ANNUAL REVIEWS

Annual Review of Political Science

Formal Theories of Special Interest Influence

Keith E. Schnakenberg[1] and Ian R. Turner[2]

[1]Department of Political Science, Washington University in St. Louis, St. Louis, Missouri, USA; email: keschnak@wustl.edu

[2]Department of Political Science, Yale University, New Haven, Connecticut, USA; email: ian.turner@yale.edu

Annu. Rev. Political Sci. 2024. 27:401–21

First published as a Review in Advance on April 11, 2024

The *Annual Review of Political Science* is online at polisci.annualreviews.org

https://doi.org/10.1146/annurev-polisci-051921-102335

Keywords

money in politics, special interest politics, lobbying, campaign finance, formal theory

Abstract

The impact of money on politics—whether through campaign finance, lobbying, or independent expenditure—raises key normative questions about democratic representation and accountability. In recent years there has been a deluge of new data allowing researchers to study money in politics from new and exciting perspectives. As a complement to this trend, there has also been a resurgence of interest in developing formal models to provide new theoretical insights that can help us understand how, why, and when money influences politics and policy. We review several major themes in this literature, focusing specifically on exchange-based models, informational models, and subsidy-based models. We compare and contrast the key contributions, and limitations, of each approach in understanding the role of lobbying and campaign finance in politics. We also discuss future avenues for research that incorporate aspects of each approach, which, we believe, will introduce new theoretical insights for understanding special interest influence.

1. INTRODUCTION

The role of money in politics is widely discussed in public discourse and academic research. The potential influence of wealthy donors, corporate interests, and special interests with unrepresentative policy views raises concerns about the state of democratic governance at a time when concerns about various inequalities are on the rise. Yet, while public concerns over moneyed influence continue to rise, empirical academic research identifying the nature of political influence by special interests has proved difficult. Part of the reason for this difficulty follows from the very nature of influence itself: Researchers do not observe key aspects of the process of political influence. Data on actual contact between special interests and policymakers (PMs) are rare. Instead, we observe end results such as patterns of donations (e.g., where money ended up) and political outcomes (e.g., who won an election, what policy was chosen, how a legislator voted), but we do not directly access special interest strategy formation or the types of lobbying being employed.

Because of these empirical difficulties, an important path to further understanding influence by, e.g., interest groups (IGs), corporate PACs, or wealthy donors is carefully crafting theories of special interest behavior. Formal models of political influence provide implications to help discriminate across different potential models of special interest influence that we can then compare to empirical patterns based on data that are accessible to researchers. Put simply, careful theorizing is crucial for learning about the influence of special interests, which is a key strength of applied formal modeling. A specific example of this comes out of our discussion of informational lobbying, where we show how not accounting for particular types of variation in special interest characteristics can harm the ability to make sound inferences from the data.

Beyond the utility for guiding empirical inquiry, theoretical models also frame the potential normative implications of special interest influence. An underappreciated consequence of adopting a particular theoretical paradigm to study the influence of money in politics is that doing so entails normative commitments to how political influence affects public welfare. Thus, careful theorizing is crucial for both positive implications and the ability of studies to speak to normative concerns that animate many of the debates surrounding special interest influence in politics.

In this review article, we delineate three broad theoretical approaches to the influence of special interests: quid pro quo exchange, information transmission, and subsidizing policymaking.[1] **Table 1** presents selected references to research in these broad research paradigms. While many articles do not perfectly conform to coarse categorization, we group them according to the primary mechanism of influence they employ. The bulk of research has focused on quid pro quo exchange and informational theories, although subsidy-based theories have also been influential in research on special interest influence since Hall & Deardorff (2006).

Quid pro quo exchange conceptualizes influence as akin to bribes: Special interests offer transfers, e.g., campaign contributions, to politicians in exchange for supporting their preferred policies. Informational theories model influence as arising from strategic information transmission used by special interests to persuade politicians to support their preferred policies. Subsidy-based theories conceptualize influence as "a matching grant of policy information, political intelligence, labor" (Hall & Deardorff 2006, p. 69) provided by special interests that loosen resource constraints and allow politicians to work more on policy objectives they already value. We elucidate the basic logic underlying each theoretical approach with a focus on delineating positive and normative implications that follow from each framework.

[1]For review articles that focus on empirical research, see de Figueiredo & Richter (2014) and Bombardini & Trebbi (2020).

Table 1 Sample of existing theoretical research on special interest influence

Theoretical approach	Selected references
Exchange-based theories	Baron 1989, 2006; Battaglini & Patacchini 2018; Baye et al. 1993; Besley & Coate 2001; Bils et al. 2021; Che & Gale 1998; Chen & Zapal 2022; Coate & Morris 1999; Dal Bó 2007; Dekel et al. 2009; Denzau & Munger 1986; Drazen et al. 2007; Duggan & Gao 2020; Felli & Merlo 2006, 2007; Groseclose & Snyder 1996; Grossman & Helpman 1994, 1996, 1999; Judd 2023; Le & Yalcin 2018; Martimort & Semenov 2007; McCarty & Rothenberg 2000; Schnakenberg & Turner 2019; Snyder 1990, 1991
Informational theories	Austen-Smith 1993, 1994, 1995, 1998; Austen-Smith & Banks 2002; Austen-Smith & Wright 1992, 1994; Awad 2020; Awad & Minaudier 2024; Bennedsen & Feldmann 2002a,b, 2006; Caillaud & Tirole 2007; Cotton 2009, 2012, 2016; Cotton & Dellis 2016; Cotton & Li 2018; Dahm & Porteiro 2008a,b; Daley & Snowberg 2011; Dellis 2023; Dellis & Oak 2019, 2020; Ellis & Groll 2019; Gordon & Hafer 2005, 2007; Lohmann 1993, 1994, 1995a,b, 1998; Minaudier 2022; Potters & van Winden 1990, 1992; Salas 2019; Schnakenberg 2017; Schnakenberg & Turner 2019, 2021, 2023; Sloof & Van Winden 2000
Subsidy-based theories	Blumenthal 2023; Ellis & Groll 2020; Hall & Deardorff 2006; Hirsch & Shotts 2015, 2018; Hübert et al. 2023

Note: **Table 1** contains a sample of references that are not discussed in detail elsewhere in the article.

A key question in the literature revolves around which politicians special interests target for influence: allies or opponents. Empirically, allies are lobbied more frequently than opponents. If the goal is to expand coalitions in support of special interests' goals, then why attempt to influence those that already agree with you? We illustrate the positive implications of each theoretical approach in terms of whether or not the theory predicts targeting allies or opponents (and under what circumstances). In addition, we discuss the possible normative implications that follow from the adoption of each framework as a theoretical lens for studying influence. Each theoretical approach commits scholars to a set of possible positive and normative implications, so the choice of theoretical framework ex ante is consequential for what inferences and conclusions are possible to claim ex post. This is important precisely because of the difficulty with money in politics research noted above: We observe only end results of influence and try to figure out how it happened. Different theoretical frameworks may produce observationally similar predictions, making the choice of framework foundational for the substantive interpretation of a study's results.

We focus on models of special interest influence of politicians/PMs as opposed to research focused on influencing voters. There is a large theoretical literature on how money influences voters (Ashworth 2006; Austen-Smith 1987; Baron 1994; Coate 2004a,b; Desai & Duggan 2021; Gerber 1996; Kenkel 2019; Meirowitz 2008; Morton & Myerson 2012; Mueller & Stratmann 1994; Potters et al. 1997; Prat 2002a,b; Prato & Wolton 2017; Sloof 1999; Vanberg 2008; Wittman 2007). While this is an important and enlightening literature, we choose to focus on influencing politicians to keep the scope of the article manageable and to more clearly highlight avenues of influencing policy. Accordingly, we do not focus on research studying how special interests attempt to influence ideological or partisan balance of power or use general spending to increase ties with political parties.

While we do not discuss influencing voters directly, the logic of the different theoretical approaches we discuss below is still applicable to this literature. However, there are generally additional considerations when focusing on influencing voters that we do not consider in this article. Some of these considerations come up in our sections discussing informative campaign finance and new research on the effects of dark money. We also do not attempt to be completely comprehensive in our coverage of the theoretical literature, focusing instead on the basic logic

Table 2 State-dependent payoffs for the policymaker (PM) and interest group (IG)

PM	$\omega = \ell$	$\omega = m$	$\omega = h$
No reform: $x = 0$	1	1	0
Reform: $x = 1$	0	0	1

IG	$\omega = \ell$	$\omega = m$	$\omega = h$
No reform: $x = 0$	1	0	0
Reform: $x = 1$	0	1	1

of the primary theoretical traditions in political science. We also focus on highlighting work we think is notable, with a bias toward recent work.

