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EMPIRICAL MODELS OF LOBBYING

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ABSTRACT

This paper offers a review of the recent empirical literature on lobbying within Political Economy. In surveying extant evidence, we emphasize quid-pro-quo and informational issues in special interest politics and we highlight crucial open research questions in both. The main unresolved methodological issues remain how to properly account for the impact of lobbying on which equilibrium policies are chosen and advanced, and on how distorted those equilibrium policies might be relative to the interests of the general public. Of the principal open questions within political economy, a comprehensive quantitative assessment of the welfare distortions of lobbying remains one of the most elusive

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1. INTRODUCTION

The objective of this article is to provide a useful organization of the most recent empirical literature on lobbying in Political Economy. Starting from a definition of lobbying, we will specifically focus on the process of political influence by corporations and other business interests on elected officials or appointed bureaucrats through means of information or other resources (e.g. campaign contributions or employment opportunities) in the adoption, retention, or amendment of public policy.¹

To the reader interested in the topic and approaching it for the first time the research question at the bleeding edge of this literature will be immediately clear. Is lobbying and, more generally, the direct or indirect interaction between business interests and the government welfare enhancing for the general public and electorate? Or is it instead distortive and deleterious? Is lobbying a valid political mechanism “*to petition the government for a redress of grievances*”, as The National Institute for Lobbying & Ethics (a trade association representing American lobbyists) vividly asserts, borrowing from the First Amendment of the U.S. Constitution?² Or is it a tool for the distortion of public policy from the social optimum, a crucial cog in the mechanism of transforming concentrated economic power into political heft and corruption?

To the average voter the answer appears surprisingly unambiguous. The role of lobbyists and special interest groups in Washington was indicated as a “*very big problem*” by 53% of respondents to three surveys conducted by the Pew Center between September 2018 and March 2019.³ (It was 38% for illegal immigration, in comparison.) Lobbyists are also consistently ranked at the rock bottom in terms of trustworthiness, honesty and ethical standards. According to the Gallup annual survey of Honesty and Ethics in the Professions lobbyists are ranked in any year between 2007 and 2017 as “*very low*” or “*low*” by 60% of the sample (the low point in terms of reputation is 2008 with 64% and the high point 2013 with 56%).⁴ (It was 25% for bankers, in comparison.)

¹ For less recent work and a prospective more oriented towards Political Science, see De Figueiredo and Richter (2014). For an earlier review of work on campaign contributions and money in politics more generally, see Stratmann (2005).

² <https://lobbyinginstitute.com/what-is-lobbying/> last accessed August 13, 2019.

³ <https://www.pewresearch.org/fact-tank/2019/07/22/key-findings-about-americans-declining-trust-in-government-and-each-other/> last accessed August 13, 2019.

⁴ <https://news.gallup.com/poll/1654/honesty-ethics-professions.aspx> last accessed August 13, 2019.

To the average researcher currently working in this area bordering Economics, Political Science, and Sociology, the scientific answer appears instead far from clear-cut and settled. Indeed, given the variety and depth of the studies reviewed in what follows and the often nuanced nature of some of the results we will discuss, this article will likely add to this lack of clarity. We can candidly anticipate that the reader interested in an answer to the question of whether lobbying is “bad or good” will not find it here.

For the sake of cleanness of exposition we will refer, wherever not excessive in the way of oversimplification, to the interactions of a representative firm F facing a government official P (politician) directly, or indirectly through an external lobbyist L . This initial distinction between direct and intermediated interaction between F and P will turn out to be relevant from the empirical perspective. It also happened to have been an issue initially overlooked in the early empirical literature on special interest politics, especially in the context of lobbying for trade policy (e.g. Goldberg and Maggi, 1999; Gawande and Bandyopadhyay, 2000; Gawande et al., 2012), but now understood to be crucial from the perspective of an empirical assessment of the welfare consequences of lobbying (for instance in Blanes i Vidal, Draca, and Fons-Rosen, 2012; Bertrand, Bombardini, and Trebbi, 2014).

