

Commercial Lobbying: Institutions and Political Reforms*

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Abstract

This paper analyzes the effective regulation of commercial lobbying activities and focuses on the endogenous choice of regulatory institutions. The analysis uses a model of commercial lobbying in which citizens hire lobbyists to present policy matters on their behalf, and policymakers announce political access rules to induce citizens and lobbyists to engage in information acquisition and make financial contributions. The distribution of private costs and public informational benefits from commercial lobbying can explain why commercial lobbying is widely employed, but may not be socially efficient, and may lack public support. I derive the institutional conditions under which a market outcome can be first-best as well as the conditions under which a first-best institution will be self-stable or not. One result is that current lobbying regulation may fail to be effective: unable to limit lobbyists' and policymakers' incentives to substitute financial contributions for socially beneficial information acquisition. The analysis highlights the necessity to monitor information transfers as well as financial transfers to construct effective regulatory instruments. Additional results explain why endogenous reforms that regulate lobbying activities may or may not occur.

Keywords: Commercial lobbying; Information acquisition; Financial contributions; Asymmetric information; Institutional design; Endogenous institutions.

JEL classification: D72; D78.

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1 Introduction

The conventional wisdom of lobbying is that citizens or special interest groups may have policy-relevant information that an imperfectly informed policymaker wishes to learn for the benefit of society. However, lobbying and other influence activities may lead to a political capture by special interests and influence policymakers in socially undesirable ways. Exemplary lobbying and influence activities include the strategic provision of information as well as policy-contingent, or candidate-specific, campaign contributions.¹ Such activities are usually undertaken or organized by representatives of classic special interest groups or employees of commercial lobbying firms. The difference between the two types of professional lobbyist is that special interest groups and their advocates are directly affected by the policy outcomes they lobby for, whereas lobbying firms provide their intermediation services for profit to various clients.² The analysis of special interest group activities and the regulation of their activities has been a primary focus of economic analysis.³ However, the influence of commercial lobbyists is more and more predominant.⁴ These lobbyists are usually employed by law firms, government affairs firms, or consulting firms and offer citizens, firms, and special interest groups their political contacts and expertise in legal, political, and public relations affairs that goes beyond pure salesmanship. This paper acknowledges the recent changes in lobbying activities and intends to explain the implications of commercial lobbying for the optimal regulation of lobbying activities, and in addition to provide empirically relevant arguments why some societies choose to regulate professional

¹Further activities include the formation of coalitions, candidate endorsements, media campaigns, and obviously corruption.

²The wide engagement in lobbying activities and the presence of commercial lobbying firms can be confirmed by the disclosures by professional lobbyists under the Lobbying Disclosure Act (1995) which are electronically available on through the Senate's Office of Public Records. The data reveal that commercial lobbyists represent the interests of a variety of companies, unions, trade groups, counties, cities, universities, and individual citizens.

³See Olson's (1965) seminal work for the formation of special interest groups. For the pathbreaking work on rent seeking see Tullock (1967), Krueger (1974), and Buchanan (1980). Congleton, Hillman, and Konrad (2008). Persson and Tabellini (2000) and Grossman and Helpman (2001) provide a detailed review for special interest groups' political influence activities and lobbying. See Dahm and Porteiro (2008) for an overview of the campaign finance reform literature.

⁴Bertrand, Bombardini and Trebbi (2012) show, using U.S. federal lobbying data, that commercial lobbying is, measured in terms of the share of all lobbyists and amount of revenues, rapidly growing. For example, the share of "out-of-house" lobbyists has steadily grown from approximately 40 percent in 2000 to nearly 60 percent in 2008.

lobbying activities and other societies do not.

The influence by a few on the political process has produced plenty of public scandals and started many public discussions about the benefits and risks of professional lobbying activities. A few of these scandals and discussions have led to gradual reforms in the regulation of professional lobbying activities. The history of lobbying regulation in the United States goes back to the 1930s when the influence of specific industries or foreign governments on domestic policies became a public concern.⁵ But the first comprehensive regulation of lobbying activities at the federal level was put in place much later with the Lobbying Disclosure Act (1995). Additional public scandals revealed loopholes and public pressure resulted in the Honest Leadership and Open Government Act (2007) as amendments to the existing rules.⁶ The current regulations require lobbyists to disclose their lobbying activities, limit policymakers' "revolving door" career ambitions,⁷ and increase the transparency about policymakers' discretionary spending. Nonetheless the current regulation does not provide transparency about lobbyist-policymaker interactions, strategic information transfers from lobbyists to policymakers,⁸ or a potential substitution of financial transfers for desirable policy information to influence policymakers.⁹

⁵The Public Utilities Holding Company Act (1935) required representatives of holding companies to report their activities to the Securities and Exchange Commission before lobbying Congress, the Securities and Exchange Commission or the Federal Power Commission. The Merchant Marine Act (1936) required representatives of ship owning companies or shipyards that received government subsidies to disclose their income, expenses and interests. The Foreign Agents Registration Act (1938) required individuals who represented foreign entities to register. The first general law to regulate lobbying activities at the federal level was enacted in 1938 and applied only to the legislative branch, namely Congress. See Chari, Hogan, Murphy (2010) for a more detailed discussion of the history of lobbying regulation in the United States.

⁶Jack Abramoff was one of the more enigmatic professional lobbyists, working for several lobbying firms over time, and also well known for lucrative lobbying deals. He was the center of a public corruption scandal and pleaded guilty to charges of fraud, tax evasion, and bribery of Congress members. The investigations led to several investigations and convictions against policymakers, staffers, and lobbyists. See Schmidt and Grimaldi (2005, 2006).

⁷The revolving door is the phenomenon of former public officials who become lobbyists and provide their political networks and expertise to potential clients. For an empirical analysis of this phenomenon and the networks of lobbyists and policymakers see Blanes i Vidal, Draca, and Fons-Rosen (2012) as well as Eggers (2010).

⁸The *New York Times* obtained emails in 2009 that showed how lobbyists employed by the same law firm and lobbying on behalf of a biotechnology company provided House members from both parties ghost-written statements that were printed in the *Congressional Record*.

⁹The Lobbying Disclosure Act (LDA) requires lobbyists to disclose their lobbying revenues, names of clients, and institutions of their administrative contacts but not the names of the policymakers they interacted. Current empirical analysis uses various proxies for lobbyist-policymaker networks. Blanes i Vidal, Draca and Fons-Rosen (2012) use past work experience of lobbyists and policymakers, Eggers (2010) uses party affiliation of lobbyists, and Bertrand, Bombardini and Trebbi (2012) employ campaign contributions to politicians by lobbyists as measure. The current analysis may shed some light in Section 4.3 on why

In addition to the observed gradual reforms, an institutional comparison reveals that the institutions that regulate lobbying activities differ widely across countries and even within countries at the state level. Countries with a higher degree of formal lobbying regulation, such as public registers, codes of conduct, and activity reports, are, for example, the United States, Canada, and recently Australia. Most Western democracies have only limited forms of regulation or none.¹⁰ Irrespective of the level of regulation, a public dissatisfaction with professional lobbying activities is present in most countries. Though the United States have relatively strong lobbying regulations in place, there is still a lack of satisfaction and transparency present.¹¹ A public dissatisfaction and inability to initiate reforms may be highlighted by the case of the European Union with its three main political institutions. The European Parliament, with its elected members, has a mandatory registry for lobbyists. The European Commission, with officials appointed by member states, has just recently changed in 2008 from self-regulation to a voluntary registry for lobbyists.¹² The European Council, as the representation of member states' governments, has no rules in place.

The main focus of this study is on commercial lobbying activities to acknowledge the growing activities by commercial lobbyists and to close the observed gap in the literature that focuses exclusively on special interest group lobbying.¹³ The current analysis addresses two questions: what are the institutions that can achieve first-best lobbying outcomes in a market environment, and why do we observe unregulated lobbying activities as well as gradual reforms? To answer both questions, the analysis uses Groll and Ellis' (2012a) model of commercial lobbying in which lobbyists provide lobbying services for profit to

policymakers may hesitate to disclose their interactions with lobbyists.

¹⁰See Chari, Hogan and Murphy (2010) for a detailed comparison of lobbying regulation across countries.

¹¹For example, this is highlighted by U.S. Senator Ron Wyden's statement about the Trans Pacific Partnership (TPP) and the U.S. Trade Representative (USTR): "[...] And yet, Mr. President, the majority of Congress is being kept in the dark as to the substance of the TPP negotiations, while representatives of U.S. corporations – like Halliburton, Chevron, PHRMA, Comcast, and the Motion Picture Association of America – are being consulted and made privy to details of the agreement. As the Office of the USTR will tell you, the President gives it broad power to keep information about the trade policies it advances and negotiates, secret. Let me tell you, the USTR is making full use of this authority. [...]" Statement for the Record to the U.S. Senate, May 23rd 2012.

¹²The Interinstitutional Agreement on the Establishment of a Transparency Register (2011) combines both the Parliament and the Commission registers for enhanced transparency.

¹³The analysis does not ignore or rule out special interest group lobbying but highlights the comparative advantage of commercial lobbyists in comparison to internal special interest group lobbyists.

many clients and possess an expertise that allows them to make predictions about the social desirability of policy proposals. Lobbyists can share their information findings and transfer financial contributions to policymakers in exchange for political access that is of interest to the lobbyists' clients. A policymaker's powerful position to allocate political access across competing citizens and lobbyists allows him to request his preferred combination of information acquisition and financial contributions, which in turn may not be socially efficient. This potential distortion is addressed by the first question. The analysis shows that if commercial lobbying is socially desirable, then transparency about policymakers' and lobbyists' financial and informational transfers can limit potential welfare distortions. These distortions may arise from lobbyists' and policymakers' incentives to substitute financial contributions for socially beneficial information. An exclusive focus on financial contributions may fall short of identifying such a substitution.

The policymakers' requests in an unregulated market equilibrium cause both a private rent dissipation for citizens and lobbyists as well as a potential distortion in the quality of political decisions. The private rent dissipation and quality of political decisions may cause a political conflict between citizens and policymakers and gives rise to the second question. This political conflict determines the conditions under which a first-best institution is self-stable or not. In addition, the analysis explains the observed political stability of unregulated lobbying activities with self-interested policymakers who do not distort the positive welfare effects from commercial lobbying too much or by citizens who do not have sufficient political influence to institute political reforms.

