTS

In our analysis we have assumed that information collection costs are the same on both issues. This assumption allowed us to focus on how differences in priors and issue salience affect the socially detrimental nature of IL. We now consider two alternative specifications in which information collection costs vary across issues.

In one specification, \( d_1 = d_2 \) and \( c_1 \neq c_2 \). Given \( d_1 = d_2 \), we shall interpret the difference in costs as reflecting an asymmetry in IGs’ access to funds and resources. Intuitively, the expected net gain from producing information is relatively bigger for a large group that has access to plenty of resources than for a small group operating on a shoestring budget. This specification captures, among other things, situations in which some interests in society fail to be represented (e.g., because of a collective action problem) — which would correspond to a very high information collection cost \( c \) for those interests, — whereas other interests in society are able to organize and mobilize vast resources — which would correspond to a low information collection cost \( c \).

In another specification, \( d_1 = c_1 \neq d_2 = c_2 \). Given \( d_n = c_n \), we shall interpret the difference in costs as reflecting an asymmetry in the complexity of issues. For example, acquiring scientific evidence on a complex issue is no doubt more costly than conducting an opinion poll in a legislator’s district.

The argument turns out to be almost identical under these two alternative specifications. For expositional purposes we shall therefore focus our presentation on the former specification (i.e., the one in which \( d_1 = d_2 \) and \( c_1 \neq c_2 \)). We shall conclude this section with a discussion of an interesting feature specific to the latter specification (i.e., the one in which \( d_1 = c_1 \neq d_2 = c_2 \)).

The intuition and results from Section 4 still hold in the \( \pi \)-case. This is because the information collection strategies along the equilibrium path must be the same as in our baseline model (see (II)). As a result, the set of necessary and sufficient conditions for an equilibrium with socially detrimental IL to exist are identical to the ones of Proposition 2, except for Condition 3 which is replaced with

\[
\pi_1 \pi_2 \geq c_2 \quad \text{and} \quad c_1 > \pi_1 + \pi_2 - 1.
\]

Consider now the \( \alpha \)-case. The intuition and results from Section 4 still hold when \( c_2 \geq c_1 \), i.e., when the IG for the less salient issue is also the one with more limited access to funds. To understand why, note that IL can be socially detrimental only if: (1) in the absence of (information from) IGs, the legislator starts by collecting information on issue 1; and (2) \( IG_2 \) is the only group producing information. The latter condition requires information collection incentives to be stronger for \( IG_2 \) than for \( IG_1 \). Since in this case the agenda motive is the same for both groups and \( c_2 \geq c_1 \), this requires \( IG_2 \)’s persuasion motive to be stronger than \( IG_1 \)’s. It must then be that: (1) in the absence of (information from) IGs, the legislator never implements the reform for issue 2, which requires that the legislator does not collect information on issue 2 and that \( \pi < 1/2 \); and (2)

\[\text{The characterization of the sets of equilibria in which IL is socially detrimental is available from the authors.}\]
in the presence of IGs, the legislator implements the reform for issue 1 with positive probability, which given \( \pi < 1/2 \) requires that the legislator collects information on issue 1 following a message \( m_2 = S_2 \). To sum up, information collection strategies along the equilibrium path must be the same as in (I). The set of necessary and sufficient conditions for socially detrimental IL is therefore the same as in Proposition 1, except that Condition 3 is replaced with \( c_1 > \pi^2 \) and \( \pi \geq c_2 \).

In contrast, when \( c_1 > c_2 \) IG’s persuasion motive need not be stronger than IG’s for IG, to produce information. In contrast to our baseline specification, it is therefore no longer necessary that the legislator never implements the reform for issue 2 in the absence of (information from) IGs. As a result, we can now have \( \pi \geq 1/2 \) (and friendly lobbying) or the legislator collecting information on issue 2 following a message \( m^*_L = S_1 \).

We conclude this discussion with an interesting feature of the specification in which issues differ in their complexity (i.e., \( d_1 = c_1 \neq d_2 = c_2 \)). We saw in Section 4 that in the \( \alpha \)-case, the socially detrimental nature of IL is independent of the information production capabilities of the State. This is no longer true when \( d_1 \) is sufficiently larger than \( d_2 \), i.e., when the more-salient issue is also the more-complex issue. In this case, IL is more likely to be socially detrimental in the case where the information production capabilities of the State are limited (i.e \( \mathcal{E}_2 \subseteq \mathcal{E}_1 \)). Curiously, this is the very case in which we were expecting IL to be socially valuable. Moreover, this result is in complete contrast with what we have found in the \( \pi \)-case. The intuition behind this counterintuitive result lies in stronger lobbying incentives. Specifically, a limitation on the information production capabilities of the State precludes the legislator from collecting information on issue 2 in the absence of (information from) IGs. This creates a persuasion motive for IG, thereby strengthening its incentives to produce information and increasing the prospects for socially detrimental IL.

5.4 LESS-THAN-PERFECT INFORMATION ACCURACY

We have assumed that information is perfectly informative about the state of the world. If the IG (legislator) collects information on issue \( n \), then until now \( m_n = \theta_n \) (\( m^L_n = \theta_n \)) with probability one. In this section, we consider an alternative specification of the model in which \( m_n = \theta_n \) with probability \( q_n \in (1/2, 1] \). That is, when either the legislator or IG collects information, evidence reflects the true state of issue \( n \) with probability \( q_n \). With probability \( (1 - q_n) \), the evidence reflects the wrong state of the world.

We assume that \( q_n \) is sufficiently accurate to overturn the legislator’s priors in favor of or against the reform. That is, \( q_n \geq \max\{\pi_n, 1 - \pi_n\} \) for both issues. We further assume that information is identical, regardless whom collects it. This implies that regardless of whether IG or the legislator or both collect information on issue \( n \), the legislator is exposed to the same evidence. No additional evidence is revealed when both collect evidence compared with when only one of them collect information.

In this setting, the main qualitative results from the previous sections continue to hold for the cases where issues differ in only salience or priors, and \( q_1 = q_2 \) is sufficiently large. This is unsurprising. This section therefore focuses on an alternative question; we ask whether IL can be
socially detrimental when issues only differ in their information quality, \( q_n \). Here, we assume \( \alpha = 1, \pi_1 = \pi_2 \equiv \pi, c_1 = c_2 \equiv c, d_1 = d_2 \equiv d \), and finally \( 1/2 < q_2 < q_1 \leq 1 \).

Let \( \tau_n \equiv \pi q_n + (1-\pi)(1-q_n) \) denote the probability that information collection on issue \( n \) results in a message supporting reform (i.e., \( m_n = R_n \) if the IG collects and \( m_n^L = R_n \) if the legislator collects). Furthermore, in the previous sections we have assumed that the legislator implements \( R_1 \) when indifferent between implementing any of the two reforms. Here, this assumption is not without loss of generality. Let \( z \in [0,1] \) denote the probability that the legislator breaks ties in favor of issue 1.

**Proposition 5** An equilibrium in which \( W > W^{IG} \) exists if and only if

1. \( \pi \geq 1/2 \),
2. \( 2\pi(1-\pi)(2q_1 - 1) \geq d > q_1 - \pi \), and
3. \( \tau_1 + \tau_2 - 1 \geq c > \tau_1 + \tau_2 - 1 - \tau_1 \tau_2 (1-z) \).