2. INFLUENCING POLICYMAKERS: A STRATEGIC SETTING FOR MODELING INFLUENCE

In this section, we present a simple model that we use to illustrate the dynamics of IG influence across paradigmatic theoretical approaches. We go on to use this framework to compare the quid pro quo exchange approach with different informational approaches and providing subsidies. In each case, we unpack the logic of the model and discuss positive and normative implications.

To fix ideas for the various approaches to understanding IG influence that we discuss below, we consider a simple example. The example involves an interaction between a PM and an IG, which we may think of as representing a firm or some other interested group. There is an emerging technology entering the market, and the PM must decide whether to implement a reform that will help increase the presence of this new technology in the market. For instance, the emergent technology may be technology for electric cars or a new financial product, and the reform may be consumer subsidies or deregulation to encourage the technology to flourish. When $x = 1$, the reform is implemented, and when $x = 0$, it is not.

In this setting, there is also uncertainty about the effects that the reform would have, which we model as uncertainty about a state of the world ω that changes who benefits from the reform. To keep things simple, we consider three states of the world. (*a*) When $\omega = \ell$ (the low state), the reform is inefficient in the sense that both the IG and the PM's constituents are worse off if the reform is implemented. (*b*) When $\omega = m$ (the medium state), the IG would benefit from implementation of the reform, but the PM's constituents would not. (*c*) When $\omega = h$ (the high state), the reform is efficient in the sense that both the IG and the PM's constituents are better off when the reform is implemented.

Table 2 summarizes PM and IG preferences. Both receive a payoff of 1 when their preferred policy (given the state) is implemented and 0 when their least preferred policy is implemented. However, their preferences conflict over preferred policies given the state. The PM prefers the reform to be implemented only if $\omega = h$, and the IG prefers that it be implemented when $\omega \in \{m, h\}$. Both prefer no reform ($x = 0$) when $\omega = \ell$. Thus, there is policy disagreement between the PM and IG when $\omega = m$, which we highlight in tan in **Table 2**.

The ex ante probability of each state is $p(\omega) \geq 0$, with $p(\ell) + p(m) + p(h) = 1$. Since the state $\omega = m$ is the only state in which the PM and IG disagree on the appropriate course of action, we can think of $p(m)$ as a measure of ex ante preference divergence. We refer to the PM as an ally whenever policy interests are aligned and the PM would make choices that the IG would prefer even without any influence activities. When instead the PM and the IG ex ante prefer different policies, we refer to them as misaligned and refer to the PM as an opponent. The preferences described in **Table 2** imply that the PM's and IG's ex ante policy preferences are misaligned when $p(\ell) < 1/2$ and $p(h) < 1/2$. A sufficient condition for this to be true is $p(m) > 1/2$. If either $p(\ell) > 1/2$ or $p(h) > 1/2$, then the PM is the IG's ally because the PM's and IG's policy preferences are ex ante aligned.

For many of the following sections, we consider various types of influence within this general structure. The information structure, nonpolicy payoffs, and actions available to the players vary throughout the article while maintaining this general framework.

3. EXCHANGE-BASED INFLUENCE

One paradigm for studying political influence involves the logic of quid pro quo exchange. The basic logic adapts menu auctions in which transfers, often taken to represent campaign contributions, from special interests to PMs are promised in exchange for policy favors (Baron 1989; Bernheim & Whinston 1986; Grossman & Helpman 1994, 1996). Essentially, the IG bribes the PM to choose policy in line with its interests. In the canonical model of quid pro quo exchange, special interests promise transfers for policy favors, and it is assumed that those promises are credible: That is, the IG will follow through on the transfer upon the PM choosing its preferred policy, or the PM will follow through on choosing the IG's preferred policy after receiving the campaign contributions. However, subsequent research has also shown that quid pro quo exchange can still result in influence even after relaxing the credibility of these promises (Fox & Rothenberg 2011), sometimes also introducing punishments or threats (Dal Bó & Di Tella 2003, Dal Bó et al. 2006). For clarity, we focus on the simple case in which the transfer offered to the PM is assumed to be credible.

3.1. The Logic of Quid Pro Quo Exchange

To clearly and concisely communicate the logic of exchange-based theories, we analyze a simple game. To facilitate a clean comparison with the informational approaches we describe next, we assume that neither the PM nor IG has private information about ω but both know $p(\cdot)$. First, the IG offers the PM a transfer, such as campaign contributions, to implement policy $x \in \{0, 1\}$, $b_x \in \mathbb{R}_+$, where the cost of the transfer is increasing and convex, $\frac{b_x^2}{2}$. The IG's payoffs are then $u_{\text{IG}} = v_{\text{IG}}(x, \omega) - \frac{b_x^2}{2}$, where $v_{\text{IG}}(x, \omega)$ are the payoffs described in **Table 2**. After the transfer is offered, the PM sets policy x. For simplicity, we assume that the PM's payoffs are linear in transfers: $u_{\text{PM}} = b_x + v_{\text{PM}}(x, \omega)$, where $v_{\text{PM}}(x, \omega)$ is given in **Table 2**.

First, it is clear that the IG will never offer the PM a transfer to implement $x = 0$, since any time that the IG prefers $x = 0$, so does the PM. If $p(\ell)$ is high enough that the IG prefers $x = 0$, then it is also high enough that the PM does and, absent any transfer, will implement $x = 0$. Second, the IG will never offer the PM a transfer when $p(h)$ is high enough, since in that context both the IG and the PM prefer $x = 1$ and that will be the policy implemented with no influence. Both of these follow from the fact that preferences are aligned in states $\omega = \ell$ and $\omega = h$ and the PM is an ally. Therefore, quid pro quo influence is exercised only when $\omega = m$ is sufficiently likely and the PM is an opponent.

Result 1. The IG engages in quid pro quo influence if and only if $p(m)$ is sufficiently large.

Result 1 clearly describes when we observe quid pro quo lobbying in this environment. Since $\omega = m$ is the state in which the IG and PM disagree on the appropriate policy choice, the result can be interpreted to mean that quid pro quo lobbying occurs only when there is sufficient preference divergence.

3.2. Positive Implications

The most straightforward implication of quid pro quo lobbying is that we should see PMs change their policy choice to match the preferences of the IGs when IGs engage in this tactic. Although this is a straightforward implication, it does not hold for all of the theoretical mechanisms in the literature.

Another implication of quid pro quo lobbying is that IG lobbying targets opponents, not allies. The IG never engages in lobbying activity when it is sufficiently likely that its interests are aligned with the PM [i.e., if $p(\ell)$ or $p(h)$ is sufficiently large]. It only makes sense to offer PM a transfer in exchange for policy if their interests are sufficiently misaligned, which occurs only in the middle state $\omega = m$. This implies that quid pro quo exchange targets opponents who ex ante disagree with the IG's interests. There will be no quid pro quo influence aimed at allies. Special interests should use quid pro quo exchange only to influence PMs who are misaligned with their interests.

3.3. Normative Implications

The normative implications of quid pro quo lobbying are the most straightforward. If public welfare (e.g., constituent preferences) is largely aligned with the PM (perhaps due to an electoral connection), then quid pro quo influence is uniformly bad from a normative perspective. Any time quid pro quo influence is exercised, it is targeted at inducing PMs to implement policies that the IG favors at the cost of policies favored by the PM. Since the transfer used to induce this behavior is privately enjoyed by the PM (rather than some good distributed to the public), this yields a public welfare loss. Thus, any time the IG strategically elects to offer a bribe, it harms public welfare by inducing the PM to choose a policy she would not have chosen absent the transfer. This is decidedly bad news for assessing the social welfare impact of special interest influence.

A few caveats are in order. The normative implications above assume that the policy preferences of the PM have something to do with public welfare. If this is not the case, then the normative implications of the theory are less clear. Furthermore, we are discussing welfare and therefore considering normative implications from a welfarist point of view. Process concerns may reasonably drive the normative implications of special interest influence. In that case, for instance, it is perfectly reasonable to object to quid pro quo influence, even when it happens to lead to outcomes that are good for constituents on average.

4. INFORMATIONAL INFLUENCE

An alternative theoretical approach is that IGs exert influence by acquiring policy expertise and strategically transmitting information to PMs. In contrast to exchange-based theories, there is no quid pro quo; rather, policy information may influence PMs' policy choices. Importantly, this also provides the opportunity for influence to improve policymaking overall, even though IGs will often be biased relative to PMs.