This study is related to the lobbying literature that focuses on a special interest group's strategic choice of providing information and campaign contributions as means to influence policymakers.¹⁴ Early models have modeled campaign contributions as a means to gain political access to policymakers, and the political access gained thereby as a channel

¹⁴There is an extensive literature that examines the influence of campaign contributions on policy outcomes. In particular, see Bernheim and Whinston (1986), Grossman and Helpman (1994), and Besley and Coate (2001). Common for these models is that special interest groups provide financial resources to policymakers in exchange for preferred policies. Another strand of literature assesses the role of lobbying as information revelation. See Crawford and Sobel (1982), Potters and van Winden (1992), Austen-Smith (1994), and Krishna and Morgan (2001) for exemplary studies. Issues in these models are the special interest group's ability to reveal credibly their private information to the policymaker, and the special interest group's incentive to misrepresent private information to induce desired policy choices.

for the transmission of the interest group’s private information.¹⁵ More recent models focus on special interest groups’ strategic choice of information transmission and financial contributions. For example, Bennedsen and Feldmann (2006) argue that an information externality arises when competing special interest groups attempt to influence a policy-maker with policy-relevant information about a single policy. This information externality reduces an interest group’s incentive to provide information and results in a specialization of interest groups in providing information or financial contributions, depending on the interest group’s information technology. In the current analysis citizens have policy proposals with unknown spillovers that may be investigated by lobbyists. The lobbyists’ findings are specific for each policy proposal so that there is an externality from an enacted policy but no informational externality. Dahm and Porteiro (2008a) focus on the observed simultaneity of information acquisition and financial contributions. In their model a single interest group’s gathered information may benefit or harm its aspirations. So financial contributions may avoid a negative information effect or complement information transfers depending on the lobbying game. In a companion paper, Dahm and Porteiro (2008b) focus on the implications of legal contribution limits for the provision of information. They argue that limits on financial contributions make contributions as “damage control” less effective and decrease an interest group’s incentive to gather risky information. Cotton (2009) analyzes a policymaker who is selling policy favors in exchange for contributions but no information provision and selling access in exchange for lower contributions and observable information. The policymakers’ choice is driven by the policy importance. In the analysis of this paper, the choice of information provision and financial contributions depends on both policy importance and policymakers’ personal preferences.

In stark contrast, Groll and Ellis (2012a) provide a rationale for commercial lobbying firms that offer intermediation services for profit. Citizens and lobbyists compete for political access and over many policy proposals rather than for the direction of a single

¹⁵Austen-Smith (1995) argues that a special interest group acquires political access to a legislator that enables the group to transmit policy-relevant information. The legislator can use the interest group’s willingness to buy access as a signal to form a belief about the group’s credibility. Lohmann (1995) shows that competing special interest groups provide policy-relevant information to a policymaker and only those with interests that conflict with the policymaker’s interests pay a positive amount to gain access and enhance their credibility.

policy. The competition by many lobbyists for political access, which they essentially sell to their clients, and the policymakers' requests for policy-relevant information and financial contributions in exchange for access explain the observed simultaneity of both means. Commercial lobbyists are indifferent per se between both means and provide credible information since they are not directly affected by the policy outcomes they lobby for and also have only limited incentives to misrepresent information because of potential adverse effects for other clients. Groll and Ellis (2012a,b) argue that commercial lobbyists share characteristics with "biased experts", who are directly affected by policy outcomes, and "advocates", who argue strongly for clients, but that their motivation and incentives differ and allow policymakers to induce costly information acquisition and truth-telling without consulting multiple lobbyists for a single issue.¹⁶ The current analysis takes advantage of the simultaneity of information and contributions as well as the simple general-equilibrium structure to derive the conditions for an optimal regulation of lobbying activities.¹⁷

Finally, this study also relates to the recent literature that models political institutions as endogenous choices by rational agents. One strand of the literature focuses on the endogeneity of the political enfranchisement of agents.¹⁸ Another strand focuses on the endogeneity of electoral rules, social choice functions, and the delegation of power.¹⁹ Barbera and Jackson (2001), for example, focus on self-stable constitutions consisting of a voting rule for ordinary affairs and one for constitutional changes and Aghion, Alesina and Trebbi (2004) analyze the delegation of power and its optimal checks and balances.²⁰ In contrast Mulligan, Gil and Sala-i-Martin (2004) argue that the political decision-making process might be more affected by interest groups' influence activities than by electoral

¹⁶For a discussion of biased experts see for example Crawford and Sobel (1982) and Krishna and Morgan (2001); for an analysis of advocates see Dewatripont and Tirole (1999).

¹⁷For an analysis of commercial lobbying with unobservable information acquisition and quality, see Groll and Ellis (2012b). They show that policymakers engage in repeated interactions and rent sharing with commercial lobbyists. Because of the scarcity of political access, commercial lobbyists have greater incentives to invest in lobbyist-policymaker relationships than in lobbyist-client relationships.

¹⁸In particular, see Acemoglu and Robinson (2000, 2006) who argue that political elites transferred political power to disenfranchised citizens to prevent social unrest. Other models provide explanations for a voluntary extension of the franchise such as Lizzeri and Persico (2004) and Jack and Lagunoff (2006).

¹⁹See Koray (2000) for the endogeneity of social choice functions.

²⁰More recent work by Messner and Polborn (2004) studies self-stable voting rules in an overlapping generations framework in which young and old vote on policies that realize delayed costs and benefits. Maggi and Morelli (2006) analyze countries' voluntary entry decisions into international organizations and the stability of such agreements with respect to voting rules. Trebbi, Aghion and Alesina (2008) focus on the choice of voting rules when some electorates are part of minorities.

rules. The current analysis uses general pivotal rules and focuses on the conditions under which a first-best institution that regulates commercial lobbying activities is self-stable, and explains how unregulated commercial lobbying activities may cause endogenous political reforms. Bertrand, Bombardini and Trebbi (2012) focus on the overall lobbying industry and try to disentangle whether lobbyists provide issue expertise or contacts to policymakers. They find evidence that lobbyists' expertise as well as personal contacts matter. Their empirical findings support many of the assumptions made in the model.

The structure of this study is as follows. Section 2 presents the economic model. Section 3 discusses two characteristics of the unregulated market equilibrium. Section 4 derives the first-best institution that regulates commercial lobbying activities. Section 5 highlights a political conflict between citizens and policymakers, derives the conditions under which a first-best institution is self-stable, and provides arguments for the empirically relevant case of unregulated lobbying activities despite a public dissatisfaction. Section 6 concludes.

2 The Economic Model

The structure of the economic model follows the commercial lobbying model by Groll and Ellis (2012a). A society with population T consists of citizens, c , lobbyists, l , and policymakers, p , such that $T = C + L + P$. Each citizen has a single policy proposal which, if enacted, will yield a private benefit of $\pi^c > 0$ and create a social spillover of e^c , $e^c \in \{s, -s\}$ with $s > 0$.²¹ A policy proposal with a positive spillover would be socially desirable whereas one with a negative spillover would be socially undesirable – that is $\pi^c - s < 0$.²² A policy proposal's social desirability is unknown to society ex ante, but each society member knows the exogenous probability for a positive spillover, $\rho(e^+)$ and the complementary probability for a negative spillover, $\rho(e^-) = 1 - \rho(e^+)$. Overall, the expected social value of any policy proposal is positive.²³ A policy proposal can be presented to a policymaker either directly

²¹The role of a citizen can be extended to any entity with private benefits from an enacted policy proposal such as a firm, organization or special interest group that has solved its collective action problem.

²²This echoes Buchanan (1980), who noted that “profit seeking” and “rent seeking” may be the same activity, and similarly motivated, but the consequences are either socially desirable or socially undesirable.

²³These spillovers can be interpreted as externalities or impure public goods. Examples for such policies are projects that require a legislative change of current laws or an administrative support such as special permissions or exemptions, which are common in tax, antitrust, and immigration issues.

by a citizen or indirectly by a lobbying firm, which operates for profit. Lobbyists have a verification technology that allows them to provide policy-relevant information and the ability to provide financial contributions to policymakers. Policymakers announce political access rules to citizens and lobbyists, $\tilde{a}^{cp}(\cdot)$ and $\tilde{a}^{lp}(\cdot)$, and enact all presented proposals.²⁴ Policymakers are appointed by some constitutional rule that is common knowledge.

The actions by lobbyists and the interactions between policymakers and lobbyists are unobservable to citizens. Notwithstanding, citizens can observe the amount of political access, $\tilde{a}^l$, and the number of clients, n^l , for each lobbying firm l . Policymakers are able to observe both the lobbyists' investigation efforts and returned verification signals.²⁵ All individuals know the exogenous probabilities related to the lobbyists' verification technologies.

There are three markets. The lobbying labor market has no barriers to entry and there is perfect arbitrage in citizens' and lobbyists' equilibrium payoffs. Citizens may hire a lobbyist in a perfectly competitive lobbying market at a market equilibrium fee of k . Lobbyists offer verification efforts and financial contributions to policymakers in exchange for political access. These exchanges have agency characteristics. This framework accounts for the necessary characteristics of commercial lobbying activities when both information acquisitions and financial contributions are possible, and it provides a simple general-equilibrium structure. The next sections provide further details.

2.1 Citizens

Each citizen decides whether or not to become a lobbyist. Since there are no barriers to entry, a citizen's decision to enter the commercial lobbying industry depends simply on the expected payoffs for citizens and lobbyists – that is $E[\Pi^c] \geq E[\Pi^l]$ for all c and l .

Each citizen who does not become a lobbyist will realize the private benefit of the policy proposal if it is enacted by any policymaker and enjoy a share of aggregate spillovers. A

²⁴This relates to policymakers who act as “gatekeepers,” who can design political access rules to allocate the scarce time across citizens and lobbyists in exchange for resources. This relates to Grossman and Helpman (1994) where policymakers receive policy contingent payments.

²⁵In this sense policymakers act as informed supervisors, who do not possess an independent verification technology but are competent enough to grasp provided information. This notion is similar to Milgrom and Roberts (1986), Laffont and Tirole (1990, 1991), and Bennedsen and Feldmann (2006).

citizen's direct presentation, if access is gained, is costless. If a lobbyist is hired to present a policy proposal, then the citizen has to pay a service fee of k for the intermediation service. It is assumed that a citizen hires only one lobbyist. The payoff for citizen c is then

$$\Pi^c = \begin{cases} \pi^c + \frac{1}{T} \sum_{c=1}^A e^c & \text{if } c\text{'s proposal is presented directly,} \\ \frac{1}{T} \sum_{c=1}^A e^c & \text{if } c \text{ is unsuccessful or politically inactive,} \\ \pi^c - k + \frac{1}{T} \sum_{c=1}^A e^c & \text{if } c\text{'s proposal is presented by } l, \text{ or} \\ -k + \frac{1}{T} \sum_{c=1}^A e^c & \text{if } c\text{'s proposal is passed to } l \text{ but not presented.} \end{cases} \quad (2.1)$$

Citizens are incompletely informed and if their individual participation does not affect the number of enacted proposals, A , then spillovers do not affect a citizen's decision. Political access is uncertain. For the direct approach citizens use the aggregate political access available to citizens, A^c , and the number of competing citizens for this access, to form an expectation. For the indirect approach a citizen uses a firm's political access to policymakers, $\tilde{a}^l$, and the firm's number of clients, n^l , to form an expectation.

2.2 Lobbying Firms

Each lobbying firm is represented by one lobbyist and has n^l clients who each pay a service fee of k . A lobbyist may present policy matters on clients' behalf to policymakers depending on l 's political access. A lobbyist's political access is $\tilde{a}^l = \sum_{p=1}^{p^l} \tilde{a}^{lp}$ to p^l political contacts. Besides verified, m^{lp} , and unverified policy proposals, u^{lp} , a lobbyist may transfer financial contributions of f^{lp} to each p^l , which can be aggregated to $f^l = \sum_{p=1}^{p^l} f^{lp}$.