The interaction among the main set of players $\{F, L, P\}$ will typically revolve around the *demand* of a certain “policy” by F and the ability of P of supplying such policy. Defining and empirically circumscribing what that *policy supply* is and what the counterfactual policy that would have been implemented by P , absent the political influence of F , is the crux of the empirical literature that we study.

For the most part, one can state confidently that measuring what F obtains from lobbying is one of the most complex dimension of empirical research in this area. The reason for this complexity will be rather transparent. What a specific firm F demands may be extremely specific, possibly buried into pages of regulatory rulemaking or multiple statutes (Yackee and Yackee, 2006; Bertrand, Bombardini, Fisman, Hackinen and Trebbi, 2018), heterogeneous, hardly comparable across firms belonging to different sectors or even within the same industry.⁵

⁵ Kang (2016), one of the few empirical papers in the literature addressing the complexity of mapping policy demand from textual components of U.S. House of Representatives statutes, provides an excellent example of the intricacy of such exercise and produces a detailed blueprint of how to handle it.

It complicates things further that a policy demand by F may often be expressed in the negative, in the form of blocking or stopping a specific legislative or administrative proposal, to the advantage of an incumbent corporate beneficiary (Baumgartner, Berry, Hojnacki and Leech, 2009; Drutman, 2015). This is the case of safety controls (e.g. guns), extant trade subsidies (e.g. non-tariff and tariff barriers) or tax exemptions covering arrays of products and goods (e.g. the Farm Bill). As a consequence, in many instances what F obtains in the process of lobbying will be invisible: to maintain a status quo ante, without any discernible change in the law.⁶

As a point of further clarification, it is important to emphasize here that, while our terminology of a supply and demand of policy may seem to necessarily to imply a monetary exchange of resources between F and P - what in special interest politics is called the *quid-pro-quo* perspective, and in more lay terms may be described as corruption, this does not need to be the case at all. Indeed, while much of the economic literature on lobbying, starting from the seminal theoretical contributions of Grossman and Helpman (1994, 1996), has been centered on quid-pro-quo lobbying, this is by far not the standard perspective in other disciplines, such as Political Science and Sociology. Within these related fields, the perspective is *informational*.

Instead of payment for policy from F to P, original contributions such as Potters and van Winden (1990, 1992), Austen-Smith (1994, 1995), Austen-Smith and Wright (1996), and Bennesen and Feldmann (2002), etc. have focused on issues of asymmetry of information and of expertise between F to P (possibly via L or with L's strategic intermediation). The informational perspective is also the one taken by The National Institute for Lobbying & Ethics on behalf of its members, the American lobbyists. It states: "*Lobbying is a legitimate and necessary part of our democratic political process. Government decisions affect both people and organizations, and information must be provided in order to produce informed decisions. Public officials cannot make fair and informed decisions without considering information from a broad range of interested parties.*"

From an informational perspective, additional layers of empirical complication arise from the immaterial and hard-to-measure nature of what is transacted: information and messages, not

⁶ We will also observe how specific approaches to lobbying, such as in the case of all-pay auctions (Baye, Kovencok de Vries, 1993; Che and Gale, 1998) or tournament approaches, will face a similar measurement complication, as payment and exertion of lobbying efforts will not be met necessarily by policy rewards coming the way of F.

physical goods or payments. This compounds to the difficulty of assessing the degree of bias and measuring the incentives to lie for F or for any strategic intermediary L.

In terms of conceptual organization of the empirical research, this article will focus on the simple dichotomy between empirical models focused on quid-pro-quo, where essentially F and P are on even grounds in terms of informational symmetry, and informational models of lobbying, where this symmetry is broken and where a biased, but more informed, F interacts with an uninformed P. As it will become obvious, a natural skewness within Political Economy will emerge with respect to the relative abundance of quid-pro-quo based model evidence versus informational ones. This is not because empirical quid-pro-quo models are to be considered a better fit of reality, but because, as we discuss, data on informational needs of agents and precise evidence on transmission of expertise are extremely hard to come by. Hence, empirical models of lobbying displaying informational effects are rarer.