4.1. Informational Lobbying

Policy expertise is commonly represented as the IG having private information about the state of the world. The nature of information transmission—cheap talk or verifiable information—and the conceptualization of IG policy preferences—state dependent or state independent—are important for the positive implications that follow from the informational framework. We illustrate these differences by unpacking the logic of models in which IGs have state-dependent preferences and engage in cheap talk communication and models in which IGs have state-independent preferences and provide verifiable information to PMs. These correspond to empirical differences in IG motivations—state-dependent preferences as discussed in the example in Section 2 versus state-independent preferences whereby IGs always prefer one policy regardless of the state of the world.

4.1.1. Cheap talk and state-dependent preferences. Assume that the IG learns the value of ω but the PM does not. At the beginning of the game, the PM's beliefs are equal to $p(\cdot)$, but the IG's beliefs are concentrated on the true state of the world. The IG can no longer make transfers to the PM. Instead, the IG can send a message $s \in \{\ell, m, h\}$ to the PM. To start with, these messages are so-called cheap talk in the sense of having no direct impact on payoffs and being unverifiable, so both players' payoffs are given by the payoffs from **Table 2**.

The IG's strategy is a complete plan specifying how they will go about sending messages to the PM for each possible value of ω. There is always an equilibrium in which the IG does not transmit any information. To see this, suppose that the IG randomizes uniformly over all messages regardless of the state of the world. Since these messages are uninformative about ω, the PM's beliefs and actions will not depend on what message she receives. Furthermore, since the messages have no effect on the policy that is chosen, the IG will have no incentive to deviate from this strategy. Thus, this strategy profile constitutes an equilibrium. However, in the context of lobbying, this is an uninteresting equilibrium: An IG that bothers to engage in lobbying is probably not planning to play the equilibrium in which lobbying makes no difference. Thus, we focus on equilibria in which lobbying is influential.

There is never an equilibrium to this game in which the IG fully reveals all information about ω. To see that this cannot be an equilibrium, consider a profile in which, for all $\omega \in \{\ell, m, h\}$, the IG sends the accurate message $s = \omega$. Then, for every message the PM receives, the PM's beliefs are concentrated on the state corresponding to the message. Therefore, the PM chooses $x = 0$ when $s \in \{\ell, m\}$ and chooses $x = 1$ when $s = h$. However, the IG can deviate from this strategy when $\omega = m$ and instead send the message $s = h$, which induces the IG's preferred outcome of $x = 1$. Thus, there cannot be an equilibrium in which the IG fully reveals its information about ω because of policy disagreement between the IG and the PM when $\omega = m$.

The IG can sometimes influence the PM by strategically disclosing some information while obfuscating other information. One way to implement this strategy is as follows: (*a*) When $\omega = \ell$, the IG sends the message $s = \ell$. (*b*) When $\omega \in \{m, h\}$, the IG randomizes uniformly between $s = m$ and $s = h$. Following the message $s = \ell$ given this strategy, the PM is fully convinced that $\omega = \ell$ and therefore chooses $x = 0$. The IG's and PM's interests are aligned in this case. Furthermore, this is the IG's preferred outcome, so there is no reason for the IG to deviate from this strategy in this situation.

However, for this strategy to be influential, it must be the case that the PM is persuaded to choose $x = 1$ following the messages $s = m$ and $s = h$, despite the fact that the PM is not sure whether the state is m or h. When is this true? To understand this, we must compute the PM's beliefs following either of these messages by using Bayes's rule. Following a message of $s \in \{m, h\}$, Bayes's rule implies that the probability of $\omega = \ell$ is zero, the probability of $\omega = m$ is $\frac{p(m)}{p(m)+p(h)}$, and the probability of $\omega = h$ is $\frac{p(h)}{p(m)+p(h)}$. The PM sets $x = 1$ if the probability of $\omega = h$ is at least one-half. Therefore, this strategy is influential as long as $p(h) \geq p(m)$. In this case, the IG's and PM's interests are ex ante aligned since both of them agree that the reform should be implemented when $\omega = h$.

Result 2. Under state-dependent preferences and cheap talk messages, if $p(h) \geq p(m)$, there is an equilibrium in which (*a*) the IG accurately reveals either that $\omega = \ell$ or that $\omega \in \{m, h\}$ and (*b*) on the path of play the PM chooses $x = 0$ when $\omega = \ell$ and $x = 1$ when $\omega \in \{m, h\}$. If $p(h) < p(m)$, then on the path of play, the PM chooses only $x = 0$ in any equilibrium.

In Result 2, information transmission is driven by an important feature of the IG's preferences: Even though the IG is more likely to prefer $x = 1$ than is the PM, there is some state for which the IG prefers $x = 0$. This is referred to as state-dependent preferences, and it is key to the result. If instead we considered a model for which $\omega = \ell$ was not possible and the only two states were m and h, then the IG's preferences would be state independent, in which case, in this setting, there would be no informative equilibrium under cheap talk and, therefore, no political influence. The result of no information transmission, however, does not generalize: In a model with more than two actions, the IG may still influence the PM's choice (Chakraborty & Harbaugh 2010, Lipnowski & Ravid 2020).

4.1.2. Verifiable information and state-independent preferences. Of course, for some types of special interests, a model with state-independent preferences seems to be a good representation of their preferences. For instance, the National Rifle Association may support deregulation of firearms regardless of the facts that might persuade the PM. An IG with state-independent preferences may still persuade the PM, however, if information is verifiable. Verifiable information may take the form of a report revealing information from data collection that could be replicated by a third party. For instance, the IG could provide an analysis of administrative data or of publicly available polls. We represent state-independent preferences in the context of this model by setting $p(m) + p(h) = 1$. Recall that this is a setting in which there would be no IG influence under cheap talk messaging with state-dependent preferences. Rather than assuming cheap talk messages, assume that the IG can transmit verifiable messages such as a report with sources that the PM can check. Clearly, in this case, a signal from the IG informs the PM about the state of the world. The IG can choose to transmit such a signal or stay silent.

What is the optimal strategy for the IG? As it turns out, there are two cases leading to different conclusions. In one case, which we may term the ally case, the PM's prior is that $p(h) \geq p(m)$ so that the PM would choose $x = 1$ without any influence. In this case, the IG is better off staying silent. When $\omega = h$, the IG could make the PM even more sure that $x = 1$ is the right choice, but the PM would have chosen $x = 1$ anyway. When $\omega = m$, the IG can only persuade the PM to choose $x = 0$, which is the IG's least preferred action, but the PM would have chosen $x = 1$ had the IG simply stayed silent. In the other case, which we may term the opponent case, the PM's prior is that $p(m) > p(h)$, so that the PM would choose $x = 0$ under her prior. Then, sending a signal when $\omega = m$ convinces the PM to choose the IG's least preferred option, which is $x = 0$, but staying silent would have induced the same outcome. When $\omega = h$, sending a verifiable signal causes the PM to choose the IG's preferred policy of $x = 1$ when the PM would have otherwise chosen $x = 0$. Thus, the IG will influence the PM in this case by providing information that $\omega = h$.

Result 3. Under state-independent preferences and verifiable information, the IG lobbies opponents, but not allies.

We emphasize verifiable information with state-independent preferences because some level of verifiability is required to support informational lobbying in a simple two-action, one-PM model with state-independent preferences. However, the main prediction of Result 3 is driven more by the nature of the IG's preferences than by verifiability. If the IG and PM were aligned in the same sense that is required to support informative cheap talk equilibria, lobbying would still occur, even though the IG and PM would be allied in that case.

4.1.3. Positive implications. Qualitative knowledge about the political environment is important for considering which informational theory is appropriate. In settings in which special interests preferences are likely to be state dependent (e.g., firms whose regulatory preferences may depend on the state, as in the motivating example of Section 2), theories of influence can conceptualize information transmission by using cheap talk and still characterize informative equilibria and make predictions about the nature of influence. In contrast, in settings in which special interest preferences are more likely to be state independent (e.g., firms or IGs that always benefit from particular regulations or policies, such as established firms that always benefit from entry barriers or government subsidies or groups that have clear advocacy goals), special interests can influence PMs by providing verifiable information through research reports and the like. These differences help applied researchers to choose the most appropriate theoretical framework for their particular purposes. A related implication is that using data that pools special interests with potentially different preferences—state dependent versus state independent—can lead to difficulties in inference since their potential to influence PMs through information transmission may be more or less effective in different political environments. This introduces complications as to deciding what theoretical lens is most appropriate.