Lobbying firms possess an verification technology that returns a signal x , $x \in \{x^+, x^-\}$, which improves the firm's information about a policy proposal. If the signal is positive, x^+ , then it is more likely that the proposal's spillover is positive than without an investigation $\rho(e^+|x^+) > \rho(e^+)$; a negative signal, x^- , increases the likelihood of a negative spillover, $\rho(e^-|x^-) > \rho(e^-)$. Investigated proposals with a positive signal have a greater expected social value than unverified proposals; verified proposals with a negative signal have a negative expected social value. The expected social values are common knowledge and can

be summarized to

$$\begin{aligned} \rho(e^+|x^+) (\pi^c + s) + \rho(e^-|x^+) (\pi^c - s) &> \rho(e^+) (\pi^c + s) + \rho(e^-) (\pi^c - s) \\ &> 0 > \rho(e^+|x^-) (\pi^c + s) + \rho(e^-|x^-) (\pi^c - s). \end{aligned} \quad (2.2)$$

There are processing costs that occur for each policy proposal that is accepted by a lobbying firm. These costs are represented by the increasing convex cost function $G(n^l)$ with $G'(0) = 0$. The verification of proposals incurs costs that are represented by the increasing convex cost function $F(m^l)$ with $F'(0) = 0$, where $m^l = \sum_{p=1}^{p^l} m^{lp}$.²⁶

Lobbying firms also receive a share of aggregate spillovers; hence, a lobbyist maximizes the payoff of

$$\Pi^l = kn^l - G(n^l) - F(m^l) - \sum_{p=1}^{p^l} f^{lp} + \frac{1}{T} \sum_{c=1}^A e^c. \quad (2.3)$$

with respect to the number of clients and subject to the political access granted by policymakers. The political access is conditional on verification efforts and financial contributions and follows from policymakers' access rules. It is assumed that there are sufficient lobbyists such that each may neglect the effects of their own entry-exit decision on aggregate spillovers.

2.3 Policymakers

Each policymaker enacts a number of policy proposals given his finite time endowment, A^p . All policymakers enjoy an ego rent from holding office, θ , potentially receive financial contributions, f^{lp} , from their l^p lobbying contacts, and enjoy a share of aggregate spillovers from all enacted policy proposals. Since there are P policymakers, the number of enacted policy proposals aggregates to $A \leq PA^p$ enacted policies. Each policymaker p does not possess an independent information technology but can announce $\tilde{a}^{cp}(\cdot)$ and $\tilde{a}^{lp}(\cdot)$, which determine the political access for citizens and lobbying firms. The provision of verification efforts and financial contributions by lobbyists may affect these access rules. The parameter

²⁶Unverified but presented proposals, which can be aggregated to $u^l = \sum_{p=1}^{p^l} u^{lp}$, cause processing costs but no verification costs.

α with $\alpha \in [0, 1]$ represents the policymaker's valuation of financial contributions.²⁷ The policymaker p maximizes the payoff of

$$\Pi^p = \theta + \alpha \sum_{l=1}^{l^p} f^{lp} + \frac{1}{T} \sum_{c=1}^A e^c \quad (2.4)$$

subject to the time constraint for allocating political access across citizens and lobbyists – that is $A^p \geq \sum_{c=1}^{c^p} \tilde{a}^{cp} + \sum_{l=1}^{l^p} \tilde{a}^{lp}$. The benefits from allocating scarce political access across citizens and lobbyists differ for two reasons: First, citizens can only present their own policy proposal, but lobbyists can provide policy proposals and additional desired resources to a policymaker. Second, policymakers observe lobbyists' verification efforts and signals and can enforce their access rules by denying political access when necessary.

3 Market Equilibrium

The unregulated market equilibrium is characterized by demand equals supply in the market for commercial lobbying services, perfect arbitrage in the lobbying labor market, and a Nash equilibrium between policymakers in choosing agency contracts for lobbyists. The number of policymakers follows from a constitution with $P = \bar{P}$. In the following sections two characteristics of the unregulated market equilibrium are discussed to motivate the current analysis for the effective regulation of lobbying activities and observed institutional differences. The derivation and complete characterization of the equilibrium can be found in Groll and Ellis (2012a).

²⁷This valuation can be interpreted as the policymaker's degree of dishonesty or the effectiveness of financial contributions. These financial contributions and their valuation can be seen broadly in the absence of direct money transfers. Contributions account for all costs that lobbyists bear and are not related to the representation of clients or information acquisition. These expenditures benefit policymakers who do not have to value them equally. Examples would be fundraising campaigns, networking events, gifts of air travel, or charities that benefit policymakers and are organized or funded by lobbyists to gain political access.

3.1 Political Access, Enacted Policy Proposals and Financial Contributions

Each policymaker takes the lobbying service fee, k , the size of each firm, n^l , and the number of lobbyists, L , as given, and determines the allocation of time, A^p , across citizens and lobbyists. A policymaker expects to benefit via spillover shares from any unverified or positively verified proposal and from financial contributions. Policymakers have no incentive to allocate time to citizens as long as lobbyists provide sufficient proposals and comply with their access rules. The access rules for lobbyists consist of a required level of verification effort, $\tilde{m}^{lp}$, the number of policy proposals to be presented, $\tilde{a}^{lp}$, and a financial contribution, $\tilde{f}^{lp}$, from each lobbying contact.²⁸ A policymaker has to respect the lobbyist's participation condition and cannot force his own lobbying contacts to absorb economic losses.

The policymaker's requests $(\tilde{m}^{lp}, \tilde{u}^{lp}, \tilde{f}^{lp})$ can be summarized as follows.²⁹

Proposition (Groll and Ellis, 2012a). *If $\alpha > 0$, then a policymaker extracts all available private rents from their lobbying contacts. How the policymaker extracts rents depends on the parameter values and takes one of four possible forms:*

1. *If the solution is at a corner with respect to verified proposals, then all approved policy proposals received positive verification signals. All remaining rents are extracted by policymakers via financial contributions.*
2. *If the solution is at a corner with respect to verified and unverified proposals, then the solution to the policymaker's problem involves lobbyists verifying m^{co} proposals, which exhaust a lobbyist's financial resources, and presenting those proposals which received a positive verification signal together with sufficient unverified proposals to exhaust access. No rents are extracted via financial contributions because of a*

²⁸The number of unverified proposals presented by a lobbyist to a policymaker can be written as $u^{lp} = \tilde{a}^{lp} - \rho(x^+)m^{lp}$.

²⁹For the analysis of a perfectly honest policymaker with $\alpha = 0$ see Groll and Ellis (2012a).

sufficiently small α . The amount of verification at the firm-level is determined by

$$F \left(m^{co} + \sum_{h \neq p} m^{lh} \right) = n^l k - \sum_{h \neq p} f^{lh} - G \left(n^l \right) - E[\Pi^c | \text{private ben.}]. \quad (3.1)$$

3. If the solution is interior with respect to verification and financial contributions, then the policymaker's problem involves lobbyists verifying $m^\#$ proposals, and presenting those proposals which received a positive verification signal together with sufficient unverified proposals to exhaust access. All remaining rents are extracted by policymakers via financial contributions. The amount of verification at the firm-level is determined by

$$m^\# = m \left(\underbrace{\alpha}_{(-)}, \underbrace{T}_{(-)}, \underbrace{s}_{(+)}, \overbrace{\underbrace{\rho(x^+)}_{(+)}, \underbrace{\rho(e^+|x^+)}_{(+)}, \underbrace{\rho(e^-|x^+)}_{(-)}, \underbrace{\rho(e^+)}_{(-)}, \underbrace{\rho(e^-)}_{(+)}}^{\text{verification technology (+)}} \right).^{30} \quad (3.2)$$

4. If the solution is at a corner with respect to financial contributions, then all approved proposals are unverified.

3.1.1 Sources for Potential Market Failure

The sources for a potential market failure can be manifold.³¹ The two main concerns are that policymakers do not internalize all costs of lobbying activities when they request verification efforts, and that the policymakers' preferences and requests distort the socially optimal level of verification efforts.³² The first externality arises when policymakers take only their individual spillover shares and the lobbyists' participation constraint into account, but ignore aggregate spillover effects and the costs of processing policy proposals. The former may cause a verification effort at the firm-level that is inefficiently low; the

³⁰It follows from $\frac{\partial F(m^l)}{\partial m^l p} = \rho(x^+) \frac{s}{\alpha T} [\rho(e^+|x^+) - \rho(e^-|x^+) - \rho(e^+) + \rho(e^-)]$.

³¹Groll and Ellis (2012a) provide a detailed normative analysis of the market equilibrium and discuss each potential market failure in more detail.

³²There is a third potential market failure. Citizens and lobbyists do not internalize the benefits from spillover shares into their choices. This may lead to lower investments for lobbying activities, and as a consequence to fewer available resources for the socially desired verification of policy proposals.

latter may cause a verification effort that is inefficiently high.³³

Finally, policymakers have the ability to control political access. Each policymaker has preferences over improved spillover shares and financial contributions. These personal preferences and the policymakers' political access rules may distort the social benefits from commercial lobbying activities. The distortion arises when policymakers substitute financial contributions for verification efforts, for personal gain. This is more likely for higher values of α , lower spillover shares, and lower expected gains from verification.

3.2 Private Rent Dissipation

Citizens attempt to approach policymakers to realize the private benefit of their policy proposals at no cost, whereas lobbyists compete for political access for lobbying profits. This competition for political access allows policymakers to extract resources in exchange for their scarce time. In this competition lobbyists have a resource and capability advantage and gain all available political access. So citizens decide whether they want to hire a lobbyist or give up their policy proposals. In a symmetric equilibrium, all citizens are clients of commercial lobbying firms and their willingness to pay is the expected benefit from an enacted policy proposal and equals the marginal cost of processing proposals at the firm-level – that is $C = n^l L$ and $\frac{\bar{P}^{AP}}{L n^l} \pi^c = k = \frac{\partial G(n^l)}{\partial n^l}$ for every l .³⁴

Proposition 1. *All expected private rents for citizens and lobbyists are dissipated. However, not all social rents are dissipated.*

The competition for political access by citizens and lobbyists as well as the resource requests by self-interested policymakers extract all expected private rents from citizens and lobbyists.³⁵ However, not all expected social rents are dissipated since citizens and lobby-

³³The costs of verifying proposals affect the market for commercial lobbying services and lobbyists' participation condition for the political access market. The policymaker's marginal decision how to extract available lobbying rents is unaffected.

³⁴The first statement follows from the entry condition. If a citizen would exist who is not a client of a commercial lobbying firm, then this citizen would realize no expected private benefit and, given that $G(\cdot)$ is increasing and convex, could contest the lobbying industry at a lower cost per client. Hence, in equilibrium, each citizen must either be a client or become a lobbyist. The second statement follows from the expected benefit of passing the policy proposal to a lobbyist where a citizen uses the lobbyist's access to policymakers and the number of the lobbyist's clients to form an expectation about the likelihood that the proposal is presented.