The conditions correspond to a parameter state in which, in the absence of IL, the legislator collects information on issue 1 before either implementing \( p = (R_1, S_2) \) when \( m_1^L = R_1 \) or implementing \( p = (S_1, R_2) \) when \( m_1^L = S_1 \). With IL, the parameters lead to an equilibrium in which \( IG_2 \) (driven by an agenda motive) collects information and \( IG_1 \) does not, with the legislator implementing \( p = (S_1, R_2) \) when \( m_2 = R_2 \) and \( p = (R_1, S_2) \) when \( m_2 = S_2 \). Without IL, the legislator always learns about \( \theta_1 \) and never learns about \( \theta_2 \) before implementing policy. With IL, the legislator always learns about \( \theta_2 \) and never learns about \( \theta_1 \) before implementing policy. Social welfare is higher when the legislator learns about \( \theta_1 \) rather than \( \theta_2 \); it is higher in the absence of IL.

 Implicit in Condition 3 is a requirement that \( z < 1 \). Notice that if \( z = 1 \), then the results will still apply if \( c_1 \neq c_2 \) such that \( c_2 \leq \tau_1 + \tau_2 - 1 < c_1 \).

### 5.5 GROUPS WITH OPPOSITE VIEWS

In our analysis we have assumed that there is only one IG advocate per issue and that it always prefers the reform proposal to the status quo. However, as Baumgartner et al. (2009) show for the US, there are typically two sides per issue, “one side seeking some particular type of change to the existing policy and another one seeking to protect the status quo” (p7).

We now consider an alternative specification in which there are two IG advocates per issue, one that always prefers the reform proposal to the status quo and another one that always prefers the status quo to the reform proposal. Specifically, given a policy \( p_n \), the utility of the pro-reform IG for issue \( n \) (hereafter \( IG_n^R \)) is given by

\[
v_n^R(p_n) = \begin{cases} 
1 & \text{if } p_n = R_n \\
0 & \text{if } p_n = S_n.
\end{cases}
\]
The utility of the anti-reform IG for issue \( n \) (hereafter \( IG^S_n \)) is given by

\[
\nu^S_n(p_n) = \begin{cases} 
0 & \text{if } p_n = R_n \\
1 & \text{if } p_n = S_n.
\end{cases}
\]

The addition of anti-reform IGs triggers an expansion of the set of parameter values under which equilibria with socially detrimental IL exist. That our previous results are robust to the addition of anti-reform IGs is rather natural. To see this, consider an equilibrium in which IL is socially detrimental. \( IG_1^S \) benefits from the agenda inversion triggered by \( IG^R_2 \)’s lobbying, and has therefore no incentive to produce information itself. Likewise \( IG_2^S \) has no incentive to produce information in an attempt to counteract \( IG^R_2 \)’s lobbying given our assumption that messages never reveal the wrong state of the world.

The following proposition identifies an additional set of parameter lists under which equilibria with socially detrimental IL exist. In those equilibria, only \( IG_2^S \) produces information. It is worth emphasizing that under these parameter lists, the presence of anti-reform IGs is necessary for equilibrium IL to be socially detrimental. Moreover, in our setting (even allowing for \( d_1 \neq d_2 \)), the presence of anti-reform IGs does not add any other parameter list under which equilibria with socially detrimental IL exist.

**Proposition 6** Let \( \pi_1 = \pi_2 \equiv \pi \) and \( \alpha > 1 \). An equilibrium in which \( W > W^IG \) exists if

1. \( \pi \geq 1/2 \),
2. \( \min \{ \pi (\alpha - 1), (1 - \pi) [\alpha + (2\pi - 1)] \} \geq d > (1 - \pi) \alpha \), and
3. \( c_1 > (1 - \pi^2) \geq c_2 \).

To understand this result, note that IL can be socially detrimental only if in the absence of (information from) IGs, the legislator starts by collecting information on issue 1. It follows that \( IG_2^S \) has an agenda motive for not producing information (since it wants to protect the status quo). For \( IG_2^S \) to produce information, this agenda motive must therefore be neutralized. This happens if following a message \( m_2 = R_2 \), the legislator collects information on issue 1, which has the interesting feature of preventing an inversion of the agenda. Hence the first part of Condition 2 and the restriction that \( \alpha > 1 \). It must also be that following a message \( m_2 = S_2 \), the legislator does not collect information on issue 1. This is because the legislator would otherwise be fully informed, and IL would then be socially beneficial. Hence the strict inequality part of Condition 2. Now, since \( IG_2^S \) does not exercise an agenda motive, it must have a persuasion motive. This requires that \( \pi \geq 1/2 \) (Condition 1) and that in the absence of IGs, the legislator does not collect information on issue 2. Finally, it must be that \( IG_2^S \)'s incentives for producing information are stronger than \( IG_1^S \)'s. Given the absence of an agenda motive and the equivalence of \( IG_1^S \)'s and \( IG_2^S \)'s persuasion motives (since \( \pi_1 = \pi_2 \) and \( \sigma_2^2(S_1) = \sigma_1^IG(S_2) = 0 \)), information collection must be more costly for \( IG_1^S \) than for \( IG_2^S \). Hence Condition 3.
Interestingly, \( \pi \geq 1/2 \) implies that lobbying is confrontational, as in Implication 2. Moreover, only the persuasion motive is necessary, as in Implication 3. Finally, lobbying has here no agenda motive and, more surprisingly, does not distort the agenda. In spite of this, the existence of an agenda (i.e., a restriction on \( M \)) is necessary for IL to be socially detrimental (as shown in Lemma 1). The intuition behind socially detrimental IL follows here because in the absence of (information from) IGs, the constraint on \( M \) induces the legislator to collect information on issue 1, something he does not do if there is no constraint on \( M \) (since \( d > (1 - \pi) \alpha \)). To put it another way, IL is socially detrimental because of the legislator’s information collection decision, not because of IGs’ lobbying.

6 CONCLUSION

The literature on informational lobbying and persuasion generally views the production and transmission of undistorted information by IGs as socially beneficial. Only when lobbying models incorporate quid pro quo exchange of political contributions for policy favors, pandering to special interests for reelection, or deception and information distortion does lobbying have the potential to lower social welfare.

In this paper, we challenge the view that undistorted informational lobbying is necessarily socially beneficial. We do so under a number of assumptions most favorable for lobbying to be beneficial for policymaking. Specifically, we assume the policymaker works to maximize social welfare, IGs can influence policymaking only through information provision and cannot manipulate or hide information, and the policymaker and IGs have access to the same information production technology. We have shown that even in such a favorable context, informational lobbying can be socially detrimental. Moreover, we have shown this to be true under a reasonable range of parameter values, suggesting our findings may apply to a variety of real world situations. Finally, we have argued that our model and results are consistent with empirical accounts of the lobbying process.

Our analysis has important implications for the public debate on the merits of campaign finance reform and lobbying. It shows that eliminating special interest money from the political process is not sufficient to ensure that policymakers implement the policies favored by their constituents. Unbiased informational lobbying, even in the absence of money, can have detrimental effects on welfare. Our results show that the reliance of policymakers on informational lobbying to learn about issues can induce them to prioritize issues with active lobbies. Decreasing policymakers’ reliance on IGs, by increasing resources available for in-house research and making it less costly for them to collect information, for example, may lead to policy decisions more in line with the preferences of constituents.

REFERENCES


A APPENDIX

Proof of Lemma 1. Let $M = 2$. Recall from Section 2 that the legislator chooses policy $p_n = R_n$ if and only if $\beta_n \geq 1/2$. Define $\bar{\beta}_n \equiv \max \{\beta_n, 1 - \beta_n\}$ as the probability with which the legislator believes he chooses the correct policy for issue $n$ (i.e., $p_n = \theta_n$). To prove the result, it is sufficient to establish that $\bar{\beta}_n^{IG} \geq \bar{\beta}_n$ for every issue $n$, i.e., that the legislator is (weakly) better informed in the presence of IGs than in their absence.