The second set of positive implications speak to the targets of informational lobbying. Results 2 and 3 illustrate differences in who is lobbied by special interests on the basis of their preferences and approach to influence. With state-dependent preferences using cheap talk information transmission, allies are lobbied. When $\omega = \ell$, the IG and PM are aligned, and the IG perfectly reveals ω. When $\omega \in \{m, h\}$, the IG can influence the PM to always implement the reform ($x = 1$) only when the PM is an ex ante ally [i.e., $p(h) \geq p(m)$]. If instead the PM is an opponent [$p(h) < p(m)$], then the reform is never implemented, and the IG is unable to use cheap talk to influence the PM to do otherwise. Moreover, when $p(\ell) = 0$, the IG can never influence the PM by using cheap talk lobbying.

However, IGs with state-independent preferences using verifiable information lobbying can influence PMs in this setting. In contrast to the case of IGs with state-dependent preferences using cheap talk lobbying, in this case when the PM is an ally [$p(h) \geq p(m)$], which is exactly when IGs with state-dependent preferences using cheap talk can influence PMs, the IG never lobbies, because there is no need to influence the PM. The PM will already implement the reform, which the IG prefers, without any lobbying. When instead the PM is an opponent [$p(h) < p(m)$], which is exactly when IGs with state-dependent preferences using cheap talk lobbying cannot influence PMs, the IG can influence the PM by providing verifiable information that the state is $\omega = h$, which leads the PM to implement the reform ($x = 1$) when she otherwise would not have.

Interestingly, these examples show that informational influence can be targeted at allies under certain circumstances, even though much of the early literature developing informational theories focused on explaining the empirical regularity that special interests seem to interact with allies more frequently than with opponents (Austen-Smith 1994, Hall & Deardorff 2006). This puzzle animated a large literature, even though, upon reflection, a standard cheap talk logic à la Crawford & Sobel (1982) would support the idea that special interests trying to credibly transmit information to PMs would benefit from targeting allies. Part of this is likely due to much of the early research on informational influence adopting a framework in which special interests are assumed to have state-independent preferences (Austen-Smith & Wright 1992, Potters & van Winden 1992), which we have shown do often predict lobbying opponents.

More generally, however, prior research has explored other reasons why special interests might target allies when attempting to exert influence through information transmission. Schnakenberg (2017) develops an informational lobbying model whereby the IG has state-independent preferences and sends cheap talk messages to influence collective decision-making (e.g., in a legislature). In this setting, IGs target allies to credibly transmit information that is then used by the PM to persuade other legislators to vote in line with IG (and PM) interests. The target of lobbying serves as an intermediary for the IG in the legislature. Awad (2020) studies a similar setting but introduces the possibility for special interests to also provide verifiable information to a subset of legislators in addition to using publicly observable cheap talk messaging. Dellis (2023) studies a different political environment where the legislature allocates district-specific goods and also finds friendly lobbying in this setting. Overall, the picture from these papers is that consideration of multiple legislators can provide a rationale for lobbying allies, even in environments with state-independent IG preferences.

4.1.4. Normative implications. A key difference between informational theories and exchange-based theories is that welfare-improving special interest influence is more plausible in informational theories. In the logic we explain above, the IG's bias relative to the PM is common knowledge, and yet lobbying can still improve aggregate outcomes (in terms of matching policy to the state from the PM's perspective). If we again assume that the public's preferences are aligned with the PM, then lobbying can unambiguously improve public welfare in our examples. Under cheap talk influence, when $p(h) \geq p(m)$, the PM sometimes implements the reform when she would not have if she had had full information (i.e., when $\omega = m$), but this happens less frequently than her setting policy in line with her interests (i.e., when $\omega \in \{\ell, h\}$) since $p(\ell) + p(h) > p(m)$. When $p(m) > p(h)$, she always forgoes reform (i.e., $x = 0$), but again this is the correct course of action from her perspective more often than not since $p(\ell) + p(m) > p(h)$. Similarly, when the IG has state-independent preferences and uses verifiable information lobbying in equilibrium [which occurs only when $p(m) > p(h)$], public welfare improves, since when $\omega = m$, the IG does not lobby and the PM sets $x = 0$—her preferred policy in that state—but when $\omega = h$ and the IG does lobby, the PM is led to implement reform when she otherwise would not have. This is her preferred outcome, and therefore the informational lobbying improved her decision-making.

Although it is true in this simple one-PM model that informational lobbying must always improve policymaking from the PM's perspective, this is not true in all models. In fact, informational lobbying can, from an ex ante perspective, harm legislator welfare in situations with multiple legislators. Alonso & Câmara (2016) and Schnakenberg (2015) show that this result can be reversed when an informed sender communicates strategically to an audience of multiple PMs who vote over the outcome. Alonso & Câmara (2016) use a Bayesian persuasion framework with supermajority rule. Schnakenberg (2015) uses cheap talk with a general voting rule and shows that this result holds for all cyclic voting rules. The intuition behind these results is that, when the lobbyist can play different winning coalitions off of one another, the IG may get its way most or all of the time, even though all or most legislators are left out of the winning coalition often enough to lose out on average.

4.2. Related Approaches

Below, we review some related approaches that focus on tactics other than direct lobbying but for which the principal mechanism is still information transmission to politicians.

4.2.1. Informational campaign finance. Although lobbying is perhaps the most direct example of using information to influence PMs, there is also a literature studying informative campaign finance. In contrast to quid pro quo exchange theories of using campaign contributions that serve as direct transfers in exchange for policy favors, informative campaign finance theories study how contributions or ad spending influences policymaking by conveying information. Gordon & Hafer (2005, 2007) show how this reasoning might work in the realm of regulation. Austen-Smith (1995), Cotton (2012), and Lohmann (1995a) show how this information transmission may be facilitated by the exchange of contributions for access. In Schnakenberg & Turner (2021), the cost of the signal provided through campaign contributions is endogenous to the electoral environment itself. A key to their theoretical argument is that contributions are used both to influence who wins elections and to influence the policy choices of politicians who take office. Indeed, these two potential paths to influence through campaign finance are deeply interrelated.

To informally illustrate the logic of Schnakenberg & Turner (2021), consider a corporate PAC associated with a firm that supports deregulation of the firm's industry.[2] Its preferences are state independent—regardless of the state of the world, it always prefers deregulation. A range of

[2]This example is adapted from Schnakenberg & Turner (2021, p. 89). General proofs of the results underlying the example can be found in that article.

regulatory policies may be proposed and implemented, with no regulation and extremely stringent regulation on the extremes. An election determines who takes office to decide which regulatory policy will be implemented. There are two candidates: an Ally that shares the PAC's deregulatory preference and a Moderate whose preferences depend on the state of the world. When the state of the world suggests that lower regulation is good, the Moderate supports that, but if the environment is one where more regulation would be beneficial, then the Moderate is happy to institute more stringent regulation. The corporate PAC, through doing its own research, receives noisy information as to whether or not, on balance, deregulation is likely to be good for the broader economy rather than just the firm's interests. If the information reveals that deregulation (regulation) would benefit the whole economy, then the PAC has learned favorable (unfavorable) information. The winner of the election will also, upon taking office, independently receive noisy information about the desirability of regulation.

The corporate PAC makes a choice to donate to the Ally or Moderate. Contributions positively affect the probability of the recipient winning the election. From a purely electoral perspective, the PAC clearly prefers to contribute to the Ally and enhance his chances of winning the election. Contributions are publicly observed and therefore may convey the PAC's information about whether or not deregulation will benefit not only the firm but also the broader economic environment. Because of this possibility, the PAC will sometimes contribute to the Moderate's campaign to persuade him that it has favorable information and that deregulation is a broadly beneficial policy to implement.

However, contributions to the Moderate do not automatically signal favorable information. To credibly convey its favorable information, it must be that the PAC would not donate to the Moderate had it received unfavorable information. There are two reasons that this condition can be satisfied. First, because the PAC has information about the desirability of regulation prior to contributing, it can predict the signal a Moderate politician will receive if he takes office. When the PAC receives favorable (unfavorable) information, it knows that the politician who subsequently wins office is more likely to also receive favorable (unfavorable) information. Even though the PAC's information and the politicians' information are independently acquired, both are positively correlated with the truth as to whether or not (de)regulation is desirable. This leads a PAC that receives unfavorable information to expect that the Moderate will be more likely to implement stringent regulations, which pushes its incentives toward contributing to the Ally to raise his probability of winning. Second, because of the first dynamic, the expected policy difference between a Moderate politician and an Ally politician is larger when the PAC possesses unfavorable information. All these considerations imply that a PAC who receives unfavorable information places greater weight on using contributions to affect who wins the election than on trying to communicate its private information, relative to a PAC who has favorable information. The trade-off between influencing who wins and influencing the policy choices of whoever wins is precisely what creates a costly signal and allows the PAC to use contributions to influence politicians through information transmission.