³⁵This result is similar to the rent-seeking literature, in which a Tullock (1980) contest induces individuals

ists do not internalize the spillover effects into their lobbying decisions and policymakers may earn financial contributions. The benefits for citizens and lobbyists from commercial lobbying activities depend entirely on the quality of spillovers and policies enacted by self-interested policymakers. As shown in (3.2), the quality of spillovers and enacted policies depends on the policymakers' verification requests and is summarized by $E[e^c|\alpha]$. The market equilibrium payoffs for citizens and lobbyists are

$$E[\Pi^{c\#}] = \frac{\bar{P}A^p}{T}E[e^c|\alpha] = E[\Pi^{l\#}] \quad (3.3)$$

and for policymakers

$$E[\Pi^{p\#}] = \theta + \alpha f^{p\#} + \frac{\bar{P}A^p}{T}E[e^c|\alpha]. \quad (3.4)$$

4 First-Best Institutions

This section takes up the point of a potential market failure and proposes the institutional elements that may achieve efficient market outcomes. The analysis starts with defining the institutional elements of interest and derives then the elements for a first-best institution in a market environment in two steps: first, a fictitious social planner who wants to maximize social welfare and can employ all resources solves for the socially optimal distribution of political access and level of commercial lobbying; second, the analysis derives additional institutional conditions under which the social optimum can be a market equilibrium.

The social optimum depends on the social desirability of commercial lobbying and there are two possibilities. The analysis derives two institutions with both a larger number of policymakers and zero level of commercial lobbying or a smaller number of policymakers and a positive level of commercial lobbying. The analysis highlights the importance of evaluating the effectiveness and social benefits from an information provision by commercial

competing for a prize to expend resources such that with an increasing number of competitors these political investments equal the prize. Here, in the presence of policy spillovers competition for private rents may lead to incomplete social rent dissipation. It is also similar to Cotton (2012) who shows how a policymaker can extract all rents from a wealthy lobbying interest group in a contributions-for-access environment whereas a less-wealthy interest group receives no access but enjoys private rents. Here, citizens and commercial lobbyists are homogeneous but they also do not invest of all their resources in lobbying activities. The result shows that heterogeneous agents are not necessary for incomplete rent dissipation.

lobbyists. Transparency rules that focus exclusively on financial transfers from lobbyists to policymakers - and do not also ask “What have you learned from a lobbyist?” - may fall short as means to limit welfare distortions.

4.1 Institutions

The analysis abstracts from a detailed discussion of voting rules and the delegation of power for collective decision-making.³⁶ The institutional elements of interest describe the number of policymakers, available political access to citizens and lobbyists, and the legal constraints on lobbying activities within a constitutional framework. The constitutional framework could be, but is not limited to, a democratic constitution with presidential, parliamentary, or direct democratic voting features, or a bureaucracy with government agencies. An institution that regulates lobbying activities is defined as follows.

Definition 1. *An institution I is a set of elements $(\bar{P}, \bar{A}^c, \bar{A}^l, \bar{q}, \bar{f})$ with $\bar{P} \in [0, T]$, $\bar{A}^c \in [0, A^p]$, $\bar{A}^l \in [0, A^p]$, $\bar{q} \in [0, 1]$, and $\bar{f} \in [0, \infty)$.*

The institution I determines the number of policymakers, $\bar{P}$, defines potential constraints for policymakers to allocate political access across citizens and lobbyists, $\bar{A}^c$ and $\bar{A}^l$, describes potential responsibilities for policymakers to request a certain expected quality of policy information from commercial lobbyists, $\bar{q}$, and may regulate the ability of policymakers to receive financial contributions from lobbyists, $\bar{f}$. The expected quality of policy information that is provided by a lobbyist to a policymaker, q , depends on the share of verified policy proposals with positive signals amongst all presented policy proposals – that is $q = \frac{\rho(x^+)m^{lp}}{\bar{a}^{lp}}$. Here, $\bar{f}$ can be interpreted as a limit on the financial contribution a policymaker can receive from a lobbyist.

³⁶The reader is referred to Buchanan and Tullock’s (1962) influential work and Congleton and Swedenborg’s (2006) review of democratic constitutional design.

4.2 First-Best Institution

Suppose a fictitious social planner cares about social welfare as the sum of individual payoffs. This can be written as

$$\Pi^s = \sum_{c=1}^C \Pi^c + \sum_{l=1}^L \Pi^l + \sum_{p=1}^P \Pi^p \quad (4.1)$$

and can be summarized in expected terms to

$$E[\Pi^s] = A\pi^c - \sum_{l=1}^L F(m^l) - \sum_{l=1}^L G(n^l) + P\theta + (\alpha - 1) \sum_{l=1}^L f^l + E \left[\sum_{c=1}^A e^c \right], \quad (4.2)$$

where social welfare depends on all enacted policy proposals; costs of commercial lobbying; ego rents and financial contributions for policymakers; and all policy spillovers.

When maximizing the expected social welfare with respect to optimal lobbying activities and the optimal number of policymakers, lobbyists, and citizens, it can be shown that the social optimum depends on the social desirability of commercial lobbying. If commercial lobbying is not welfare-enhancing, then the social optimum is described by no commercial lobbying activities and there are only citizens and policymakers; if commercial lobbying is welfare-enhancing, then the social optimum is described by a positive level of commercial lobbying and there are citizens, lobbyists, and policymakers. The detailed derivation of the social optimum can be found in Groll and Ellis (2012a). In the following, the characteristics of the social optimum describe the elements for a first-best institution.

4.2.1 Commercial Lobbying is Socially Undesirable

If commercial lobbying is socially undesirable, then the socially optimal number of policymakers follows from the notions that all unverified policy proposals are, in expected terms, welfare-increasing and that lobbyists contribute more to social welfare as citizens providing policy proposals. Therefore, sufficient policymakers shall be appointed to office and approve a maximum of policy proposals. To sum up, $PA^p = C$ and $T = P + C$. Given

these results the socially optimal number of policymakers and citizens is

$$P^* = \frac{T}{A^p + 1} \text{ and } C^* = \frac{TA^p}{A^p + 1}. \quad (4.3)$$

The implications for a potential first-best institution when commercial lobbying is socially undesirable can be summarized as follows.

Proposition 2. *If commercial lobbying is socially undesirable, then institution I^* with $\bar{P} = P^*$, $\bar{A}^c = A^p$, $\bar{A}^l = 0$, $\bar{q} = 0$, and $\bar{f} = 0$ is a first-best institution.*

Policymakers would be required to allocate all their time to citizens and enact any policy proposal independent of their private incentives. If all political access is allocated to citizens, then there is no reason for citizens to hire lobbyists, and the institutional elements that regulate quality of information and limits for financial contributions, $\bar{q}$ and $\bar{f}$, are not binding.

The expected sum of individual payoffs in the absence of commercial lobbying is

$$E[\Pi^{s*}] = C^* \pi^c + P^* \theta + P^* A^p E[e^c] \quad (4.4)$$

– with $C^* = P^* A^p$ and an expected spillover of $E[e^c] = s [\rho(e^+) - \rho(e^-)]$ per enacted policy proposal.³⁷

4.2.2 Commercial Lobbying is Socially Desirable

If commercial lobbying is socially desirable, then the net benefits from commercial lobbying should be maximized. Therefore, policymakers should allocate all their time to lobbyists and ask only for verified proposals with positive signals. Citizens do not receive direct political access and should pass their proposals to lobbyists who verify all of them. This can be summarized to $PA^p = \rho(x^+)Lm$, $C = nL$, and $n = m$. The existence of financial transfers depends on the degree of dishonesty or effectiveness. If financial contributions are socially wasteful, $\alpha < 1$, then they should be banned; if financial contributions are just pure transfers, $\alpha = 1$, then the social optimum would be unaffected and would not

³⁷Using the previous results, (4.4) can also be written as $E[\Pi^{s*}] = \frac{T(A^p(\pi^c + E[e^c]) + \theta)}{A^p + 1}$.

require a contribution limit. The concern about financial contribution limits is two-fold: they should ensure that financial transfers do not affect the distribution of political access or substitute for policy information, and they should actually favor direct contributions instead of socially undesired in-kind transfers. The socially optimal verification efforts at the firm-level are

$$m^* = m \left(\underbrace{s}_{(+)}, \overbrace{\underbrace{\rho(x^+)}_{(+)}, \underbrace{\rho(e^+|x^+)}_{(+)}, \underbrace{\rho(e^-|x^+)}_{(-)}, \underbrace{\rho(e^+)}_{(-)}, \underbrace{\rho(e^-)}_{(+)}}^{\text{verification technology (+)}} \right).^{38} \quad (4.5)$$

Given $T = C + L + P$ and the previous conditions the socially optimal number of policymakers is

$$P^{**} = \frac{\rho(x^+)Tm^*}{\rho(x^+)m^* + A^p + A^pm^*}. \quad (4.6)$$

The socially optimal number of citizens and lobbyists is

$$C^{**} = \frac{TA^pm^*}{\rho(x^+)m^* + A^p + A^pm^*} \text{ and } L^{**} = \frac{TA^p}{\rho(x^+)m^* + A^p + A^pm^*}. \quad (4.7)$$

The implications for a potential first-best institution of socially desirable commercial lobbying can be summarized by the following proposition.

Proposition 3. *If commercial lobbying is socially desirable, then institution I^{**} with $\bar{P} = P^{**}$, $\bar{A}^c = 0$, $\bar{A}^l = A^p$, $\bar{q} = 1$, and $\bar{f} = \begin{cases} 0 & \text{if } \alpha < 1 \\ \geq 0 & \text{if } \alpha = 1 \end{cases}$ is a first-best institution.*

The institution I^{**} would maximize the net benefits of socially desirable commercial lobbying and result in the best expected quality of enacted policy proposals since all of them would have been verified and have received a positive verification signal.

The expected sum of individual payoffs in the presence of commercial lobbying can be summarized as

$$E[\Pi^{s**}] = \rho(x^+)C^{**}\pi^c - L^{**}(F(m^*) + G(m^*)) + P^{**}\theta + P^{**}E[e^c|x^+] \quad (4.8)$$

³⁸It follows from the first-order condition $\frac{\partial E[\Pi^*]}{\partial m^l} = -\frac{\partial F(m^l)}{\partial m^l} - \frac{\partial G(m^l + u^l + r^l)}{\partial m^l} + \rho(x^+)s[\rho(e^+|x^+) - \rho(e^-|x^+) - \rho(e^+) + \rho(e^-)]$.

with $\rho(x^+)C^{**} = P^{**}A^p$ and $C^{**} = L^{**}m^*$. The expected quality of spillovers is $E[e^c|x^+] = s[\rho(e^+|x^+) - \rho(e^-|x^+)]$ per enacted policy proposal.³⁹

4.2.3 Choice of First-Best Institution

The selection of the first-best institution depends on the social desirability of commercial lobbying and follows immediately from the welfare outcomes of $E[\Pi^{s*}]$ and $E[\Pi^{***}]$ from (4.4) and (4.8). Comparing both levels of government, it can be concluded that

$$P^* = \frac{T}{A^p + 1} > P^{**} = \frac{\rho(x^+)Tm^*}{\rho(x^+)m^* + A^p + A^pm^*} \quad (4.9)$$

for $m^* > 1$ and $0 \leq \rho(x^+) \leq 1$. That is, the socially optimal number of policymakers is smaller in the presence of commercial lobbying. This follows intuitively from the notion that lobbyists will verify all clients' policy proposals and only present those proposals that have received a positive verification signal. The verification and portfolio selection by lobbyists therefore requires fewer policymakers.