Consider the legislator’s information collection decision. Define $\gamma_n \equiv \min \{\gamma_n, 1 - \gamma_n\}$ as the probability with which the legislator believes he would choose $p_n \neq \theta_n$ if he were to not collect information on this issue. It is easy to check that the legislator collects information on issue 1 if and only if $\gamma_1 \alpha \geq d$ and, if $K = 1$, $\gamma_1 \alpha \geq \gamma_2$. Likewise, he collects information on issue 2 if and only if $\gamma_2 \geq d$ and, if $K = 1$, $\gamma_2 > \gamma_1 \alpha$. Recall that if $IG_n$ produces information, it receives a message that reveals the true state $\theta_n$. Consequently, $\gamma_n^{IG} \leq \gamma_n = \min \{\pi_n, 1 - \pi_n\}$. Take $n = 1$. (The same argument applies for $n = 2$.) Either $\gamma_1^{IG} = \gamma_1$, which corresponds to the case in which $IG_1$ does not collect information. In this case, the legislator is as likely to collect information on issue 1 in the presence of IGs as in their absence. It follows that $\bar{\beta}_1^{IG} = \bar{\beta}_1$. Alternatively $\gamma_1^{IG} < \gamma_1$, which corresponds to the case in which $IG_1$ produces information. It follows that $\gamma_1^{IG} = 0$, which implies $\bar{\beta}_1^{IG} = 1 \geq \bar{\beta}_1$. Hence, in both cases $\bar{\beta}_1^{IG} \geq \bar{\beta}_1$. ■
Proof of Lemma 2. Let $\pi_1 = \pi_2 \equiv \pi$ and $\alpha = 1$. Given Lemma 1, assume w.l.o.g. that $M = 1$. Let $W_{\text{max}}$ denote the social welfare when the legislator is fully informed about the state $\theta$.

Consider two equilibria, one in the presence of IGs and another one in their absence. Observe that $W^{IG} \geq W$ if $\lambda_1 = \lambda_2$ (i.e., both IGs make the same information collection decision). Indeed, if $\lambda_1 = \lambda_2 = 1$, then the legislator gets fully informed and $W^{IG} = W_{\text{max}} \geq W$. If instead $\lambda_1 = \lambda_2 = 0$, then $W^{IG} = W$. We shall therefore assume from now on that $\lambda_1 = 1$ and $\lambda_2 = 0$. (A symmetric argument applies to $\lambda_1 = 0$ and $\lambda_2 = 1$.)

Observe that $\pi_1 = \pi_2$ and $\alpha = 1$ imply that social welfare increases with the number of issues on which the legislator is informed. It follows that $W^{IG} \geq W$ when $K = 1$.

Suppose $K = 2$, and assume by way of contradiction that $W > W^{IG}$. It must then be that in the presence of IGs, the legislator never collects information on issue 2. This is because otherwise he would make a full information policy choice (given $\lambda_1 = 1$) and $W^{IG} = W_{\text{max}} \geq W$. For the legislator to not collect information on issue 2 following message $m_1 = S_1$, it must be that $d_2 > \pi$, where $\pi \equiv \min \{\pi, 1 - \pi\}$ is the probability with which the legislator will choose $p_2 \neq \theta_2$ if he does not collect information on issue 2.

Given $\lambda_1 = 1$, it must be that in the absence of IGs, the legislator starts by collecting information on issue 2. Moreover, it must be that expectationnally he gets informed on more issues in the absence of IGs than in their presence. It must therefore be that he collects information on issue 1 following message $m_2^L = S_2$. This happens only if $\pi \geq d_1$.

We now establish the contradiction by showing that $d_2 > \pi \geq d_1$ implies the legislator does not want to start by collecting information on issue 2. If the legislator starts by collecting information on issue 2, his expected utility is

$$U_2 = \pi \left[ (1 - \pi) + 1 - d_2 \right] + (1 - \pi) \left( 2 - d_1 - d_2 \right).$$

The first term corresponds to the situation in which the legislator receives message $m_2^L = R_2$. In this case, he chooses policy $p = (S_1, R_2)$. The second term corresponds to the situation in which the legislator receives message $m_2^L = S_2$. In this case, he collects information on issue 1 (since $\pi \geq d_1$) and chooses $p = (\theta_1, S_2)$.

If instead, the legislator starts by collecting information on issue 1, his expected utility is

$$U_1 = \pi \left[ 1 + (1 - \pi) - d_1 \right] + (1 - \pi) \left( 1 + \pi - d_1 \right).$$

The first term corresponds to the situation in which the legislator receives message $m_1^L = R_1$. In this case, he chooses $p = (R_1, S_2)$. The second term corresponds to the situation in which the legislator receives message $m_1^L = S_1$. In this case, he chooses policy without collecting information on issue 2 (since $d_2 > \pi$).

Simple algebra shows that $U_1 > U_2$, a contradiction. ■

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19 Throughout the proof, we shall allow for $c_1 \neq c_2$ and $d_1 \neq d_2$ so to emphasize the fact that the result is robust to asymmetries in information collection costs.
**Proof of Fact 1.** We start by establishing the necessity of Condition 1. Consider two equilibria, one with IGs and another one without. For \( W > W^{IG} \), it must be that in the absence of IGs and IL, the legislator collects information on at least one issue. Assume by way of contradiction that he starts by collecting information on issue 2. It must then be that in the presence of IGs, \( IG_1 \) is the only IG to acquire information, i.e., \((\lambda_1, \lambda_2) = (1, 0)\). It must also be that following a message \( m_1 = S_1 \), the legislator does not collect information on issue 2; otherwise the legislator would make a full information policy choice, in which case \( W^{IG} = W_{\text{max}} \geq W \). For the latter to be true, it must be that \( d > \pi \).

Consider now the equilibrium without IGs. Given \((\lambda_1, \lambda_2) = (1, 0)\) and \( \alpha > 1 \), it must be that the legislator collects information on issue 1 after some message \( m^L_2 \in \{R_2, S_2\} \). Three cases are possible: the legislator collects information on issue 1 indifferently of the message \( m^L_2 \), or only after message \( m^L_2 = R_2 \), or only after message \( m^L_2 = S_2 \). In all cases, it is easy but tedious to check that the legislator would be strictly better off starting by collecting information on issue 1 (and not acquiring any information on issue 2 given \( d > \pi \)), a contradiction.

The necessity of Condition 2 is a direct consequence of Condition 1. ■

**Proof of Proposition 1. (Necessity)** Consider two equilibria, one with IGs and another one without. Suppose \( W > W^{IG} \).

We first establish the necessity of Condition 1. Assume by way of contradiction that \( \pi \geq 1/2 \). We know from Fact 1 that \((\lambda_1, \lambda_2) = (0, 1)\). If \( IG_2 \) were to deviate and not collect information, we would be in the same situation as without IGs, and the legislator would start by collecting information on issue 1. Following message \( m^L_1 = R_1 \), the legislator would choose \( p = (R_1, S_2) \). Following message \( m^L_1 = S_1 \), he would collect information on issue 2 if \( K = 2 \) and \((1 - \pi) \geq d\), and then choose \( p = (S_1, \theta_2) \). Otherwise, he would not collect information on issue 2 and would choose \( p = (S_1, R_2) \) (since \( \pi \geq 1/2 \)). Thus, \( IG_2 \)'s expected utility would be

\[
\tilde{V}_2 = \begin{cases} 
(1 - \pi) \pi & \text{if } K = 2 \text{ and } (1 - \pi) \geq d \\
(1 - \pi) & \text{otherwise}.
\end{cases}
\]

It is easy to check that \( \lambda_2 = 1 \) only if following message \( m_2 = R_2 \), the legislator chooses \( p = (S_1, R_2) \). Thus, in equilibrium \( IG_2 \)'s expected utility is \( V_2 = \pi - c \).