As in many empirical politico-economic problems, in what follows we will also try to highlight how the key to statistical identification may come from assessing shocks to the demand of policy by F (to pin down parameters governing the policy supply). Or it may arise from shocks to the supply by P (e.g. reelection or retirement of P, changes in the policy oversight portfolio of P, etc.) to identify the parameters governing firm behavior. Finally, some sources of variation may arise from exogenous changes affecting the technology related to the ability of L to intermediate between F and P.

In Section 2, we will begin by providing an illustration of the several empirical tools available to special interests in influencing policymakers and, as we describe the data available in the context of each tool, we will also illustrate which information they can provide in the study of special interest politics and lobbying. This step will be useful, because it will immediately disabuse the reader from the notion that lobbying “proper” (that is, as defined by the Lobbying Disclosure Act of 1995) encompasses the entirety of special interest politics or is even the bulk of the arsenal of influence tools available and employed by corporations. Finally, due to its higher data quality, amplitude of disclosure requirements, and advantageous sample size and coverage, our emphasis will be the United States context, although we will touch a limited amount of empirical work on Canada and lobbying in the European Union in Section 5.

In terms of the methodological approaches that we will review in this brief survey, the spectrum will be wide. One of the interesting features of the empirical literature on lobbying is the variety of empirical methodologies brought to bear to the study of special interest politics. The works described in this article range from standard observational studies and regression analysis, to quasi-experimental approaches, to structural econometric approaches. In fact, we will separate quid-pro-quo structural models from reduced-form approaches. We hope the reader will find in the variety of empirical angles discussed in Sections 2-4 a sense of the plasticity of the topic, in fact borrowing from several fields within economics.⁷

The paper is organized as follows. Section 2 presents an overview of the lobbying data, their coverage and limitations and links them to specific uses made of them in the literature. Section 3 reviews work focused on identification of relevant dimensions of the political influence process that emerge from quid-pro-quo approaches. It does so by focusing both on structural econometric and reduced-form applications. Section 4 focuses on recent evidence pertinent to informational models. Section 5 offers a brief perspective on empirical analysis focused on non-US lobbying. Finally, Section 6 concludes.

2. TOOLS AND DATA: AN OVERVIEW

Much of the empirical analysis of lobbying and special interest politics is focused on the United States. The reason is simple: data. The United States jurisprudence has been at the frontier of transparency and data availability since the 1970's. The Federal Election Campaign Act of 1971 and its subsequent amendments have progressively imposed detailed requirements for campaign finance disclosure on the side of both donors and recipients. Since its creation in 1974, the Federal Election Commission is the primary source of data on campaign contributions by individuals and Political Action Committees (PAC), although in recent years some notable efforts by non-profit organization, chiefly the Center for Responsive Politics, have made the data much easier to access

⁷ Special interest politics is an area where intuition from Industrial Organization is useful to study the interaction of multiple strategic special interest groups (Kang, 2016); intuition from structural and reduced-form labor economics may be relevant in tracing the career choices of lobbyists or politicians (e.g. Diermeier, Keane and Merlo, 2005 where lobbying is an important part of a congressional career); where the asymmetric informational complexities of regulation may speak directly to environmental economics; where the financial gains from political connections or the costs from policy uncertainty may touch themes relevant to financial economists (see Gutierrez and Philippon, 2019 on lobbying and misallocation).

and interpret. PAC and individual campaign contributions are the topic of the bulk of empirical research in lobbying since the 1990's.⁸ However, in the last ten years, empirical researchers have turned their attention to a measure of interest group activity that is quantitatively much larger, lobbying expenditures.⁹ What is behind the most exciting development on the data availability front is the Lobbying Disclosure Act of 1995, modified by the Honest Leadership and Open Government Act of 2007. The Senate Office of Public Records (SOPR) is the primary source of data, although CRP once again usefully organizes the data by industry and links it to other political activities of firms. CRP makes the quantitative comparison of PAC and lobbying expenditures easy. Total lobbying spending has oscillated between 3 and 3.5 billion dollars for the past ten years, starting from 1.5 billions in 1998, whereas yearly PAC donations to candidates during the same period varied between 200 and 250 million dollars.¹⁰