Using (4.4), (4.8), and (4.9), the welfare trade-off between the institution I^* with a larger number of policymakers and a ban on commercial lobbying activities and the institution I^{**} with a smaller government and commercial lobbying can be summarized to

$$\underbrace{(P^* - P^{**})(\theta + A^p\pi^c)}_{(+)} + \underbrace{A^p(P^*E[e^c] - P^{**}E[e^c|x^+])}_{(?)} + \underbrace{L^{**}(F(m^*) + G(m^*))}_{(+)} \geq 0. \quad (4.10)$$

This condition can be broken down into the following. First, in the absence of commercial lobbying there are more policymakers who enjoy ego rents and enact policy proposals, which yields more private rents. Second, in the absence of commercial lobbying there are more policy proposals enacted but the expected quality of each spillover is less than if the proposal would have been verified – that is $P^* > P^{**}$ but $E[e^c] < E[e^c|x^+]$. The difference of aggregate spillover effects depends on parameter values. Third, commercial lobbying requires resources. It can be concluded that if informational gains from commercial lobbying

³⁹Similarly, (4.8) can also be written as $E[\Pi^{***}] = \frac{T(\rho(x^+)m^*(\theta + A^p(\pi^c + E[e^c|x^+])) - A^p(F(m^*) + G(m^*)))}{\rho(x^+)m^* + A^p + A^pm^*}$.

do not outweigh larger private rents from a larger government and the costs of commercial lobbying, then the institution I^* is first-best. If they do, then I^{**} is first-best.

4.2.4 Veil of Ignorance

The first-best institution can be implemented by founding fathers or proposed by them to society members who evaluate the proposed options “behind a veil of ignorance.”⁴⁰ It is assumed that all individuals are risk-neutral when they make a choice under uncertainty.

If individuals do not know their identities ex ante, but know that commercial lobbying is socially undesirable, then all of them evaluate their individual expected payoffs behind a veil of ignorance and expect an individual payoff of

$$E[\Pi^{u*}] = \frac{C^*}{T} E[\Pi^{c*}] + \frac{P^*}{T} E[\Pi^{p*}] = \frac{1}{T} E[\Pi^{s*}], \quad (4.11)$$

which is the expected payoff from being either a citizen or a policymaker and is equal to an identical share of the optimal social welfare.⁴¹

If individuals do not know their roles, but know that commercial lobbying is socially desirable, then each individual expects a payoff of

$$E[\Pi^{u**}] = \frac{C^{**}}{T} E[\Pi^{c**}] + \frac{L^{**}}{T} E[\Pi^{l**}] + \frac{P^{**}}{T} E[\Pi^{p**}] = \frac{1}{T} E[\Pi^{s**}], \quad (4.12)$$

which is the expected payoff from being either a citizen, lobbyist, or policymaker, and equals an identical share of social welfare.⁴²

Both circumstances can be summarized as follows.

Lemma 1. *No individual has an incentive to oppose a first-best lobbying institution I^* or I^{**} .*

Proof. See the Appendix A.1. □

⁴⁰This criterion for collective decision-making goes back to Harsanyi (1953) and was named and extended by Rawls (1971). Buchanan and Tullock (1962) discuss the costs of collective decision-making and external costs (costs that an individual bears because of a personal disagreement with a collective decision). The collective decision-making behind a veil of ignorance reduces external costs ex ante and can implement a social choice with unanimity.

⁴¹See (4.13) and (4.14) for a detailed description of individual payoffs. $E[\Pi^{s*}]$ follows from (4.4).

⁴²See (4.17), (4.18), and (4.19) for a detailed description of individual payoffs. $E[\Pi^{s**}]$ follows from (4.8).

Each individual expects an equal share of social welfare from behind a veil of ignorance. So whenever social welfare is maximized the expected individual payoff is maximized as well. An individual would have no incentive to oppose such a social and individual outcome.

4.3 Individual Compliance with First-Best Institution

In a next step, the analysis focuses on the individual incentives to deviate from the socially desired behavior. These incentives help to identify the potential need for additional transparency rules or regulation to achieve a first-best outcome in a market environment. Suppose that founding fathers (or society members who vote behind a veil of ignorance) have implemented an institution I^* or I^{**} but that individuals behave according to their self-interests. It can be shown that additional transparency rules might be required to constrain policymakers' resource requests and to limit financial transfers and information transfers from lobbyists to policymakers.

4.3.1 Institutional Ban on Commercial Lobbying

Suppose commercial lobbying is not welfare-enhancing and the institution I^* with a larger government P^* and a ban on commercial lobbying, $\bar{A}^l = 0$, is socially desirable and has been implemented. Citizens and policymakers observe their roles and expected payoffs. All citizens shall attempt to approach policymakers directly and policymakers shall grant all political access to them. Hence citizens can enjoy the full private benefits of their policy proposals, and citizens and policymakers alike enjoy a share of aggregate spillovers from policy proposals, which are all unverified. The socially optimal expected payoff for a citizen is

$$E[\Pi^{c*}] = \pi^c + \frac{P^* A^p}{T} E[e^c] \quad (4.13)$$

and for a policymaker

$$E[\Pi^{p*}] = \theta + \frac{P^* A^p}{T} E[e^c]. \quad (4.14)$$

A citizen could deviate from this behavior in a market environment in two ways:⁴³ A

⁴³Every citizen has an incentive to use available political access because of $\pi^c > 0$. This is independent of I^* that specifies whether a citizen is required to present a policy proposal or a policymaker is required

citizen could attempt to hire another citizen to act as a lobbyist who provides a verified policy proposal to a policymaker,⁴⁴ or could act as a lobbyist for another citizen. Both potential deviations require that a policymaker has a corresponding interest in reallocating political access and granting it to a designated lobbyist.

A policymaker could also deviate from the socially efficient behavior in two ways: A policymaker could require verification efforts in exchange for political access, or could require financial contributions in exchange for political access.⁴⁵ Both actions imply that a policymaker would reallocate political access from citizens to a designated lobbyist and violate $A^p = \bar{A}^c$. A citizen would then have the choice between complying with the policymaker's request or being politically inactive.

Proposition 4. *A citizen has no incentive to deviate from the institutional rules of I^* .*

A policymaker has an incentive to deviate from the institutional rules of I^ if*

$$\rho(x^+)E[e^c|x^+] > 2E[e^c] \text{ and } \rho(x^+)\pi^c \geq F(1) + G(1) \quad (4.15)$$

and would require verification efforts in exchange for political access or if

$$\alpha > \left(T \left(\frac{\pi^c - G(1)}{E[e^c]} \right) + 2 \right)^{-1} \quad (4.16)$$

and would require financial contributions in exchange for political access.

Proof. See Appendix A.2. □

If commercial lobbying is socially undesirable, then no citizen has an incentive to provide privately the public good of policy information. Unlike citizens, policymakers do not bear the costs of commercial lobbying directly and possess a powerful position that allows them to offer their scarce time in exchange for resources. If a policymaker values sufficiently the improvements in spillover shares through verification efforts, shown in (4.15), or values

to accept all policy proposals presented by citizens.

⁴⁴Every citizen receives political access and has no incentive to hire a lobbyist just for political representation.

⁴⁵Every policymaker has a private incentive to employ all political resources because of a share of positive expected spillovers.

financial contributions more highly than spillover shares from unverified proposals, shown in (4.16), then a policymaker has an incentive to deviate from I^* and sell his political resources to citizens via commercial lobbyists. The policymaker's requests for verification efforts are more likely for larger information improvements and larger private benefits from proposals, π^c . Financial requests are more likely for higher degrees of dishonesty or effectiveness of contributions, α , a larger population, T , and larger private benefits from proposals, π^c .

Proposition 4 implies that potential violations of I^* would be undertaken by policymakers and not by citizens. This may require additional transparency rules for monitoring and constraining policymakers' actions.

4.3.2 Institutional Facilitation of Commercial Lobbying

Now suppose commercial lobbying is welfare-enhancing and the institution I^{**} with a smaller government and a positive level of commercial lobbying activities is socially desirable and has been implemented. All individuals observe their identities and payoffs. Citizens will not receive direct political access to policymakers but will pass their policy proposals to lobbyists, who receive all available political access, verify all policy proposals from clients, and present only those with positive verification signals to policymakers. So all citizens have to pay service fees to lobbyists but can enjoy only the full private benefit from their policy proposal if the verification returned a positive signal. Lobbyists enjoy private lobbying profits and policymakers their ego rents and, potentially, financial contributions depending on α . The socially optimal expected payoff for a citizen is

$$E[\Pi^{C**}] = \rho(x^+) \pi^c - k + \frac{P^{**} A^p}{T} E[e^c | x^+], \quad (4.17)$$

for a lobbyist

$$E[\Pi^{l**}] = m^* k - F(m^*) - G(m^*) - f^{l*} + \frac{P^{**} A^p}{T} E[e^c | x^+], \quad (4.18)$$

and for a policymaker

$$E[\Pi^{p**}] = \theta + \alpha f^{p*} + \frac{P^{**} A^p}{T} E[e^c | x^+]. \quad (4.19)$$

A citizen could deviate from the socially desired behavior with an attempt to bypass the lobbyists' verification efforts and approach a policymaker directly.⁴⁶ This would require that a policymaker would have to have an incentive to reallocate political access from a lobbyist to a citizen. A citizen could pay a lobbyist to misrepresent information, or could pay a policymaker for direct political access. The former goes beyond the model's information structure. Groll and Ellis (2012b) show that with incomplete information about lobbyists' information acquisition and quality policymakers have an incentive to engage in repeated interactions with lobbyists to monitor their actions and discipline information misrepresentation. Lobbyists who compete for scarce political access then have limited incentives to misrepresent information for a single client and jeopardize the relationship with the policymaker and other clients.

A lobbyist could deviate from the institutional rules of I^{**} in two ways: A lobbyist could offer a financial contribution when $\bar{f} = 0$ (because of $\alpha < 1$), or could offer a financial contribution to substitute financial contributions for verification efforts. However, a lobbyist has no incentive to offer financial contributions if it does not affect the amount of political access or terms for political access. Alternatively, a policymaker could violate the institution I^{**} in three ways: A policymaker could reallocate political access to citizens, could demand financial contributions when $\bar{f} = 0$, or could substitute financial contribution requests for verification requests – that is $q < 1$.⁴⁷

Proposition 5. *A citizen has no individual incentive to deviate from the institutional rules of I^{**} .*

A lobbyist and a policymaker have a mutual incentive to substitute financial contribu-

⁴⁶ Assume that $\rho(x^+) - k \geq 0$ and that a citizen has an incentive to pass the proposal to a lobbyist.