Consider now \( IG_1 \). In equilibrium, it gets its reform implemented only following message \( m_2 = S_2 \). If \((1 - \pi) \alpha \geq d\), then following \( m_2 = S_2 \) the legislator collects information on issue 1 and chooses \( p = (\theta_1, S_2) \). Otherwise, he does not collect information on issue 1 and chooses \( p = (R_1, S_2) \) (the latter since \( \pi \geq 1/2 \)). \( IG_1 \)'s expected utility is

\[
V_1 = \begin{cases} 
(1 - \pi) \pi & \text{if } (1 - \pi) \alpha \geq d \\
(1 - \pi) & \text{otherwise}.
\end{cases}
\]
If $IG_1$ were to deviate and produce information, it would get its reform implemented with probability $\pi$ (i.e., following message $m_1 = R_1$). Its expected utility would be $\tilde{V}_1 = \pi - c$. Simple algebra shows that $V_2 \geq \tilde{V}_2$ implies $\tilde{V}_1 \geq V_1$, which contradicts $(\lambda_1, \lambda_2) = (0,1)$. Hence, it must be that $\pi < 1/2$.

We next establish the necessity of $\pi \alpha \geq d$ in Condition 2. Assume by way of contradiction that $\pi \alpha < d$. This implies that following message $m_2 = S_2$, the legislator does not collect information on issue 1. Since $\pi < 1/2$, he then chooses $p = (S_1, S_2)$. IGs’ expected utilities are $V_1 = 0$ and $V_2 = \pi - c$ for $IG_1$ and $IG_2$, respectively. If $IG_1$ were to deviate and produce information, we know from above that its expected utility would be $\tilde{V}_1 = \pi - c$. If $IG_2$ were to deviate and not collect information, it would not get its reform implemented. This is because $d > \pi \alpha$ and $\alpha > 1$ imply $d > \pi$, in which case the legislator does not acquire information on issue 2 following message $m_2^L = S_1$. Since $\pi < 1/2$, he then chooses $p = (S_1, S_2)$. $IG_2$’s expected utility would then be $\tilde{V}_2 = 0$. Simple algebra shows that $V_2 \geq \tilde{V}_2$ implies $\tilde{V}_1 \geq V_1$, which contradicts $(\lambda_1, \lambda_2) = (0,1)$. Hence, it must be that $\pi \alpha \geq d$ and, therefore, that the legislator collects information on issue 1 following message $m_2 = S_2$.

We third establish the necessity of $d > \pi (\alpha - 1)$ in Condition 2. Since the legislator collects information on issue 1 following message $m_2 = S_2$, it must be that he does not do so following message $m_2 = R_2$. This is because otherwise he would be fully informed and $W^{IG} = W_{\text{max}} \geq W$. Hence, it must be that $d > \pi (\alpha - 1)$.

From the above conditions, we can infer that in the presence of IGs, $IG_2$ is the only IG to produce information. Following message $m_2 = R_2$, the legislator chooses $p = (S_1, R_2)$. Following message $m_2 = S_2$, he collects information on issue 1 and chooses $p = (\theta_1, S_2)$. IG’s expected utilities are $V_1 = (1 - \pi) \pi$ and $V_2 = \pi - c$ for $IG_1$ and $IG_2$, respectively. Social welfare is $W^{IG} = (1 - \pi^2) \alpha + 1$.

We fourth establish the necessity for $d > \pi$ when $K = 2$ (which is implicit in Conditions 1, 2 and 4). Assume by way of contradiction that $K = 2$ and $\pi \geq d$. This implies that in the absence of (information from) IGs and following message $m_1^L = S_1$, the legislator collects information on issue 2 and chooses $p = (S_1, \theta_2)$. If $IG_2$ were to deviate and not collect information, its expected utility would then be $\tilde{V}_2 = (1 - \pi) \pi$. Recall from above that if $IG_1$ were to deviate and produce information, its expected utility would be $\tilde{V}_1 = \pi - c$. Simple algebra shows that $V_2 \geq \tilde{V}_2$ implies $\tilde{V}_1 \geq V_1$, which contradicts $(\lambda_1, \lambda_2) = (0,1)$. Hence, it must be that $d > \pi$ when $K = 2$ and, therefore, that the legislator does not collect information on issue 2 following message $m_1^L = S_1$.

From the above conditions, we can infer that in the absence of (information from) IGs, the legislator collects information on issue 1 only. Following message $m_1^L = R_1$, he chooses $p = (R_1, S_2)$. Following message $m_1^L = S_1$, he chooses $p = (S_1, S_2)$. Social welfare is $W = \alpha + (1 - \pi)$. It follows that if $IG_2$ were to deviate and not collect information, its expected utility would be $\tilde{V}_2 = 0$.

We fifth establish the necessity of Condition 3. For $\lambda_1 = 0$, it must be that $V_1 > \tilde{V}_1$. Recall from above that $V_1 = (1 - \pi) \pi$ and $\tilde{V}_1 = \pi - c$. It must then be that $c > \pi^2$. For $\lambda_2 = 1$, it must be that $V_2 \geq \tilde{V}_2$. Recall from above that $V_2 = \pi - c$ and $\tilde{V}_2 = 0$. It must then be that $\pi \geq c$. 

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Finally, simple algebra shows that Condition 4 is necessary for $W > W^{IG}$.

(Sufficiency) Suppose Conditions 1-4 are satisfied. It is not difficult to check that the strategies described above are equilibrium strategies and that $W > W^{IG}$. ■

Proof of Proposition 2. (Necessity) Consider two equilibria, one with IGs and another one without. Assume $W > W^{IG}$.

We first establish the necessity of Condition 1. Assume by way of contradiction that $K = 1$. We know from Fact 1 that in the absence of IGs, the legislator collects information on issue 1. Following message $m^L_1 = R_1$, he chooses $p = (R_1, S_2)$. Following message $m^L_1 = S_1$, he chooses instead $p = (S_1, R_2)$ if $\pi_2 \geq 1/2$ and $p = (S_1, S_2)$ if $\pi_2 < 1/2$. His expected utility is then

$$U_1 = \pi_1 [1 + (1 - \pi_2)] + (1 - \pi_1) (1 + \pi_2) - d.$$

If the legislator were to deviate and not collect information, he would choose $p = (R_1, S_2)$ if $\pi_1 \geq 1/2$ and $p = (S_1, S_2)$ if $\pi_1 < 1/2$. His expected utility would be $U_\emptyset = \pi_1 + (1 - \pi_2)$. We also know from Fact 1 that $(\lambda_1, \lambda_2) = (0, 1)$. This, together with $\alpha = 1$ and $W > W^{IG}$, implies that in the presence of IGs, the legislator does not collect information on issue 1. This happens only if $d > \pi_1$. Simple algebra shows that $d > \pi_1$ and $U_1 \geq U_\emptyset$ imply $\pi_2 \geq 1/2$.

Given the above information collection strategies, social welfare is

$$W = \pi_1 [1 + (1 - \pi_2)] + (1 - \pi_1) (1 + \pi_2)$$

in the absence of IGs, and

$$W^{IG} = \pi_2 [(1 - \pi_1) + 1] + (1 - \pi_2) (\pi_1 + 1)$$

in their presence. Hence, $W^{IG} = W$, a contradiction. It must then be that $K = 2$.