As emphasized by Milyo, Primo and Groseclose (2000) corporate PAC's have received a disproportionate amount of attention in the empirical literature due to their early availability. We therefore concentrate on LDA lobbying data, which is the focus of much ongoing research. However, before we do so, we would like to briefly refer to two phenomena that are growing in size and that have not been the subject of close academic scrutiny. The first one is the rise of so-called Super PAC's, created in the wake of the 2010 landmark "Citizens United vs FEC" U.S. Supreme Court case. Firms and other organizations can now contribute unlimited amounts to these "independent expenditure" groups as long as those groups do not coordinate with a specific candidate's campaign. There were only 83 Super PAC's in 2010 for a total spending of \$60 Millions, while in the 2018 electoral cycle close to 2,400 groups raised 1.5 billion and spent just above \$800 millions. The second, even harder-to-study and partially overlapping phenomenon is the increasing use of what is referred to as "dark money". "Social welfare" groups organized under section 501(c)4 of the Internal Revenue Code can engage in political spending as long as it is not the majority of their activity.¹¹ Importantly, these groups are not required to disclose their donors.

⁸ For example, Snyder (1989).

⁹ The observation that lobbying expenditures dwarf PAC spending was made forcefully in Milyo, Primo and Groseclose (2000)

¹⁰ It should be noted that committee fund raising and expenditures are much higher if we take into account independent expenditures and independent expenditure-only committees (i.e. SuperPAC's): the yearly amount raised vary between 600 million and 1.5 billion dollars.

¹¹ Other organizations such as 5019(c)5 and 501(c)6 (business groups) are also subjects to similar regulation, while tax-exempt 501(c)3 are not allowed to engage in political spending.

CRP reported a peak of almost \$320 million spent by such groups in 2012. Although quantitative research in this area is inherently difficult, investigative reporting has made these entities hard to ignore.¹²

Facts about Lobbyists

According to the LDA rules, lobbyists and lobbying firms¹³ are required to file an initial registration for each client they serve and quarterly reports any time their lobbying-related income exceeds \$3,000 (in 2019). The quarterly reports indicate the name of the lobbying firm or lobbyist, the client name, the total amount paid by the client, the names of the lobbyists who worked on behalf of the client and the issues they worked on (a list of 79 pre-determined codes as of 2019 and specific bill numbers).

Bertrand, Bombardini and Trebbi (2014) document that during the period 1999 to 2008 about 37,000 individual lobbyists were active. CRP lists on average 12,537 unique lobbyists per year between 1998 and 2019, varying from 10,417 in 1998 to a peak of 14,825 in 2007. The number has been declining back to 11,654 in 2018.

The SOPR data also classify lobbyists according to whether they are in-house lobbyists (internal lobbying) or whether they work for a lobbying firm that is representing another organization (external lobbying). Bertrand, Bombardini and Trebbi (2014) show a decline over time in the share of in-house lobbyists, from nearly 60 percent at the beginning of the sample period to less than 40 percent by the end. Growth in lobbying expenses over the sample period (about a 30 percent increase) is almost entirely due to the growth of external lobbying, which doubled over the sample period.

Another important source of information to determine lobbyists' policy alignment and the existence of political connections through past employment, for example as staff members, is www.lobbyists.info. This website, which was originally derived from the directory "Washington Representatives" and is maintained by Columbia Books & Information Services (CBIS), is the most comprehensive source of information of the background of federal lobbyists. Bertrand, Bombardini and Trebbi (2014) found that about 14,000 of the 37,000 active lobbyists had a profile

¹² See Mayer (2017)

¹³ An individual is defined as lobbying on behalf of a client if the activity involves more than 20% of her time and has more than one lobbying contact per disclosure period.

on the website and among those 11 percent had some association to the Republican party and about 10 percent to the Democratic party. Around 1 percent of the lobbyists were former members of Congress while 2 percent of the biographies mentioned some experience in the White House. Former aides were 11 percent of the sample.

Facts about Lobbying Clients

The LDA explicitly requires that the registrant file a separate report for each client, which can be a firm, a non-corporate organization or an individual. The CRP led the effort to homogenize and aggregate lobbying expenditures by clients, facing the difficulty of often misspelled client names.