4.2.2. Informative outside lobbying. One possibility that we have not discussed extensively so far is that IGs inform PMs about public opinion by mobilizing grassroots action. Kollman (1998) conceptualizes outside lobbying as signaling to politicians. Recent theoretical work explores how citizens mobilize to signal their preferences to PMs (Gause 2022a,b) and how IGs design mobilization strategies to shape this process to their advantage (Holburn & Raiha 2023). Further theoretical work distinguishing and combining direct (inside) and indirect (outside) lobbying is a fruitful path of research for better understanding different special interest strategies of influence.

5. SUBSIDY-BASED INFLUENCE

Legislative subsidy is another important tactic in the literature on lobbying. The motivation for this comes from the prior results from work on quid pro quo lobbying and on informational lobbying by groups with state-independent preferences; these results suggest that lobbying should target opponents. However, there is some evidence that IGs lobby allies a significant amount, so it is necessary to understand why. One possible explanation, from Hall & Deardorff (2006), is that lobbyists are providing subsidies to legislators who share their policy views, so that they can be more successful in pursuing their shared interests. This section presents a simple model that reproduces some of the insights of Hall & Deardorff (2006), but in a way that allows us to easily build on the model in various ways. One other subsidy-based approach in the literature is to conceptualize IGs as policy developers who put effort into designing high-quality policy proposals to give legislators an incentive to adopt them even if their substantive (spatial) preferences conflict (Hirsch & Shotts 2018).

To introduce the idea of legislative subsidy, we must augment our baseline model in two ways. First, in addition to the policy x, there is also some other activity that the PM may want to spend time on. We label this other activity y, and we can interpret it in a variety of ways. For instance, y might be a different policy that the IG does not care about. Alternatively, y might be some service to the party or to the PM's campaign, like fundraising or campaigning. The point is that the PM may need to choose whether to spend time on the policy x or on the alternative goal y. Second, the PM is resource constrained. We represent this idea by assuming that the PM has a budget $B > 0$, which represents the total amount of effort that the PM has to give. Choosing a policy x uses up some amount of effort $e_x > 0$, and doing the activity y takes some amount of effort $e_y > 0$, where $e_x + e_y > B$. That is, the PM initially cannot pursue both x and y. Additionally, we assume that there are costs to pursuing either activity, which we represent by $c_x > 0$ for x and $c_y > 0$ for y. This represents the idea that working on either x or y still bears some cost since, for instance, the PM could work on neither issue and enjoy leisure time or work on some third issue that is not modeled here that the IG cannot subsidize.

Hall & Deardorff (2006) suggest that the IG influences outcomes by subsidizing the efforts of the PM. In their paper, this might work as (*a*) a simple subsidy that merely increases the PM's budget and therefore the total amount of work that can be done or as (*b*) a matching grant that provides additional effort specific to work done on a particular issue and that relies on the PM devoting effort to that issue. The key difference between these two forms of legislative subsidy for us is the extent to which the subsidy is fungible across different tasks and therefore whether the additional effort it produces on one issue comes at the expense of the other. In our stylized model, we capture this by allowing the IG to subsidize the PM's work in the following ways:

- Simple subsidy: The IG provides additional labor to increase the PM's effort budget from B to at least $e_x + e_y$, allowing the PM to engage in both activities.
- Specific subsidy: The IG provides help on one issue or the other to reduce the magnitude of either c_x or c_y. To further simplify matters, we assume that the IG can reduce these costs all the way to zero. (Limiting the extent of the subsidy reduces the effectiveness of lobbying, but not in a way that is interesting to the points we make below.)

Although there is not always a stark conceptual distinction between simple and specific subsidies in practice, the following examples help illustrate each. First, consider a legislator who can spend time on constituent service or on drafting a bill that the IG would like to pass. The IG could help the legislator by providing labor that could be used for constituent service, which frees up time for the legislator to work on the bill. This clearly falls under simple subsidy because the purpose is only to increase the legislator's total time budget. Second, consider a legislator who can spend time working on bill x or another bill y and is initially inclined to spend her time on bill y. The IG can offer to conduct research to help the legislator improve bill x conditional on her spending time on that bill. This is a specific subsidy because it requires the legislator to choose allocating time to x rather than to y.

We assume that providing any subsidy has a cost $c_{\mathrm{IG}} \in (0, \min\{r_{\mathrm{IG}}, 1 - r_{\mathrm{IG}}\})$ to the IG. The upper bound simply avoids discussion of the uninteresting case in which the IG would never lobby because it is too expensive relative to the policy benefit. The IG's preferences are only over the PM's choice of x and are given by **Table 2** as in the prior models. In addition, we assume that, if the PM does not work on issue x at all, the IG gets a payoff $r_{\mathrm{IG}} \in (0, 1)$, which is worse than getting her preferred policy for x but better than getting her least preferred policy. We interpret this as a value for the status quo policy. The PM's preferences are similarly governed by **Table 2** as before, but with a reservation value $r_{\mathrm{PM}} > 0$ for not working on x. The value of r_{PM} should be interpreted as the combined value of working on y and getting the status quo outcome on x.

5.1. Aligned Policymakers

We begin by reproducing some of the main insights from Hall & Deardorff (2006), which depend on the assumption that the IG and PM are aligned on policy preferences. To ensure that this holds, we consider the case in which $p(h) = 1$ so that both the IG and PM agree that the best choice is surely $x = 1$. We begin by discussing the PM's best choice without any kind of subsidy. In this case, the PM can pursue the policy, giving her a payoff of $1 - c_x$, or the alternative task, which gives her a payoff of $r_{\mathrm{PM}} - c_y$. If the PM can pursue only one task, she pursues y if $r_{\mathrm{PM}} - c_y > 1 - c_x$ and x if the inequality is reversed.

Result 4 explains when the IG may benefit from using each strategy. It may be that an IG is better equipped to use some tactics over others for reasons we do not explain in this simple model, so we focus only on when each strategy is potentially fruitful. For instance, this model never uniquely predicts that the IG uses a specific subsidy—when the IG could use a specific subsidy, the simple subsidy would also have worked—but the IG may prefer this for one reason or another.

Result 4. Assume $p(h) = 1$ so that the IG and PM are aligned with probability one. The IG provides no subsidy if $1 - c_x > r_{\mathrm{PM}} - c_y$. If $1 - c_x < r_{\mathrm{PM}} - c_y$, the IG may benefit from providing a simple subsidy. If additionally $1 - c_x < r_{\mathrm{PM}} - c_y < 1$, the IG may benefit from providing a specific subsidy for x.

Thus, the simple subsidy is useful any time the PM would initially rather spend time on y than on x. The specific subsidy is useful when the PM would initially rather spend time on y rather than on x, and additionally, the costs of spending time on x can be reduced enough to reverse that preference.

A few points about Result 4 are worthy of emphasis. First, although subsidy-based theories were originally developed to explain why IGs lobby allies, Result 4 shows how this theory also rests on the presence of some preference divergence between the IG and PM: Although aligned on policy, the IG and PM must disagree on how the PM should allocate effort. Second, although the simple subsidy and specific subsidy are attractive to the IG in overlapping circumstances, they have different behavioral implications: The simple subsidy induces the PM to pursue both tasks, and the specific subsidy induces the PM to pursue x rather than y. We return to both points in the positive and normative implications.

5.2. Misaligned Policymakers

Although legislative subsidy was meant to explain how IGs can lobby like-minded PMs, the specific subsidy above and the idea of a matching grant from Hall & Deardorff (2006) raise the possibility that subsidies can induce PMs to work on one issue rather than another, which may be useful for lobbying opponents. To make this point, consider the same model as above, except assume that $p(m) = 1$ so that the IG and PM certainly disagree on policy.

Clearly the simple subsidy is not profitable to the IG in this case: The IG would much rather that the PM not spend time on x. An alternative strategy is to incentivize the PM to spend time on y rather than on x, which can be accomplished through a specific subsidy.

Result 5. Assume $p(m) = 1$ so that the IG and PM are misaligned with probability one. The IG provides a specific subsidy for y if $r_{\mathrm{PM}} > 1 - c_x > r_{\mathrm{PM}} - c_y$.