⁴⁷ Similarly, every policymaker has a private incentive to employ all political resources because of a share of positive expected spillovers.

tions for verification efforts if

$$F'(m^* - 1) < \frac{1 + \alpha}{\alpha} \frac{E[e^c|x^+] - E[e^c]}{T}. \quad (4.20)$$

A policymaker has an incentive to extract further financial contributions from lobbyists if

$$k + \frac{E[e^c|x^+] - E[e^c]}{T} > F'(m^* - 1) + G'(m^* - 1) \quad (4.21)$$

Proof. See Appendix A.3. □

A citizen may want to bypass the verification efforts by lobbyists to avoid his private costs of commercial lobbying, $\rho(x^-) + k$, but cannot persuade a policymaker to reallocate political access because of a potential reduction in the share of spillovers, $\frac{E[e^c|x^+] - E[e^c]}{T} > 0$.

If (4.20) holds, then lobbyists have an incentive to substitute financial contributions for verification efforts because of cost savings, and policymakers have an incentive to realize higher private gains from financial contributions than from better spillover shares. These incentives can lead to collusive behavior between lobbyists and policymakers. The substitution of financial contributions for verification efforts is more likely for higher marginal costs of verification, $F'(\cdot)$, higher degrees of dishonesty, α , larger populations, T , and lower spillover improvements through commercial lobbying, $E[e^c|x^+] - E[e^c]$.

The incentive for collusion is related to Tirole (1986) and Laffont and Tirole (1991). In their agent-supervisor-principal model an agent undertakes an unobservable productive effort and a supervisor is hired by a principal to monitor the agent. The supervisor can share the monitoring findings with the principal or can collude for a side payment with the agent and suppress the information. Such collusion reduces the principal's wealth and would require the principal to pay the supervisor a reward for sharing the information. Kessler (2000) shows that if the supervisor's monitoring information can be concealed but not forged, then a principal can prevent collusion at no costs. In the analysis here, the policymaker receives "hard" information about the lobbyist's signals and verification effort if he requests the information. Collusion, as the substitution of financial contributions for verification efforts, could therefore be prevented if additional institutional rules ensure

transparency regarding lobbyists' and policymakers' financial and information transfers. That is, policymakers would have to disclose the amount of policy information they received.

Policymakers have an incentive to use their powerful positions to extract economic rents from lobbyists via financial contributions. The threat of losing political access and the lobbyist's value of political access is expressed in (4.21). This mechanism is similar to the unregulated market outcome in which policymakers announce take-it-or-leave-it access rules to lobbyists. The welfare implications depend on whether these additional financial contributions are socially wasteful in-kind transfers, $\alpha < 1$, or pure transfers, $\alpha = 1$.

Despite the risk of political influence, a common argument in support of lobbying activities is the provision of socially desirable information to policymakers. This implies the importance of evaluating the effectiveness of such information provision. Here, proposition 5 highlights a potential collusive incentive for lobbyists and policymakers that may require monitoring informational transfers as well as the financial transfers between them. Further, current transparency rules that focus exclusively on financial transfers may fall short of distinguishing between additional financial contributions that do not affect information acquisitions (as pure transfers or additional transfers) and financial contributions that substitute for information acquisitions (as distortions).

5 Political Conflict and Institutional Reforms

This section relaxes the assumption of exogenously given institutions and focuses on the distributional consequences arising from commercial lobbying activities. The focus is on a potential political conflict between citizens, lobbyists, and policymakers that may result in endogenous reforms departing from or preventing a first-best institution. The analysis focuses on two questions: Under which conditions are first-best lobbying institutions self-stable, and how can the empirically relevant case of unregulated lobbying market outcomes be explained? Rather than using a specific voting rule to initiate institutional reforms, the focus is more general and considers the cases when unanimous support is required, when

citizens are decisive, or when policymakers are decisive.⁴⁸

5.1 Self-Stable First-Best Institutions

Earlier in this paper, a social planner implemented or proposed the first-best lobbying institution on the basis of social desirability of commercial lobbying activities. In this section individuals observe their individual payoffs in the first-best – and articulate their political demands. To answer the first question the analysis focuses on these political incentives and pivotal rules for institutional reforms to explain the stability of first-best institutions. It is assumed that there are no compensating transfers between individuals and that their political preferences are completely determined by their individual payoffs.⁴⁹ The rationale for an inefficient institutional reform is characterized by the distributional consequences in the first-best and the distribution of political power, but not by any kind of market failure.

An institutional reform may lead to a different number of policymakers, $\bar{P}$, and result in a different distribution of citizens and lobbyists. If individuals expected a complete new draw of social roles and payoffs, then they would act behind a veil of ignorance and the first-best institution would always be self-stable, as shown in section 4.2.4. To add some insights, it is assumed that individuals' expectations are more detailed.

5.1.1 First-Best Institution: No Commercial Lobbying

Suppose commercial lobbying is socially undesirable and the institution I^* has been implemented at the constitutional stage. The question is whether or not the first-best institution I^* is self-stable or if there is collective demand for the institution I^{**} (for example, via a referendum) with $P^* > P^{**}$.

If citizens do not expect to be appointed to a political office because of a smaller government or political barriers to entry, then they would find it optimal to be a client or

⁴⁸The current analysis includes all policymakers with discretionary power such as politicians, staff members, or public servants. One may argue that political competition amongst politicians may keep politicians sufficiently accountable and political reforms may not be necessary. This special case is left for future research.

⁴⁹A first-best outcome can always be achieved with compensatory transfers. However, compensation for individuals who suffer from a single policy is rarely observed and it is not uncommon that individuals are asked to vote on a single policy topic and ignore potentially offsetting policies.

a lobbyist after a reform. A representative citizen compares the expected payoffs of $E[\Pi^{c*}]$ with $E[\Pi^{c**}]$ and $E[\Pi^{l**}]$ as described in (4.13), (4.17), and (4.18).

Proposition 6. *Citizens oppose the first-best institution I^* if the expected improvements in spillover shares outweigh citizens' private benefits from direct political access.*

Proof. See Appendix A.4. □

Citizens are willing to deviate from the first-best institution I^* and provide privately the public good of lobbyists' verification efforts if their expected shares of spillover improvements outweigh their foregone private benefits from direct political access, which yields them the entire proposal's private benefit.

If some policymakers expect that they would lose their political office, then these “weaker” policymakers would expect to be a client or a lobbyist after an institutional reform. A representative weaker policymaker compares the expected payoffs of $E[\Pi^{p*}]$ as described in (4.14) with $E[\Pi^{c**}]$ and $E[\Pi^{l**}]$. There might be some “stronger” policymakers who expect to stay in office. The trade-off for a representative stronger policymaker follows from the expected payoffs of $E[\Pi^{p*}]$ and $E[\Pi^{p**}]$ as described in (4.19).⁵⁰

Proposition 7. *Weaker policymakers oppose the first-best institution I^* if the expected improvements in spillover shares outweigh their private benefits from holding political office.*

Stronger policymakers oppose the first-best institution I^ if their expected benefits from commercial lobbying activities are positive – that is*

$$\alpha f^{p*} + \frac{A^p}{T} (P^{**} E[e^c | x^+] - P^* E[e^c]) > 0 \quad (5.1)$$

with $f^{p*} \geq 0$.

Proof. See Appendix A.5. □

Weaker policymakers expect to lose their political office and face a similar trade-off to citizens in this case. A citizen would lose the private benefits from direct political access,

⁵⁰The heterogeneity amongst policymakers and the likelihood to stay office could be explained by political influence or seniority.

whereas a weaker policymaker would lose the private benefits associated with a political office. Stronger policymakers expect to keep such private benefits from office and demand an institutional reform for commercial lobbying if their spillover shares from fewer but verified proposals outweigh the spillover shares from more but unverified policy proposals, or if the financial contributions of f^{p*} are sufficiently large. An institutional reform could improve the quality of enacted policy proposals, if $P^{**}E[e^c|x^+] > P^*E[e^c]$, but this is just a necessary but not sufficient condition for welfare-enhancing commercial lobbying.

Using proposition 6, proposition 7, $\rho(x^-)\pi^c + k > 0$, and $f^{p*} \geq 0$, the following can be concluded.

Corollary 1. *Policymakers are more likely than citizens to oppose the first-best lobbying institution I^* .*

This follows immediately from the distribution of benefits and costs of commercial lobbying. Policymakers do not bear the costs of commercial lobbying and can improve their spillover shares and earn financial contributions, whereas citizens have to bear the costs of commercial lobbying.

5.1.2 First-Best Institution: With Commercial Lobbying

Now suppose commercial lobbying is socially desirable and the institution I^{**} has been implemented at the constitutional stage. The question reverses to: Under which conditions is the first-best institution I^{**} with $P^{**} < P^*$ self-stable?

If citizens and lobbyists do not expect to be appointed to a political office because of many citizens and lobbyists as well as a potentially small increase in the number of policymakers, then citizens and lobbyists would expect to be citizens after an institutional reform. A representative citizen or lobbyist would compare the individual expected payoffs of $E[\Pi^{c**}]$ and $E[\Pi^{l**}]$ with $E[\Pi^{c*}]$. If policymakers expect to stay in office after an institutional reform, then the trade-off is between $E[\Pi^{p**}]$ and $E[\Pi^{p*}]$.

Proposition 8. *Citizens and lobbyists oppose the first-best institution I^{**} if their private lobbying costs outweigh their shares of spillover improvements through commercial lobbying.*

*Policymakers do not oppose the first-best institution I^{**} .*

Proof. See Appendix A.6. □

Citizens bear the costs of commercial lobbying and the foregone private benefits from direct political access. If citizens' shares in spillovers do not improve sufficiently, then they are not willing to bear these costs and abandon direct political access. Unlike citizens, policymakers do not bear the costs of commercial lobbying and focus entirely on potential spillover improvements. If commercial lobbying is socially desirable, then the spillover improvements through commercial lobbying are positive and policymakers have every incentive to pursue such benefits.

5.1.3 Political Power and Reforms

Given the previously described political incentives, the analysis proceeds with different pivotal rules. First, suppose an institutional reform requires unanimity amongst society members. Corollary 1 predicts that the support by citizens would determine the likelihood of an institutional reform from institution I^* to institution I^{**} . If policymakers would support a reform because of expected gains, then citizens cannot also expect gains since all potential Pareto-improvements are exhausted whenever I^* would be optimal. This implies that the first-best institution I^* would be self-stable because of a veto by citizens. Proposition 8 implies that the first-best institution I^{**} would be self-stable because of a veto by policymakers to block an institutional reform from I^{**} to I^* .