The CRP reports that in 2018 the largest spending was by industry associations, such as the US Chamber of Commerce (almost \$94 million), the National Association of Realtors and the Pharmaceutical Research and Manufacturers of America, together with 501(c)4 organization Open Society Policy Center and large corporations such as Blue Cross/Blue Shield (\$24 million), Alphabet Inc and AT&T. The economics literature has focused on lobbying by firms, and business interests more in general, because those entities tend to focus their lobbying not on ideological issues, but on policies such as tariffs, subsidies, banking regulations and taxation that have a key impact on the allocation of resources in the economy.

One of the first efforts to match firms to their political activity using Compustat North America was Grier, Munger and Roberts (1994).¹⁴ Bombardini and Trebbi (2012) linked lobbying records to Compustat's corporations, but only for the subset of firms involved in lobbying for trade issues. Richter, Samphantharak, and Timmons (2009) and Kerr, Lincoln and Mishra (2014) performed a more comprehensive linking exercise covering a large portion of Compustat's firms lobbying on all issues. When it comes to linking lobbying records of public firms to standard Compustat identifiers, such as gvkey's, which in turn allows the researcher to link other firm-level balance sheet variables, the state-of-the-art website is www.LobbyView.org, described in detail in Kim (2018). The dataset is employed in Huneus and Kim (2019), discussed later.

¹⁴ Bombardini (2008) undertook a similar effort for more recent PAC data.

Kerr, Lincoln and Mishra (2014) and Huneus and Kim (2019) offer interesting stylized facts about the lobbying behavior of public firms. First, lobbying is rare, and positively related to firm size.¹⁵ According to Huneus and Kim (2019) in 2017, of 7,646 U.S. public firms, 766 engaged in lobbying. Lobbying firms have sales that are almost 4 times of those firms that do not lobby. Conditional on lobbying, Huneus and Kim (2019) show that the elasticity of lobbying expenditure to total firm sales is around 1, confirming that size affects lobbying both at the intensive and extensive margin. Second, lobbying is persistent: Kerr, Lincoln and Mishra (2014) report that 92% of firms that lobby in a given year, also lobby in the next year.¹⁶ Such persistence is explained by the presence of large sunk costs in setting up political presence.

Firms are not the only business-related entities that engage in lobbying. In fact smaller firms are likely to participate through their membership in industry-wide organizations. This is a phenomenon at the core of Bombardini and Trebbi (2012), who show that industries with lower industry concentration and lower product differentiation tend to spend a higher share of the lobbying expenditure through trade associations. Using more recent figures, Huneus and Kim (2019) confirm though the one by individual firms is the more prevalent form of lobbying.¹⁷

3 QUID-PRO-QUO LOBBYING

3.1 STRUCTURAL ECONOMETRIC APPROACHES TO QUID-PRO-QUO LOBBYING

There are important advantages in taking a structural approach to the empirical analysis of lobbying. First, structural models require an explicit definition of the full set of theoretical assumptions at the basis of the analysis. It forces the researcher to spell out precisely all relevant features of the research problem, starting from its primitive parameters and data generating process. In this sense, the structural approach requires clarity on what both F and P get out of their exchange (quid pro quo). Second, the structural econometric approach requires a more rigorous consideration of the theoretical assumptions, which need actual empirical validation to

¹⁵ Unsurprisingly, this is also the case for PAC contributions, as reported, among others, by Grier, Munger and Roberts (1994) and Bombardini (2008).

¹⁶ Persistence of lobbying and its consequences is also at the core of Druttman (2015).

¹⁷ Bombardini and Trebbi (2012) report an average share of lobbying by individual firms of 67%, with a median of 96%. Huneus and Kim (2019) report lobbying by business associations to be less than a quarter of all lobbying expenses.

deliver sensible parameter estimates and in-sample fit. Most assumptions in empirical models cannot merely pass intuitive/qualitative scrutiny, but must actually fit the data without inducing nonsensical estimates along any dimension of the parameter space. Assumptions face immediate discipline by the data (individually or jointly) and often can be verified and rejected. Finally, structural approaches in Political Economy are not exclusively useful for counterfactual analysis or out-of-sample prediction, but they can deliver certain parameter estimates that may be of independent genuine research interest themselves. Some of these parameters, for example, are the latent returns to lobbying or the unobserved fixed costs of political participation for a special interest. We present a few notable examples in this section.