The idea of Result 5 is that an IG may benefit from using subsidies to induce PMs to spend time on issues other than the ones on which they disagree. It is unclear to us whether this is an empirically relevant prediction, but it suggests that subsidy-based theories with misaligned PMs and IGs may be an interesting topic to explore despite the initial motivation for these models (see Blumenthal 2023 for a nice example of this).

5.3. Positive Implications

One important positive implication of subsidy-based theories is that special interest influence need not involve changing the PM's preferred policy to implement, which is central to informational theories. As a consequence, lobbying may frequently target PMs who already agree with the IG on the merits of the policy.

Another positive implication from the subsidy view of special interest influence is that lobbying is driven by resource constraints. We might expect lobbying to go toward policymaking institutions that are more constrained relative to those that are unconstrained with respect to the amount of time and resources they have to accomplish their aims. Furthermore, lobbying may have the effect of increasing the work capacity of the policymaking institution. A related implication of subsidy-based theories is that the primary effect of lobbying will be to shape how PMs spend their time and effort. This may occur either by increasing the total amount of effort that can be allocated or by shifting effort from one area of policymaking to another.

Finally, an important positive implication of subsidy-based theories has to do with the type of conflict of interest that we should observe between IGs and lobbying targets. In Hall & Deardorff (2006), IGs and lobbying targets do not disagree on policy but do disagree on how the PM could best spend her time. In Hirsch & Shotts (2018), the IG and lobbying targets may disagree on substantive policy, but both value the development of higher-quality proposals. Thus, even though the lack of conflict of interest on substantive policy is often taken as central to applications of subsidy-based theories, there is still some conflict of interest present that drives special interests to attempt to influence PMs (e.g., to induce legislators to work on their preferred policies rather than others the legislator may also care about).

5.4. Normative Implications

The normative implications of subsidy-based theories are somewhat ambiguous. Unlike under quid pro quo lobbying or the most nefarious forms of informational lobbying, subsidy-based theories do not predict that lobbying affects a legislator's policy choices in a way that leads them to implement policies they dislike. Rather, it leads them to allocate effort toward policy that they already like. Therefore, some of the policy distortions that arise under these other forms of special interest influence need not arise here. The effects of subsidy-based lobbying on societal welfare may often be positive since lobbying increases the number of tasks that PMs are able to accomplish. If those tasks are also in the interests of the broader public, then special interest influence can have a large positive impact on social well-being. However, if special interest subsidies allow legislators, through the relaxing of resource constraints, to focus on tasks that constituents prefer they did not, then societal welfare can be harmed. Another potential negative welfare effect of subsidy-based influence occurs through agenda distortion. This downside of influence is most evident for the specific (as discussed here) or matching grant (as in Hall & Deardorff 2006) types of subsidy, where the subsidy can direct PMs' attention away from one task toward another.

6. SUMMARY AND DIRECTIONS FOR FUTURE RESEARCH

In this article, we delineate the logic underlying different theoretical approaches to studying special interest influence: exchange-based influence, informational influence, and subsidy-based influence. In doing so, we highlight not only the differential logic underlying special interest behavior and subsequent political outcomes, but also the differential normative implications that flow from each theoretical approach. Both quid pro quo theories and a subset of informational theories predict targeting opponents for influence. However, other informational theories and subsidy-based theories predict targeting allies for influence.

Moreover, exchange-based theories tend to produce welfare-reducing normative implications, while both informational and subsidy-based theories provide the possibility that the gains from special interest attempts at influence outweigh the losses from that influence (and vice versa). Ultimately, we argue that, due to these differences (and similarities) across different theoretical frameworks for studying special interest influence, researchers should think carefully about the political context, the population of special interests, and the types of influence activities observed (among other things) when adopting a theoretical lens. This is a highly consequential choice that limits researchers to particular sets of positive and normative commitments. This is a good thing in that doing so better allows empirical researchers to navigate a difficult, and largely opaque, empirical terrain in a more principled manner. Nonetheless, the choice of theoretical framework should be considered carefully and tailored to the particular context being studied.

6.1. Multiple Tools of Influence

Much of the literature on special interest influence emphasizes the contrasting predictions from different theoretical mechanisms. In reality, more than one of these mechanisms might apply to any given setting. One promising path for future research is to examine the interplay between multiple tools of influence. Some recent research has taken this path.

Schnakenberg & Turner (2019) consider electoral accountability in a model in which an IG may engage in (verifiable) information lobbying or quid pro quo lobbying. Politicians vary with respect to their susceptibility to quid pro quo influence. Voters have an incentive to select politicians who are not prone to corruption, but voters tend to benefit from informational lobbying. One problem is that voters cannot see what happens between a lobbyist and politician behind closed doors, so they have difficulty distinguishing between harmful quid pro quo lobbying and productive informational lobbying. One consequence is that politicians may deny access to lobbyists altogether to signal that they are not corrupt. This results in perverse outcomes in the sense that the politicians denying access to lobbyists are exactly the types of politicians who would have used the lobbyist's information to improve voter welfare.

Ellis & Groll (2020) provide a model that combines aspects of informational lobbying and legislative subsidy. In their model, they distinguish between legislative subsidies in the form of information provision such as providing white papers and testimony (which generally falls under the category of informational lobbying with verifiable information) and subsidies in the form of other labor required for policy implementation, such as policy drafting and so on. The model uncovers a useful typology of lobbying motives and shows how resource constraints may work to the advantage of the PM in interactions with special interests.

6.2. Influence at Different Points in the Policy Process

Along with having multiple tactics available to them, special interests can pursue influence at different points in the policy process, including before the bill is drafted, during passage, and after passage. This choice has interesting strategic implications and entails the use of different tactics at different times. We review two useful examples below.

Wolton (2021) analyzes a model in which IGs may engage in inside or outside lobbying. Generally speaking, inside lobbying provides information that influences the content of the bill, and outside lobbying helps determine whether the bill succeeds. One insight of the paper is that inside lobbying conveys information about the willingness of a group to engage in outside lobbying. The possibility of these two avenues for influence also makes the empirical relationship between inside lobbying expenditures and policy success complicated. For instance, there are asymmetries between the group aligned with the PM's policy goals and the group opposed to those goals. For the group aligned with the PM, inside lobbying expenditures are not correlated with success, because a resolved group would save their resources and use them for outside lobbying. For the group opposed to the PM's proposed policy change, an analysis of lobbying expenditures might underestimate the group's power because the mere threat of outside lobbying is sufficient to shape the policy.

You (2017) points out that a substantial proportion of lobbying over a policy occurs after that policy has passed, and provides a useful explanation for why this ex post lobbying occurs. The argument is that lobbying over passage produces collective action problems for IGs in the same industry that would benefit from passage, but ex post lobbying is concentrated on rulemaking and is more focused on the distribution of particularistic benefits within an industry.

6.3. Business, Politics, and Influence

Another promising area of research considers the relationships between markets and political influence. We see two major strands of recent work meeting this broad description. The first strand analyzes the organization of lobbying as an industry, and the second analyzes the relationship between influence activities in an industry and market competition. Below we highlight a few noteworthy recent papers in both traditions.

A small theoretical literature analyzes commercial lobbyists as a distinct type of actor in politics. The general point of view taken in this literature is that commercial lobbyists can serve as an intermediary that verifies or screens information about the claims of the IGs they represent. In Groll & Ellis (2014, 2017), commercial lobbyists engage in costly information verification. Hirsch et al. (2023) further consider the role of ideological preferences of lobbyists and show how this mediates their effectiveness as intermediaries by affecting how well they can avoid the temptation to exaggerate for their clients and lose credibility.

The other side of this coin is the analysis of how markets and political interference interact. Callander et al. (2022) explain how market power and political power may have feedback effects: Political power leads to more market power, but market power leads to more political power. Although we might think that this dynamic could lead to more and more concentration of power over time, Callander et al. (2022) show that this feedback is actually bounded and reverses when market power becomes too high. Callander et al. (2024) apply a related model to help understand when policies can be effective in the long term after accounting for the response of firms, and they show how this varies on the basis of the market context. Other papers combine theory and data to estimate returns to lobbying in the private sector; in one example, Kang (2016) estimates returns to lobbying in the energy sector by using a structural model of lobbying.