However, unanimous voting as a collective decision rule for institutional reforms may not be appropriate for all constitutional settings. Now suppose that citizens are decisive for an institutional reform. Examples would be a simple majority or super-majority for collective decisions, which are indeed mostly affected by citizens' preferences. Proposition 6 and proposition 8 imply that the citizens' support for a potential reform is entirely determined by the comparison of commercial lobbying fees and benefits from direct political access with the potential improvements in individual spillover shares.

Finally, suppose policymakers are pivotal for institutional reforms. An example would be a parliamentary approval that can be delayed, a bureaucratic government agency, or policymakers with limited re-electoral concerns. The support for an institutional reform by

policymakers follows from proposition 7. It implies that policymakers favor an institution with commercial lobbying activities as their expected benefits from commercial lobbying activities of the provision of information or financial contributions are positive. This is independent of the lobbying costs, which are borne by citizens.

The choice of the lobbying institution via potential reforms can be summarized to the following.

Proposition 9. *The distributional consequences of commercial lobbying activities and the collective decision rule for institutional reforms may lead to an inefficient lobbying institution.*

The analysis assumed that all individuals behave according to their “socially efficient” roles but allowed for endogenous institutional reforms. The rationale for an inefficient institutional reform has been characterized by political power and the distributional consequences in the absence of market failures.

5.2 Stability of Unregulated Market Outcome

To answer the second question of this paper, the analysis focuses on the empirically relevant case of unregulated lobbying activities that may result in market failure. It has been shown that citizens and lobbyists do not realize any private rents from commercial lobbying activities since self-interested policymakers extract all private rents. The payoffs by citizens and lobbyists are entirely determined by their individual spillover shares. These spillovers depend on the quality of political decisions by policymakers. This raises the question why unregulated lobbying activities are relatively common despite public dissatisfaction or private rent dissipation for citizens. It can be shown that the unregulated market outcome can be explained by self-interested policymakers who do not distort the benefits from commercial lobbying activities too much, or by citizens who are not powerful enough to constrain policymakers via institutional reforms.

Citizens support commercial lobbying in the first-best if their shares of expected spillover

improvements outweigh their private lobbying costs – that is

$$\frac{A^p}{T} (P^{**} E[e^c|x^+] - P^* E[e^c]) \geq \rho(x^-) \pi^c + k. \quad (5.2)$$

Suppose this holds. Further, citizens who observe the unregulated market outcome with a given number of policymakers $\bar{P}$ support a complete ban on commercial lobbying if

$$\frac{\bar{P} A^p}{T} (E[e^c|\alpha] - E[e^c]) < \frac{\bar{P} A^p}{T - \bar{P}} \pi^c, \quad (5.3)$$

which is the difference between the shares of expected spillover improvements via commercial lobbying and the expected private benefits from direct political access. The share of expected spillovers depends on the quality of political decisions made by self-interested policymakers – that is $E[e^c|\alpha]$.⁵¹ For the citizens' political incentives for the unregulated market setting, the following can be stated.

Lemma 2. *If citizens have a political incentive to oppose commercial lobbying activities in a market environment, then they demand a constitutional change with a ban on commercial lobbying and an increase in the number of policymakers.*

Proof. See Appendix A.7. □

If citizens demand a ban on commercial lobbying because of relatively low spillover improvements compared to the expected gains from political access, then citizens demand a ban on commercial lobbying and direct political access. If the number of policymakers would not change, then direct political access would be uncertain and citizens would be better off to reduce the competition for political access. Therefore the citizens' decision to accept or oppose the current unregulated commercial lobbying market depends on

$$\frac{A^p}{T} (\bar{P} E[e^c|\alpha] - P^* E[e^c]) \gtrless \pi^c. \quad (5.4)$$

Consequently, the following can be stated.

⁵¹The quality of political decisions follows from the policymaker's optimal requests for verified and unverified proposals. Verified proposals improve the expected quality spillover shares, but unverified proposals save verification resources and allow larger financial contributions. This trade-off has been shown in (3.2).

Proposition 10. *If the policymakers' degree of dishonesty, α , is too large, then citizens have an incentive to demand a second-best institution to constrain self-interested policymakers independent of citizens' support for commercial lobbying in the first-best.*

Proof. See Appendix A.8. □

Despite the fact that citizens would be willing to forfeit political access for improved political decisions through commercial lobbying activities at the constitutional stage, (5.2) holds that citizens may have an incentive to implement an inefficient institution that bans commercial lobbying activities and constrains self-interested policymakers. As the policymakers' degree of dishonesty, α , increases policymakers request fewer verification efforts for higher financial contributions and distort social benefits. The citizens' collective demand is independent of the actual commercial lobbying costs. Their collective incentive is entirely characterized by the improvements in political decisions and the citizen's private benefit from direct political access.

Proposition 10 implies that unregulated commercial lobbying activities can be explained by self-interested policymakers who do not distort the social benefits from commercial lobbying too much, or by citizens who do not have sufficient political power to constrain policymakers. Which of these two hypotheses is correct is an empirical question.

6 Conclusion

This paper provides an analysis for the effective regulation of commercial lobbying activities and of potential endogenous reforms departing from a first-best institution. It highlights the importance of transparency rules about financial transfers and information transfers from lobbyists to policymakers and proposes that the observed institutional differences can be explained by the distribution of benefits and costs of commercial lobbying and the distribution of political power.

The analysis uses a model of commercial lobbying that provides an explanation for the observed simultaneity of information transmission and financial contributions and a simple general-equilibrium structure. Imperfectly informed policymakers can announce

take-it-or-leave-it political access rules to citizens and lobbyists who compete for political access by providing resources to policymakers. Policymakers can request their desired levels of information acquisitions and financial contributions from lobbyists, which may not be socially efficient and may cause a private rent dissipation. The analysis has derived several new insights not previously present in the analysis of lobbying activities and political institutions. First, the effective regulation of commercial lobbying activities may require additional transparency that limits lobbyists' and policymakers' collusive incentives to substitute financial contributions for information provision. Current transparency rules that focus exclusively on financial benefits may fall short of preventing this. Second, the analysis shows how the distribution of costs and benefits from commercial lobbying activities may cause a political conflict between citizens and policymakers. This potential conflict provides the conditions under which a first-best institution is self-stable or not. The analysis also argues that the observed political stability of unregulated lobbying activities can be explained by self-interested policymakers who do not distort political decisions too much or by citizens who do not have sufficient political power to initiate reforms.

One direction for future research would be to investigate how political competition amongst politicians with different preferences for financial contributions affects the quality of political decisions. Electoral competition as a means of political accountability may decrease the optimal degree of regulation for this subgroup of policymakers.

7 References

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A Appendix

A.1 Proof of Lemma 1

Suppose $E[\Pi^*]$ is the maximum for social welfare. If this holds, then $\frac{1}{T}E[\Pi^*]$ is the maximum expected individual payoff behind a veil of ignorance. It follows that no individual would have an incentive to oppose I^* with an expected payoff of $E[\Pi^*] = \frac{1}{T}E[\Pi^*]$ behind a veil of ignorance.

Now suppose $E[\Pi^{**}]$ is the maximum for social welfare. If this holds, then $\frac{1}{T}E[\Pi^{**}]$ is the maximum expected individual payoff behind a veil of ignorance. And it follows immediately that there is no incentive for opposition because of $(E[\Pi^{**}] = \frac{1}{T}E[\Pi^{**}])$.

A.2 Proof of Proposition 4

For the first statement the goal is to identify whether a citizen would deviate from I^* or not. Suppose a citizen, d , attempts to hire another citizen, h , to act as a lobbyist. This would require that d would be better off and h not worse off. In addition, a policymaker, g , has to agree to reallocate political access and cannot be worse off. Citizen d would deviate and attempt to hire h if $E[\Pi^{c*}] < E[\Pi^d]$ with

$$\begin{aligned} \pi^c + \frac{P^* A^p}{T} E[e^c] &< \rho(x^+) \pi^c - k + \frac{P^* A^p - 2}{T} E[e^c] + \frac{\rho(x^+) E[e^c | x^+]}{T} \\ \rho(x^-) \pi^c + k &< \frac{\rho(x^+) E[e^c | x^+] - 2E[e^c]}{T}, \end{aligned} \quad (\text{A.1})$$

where h would give up a policy proposal and a policymaker g would not approve a policy proposal with a negative verification signal.

Since, in a social optimum, all potential Pareto-improvements are exhausted, there would have to exist at least one citizen, $w \neq d, h$, or one policymaker, $b \neq g$, who would be worse off. A citizen w is worse off if $E[\Pi^{c*}] > E[\Pi^w] = \pi^c + \frac{P^* A^p - 2}{T} E[e^c] + \frac{\rho(x^+) E[e^c | x^+]}{T}$; a policymaker b is worse off if $E[\Pi^{p*}] > E[\Pi^b] = \theta + \frac{P^* A^p - 2}{T} E[e^c] + \frac{\rho(x^+) E[e^c | x^+]}{T}$. Both can be reduced to

$$2E[e^c] > \rho(x^+) E[e^c | x^+]. \quad (\text{A.2})$$

Since $\rho(x^-) \pi^c + k > 0$, there is a contradiction between (A.1) and (A.2). Since no citizen d exists, there can be no citizen h and a citizen has no incentive to deviate from I^* .

For the second statement the goal is to identify whether a policymaker would deviate from I^* or not. Suppose a policymaker, i , deviates from $A^p = \bar{A}^c$ in the following way: one citizen, h , would not receive political access and another citizen, d , would be required to hire h to act as a lobbyist who is required to verify d 's proposal. Policymaker i has an incentive to deviate if $E[\Pi^*] < E[\Pi^i]$ with

$$\begin{aligned} \theta + \frac{P^* A^p}{T} E[e^c] &< \theta + \frac{P^* A^p - 2}{T} E[e^c] + \frac{\rho(x^+)}{T} E[e^c | x^+] \\ 2E[e^c] &< \rho(x^+) E[e^c | x^+], \end{aligned} \quad (\text{A.3})$$

which is i 's incentive condition. Citizen h would agree and not stay home if $k - F(1) - G(1) + \frac{\rho(x^+)}{T} E[e^c | x^+] \geq 0$; citizen d would agree to pay h and not stay home if $\rho(x^+) \pi^c - k + \frac{\rho(x^+)}{T} E[e^c | x^+] \geq 0$. Combining both inequalities with respect to k , the following can

be written

$$\begin{aligned} \rho(x^+) \left(\pi^c + \frac{E[e^c|x^+]}{T} \right) &\geq k \geq F(1) + G(1) + \frac{\rho(x^+)}{T} E[e^c|x^+] \\ \rho(x^+) \pi^c &\geq F(1) + G(1), \end{aligned} \quad (\text{A.4})$$

which is the feasibility condition.

If both the incentive condition and the feasibility constraint hold, then a self-interested policymaker has an incentive to violate I^* and require verification efforts in exchange for political access.