Kang (2016) offers one of the rare instances where equilibrium policy success, multiple lobbying decisions by special interest groups in favor or against each policy dimensions (the *quid* of the *quid pro quo*) and economic returns to lobbying are all, simultaneously modeled within the same econometric framework. This nontrivial feat is accomplished first by presenting a detailed measure for the outcome of the lobbying process in the context of U.S. energy sector: the approval or rejection of a specific policy proposal (e.g. a solar energy production subsidy) identified through the application of natural language processing (NLP) tools to congressional bill texts. We underscore how, in order to keep the policy proposals relatively comparable with each other, the author focuses on the energy policy, affecting an important, but tightly circumscribed industry. In order to obtain a complete picture of failing and succeeding proposals, the author focuses further on a single legislative term, the 110th Congress. And finally, to precisely trace the ultimate fate of each policy, Kang decouples policies from the various legislative bills “carrying” those policy proposals.¹⁸ The paper studies 538 policies that are included in 445 bills requiring extensive NLP pre-analysis.

Kang (2016) frames the lobbying game as a series of contests among multiple special interests for the policies adopted by one P. The set of F’s consists of four coalitions representing four

¹⁸ For instance, the author reports several instances where policy Q1 and Q2 are part of the same bill, the bill fails, but then policy Q2 is carved out and added to a new bill, which then passes. Likely, omitting this refinement of the data and focusing only on bill passage could lead to severe mismeasurement of the effects of lobbying. In essence, just the preparatory data effort of Kang is substantial and the attention to institutional detail becomes crucial. Political science researchers, such as Baumgartner et al. (2009) and other more qualitative studies of lobbying in Congress, often make similar considerations.

different areas of economic interest (coal, oil and gas, nuclear, renewables). Kang further assumes that within each coalition Olson (1965) collective action issues have been solved¹⁹.

From lobbying reports then the author links each special interest group to each policy, measuring whether each F lobbies P on each policy and whether F supports or opposes it. Interestingly, policies that are not associated with lobbying activity tends to be rarely enacted (1% of cases). Policies where two or more players lobby are much more likely to pass (24%) and differentially so depending whether all F's are on the same side of the issue or not, implying substantial selection in the data. Overall, only 8% of all policies are eventually enacted.

There is no informational role of lobbying in the model and the problem is a game of complete information. Conditional on lobbying expenditures (s_1, \dots, s_4) , this enactment probability is modeled as a modification of the standard Tullock (1967) contest function, which is normally in the form $p_i = (s_i)^\beta / \sum_j (s_j)^\beta$ for generic nonzero expenditures (otherwise $p_i = 1$ if $s_{j \neq i} = 0$ and $s_i > 0$).²⁰ The modifications to the context function applied by Kang allow for additional group parameters modeling the effectiveness of lobbying against or in favor of a policy, and for a baseline probability of enactment different from one, absent competition from other F's.²¹

Under these assumptions, the subgame spending phase equilibrium where the vector (s_1, \dots, s_4) is determined is unique given entry, but the entry decision phase displays multiplicity. Generally, we only know that at least one mixed strategy equilibrium of the game exists. As necessary in the structural estimation of models with multiple equilibria, the author imposes a selection argument and focuses on the equilibrium that maximizes the sum of all the players' payoffs as criterion. Focusing on this specific equilibrium, Kang aims at recovering influence, baseline enactment probabilities and cost parameters so to maximize the likelihood of observing the empirical policy enactment, lobbying participation, and total lobbying expenditures recorded in the data. As several equilibrium objects do not have a closed-form representation, simulation methods are required for this.

¹⁹ This may not be always an appropriate assumption, even for specific issues such as trade policy. See Bombardini and Trebbi (2014) and Kim (2017) for a discussion.

²⁰ See also Baik (2008)

²¹ To further simplify the game, the author excludes issues of budget constraints for each special interest group (realistically assumed to have deep pockets), to focus on the subgame perfect Nash equilibria of each policy/lobbying game independently for the others, essentially treating them as independent games.