6.4. Contemporary Policies

Prior theoretical work considers the effects of institutions such as spending caps. Many of the policies analyzed in the past are no longer feasible policies in the United States due to constitutional considerations. A useful opening for current theoretical work is to use theoretical models to help understand the current policy debates related to influence activities. One recently active area of research is on campaign finance disclosure laws to regulate so-called dark money. Schnakenberg & Turner (2023) and Schnakenberg et al. (2023) analyze models of dark money regulation on the basis of different premises about the purposes of spending. Schnakenberg & Turner (2023) consider a model of influence on politicians through spending along the lines of Schnakenberg & Turner (2021), but one in which the institutions in place may or may not require disclosure of contributions. Schnakenberg et al. (2023) analyze a model of dark money influence on voters who are using advertisements to learn about candidate attributes. In both models, donors may benefit from allowing dark money to conceal the motivations behind giving, but the ability to give secretly leads to a loss of credibility that sometimes backfires for the donors. A related emerging policy debate involves regulation of online political advertising, raising concerns about misinformation, foreign interference, and delegitimizing electoral processes (e.g., Wood 2020, Wood & Ravel 2017). Formal theories are well equipped to study the informational effects that these new advertising avenues may facilitate and the potential impact of regulations.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

ACKNOWLEDGMENTS

We would like to thank an anonymous reviewer, Benjamin Blumenthal, and Marko Klašnja for helpful comments and suggestions. All errors of omission or commission are solely our own.

LITERATURE CITED

Alonso R, Câmara O. 2016. Persuading voters. *Am. Econ. Rev.* 106(11):3590–605

Ashworth S. 2006. Campaign finance and voter welfare with entrenched incumbents. *Am. Political Sci. Rev.* 100(1):55–68

Austen-Smith D. 1987. Interest groups, campaign contributions, and probabilistic voting. *Public Choice* 54(2):123–39

Austen-Smith D. 1993. Information and influence: lobbying for agendas and votes. *Am. J. Political Sci.* 37(3):799–833

Austen-Smith D. 1994. Strategic transmission of costly information. *Econometrica* 62(4):955–63

Austen-Smith D. 1995. Campaign contributions and access. *Am. Political Sci. Rev.* 89(3):566–81

Austen-Smith D. 1998. Allocating access for information and contributions. *J. Law Econ. Organ.* 14(2):277–303

Austen-Smith D, Banks JS. 2002. Costly signaling and cheap talk in models of political influence. *Eur. J. Political Econ.* 18:263–80

Austen-Smith D, Wright JR. 1992. Competitive lobbying for a legislator's vote. *Soc. Choice Welf.* 9(3):229–57

Austen-Smith D, Wright JR. 1994. Counteractive lobbying. *Am. J. Political Sci.* 38(1):25–44

Awad E. 2020. Persuasive lobbying with allied legislators. *Am. J. Political Sci.* 64(4):938–51

Awad E, Minaudier C. 2024. Friendly lobbying under time pressure. *Am. J. Political Sci.* 68(2):529–43

Baron DP. 1989. Service-induced campaign contributions and the electoral equilibrium. *Q. J. Econ.* 104(1):45–72

Baron DP. 1994. Electoral competition with informed and uniformed voters. *Am. Political Sci. Rev.* 88(1):33–47

Baron DP. 2006. Competitive lobbying and supermajorities in a majority-rule institution. *Scand. J. Econ.* 108(4):607–42

Battaglini M, Patacchini E. 2018. Influencing connected legislators. *J. Political Econ.* 126(6):2277–322

Baye MR, Kovenock D, de Vries CG. 1993. Rigging the lobbying process: an application of the all-pay auction. *Am. Econ. Rev.* 83(1):289–94

Bennedsen M, Feldmann SE. 2002a. Lobbying and legislative organization: the effect of the vote of confidence procedure. *Bus. Politics* 4(2):187–203

Bennedsen M, Feldmann SE. 2002b. Lobbying legislatures. *J. Political Econ.* 110(4):919–46

Bennedsen M, Feldmann S. 2006. Informational lobbying and political contributions. *J. Public Econ.* 90(4–5):631–56

Bernheim BD, Whinston MD. 1986. Menu auctions, resource allocation, and economic influence. *Q. J. Econ.* 101(1):1–31

Besley T, Coate S. 2001. Lobbying and welfare in a representative democracy. *Rev. Econ. Stud.* 68(1):67–82

Bils P, Duggan J, Judd G. 2021. Lobbying and policy extremism in repeated elections. *J. Econ. Theory* 193:105223

Blumenthal B. 2023. Political agency and implementation subsidies with imperfect monitoring. *J. Law Econ. Organ.* 39(3):775–800

Bombardini M, Trebbi F. 2020. Empirical models of lobbying. *Annu. Rev. Econ.* 12:391–413

Caillaud B, Tirole J. 2007. Consensus building: how to persuade a group. *Am. Econ. Rev.* 97(5):1877–900

Callander S, Foarta D, Sugaya T. 2022. Market competition and political influence: an integrated approach. *Econometrica* 90(6):2723–53

Callander S, Foarta D, Sugaya T. 2024. The dynamics of a policy outcome: market response and bureaucratic enforcement of a policy change. *Am. J. Political Sci.* In press. **https://doi.org/10.1111/ajps.12784**

Chakraborty A, Harbaugh R. 2010. Persuasion by cheap talk. *Am. Econ. Rev.* 100(5):2361–82

Che Y-K, Gale IL. 1998. Caps on political lobbying. *Am. Econ. Rev.* 88(3):643–51

Chen Y, Zapal J. 2022. Sequential vote buying. *J. Econ. Theory* 205(Oct.):105529

Coate S. 2004a. Pareto-improving campaign finance policy. *Am. Econ. Rev.* 94(3):628–55

Coate S. 2004b. Political competition with campaign contributions and informative advertising. *J. Eur. Econ. Assoc.* 2(5):772–804

Coate S, Morris S. 1999. Policy persistence. *Am. Econ. Rev.* 89(5):1327–36

Cotton C. 2009. Should we tax or cap political contributions? A lobbying model with policy favors and access. *J. Public Econ.* 93(7):831–42

Cotton C. 2012. Pay-to-play politics: informational lobbying and contribution limits when money buys access. *J. Public Econ.* 96(3):369–86

Cotton C. 2016. Competing for attention: lobbying time-constrained politicians. *J. Public Econ. Theory* 18(4):642–65

Cotton C, Dellis A. 2016. Informational lobbying and agenda distortion. *J. Law Econ. Organ.* 32(4):762–93

Cotton CS, Li C. 2018. Clueless politicians: on policymaker incentives for information acquisition in a model of lobbying. *J. Law Econ. Organ.* 34(3):425–56

Crawford VP, Sobel J. 1982. Strategic information transmission. *Econometrica* 50(60):1431–51

Dahm M, Porteiro N. 2008a. Informational lobbying under the shadow of political pressure. *Soc. Choice Welf.* 30(4):531–59

Dahm M, Porteiro N. 2008b. Side effects of campaign finance reform. *J. Eur. Econ. Assoc.* 6(5):1057–77

Dal Bó E. 2007. Bribing voters. *Am. J. Political Sci.* 51(4):789–803

Dal Bó E, Dal Bó P, Di Tella R. 2006. "Plata o plomo?": bribe and punishment in a theory of political influence. *Am. Political Sci. Rev.* 100(1):41–53