We second establish the necessity of Condition 2. For further reference, observe that in the presence of IGs, only $IG_2$ produces information. Following message $m_2 = R_2$, the legislator chooses $p = (S_1, R_2)$. Following message $m_2 = S_2$, he chooses instead $p = (R_1, S_2)$ if $\pi_1 \geq 1/2$ and $p = (S_1, S_2)$ if $\pi_1 < 1/2$. Social welfare is then

$$W^{IG} = \pi_2 [(1 - \pi_1) + 1] + (1 - \pi_2) (\pi_1 + 1).$$

To establish the necessity of Condition 2, we must show the necessity for $\pi_1 \geq 1/2$ (which is implicit in Condition 2). To see this, assume by way of contradiction that $\pi_1 < 1/2$. It follows from above that in the presence of IGs, the legislator never implements the reform on issue 1. $IG_1$’s expected utility is then equal to zero. If $IG_1$ were to deviate and produce information, he would get its reform implemented with probability $\pi_1$ (i.e., following message $m_1 = R_1$). His expected utility would then be equal to $\pi_1 - c$. For $\lambda_1 = 0$, it must then be that $c > \pi_1$. At the same time, $IG_2$ collects information and gets its reform implemented with probability $\pi_2$. Its expected
utility is then equal to \( \pi_2 - c \). It it were to deviate and not produce information, it would get a non-negative utility. For \( \lambda_2 = 1 \), it must then be that \( \pi_2 \geq c \). Taken together, \( \pi_2 \geq c \) and \( c > \pi_1 \) contradict \( \pi_1 > \pi_2 \). It must then be that \( \pi_1 \geq 1/2 \).

\[ d > (1 - \pi_1) = \pi_1 \text{ is necessary for the legislator to not collect information on issue 1 in the presence of IGs, as already noted above.} \]

We now establish the necessity of \( \pi_2 \equiv \min \{ \pi_2, 1 - \pi_2 \} \geq d \). Assume by way of contradiction that \( d > \pi_2 \). It follows that in the absence of IGs, the legislator does not collect information on issue 2 (following any message \( m^L_1 \)). He thus chooses \( p = (R_1, S_2) \) following message \( m^L_1 = R_1 \). Following message \( m^L_1 = S_1 \), he chooses \( p = (S_1, R_2) \) if \( \pi_2 \geq 1/2 \) and \( p = (S_1, S_2) \) if \( \pi_2 < 1/2 \). Either \( \pi_2 \geq 1/2 \), in which case social welfare is

\[ W = \pi_1 [1 + (1 - \pi_2)] + (1 - \pi_1) (1 + \pi_2) . \]

Simple algebra shows that \( W^{IG} = W \), a contradiction. Alternatively, \( \pi_2 < 1/2 \), in which case the legislator’s expected utility is \( U_1 = 1 + (1 - \pi_2) - d \). If the legislator were to deviate and not collect information, he would choose \( p = (R_1, S_2) \) (since \( \pi_1 \geq 1/2 > \pi_2 \)) and his expected utility would be \( U_0 = \pi_1 + (1 - \pi_2) \). Simple algebra shows that \( d > (1 - \pi_1) \) implies \( U_0 > U_1 \), a contradiction. It must then be that \( \pi_2 \geq d \).

In the absence of IGs, the legislator starts by collecting information on issue 1. Following message \( m^L_1 = R_1 \), he chooses \( p = (R_1, S_2) \). Following message \( m^L_1 = S_1 \), he collects information on issue 2 (since \( \pi_2 \geq d \)) and chooses \( p = (S_1, \theta_2) \). His expected utility is then

\[ U_1 = \pi_1 [1 + (1 - \pi_2) - d] + (1 - \pi_1) (2 - 2d) . \]

If he were to deviate and not collect any information, his expected utility would be \( U_0 = \pi_1 + (1 - \pi_2) \). Simple algebra shows that \( U_1 \geq U_0 \) only if \( \frac{(1-\pi_1)(1+\pi_2)}{2-\pi_1} \geq d \).

We third establish the necessity of Condition 3. We know that IG2 produces information and gets its reform implemented with probability \( \pi_2 \) (i.e., following message \( m_2 = R_2 \)). Its expected utility is then equal to \( \pi_2 - c \). If it were to deviate and not collect information, we would be in the same situation as without IGs, and IG2 would get its reform implemented with probability \( (1 - \pi_1) \pi_2 \). Simple algebra shows that \( \lambda_2 = 1 \) only if \( \pi_1 \pi_2 \geq c \).

In the presence of IGs, IG1 gets its reform implemented with probability \( (1 - \pi_2) \) (i.e., following message \( m_2 = S_2 \)). Its expected utility is equal to \( (1 - \pi_2) \). If it were to deviate and produce information, it would get its reform implemented with probability \( \pi_1 \) (i.e., following message \( m_1 = R_1 \)). Its expected utility would then be equal to \( \pi_1 - c \). Simple algebra shows that \( \lambda_1 = 0 \) only if \( c > \pi_1 + \pi_2 - 1 \).

(Sufficiency) Suppose Conditions 1-3 are satisfied. It is not difficult to check that the strategies described above are equilibrium strategies. Moreover, social welfare is

\[ W = \pi_1 [1 + (1 - \pi_2)] + (1 - \pi_1) 2 \]
in the absence of IGs, and

\[ W^{IG} = \pi_2 [(1 - \pi_1) + 1] + (1 - \pi_2) (\pi_1 + 1) \]

in their presence. Simple algebra shows that \( W > W^{IG} \). ■
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Proof of Proposition 3. We first consider the $\pi$-case. Assume by way of contradiction that there exists a parameter list $\pi \in \mathcal{E}_S$. Proceeding as in the proof of Proposition 2, we can establish that in the presence of IGs, $(\lambda_1, \lambda_2) = (0, 1)$ and the legislator does not collect information (on issue 1). For the latter to be true, it must be that $d > \pi_1$. Since $(\lambda_1, \lambda_2) = (0, 1)$, it must also be that in the absence of IGs, the legislator collects information either on issue 1 only or on both issues.

Suppose the former. Observe first that we must have $\pi_2 < 1/2$. This is because otherwise $W_S = W_S^{IG}$, which would contradict $\pi \in \mathcal{E}_S$. Following message $m_1^L = R_1$, the legislator chooses $p = (R_1, S_2)$. Following message $m_1^U = S_1$, he chooses $p = (S_1, S_2)$. The legislator’s expected utility is then $U_1 = 1 + (1 - \pi_2) - d$. If the legislator were to deviate and not collect any information, he would choose $p = (R_1, S_2)$ if $\pi_1 \geq 1/2$ and $p = (S_1, S_2)$ if $\pi_1 < 1/2$. His expected utility would be $U_0 = \pi_1 + (1 - \pi_2)$. $d > \pi_1$ implies $U_0 > U_1$, a contradiction.

Suppose now that the legislator collects information on both issues. He chooses $p = (R_1, S_2)$ following messages $m_1^L = R_1$ and $m_1^U = S_2$. He chooses $p = (\theta_1, \theta_2)$ otherwise. His expected utility is $U_{12} = \pi_1 \pi_2 + (1 - \pi_1 \pi_2) 2 - 2d$. If the legislator were to deviate and collect information on issue 2 only, he would choose $p = (S_1, R_2)$ following message $m_2^L = R_2$. Following message $m_2^U = S_2$, he would choose $p = (R_1, S_2)$ if $\pi_1 \geq 1/2$ and $p = (S_1, S_2)$ if $\pi_1 < 1/2$. His expected utility is $U_2 = \pi_2 [(1 - \pi_1) + 1] + (1 - \pi_2) (\pi_1 + 1) - d$. $d > \pi_1$ implies $U_2 > U_{12}$, a contradiction. We have thus established that $\mathcal{E}_S = \emptyset$.