Now suppose a policymaker, i , in the following situation: one citizen, h , would not receive political access and another citizen, d , would be required to hire h to act as lobbyist who is required to make a financial contribution of f^i . Policymaker i would consider this if $E[\Pi^{p*}] < E[\Pi^i]$ with

$$\begin{aligned} \theta + \frac{P^* A^p}{T} E[e^c] &< \theta + \frac{P^* A^p - 1}{T} E[e^c] + \alpha f^i \\ \frac{1}{\alpha T} E[e^c] &< f^i, \end{aligned} \quad (\text{A.5})$$

which is i 's incentive condition. Citizen h would agree to the lobbying activity and not stay home if $k - G(1) - f^i + \frac{\rho(x^+)}{T} E[e^c] \geq 0$; citizen d would agree to pay h and not stay home if $\pi^c - k + \frac{\rho(x^+)}{T} E[e^c] \geq 0$. The maximum feasible f^i , f^m , would extract all private rents from d and h such that

$$f^m = \pi^c - G(1) + \frac{2}{T} E[e^c]. \quad (\text{A.6})$$

Combining the incentive condition and f^m , the following can be written

$$\alpha > \left(T \left(\frac{\pi^c - G(1)}{E[e^c]} \right) + 2 \right). \quad (\text{A.7})$$

If this condition holds, then a self-interested policymaker has an incentive to violate I^* and require financial contributions in exchange for political access.

A.3 Proof of Proposition 5

For the first statement the goal is to show that a citizen has no incentive to deviate from I^{**} . A citizen d would want to bypass a lobbyist if $E[\Pi^{c**}] < E[\Pi^d] = \pi^c + \frac{P^{**} A^p - 1}{T} E[e^c|x^+] + \frac{1}{T} E[e^c]$ with

$$\frac{E[e^c|x^+] - E[e^c]}{T} < \rho(x^-) \pi^c + k. \quad (\text{A.8})$$

However, a policymaker h would have to reallocate political access from a lobbyist to citizen d , but has no incentive since $E[\Pi^{p**}] > \theta + \frac{P^{**} A^p - 1}{T} E[e^c|x^+] + \frac{1}{T} E[e^c]$. So a citizen has no incentive to deviate.

For the second statement the goal is to identify a mutual incentive for a lobbyist and policymaker to substitute f^{lp} for m^{lp} . A lobbyist h would bid or accept to pay a payment of b^h to a policymaker i if he could substitute b^h for a single verified proposal, $m^* - 1$. The

bid of b^h would follow from $E[\Pi^{l**}] < E[\Pi^h]$ with

$$m^*k - F(m^*) - G(m^*) - f^{l*} + \frac{\bar{P}A^p}{T}E[e^c|x^+] < m^*k - F(m^* - 1) - G(m^*) - \alpha f^{l*} - b^h + \frac{\bar{P}A^p - 1}{T}E[e^c|x^+] + \frac{1}{T}E[e^c], \quad (\text{A.9})$$

which can be written as

$$b^h < F(m^*) - F(m^* - 1) - \frac{E[e^c|x^+] - E[e^c]}{T} \approx F'(m^* - 1) - \frac{E[e^c|x^+] - E[e^c]}{T}. \quad (\text{A.10})$$

A policymaker i would bid or accept a payment of b^i to allow lobbyist h to substitute b^i for a single verified proposal if $E[\Pi^{p**}] < E[\Pi^i]$ with

$$\begin{aligned} \theta + \alpha f^{p*} + \frac{\bar{P}A^p}{T}E[e^c|x^+] &< \theta + \alpha f^{p*} + \alpha b^i + \frac{\bar{P}A^p - 1}{T}E[e^c|x^+] + \frac{1}{T}E[e^c] \\ b^i &> \frac{1}{\alpha} \frac{E[e^c|x^+] - E[e^c]}{T}. \end{aligned} \quad (\text{A.11})$$

An agreement, as a mutual incentive, would be feasible if $b^l > b^i$ and that is true if

$$F'(m^* - 1) > \frac{1 + \alpha}{\alpha} \frac{E[e^c|x^+] - E[e^c]}{T}. \quad (\text{A.12})$$

For the third statement the purpose is to identify whether a policymaker would exploit his powerful position. Suppose a policymaker i would attempt to gain additional private rents. Since all proposals are verified, there would be only financial contributions to gain. Policymaker i could threaten lobbyist h to reallocate political access to a citizen d . Citizen d would have an incentive to take the direct political access. So lobbyist h would lose some access and d as a client. Lobbyist h wants to avoid this if

$$\begin{aligned} k - F(m^*) + F(m^* - 1) - G(m^*) + G(m^* - 1) + \frac{1}{T} \frac{E[e^c|x^+] - E[e^c]}{T} \\ \approx k - F'(m^* - 1) - G'(m^* - 1) + \frac{1}{T} \frac{E[e^c|x^+] - E[e^c]}{T} > 0. \end{aligned} \quad (\text{A.13})$$

That is, h complies if h realizes an economic profit from client d . Policymaker i would be able to extract h 's economic profit via financial contribution requests.

A.4 Proof of Proposition 6

The purpose is to identify the conditions under which $I^{**} \succ I^*$ for a representative citizen.

First, suppose the representative citizen expects to be a citizen after a reform. If $P^*E[e^c] > P^{**}E[e^c|x^+]$, then

$$E[\Pi^{c*}] = \pi^c + \frac{P^*A^p}{T}E[e^c] > \rho(x^+)\pi^c - k + \frac{P^{**}A^p}{T}E[e^c|x^+] = E[\Pi^{c**}] \quad (\text{A.14})$$

and the representative citizen does not oppose I^* . Whereas if $P^*E[e^c] < P^{**}E[e^c|x^+]$ but $E[\Pi^{s*}] > E[\Pi^{s**}]$, then the representative citizen opposes I^* iff

$$\rho(x^-)\pi^c + k < \frac{A^p}{T} (P^{**}E[e^c|x^+] - P^*E[e^c]). \quad (\text{A.15})$$

Second, suppose the representative citizen expects to be a citizen or a lobbyist after a reform. If $P^*E[e^c] > P^{**}E[e^c|x^+]$, then

$$\begin{aligned} E[\Pi^{c*}] &= \pi^c + \frac{P^*A^p}{T}E[e^c] > \\ E[\Pi^{cl**}] &= \frac{C^{**}}{T - P^{**}}(\rho(x^+)\pi^c) - \frac{L^{**}}{T - P^{**}}(F(m^*) + G(m^*) + f^{l*}) + \frac{P^{**}A^p}{T}E[e^c|x^+] \end{aligned} \quad (\text{A.16})$$

and the representative citizen does not oppose I^* . Whereas if $P^*E[e^c] < P^{**}E[e^c|x^+]$ but $E[\Pi^{s*}] > E[\Pi^{s**}]$, then the representative citizen opposes I^* iff

$$\pi^c - \frac{1}{T - P^{**}}(C^{**}\rho(x^+)\pi^c - L^{**}(F(m^*) + G(m^*) + f^{l*})) < \frac{A^p}{T}(P^{**}E[e^c|x^+] - P^*E[e^c]). \quad (\text{A.17})$$

In both cases, the representative citizen opposes I^* if the expected shares of spillover improvements through commercial lobbying outweigh the expected private costs.

A.5 Proof of Proposition 7

For the first statement the goal is to identify the conditions under which $I^{**} \succ I^*$ for a representative weaker policymaker. A representative weaker policymaker opposes I^* iff $E[\Pi^{p*}] < E[\Pi^{cl**}]$ with

$$\theta - \frac{1}{T - P^{**}}(C^{**}\rho(x^+)\pi^c - L^{**}(F(m^*) + G(m^*) + f^{l*})) < \frac{A^p}{T}(P^{**}E[e^c|x^+] - P^*E[e^c]) \quad (\text{A.18})$$

and $P^*E[e^c] < P^{**}E[e^c|x^+]$ but $E[\Pi^{s*}] > E[\Pi^{s**}]$.

For the second statement the goal is to identify the conditions under which $I^{**} \succ I^*$ for a representative stronger policymaker. A representative stronger policymaker opposes I^* iff $E[\Pi^{p*}] < E[\Pi^{p**}]$ with

$$\alpha f^{p*} + \frac{A^p}{T}(P^{**}E[e^c|x^+] - P^*E[e^c]) > 0 \quad (\text{A.19})$$

and $f^{p*} \geq 0$.

A.6 Proof of Proposition 8

For the first statement the goal is to identify the conditions under which $I^* \succ I^{**}$ for a representative citizen and lobbyist. A representative citizen compares $E[\Pi^{c**}]$ with $E[\Pi^{c*}]$ and opposes the former iff

$$\rho(x^-)\pi^c + k > \frac{A^p}{T}(P^{**}E[e^c|x^+] - P^*E[e^c]). \quad (\text{A.20})$$

A representative lobbyist compares $E[\Pi^{l**}]$ with $E[\Pi^{c*}]$ and opposes I^{**} iff

$$\pi^c - m^*k + F(m^*) + G(m^*) + f^{l*} > \frac{A^p}{T}(P^{**}E[e^c|x^+] - P^*E[e^c]). \quad (\text{A.21})$$

For the second statement the goal is to identify the conditions under which $I^{**} \succ I^*$ for a representative policymaker who expects to stay in office even after an institutional

reform. The comparison is

$$E[\Pi^{p**}] = \theta + \alpha f^{p*} + \frac{P^{**}A^p}{T}E[e^c|x^+] > \theta + \frac{P^*A^p}{T}E[e^c] = E[\Pi^{p*}], \quad (\text{A.22})$$

with $P^{**}E[e^c|x^+] > P^*E[e^c]$ as a necessary condition for $E[\Pi^{s**}] > E[\Pi^{s*}]$ and a policy-maker has no incentive to oppose the first-best institution I^{**} .

A.7 Proof of Lemma 2

Banning commercial lobbying as a single political measure leads to a payoff of $E[\Pi^{cbn}]$ for a representative citizen. Comparing $E[\Pi^{cbn}]$ to $E[\Pi^{c*}]$, it follows that

$$E[\Pi^{cbn}] = \frac{P^{**}A^p}{T - P^{**}}\pi^c + \frac{P^{**}A^p}{T}E[e^c] < \pi^c + \frac{P^*A^p}{T}E[e^c] = E[\Pi^{c*}]. \quad (\text{A.23})$$

Therefore, citizens are better off supporting an institutional change with more policymakers rather than just banning commercial lobbying.

A.8 Proof of Proposition 10

Suppose commercial lobbying is potentially welfare-enhancing and the lobbying institution I^{**} is first-best. However, I^{**} might not be feasible. A representative citizen then compares the equilibrium payoff in the unregulated market outcome $E[\Pi^{c\#}]$ with a payoff without commercial lobbying. Using lemma 2, the alternative is $E[\Pi^{c*}]$. So whenever

$$\frac{A^p}{T} (P^{**}E[e^c|\alpha] - P^*E[e^c]) < \pi^c, \quad (\text{A.24})$$

citizens have a political incentive to implement I^* to constrain policymakers. This is different from the support by citizens in the first-best, which followed from

$$\frac{A^p}{T} (P^{**}E[e^c|x^+] - P^*E[e^c]) \geq \rho(x^-)\pi^c + k^*. \quad (\text{A.25})$$

Therefore, the decision depends on the degree of distortion caused by self-interested policymakers.