Dal Bó E, Di Tella R. 2003. Capture by threat. *J. Political Econ.* 111(5):1123–54
Daley B, Snowberg E. 2011. Even if it is not bribery: the case for campaign finance reform. *J. Law Econ. Organ.* 27(2):324–49
de Figueiredo JM, Richter BK. 2014. Advancing the empirical research on lobbying. *Annu. Rev. Political Sci.* 17:163–85
Dekel E, Jackson M, Wolinsky A. 2009. Vote buying: legislatures and lobbying. *Q. J. Political Sci.* 4(2):103–28
Dellis A. 2023. Legislative informational lobbying. *J. Econ. Theory* 208(March):105595
Dellis A, Oak M. 2019. Informational lobbying and Pareto-improving agenda constraint. *J. Law Econ. Organ.* 35(3):579–618
Dellis A, Oak M. 2020. Subpoena power and informational lobbying. *J. Theor. Politics* 32(2):188–234
Denzau AT, Munger MC. 1986. Legislators and interest groups: how unorganized interests get represented. *Am. Political Sci. Rev.* 80(1):89–106
Desai Z, Duggan J. 2021. A model of interest group influence and campaign advertising. *Q. J. Political Sci.* 16(1):105–37
Drazen A, Limão N, Stratmann T. 2007. Political contribution caps and lobby formation: theory and evidence. *J. Public Econ.* 91(3):723–54
Duggan J, Gao J. 2020. Lobbying as a multidimensional tug of war. *Soc. Choice Welf.* 54(1):141–66
Ellis CJ, Groll T. 2019. *Who lobbies whom? Special interests and hired guns.* **https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3338696**
Ellis CJ, Groll T. 2020. Strategic legislative subsidies: informational lobbying and the cost of policy. *Am. Political Sci. Rev.* 114(1):179–205
Felli L, Merlo A. 2006. Endogenous lobbying. *J. Eur. Econ. Assoc.* 4(1):180–215
Felli L, Merlo A. 2007. If you cannot get your friends elected, lobby your enemies. *J. Eur. Econ. Assoc.* 5(2–3):624–35
Fox J, Rothenberg LS. 2011. Influence without bribes: a non-contracting model of campaign giving and policymaking. *Political Anal.* 19(3):325–41
Gause L. 2022a. *The Advantage of Disadvantage: Costly Protest and Political Representation for Marginalized Groups*. New York, NY: Cambridge Univ. Press
Gause L. 2022b. Revealing issue salience via costly protest: how legislative behavior following protest advantages low-resource groups. *Br. J. Political Sci.* 52(1):259–79
Gerber A. 1996. *Rational voters, candidate spending, and incomplete information: a theoretical analysis with implications for campaign finance reform*. Work. Pap., ISPS
Gordon SC, Hafer C. 2005. Flexing muscle: corporate political expenditures as signals to the bureaucracy. *Am. Political Sci. Rev.* 99(2):245–61
Gordon SC, Hafer C. 2007. Corporate influence and the regulatory mandate. *J. Politics* 69(2):300–19
Groll T, Ellis CJ. 2014. A simple model of the commercial lobbying industry. *Eur. Econ. Rev.* 70:299–316
Groll T, Ellis CJ. 2017. Repeated lobbying by commercial lobbyists and special interests. *Econ. Inq.* 55(4):1868–97
Groseclose T, Snyder JM. 1996. Buying supermajorities. *Am. Political Sci. Rev.* 90(2):303–15
Grossman GM, Helpman E. 1994. Protection for sale. *Am. Econ. Rev.* 84(4):833–50
Grossman GM, Helpman E. 1996. Electoral competition and special interest politics. *Rev. Econ. Stud.* 63(2):265–86
Grossman GM, Helpman E. 1999. Competing for endorsements. *Am. Econ. Rev.* 89(3):501–24
Hall RL, Deardorff AV. 2006. Lobbying as legislative subsidy. *Am. Political Sci. Rev.* 100(1):69–84
Hirsch AV, Kang K, Montagnes BP, You HY. 2023. Lobbyists as gatekeepers: theory and evidence. *J. Politics* 85(2):731–48
Hirsch AV, Shotts KW. 2015. Competitive policy development. *Am. Econ. Rev.* 105:1646–64
Hirsch AV, Shotts KW. 2018. Policy-development monopolies: adverse consequences and institutional responses. *J. Politics* 80:1229–354
Holburn G, Raiha D. 2023. *Strategic mobilization of voters*. Unpubl. Manuscr., Ivey Bus. Sch., Univ. West. Ontario. **https://www.davinraiha.com/_files/ugd/43de17_666a1647ed5a4c9aad8b3d27e286bbad.pdf**

Hübert R, Rezaee JK, Colner J. 2023. Going into government: how hiring from special interests reduces their influence. *Am. J. Political Sci.* 67(2):485–98

Judd G. 2023. Access to proposers and influence in collective policy making. *J. Politics* 85(4):1430–43

Kang K. 2016. Policy influence and private returns from lobbying in the energy sector. *Rev. Econ. Stud.* 83(1):269–305

Kenkel B. 2019. Signaling policy intentions in fundraising contests. *Q. J. Political Sci.* 14(2):225–58

Kollman K. 1998. *Outside Lobbying: Public Opinion and Interest Group Strategies*. Princeton, NJ: Princeton Univ. Press

Le T, Yalcin E. 2018. Lobbying, campaign contributions, and electoral competition. *Eur. J. Political Econ.* 55:559–72

Lipnowski E, Ravid D. 2020. Cheap talk with transparent motives. *Econometrica* 88(4):1631–60

Lohmann S. 1993. A signaling model of informative and manipulative political action. *Am. Political Sci. Rev.* 87(2):319–33

Lohmann S. 1994. Information aggregation through costly political action. *Am. Econ. Rev.* 84(3):518–30

Lohmann S. 1995a. Information, access, and contributions: a signaling model of lobbying. *Public Choice* 85(3–4):267–84

Lohmann S. 1995b. A signaling model of competitive political pressures. *Econ. Politics* 7(3):181–206

Lohmann S. 1998. An information rationale for the power of special interests. *Am. Political Sci. Rev.* 92(4):809–27

Martimort D, Semenov A. 2007. Political biases in lobbying under asymmetric information. *J. Eur. Econ. Assoc.* 5(2–3):614–23

McCarty N, Rothenberg LS. 2000. The time to give: PAC motivations and electoral timing. *Political Anal.* 8(3):239–59

Meirowitz A. 2008. Electoral contests, incumbency advantages, and campaign finance. *J. Politics* 70(3):681–99

Minaudier C. 2022. The value of confidential policy information: persuasion, transparency, and influence. *J. Law Econ. Organ.* 38(2):570–612

Morton RB, Myerson RB. 2012. Decisiveness of contributors' perceptions in elections. *Econ. Theory* 49(3):571–90

Mueller DC, Stratmann T. 1994. Informative and persuasive campaigning. *Public Choice* 81(1/2):55–77

Potters J, van Winden F. 1990. Modelling political pressure as transmission of information. *Eur. J. Political Econ.* 6(1):61–88

Potters J, van Winden F. 1992. Lobbying and asymmetric information. *Public Choice* 74(3):269–92

Potters J, Sloof R, van Winden F. 1997. Campaign expenditures, contributions and direct endorsements: the strategic use of information and money to influence voter behavior. *Eur. J. Political Econ.* 13(1):1–31

Prat A. 2002a. Campaign advertising and voter welfare. *Rev. Econ. Stud.* 69(4):999–1017

Prat A. 2002b. Campaign spending with office-seeking politicians, rational voters, and multiple lobbies. *J. Econ. Theory* 103(1):162–89

Prato C, Wolton S. 2017. *Citizens United*: a theoretical evaluation. *Political Sci. Res. Methods* 5(3):567–74

Salas C. 2019. Persuading policy-makers. *J. Theor. Politics* 31(4):507–42

Schnakenberg KE. 2015. Expert advice to a voting body. *J. Econ. Theory* 160(Part A):102–13

Schnakenberg KE. 2017. Informational lobbying and legislative voting. *Am. J. Political Sci.* 61(1):129–45

Schnakenberg KE, Schumock CT, Turner IR. 2023. *Dark money and voter learning*. Unpubl. Manuscr., Dep. Political Sci., Yale Univ. **https://osf.io/preprints/socarxiv/r562d/**

Schnakenberg KE, Turner IR. 2019. Signaling with reform: how the threat of corruption prevents informed policy-making. *Am. Political Sci. Rev.* 113(3):762–77

Schnakenberg KE, Turner IR. 2021. Helping friends or influencing foes: electoral and policy effects of campaign finance contributions. *Am. J. Political Sci.* 65(1):88–100

Schnakenberg KE, Turner IR. 2023. *Dark money and politician learning*. Unpubl. Manuscr., Dep. Political Sci., Yale Univ. **https://osf.io/preprints/socarxiv/3bzex/**

Sloof R. 1999. Campaign contributions and the desirability of full disclosure laws. *Econ. Politics* 11(1):83–107

Sloof R, Van Winden F. 2000. Show them your teeth first! A game-theoretic analysis of lobbying and pressure. *Public Choice* 104(1–2):81–120

Snyder JM. 1990. Campaign contributions as investments: the US House of Representatives, 1980–1986. *J. Political Econ.* 98(6):1195–227

Snyder JM. 1991. On buying legislatures. *Econ. Politics* 3(2):93–109

Vanberg C. 2008. "One man, one dollar"? Campaign contribution limits, equal influence, and political communication. *J. Public Econ.* 92(3):514–31

Wittman D. 2007. Candidate quality, pressure group endorsements and the nature of political advertising. *Eur. J. Political Econ.* 23(2):360–78

Wolton S. 2021. Lobbying, inside and out: how special interest groups influence policy choices. *Q. J. Political Sci.* 16(4):467–503

Wood AK. 2020. Facilitating accountability for online political advertisements. *Ohio State Technol. Law J.* 16:520–57

Wood AK, Ravel AM. 2017. Fool me once: regulating fake news and other online advertising. *South. Calif. Law Rev.* 91:1223–78

You HY. 2017. Ex post lobbying. *J. Politics* 79(4):1162–76