Pick $\pi \in \mathcal{E}$. We now show that $W_S \leq W_S^{IG} = W^{IG} < W$. Consider first the sequential protocol. We know from the proof of Proposition 2 that $W = 2 - \pi_1 \pi_2$ and $W^{IG} = 1 + \pi_2 (1 - \pi_2) + (1 - \pi_1) \pi_2$. Consider second the simultaneous protocol. Proceeding as above, we can establish that in the absence of IGs, the legislator collects information on at most one issue. There are two cases to consider:

1. $d > 2\pi_2 (1 - \pi_1)$. In this case, the legislator collects no information and chooses $p = (R_1, S_2)$. Social welfare is $W_S = \pi_1 + (1 - \pi_2)$. In the presence of IGs, $(\lambda_1, \lambda_2) = (0, 1)$ and the legislator collects no information. This is the same as under the sequential protocol, which implies $W_S^{IG} = W^{IG}$. Simple algebra shows that $W_S < W_S^{IG} = W^{IG} < W$.

2. $d \leq 2\pi_2 (1 - \pi_1)$. This, together with $d > \pi_1 = (1 - \pi_1)$, implies $\pi_2 > 1/2$. In the absence of IGs, the legislator collects information on issue 1 only. Following message $m_1^L = R_1$, he chooses $p = (R_1, S_2)$. Following message $m_1^U = S_1$, he chooses $p = (S_1, R_2)$. It follows that $W_S = \pi_1 [1 + (1 - \pi_2)] + (1 - \pi_1) (1 + \pi_2)$. Moreover, in the presence of IGs, $c > \pi_1 + \pi_2 - 1$ implies neither IG produces information. Consequently, $W_S^{IG} = W_S$. Simple algebra shows that $W_S = W_S^{IG} = W^{IG} < W$.

We now turn to the $\alpha$-case. We first establish that $\mathcal{E} \subseteq \mathcal{E}_S$. Pick a parameter list $\pi \in \mathcal{E}$. Hence, all the conditions stated in Proposition 1 must be satisfied. To prove the result it is sufficient to
show that in the absence of IGs, the legislator collects information on issue 1 only. To see this, observe that the legislator has four options available:

1. Collecting information on issue 1 only. Since \( \pi < \frac{1}{2} \), he then chooses \( p = (\theta_1, S_2) \). His expected utility is \( U_1 = \alpha + (1 - \pi) - d \).

2. Collecting information on issue 2 only. Since \( \pi < \frac{1}{2} \), he then chooses \( p = (S_1, \theta_2) \). His expected utility is \( U_2 = (1 - \pi) \alpha + 1 - d \). \( \alpha > 1 \) implies \( U_1 > U_2 \).

3. Collecting information on both issues. He chooses \( p = (R_1, S_2) \) following messages \( (m_1^L, m_2^L) = (R_1, R_2) \), and \( p = (\theta_1, \theta_2) \) otherwise. His expected utility is \( U_{12} = \alpha + (1 - \pi^2) - 2d \). \( d > \pi \) (from proof of Proposition 1) implies \( U_1 > U_{12} \).

4. Collecting no information. Since \( \pi < \frac{1}{2} \), he chooses \( p = (S_1, S_2) \). His expected utility is \( U_\emptyset = (1 - \pi) (\alpha + 1) \). Together \( \pi \alpha > 1 \) and \( d \leq 1 \) imply \( U_1 > U_\emptyset \).

Since these four cases exhaust all possibilities, we have shown that in the absence of IGs, under both protocols the legislator collects information on issue 1 only. It is then straightforward to show that \( e \in \mathcal{E}_S \). Hence \( \mathcal{E} \subseteq \mathcal{E}_S \).

We now establish that \( \mathcal{E}_S \subseteq \mathcal{E} \). Pick a parameter list \( e \in \mathcal{E}_S \). Proceeding as in the proof of Proposition 1, we can establish the necessity of the following conditions:

1. \( \pi < \frac{1}{2} \).

2. \( (\lambda_1, \lambda_2) = (0, 1) \), which implies \( \pi \geq c > \pi^2 \).

3. Following message \( m_2 = R_2 \), the legislator does not collect information on issue 1 and chooses \( p = (S_1, R_2) \), which implies \( d > \pi (\alpha - 1) \).

4. Following message \( m_2 = S_2 \), the legislator collects information on issue 1 and chooses \( p = (\theta_1, S_2) \).

5. In the absence of IGs, the legislator collects information on issue 1 only, and chooses \( p = (\theta_1, S_2) \).

Taken together, these conditions imply \( W_S = \alpha + (1 - \pi) \) and \( W_S^{IG} = \pi [(1 - \pi) \alpha + 1] + (1 - \pi) (\alpha + 1) \). Simple algebra shows that \( W_S > W_S^{IG} \) only if \( \pi \alpha > 1 \). Hence, all four conditions in Proposition 1 are satisfied, and \( e \in \mathcal{E} \). It follows that \( \mathcal{E}_S \subseteq \mathcal{E} \), which together with \( \mathcal{E} \subseteq \mathcal{E}_S \) implies \( \mathcal{E} = \mathcal{E}_S \). That \( \mathcal{E} = \mathcal{E}_S \neq \emptyset \) is easily seen by constructing a parameter list \( e \).\(^{20}\) ■

**Proof of Proposition 4.** It is easy to construct parameter lists \( e \in \mathcal{E}_K^L \), thereby establishing \( \mathcal{E}_K^L \neq \emptyset \).

\(^{20}\)An example is available from the authors.
We first consider the $\pi$-case, and establish $\mathcal{E}_K \subseteq \mathcal{E}_K^L$. The result is trivial for $K = 1$ since $\mathcal{E}_1 = \emptyset$ and $\mathcal{E}_1^L \neq \emptyset$. So suppose $K = 2$. We first show that $\mathcal{E}_2 \subseteq \mathcal{E}_2^L$. Pick a parameter list $e \in \mathcal{E}_2$. All the conditions stated in Proposition 2 are then satisfied. Suppose the legislator-first protocol. Observe that in the absence of IGs, the two protocols are trivially equivalent. We then know that the legislator starts by collecting information on issue 1. Following message $m_1^L = R_1$, he chooses $p = (R_1, S_2)$. Following message $m_2^L = S_1$, he collects information on issue 2 and chooses $p = (S_1, \theta_2)$. Social welfare is $W = 2 - \pi_1 \pi_2$.

In the presence of IGs, only $IG_2$ collects information. To see this, consider each of the five information collection decisions the legislator might choose:

1. Collecting no information. In this case, $\pi_1 \geq 1/2$ and Condition 3 of Proposition 2 imply that only $IG_2$ produces information. Following message $m_2 = R_2$, the legislator chooses $p = (S_1, R_2)$. Following message $m_2 = S_2$, he chooses $p = (R_1, S_2)$. His expected utility is $U_0 = 1 + \pi_1 (1-\pi_2) + (1-\pi_1) \pi_2$. 

2. Collecting information on issue 1 only. In this case, $IG_1$ collects no information, while $IG_2$ produces information if and only if $\pi_2 < 1/2$ and $m_2^L = S_1$. The legislator’s expected utility is

$$U_1 = \begin{cases} 
\pi_1 \left[1 + (1 - \pi_2)\right] + (1 - \pi_1) (1 + \pi_2) - d & \text{if } \pi_2 \geq 1/2 \\
\pi_1 \left[1 + (1 - \pi_2)\right] + (1 - \pi_1) 2 - d & \text{if } \pi_2 < 1/2.
\end{cases}$$

d > (1 - \pi_1) implies $U_0 > U_1$.

3. Starting by collecting information on issue 1 and, following message $m_1^L = S_1$, collecting information on issue 2 as well. In this case, neither IG produces information. The legislator’s expected utility is $U_{12} = 2 - \pi_1 \pi_2 - (2 - \pi_1) d$. $d > (1 - \pi_1)$ implies $U_0 > U_{12}$.

4. Collecting information on issue 2 only. In this case, $IG_2$ collects no information, while $IG_1$ produces information following message $m_2^L = R_2$ only (since $\pi_1 \geq 1/2$ and $\pi_1 \pi_2 \geq c$). The legislator’s expected utility is

$$U_2 = \pi_2 \left[\pi_1 + (1 - \pi_1) 2\right] + (1 - \pi_2) (\pi_1 + 1) - d < U_0.$$

5. Starting by collecting information on issue 2 and, following message $m_2^L = S_2$, collecting information on issue 1 as well. IG’s information collection strategies are the same as in the previous case. The legislator’s expected utility is $U_{21} = 2 - \pi_1 \pi_2 - (2 - \pi_2) d$. Hence, $U_{12} > U_{21}$ which, together with $U_0 > U_{12}$, implies $U_0 > U_{21}$.

Thus, in the presence of IGs the legislator collects no information, and $W^{IG} = 1 + \pi_1 (1 - \pi_2) + (1 - \pi_1) \pi_2$. Simple algebra shows that $W > W^{IG}$. Hence, $e \in \mathcal{E}_2^L$, which implies $\mathcal{E}_2 \subseteq \mathcal{E}_2^L$. That $\mathcal{E}_2 \subseteq \mathcal{E}_2^L$ is easily seen by constructing parameter lists $e \in \mathcal{E}_2^L \setminus \mathcal{E}_2$.

We now turn to the $\alpha$-case, and establish $\mathcal{E}_K \cap \mathcal{E}_K^L = \emptyset$. We consider the case in which $K = 2$; a similar argument applies when $K = 1$. Pick a parameter list $e \in \mathcal{E}_2$. All the conditions stated
in Proposition 1 are then satisfied. Suppose the legislator-first protocol. Given that in the absence of IGs the two protocols are equivalent, we know that the legislator collects information on issue 1 only, and chooses \( p = (\theta_1, S_2) \). Social welfare is \( W = \alpha + (1 - \pi) \).

In the presence of IGs, the legislator collects no information, while \( IG_1 \) (and possibly \( IG_2 \)) produces information. To see this, consider again each of the five information collection decisions the legislator might choose:

1. Collecting no information. In this case, \( \pi < 1/2 \) and \( \pi \geq c \) imply that \( IG_1 \) collects information. The legislator’s expected utility is then \( U_0 \geq \alpha + (1 - \pi) \).

2. Collecting information on issue 1 only. In this case, \( IG_1 \) produces no information, while \( IG_2 \) produces information following message \( m_1^L = S_1 \) only. The legislator’s expected utility is \( U_1 = \alpha + (1 - \pi^2) - d \). \( d > \pi \) (from proof of Proposition 1) implies \( U_0 > U_1 \).

3. Starting by collecting information on issue 1 and, following message \( m_1^L = S_1 \), collecting information on issue 2 as well. In this case, neither IG collects information. We then have \( U_{12} < U_1 < U_0 \).

4. Collecting information on issue 2 only. In this case, \( IG_2 \) produces no information, while \( IG_1 \) does. The legislator’s expected utility is \( U_2 = \alpha + (1 - \pi^2) - d = U_1 < U_0 \).

5. Starting by collecting information on issue 2 and, following message \( m_2^L = S_2 \), collecting information on issue 1 as well. It is easy to see that the legislator’s expected utility \( U_{21} < U_2 \) which, together with \( U_2 < U_0 \), implies \( U_{21} < U_0 \).

Thus, in the presence of IGs the legislator collects no information and \( W^{IG} \geq \alpha + (1 - \pi) \). Hence, \( W^{IG} \geq W \) and \( e \notin E_2^L \). It follows that \( E_2 \cap E_2^L = \emptyset \). ■

**Proof of Proposition 5.** Let \( \alpha = 1 \), \( \pi_1 = \pi_2 = \pi \), \( c_1 = c_2 = c \), \( d_1 = d_2 = d \), and finally \( 1/2 < q_2 < q_1 \leq 1 \). Additionally, \( \tau_n = \pi q_n + (1 - \pi)(1 - q_n) \) and \( q_n \geq \max \{ \pi, 1 - \pi \} \) for both \( n \).

Consider first the legislator’s choice of whether to collect information on issue \( j \), given that he previously observed message \( m_i \) (or equivalently \( m_i^L \)). First note that since \( \alpha = 1 \), both issues are equally salient. This means that when \( m_i = R_i \), the legislator prefers to implement \( R_i \) rather than collect \( m_i^L \). When \( m_i = S_i \), the legislator may choose to implement \( R_j \), which results in expected payoff \( Eu_j = \pi \), to implement neither reform, resulting in \( Eu_j = 1 - \pi \), or to collect \( m_j^L \), resulting in \( Eu_j = q_j - d \). The legislator prefers to collect information on \( j \) when

\[
(1) \quad d < \min \{ q_j - (1 - \pi), q_j - \pi \}.
\]

He prefers to implement \( (S_i, R_j) \) without collecting \( m_j^L \) if

\[
(2) \quad \pi \geq \frac{1}{2} \quad \text{and} \quad d \geq q_j - \pi.
\]
He prefers to implement \((S_i, S_j)\) without collecting \(m_j^L\) if

\[
\pi < \frac{1}{2} \quad \text{and} \quad d \geq q_j - (1 - \pi).
\]

Consider second the legislator’s choice of whether to collect information, and on which issue to collect information on first, in the event that \(m_i = m_j = \emptyset\). If the uninformed legislator does not collect information, his expected payoffs is \(Eu = 2(1 - \pi)\) if he maintains \(S_i\) on both issues and is \(Eu = \pi + (1 - \pi) = 1\) if he implements either reform. If, rather, he begins by collecting information on issue \(i\), then his expected payoff depends on what he does after observing \(m_j^L\), i.e., depends on whether (1) or (2) or (3) hold. Collecting information on issue 1 first results in

\[
\text{all of these cases, when } m_i \text{ reform on the second issue without additional information when } m_i \text{ when } q \in (1) \text{ holds where } \hat{u}_j = q_j - d \text{ when (1) holds, } \hat{u}_j = \pi \text{ when (2) holds, and } \hat{u}_j = 1 - \pi \text{ when (3) holds.}
\]

In determining the legislator’s behavior in the absence of IL, we first analyze the setting where \(\pi \geq 1/2\). Since \(q_1 > q_2\), it follows that \(q_1 - \pi < q_2 - \pi\), and thus the cut value associated with (1) and (2) is higher when \(j = 1\) than when \(j = 2\). The analysis refers to the following three cases, where \(i\) denotes the issue on which the legislator collects information first: (i) \(d < q_2 - \pi\) (e.g., when \(m_i^L = S_i\) the legislator collects information on the second issue); (ii) \(q_2 - \pi \leq d < q_1 - \pi\) (e.g., when \(m_i^L = S_i\) the legislator collects information on the second issue when \(i = 2\), and implements reform on the second issue without additional information when \(i = 1\)); (iii) \(q_1 - \pi \leq d\) (e.g., when \(m_i^L = S_i\) the legislator implements reform on the second issue without additional information). In all of these cases, when \(m_i^L = R_i\), the legislator implements reform \(R_i\).

In all three cases, one can show that the legislator prefers to collect information on issue 1 first than to collect information on issue 2 first. That is,

\[
q_1 - d + \tau_1(1 - \pi) + (1 - \tau_1)\hat{u}_2 \geq q_2 - d + \tau_2(1 - \pi) + (1 - \tau_2)\hat{u}_1
\]

regardless of whether (i) holds where \(\hat{u}_1 = q_1 - d\) and \(\hat{u}_2 = q_2 - d\), (ii) holds where \(\hat{u}_1 = q_1 - d\) and \(\hat{u}_2 = \pi\), or (iii) holds where \(\hat{u}_1 = \hat{u}_2 = \pi\). Notice that \(\hat{u}_1 \geq \hat{u}_2\) in all cases since \(q_1 - d > q_2 - d\) and \(q_1 - d > \alpha\) given that \(d < q_1 - \pi\). The expression simplifies to

\[
\hat{q} + \hat{q}(2\pi - 1)(1 - \pi) \geq (1 - \tau_2)\hat{u}_1 - (1 - \tau_1)\hat{u}_2,
\]

where \(\hat{q} \equiv q_1 - q_2\). In case (i), the right hand side becomes \(\hat{q}(\pi - (2\pi - 1)d)\). Substituting in to the above inequality and simplifying gives

\[
q - \pi + (2\pi - 1)(1 + d - \pi) \geq 0,
\]

an expression which is always satisfied given the constraints. One can similarly show that the legislator prefers to collect information on issue 1 first than to collect information on issue 2 first in cases (ii) and (iii).

Having established that the legislator prefers to begin his information collection on issue 1
rather than 2, we must now determine when the legislator prefers to collect information on issue 1 first rather than implement a reform without collecting any information. In cases (i) and (ii) the costs of information collection \( d \) are sufficiently low that the legislator always prefers to collect information on issue 1 than to not collect information. In case (iii), the legislator will prefer to collect information on 1 rather than no information if

\[
q_1 - d + \tau_1(1 - \pi) + (1 - \tau_1)\pi > \pi + (1 - \pi) = 1.
\]

This simplifies to a requirement that

\[
(5) \quad d < q_1 - (1 - \pi) - (2\pi - 1)\tau_1 = 2\pi(2q_1 - 1)(1 - \pi).
\]

For larger values of \( d \), an uninformed legislator chooses to implement a reform without first collecting any information.

Next we analyze legislator behavior in the absence of IL when \( \pi < 1/2 \). Here, condition (1) or (3) hold, never (2). We consider three cases of \( d \): (iv) when \( d < q_2 - (1 - \pi) \), (v) when \( q_2 - (1 - \pi) \leq d < q_1 - (1 - \pi) \), and (vi) when \( q_1 - (1 - \pi) \leq d \). Proceeding as we did for the case when \( \pi \geq 1/2 \), one can show that in all three cases, the legislator prefers to first collect information on issue 1 rather than on issue 2. One can also show that in cases (iv) and (v), the legislator always prefers to search on issue 1 first than to search on neither. In case (vi), however, the legislator prefers to implement neither reform without collecting any information.

In order for IL to be socially detrimental, it must decrease the probability that the legislator implements a beneficial reform when one exists. In the no-IL subgame equilibria under (i) and (iv), this will not be the case since the legislator will always follow up a realization that \( \theta_n = S_n \) by searching on the issue he remains uninformed about. In the no-IL subgame equilibria under (ii) and (v), similar logic applies. In these equilibria, the legislator collects information on issue 1, and then makes a decision without collecting information on issue 2. If \( IG_1 \) collects information, then the legislator is always at least as informed as without IL. If only \( IG_2 \) collects information, then the legislator implements a beneficial reform when \( m_2 = R_2 \), and collects information on issue 1 when \( m_2 = S_2 \). That is, the legislator always implements a beneficial reform when one exists. In case (vi) as well as case (iii) when (5) is violated, the legislator did not collect information in the absence of IL, and therefore IL cannot decrease his information.

Only case (iii) when (5) holds remains a viable option for IL to be socially detrimental. In this case,

\[
(6) \quad \pi \geq 1/2 \quad \text{and} \quad q_1 - \pi \leq d < 2\pi(1 - \pi)(2q_1 - 1).
\]

Here, the legislator collects information on issue 1 when he is uninformed, and then chooses whether to implement a reform without collecting information on issue 2. If IL involves information collection by \( IG_2 \) and not \( IG_1 \), then the legislator will make a reform decision without collecting information
on issue 1. This means that when \( m_2 = S_2 \), the legislator chooses \( R_1 \) without further search, this leads to expected social welfare \( W^{IG} = q_2 + \tau_2 (1 - \pi) + (1 - \tau_2) \pi \), versus expected social welfare without IL of \( W = q_1 + \tau_1 (1 - \pi) + (1 - \tau - 1) \pi \). In this case, \( W > W^{IG} \).

We must find conditions under which \( IG_2 \) prefers to collect information and \( IG_1 \) does not in equilibrium. In this case, \( IG_2 \) expects payoff from collecting information of \( \tau_2 - c \) and from deviating to not collect information of \( 1 - \tau_1 \) which must be that \( \tau_2 - c \geq 1 - \tau_1 \), which becomes \( c \leq \tau_1 + \tau_2 - 1 \). Additionally, \( IG_1 \) expects payoff from not collecting information of \( 1 - \tau_2 \) and from deviating to collect information of \( \tau_1 (z \tau_2 + 1 - \tau_2) - c \). It must be that \( 1 - \tau_2 > \tau_1 (1 - \tau_2 (1 - z)) - c \). This condition becomes \( c > \tau_1 + \tau_2 - 1 \). Therefore, for IL to be detrimental, it must be that

\[
\tau_1 + \tau_2 - 1 - \tau_1 \tau_2 (1 - z) < c \leq \tau_1 + \tau_2 - 1.
\]

Notice that when \( z = 1 \), the lower and upper bounds for \( c \) are equal, eliminating the possibility of IL being socially detrimental. If \( z = 1 \), then \( c_1 \neq c_2 \) is required satisfying \( c_2 \leq \tau_1 + \tau_2 - 1 < c_1 \). From conditions (6) and (7) we get the ranges of \( \pi \), \( c \), and \( d \) for which IL decreases social welfare. There is no constraint on \( K \) and the legislator only collects information on one issue in the relevant parameter case.

**Proof of Proposition 6.** Pick a parameter list \( e = (\pi, \alpha, d, c) \) that satisfies the three conditions stated in Proposition 6. It is not difficult to show that in the absence of IGs, the legislator collects information on issue 1 only. Following message \( m^L_1 = R_1 \), he chooses \( p = (R_1, S_2) \). Following message \( m^L_1 = S_1 \), \( \pi \geq 1/2 \) implies he chooses \( p = (S_1, R_2) \). Social welfare is then \( W = \alpha + 2\pi (1 - \pi) \).

In the presence of IGs, \( IG^S_2 \) is the only IG to collect information. The legislator collects information on issue 1 following message \( m_2 = R_2 \) only. He then chooses \( p = (R_1, S_2) \) following messages \( m_2 = R_2 \) and \( m^L_1 = R_1 \), and \( p = (S_1, R_2) \) following messages \( m_2 = R_2 \) and \( m^L_1 = S_1 \). Following message \( m_2 = S_2 \), he chooses \( p = (R_1, S_2) \). Social welfare is then

\[
W^{IG} = \pi [\pi \alpha + (1 - \pi) (\alpha + 1)] + (1 - \pi) (\pi \alpha + 1).
\]

Simple algebra shows that \( W > W^{IG} \).