With parameter estimates at hand, the author can then simulate the equilibrium enactment probability and the baseline passage probability in a scenario without lobbying for each policy, conditional on the observable characteristics of the policy and lobbying coalitions. This is a crucial counterfactual of the paper, aiming at the key questions of what are the effects of lobbying. In fact, the difference between the enactment probability with and without lobbying can be thought of as a dimension of the (model-dependent) effect of lobbying.

Surprisingly, here such effect is extremely small, between 0.021 and 0.415 percentage points relative to a baseline of 8 percent enactment probability. While intuition could suggest that lobbying efforts in favor and against enactment may be cancelling each other à la Becker (1983), part of the problem is in the extreme insensitivity of the success likelihood at the margin, which may be potentially indicate a form of model misspecification²². The author also estimates average returns to lobbying in the range between 137% for Renewables and 152% for Oil and Gas, which are conversely very high. This result emerges from an estimated average monetary value of each policy of more than \$500 Million, possibly another indication of some form of misspecification.

Beyond Kang (2016), however, excessive political returns on political investments are common in this literature. A second special interest politics paper following a structural approach offers a possible explanation for this specific puzzle.

Bombardini and Trebbi (2011) presents a quid-pro-quo model of policy influence that is structurally estimated on campaign contributions for the United States Congress. The paper presents a model of multilateral bargaining across heterogeneous special interests F and a single politician P . The authors emphasize how SIG donations may interact nonlinearly with the electoral bloc of votes associated with that special interest, under the assumption of some alignment of interests between workers and owners of capital (which is typically the case through profit sharing or job security motives).

²² According to the structural estimates, 40% of the lobbying expenditures cancel out, so this cannot explain the null enactment probability effect. Further, the effect of lobbying expenditures is small even when there are no opposing interventions present. By highlighting along which dimensions the structure of the problem produces counterintuitive estimates the paper offers the contribution of narrowing the spectrum of issues needing further investigation. This is a benefit of the quantitative approach followed by Kang, rather than a weakness.

The paper's first intuitive contribution is to highlight how special interest influence may be the results of multiple tools employed simultaneously and with specific patterns of substitution between them. In the analysis, the authors show how large special interests who carry a substantial employment presence in a congressional district (and therefore have the power of potentially swaying elections for House members through the mobilization of their employees) may not have the necessity of providing much in the way of campaign contributions to obtain the same policy benefit as electorally smaller groups. P will deliver the preferred policy by F, "or else...".

The evidence of access by large employers to local representatives is vast and lines up with research on incentives for access and politics (Austen-Smith, 1995; Fourinaies and Hall, 2018). However, the authors report systematic inverse-U shaped relationships between the amount of total campaign spending by sector in a congressional district and employment in a district by industry (peaking at around 18,000 industry employees). The same relationship also holds within industry, where total campaign spending across congressional districts concentrates in areas where industry employment presence is neither too big, nor too small.

Such non monotonic relationships could be easily illustrated through simple nonparametric reduced-form evidence. Here, however, the authors show the benefit of a structural approach by recovering from the first-order conditions of political spending an estimate of the marginal rate of substitution of campaign donations per vote acquired.²³ This approach explicitly determines a "dollar per vote" estimate between \$200 and \$400, depending on the specific district and media market. Such costs are then used by the authors to determine the total economic value to the politician of the special interest's support and to recover a more precise estimate of the average rate of returns on political spending.

The magnitude of such returns has been extensively debated. Ansolabehere, de Figueireido, Snyder (2003) ask why is there so little money in American Politics relative to the economic returns that one could infer from the economic magnitude of the discretionary policy programs implemented by the U.S. government. Essentially, low amounts of campaign contributions and the fact that federal campaign donations caps are very seldom binding stride in the face of the

²³ More precisely, convinced through campaign spending. The paper relies on the intuition from Baron (1994) of a fraction of voters to be susceptible of persuasion or "uninformed" to use the terminology of the original paper.

very large economic gains from government intervention. The implied (huge) rates of return seem to suggest massive failure from entry and limits to arbitrage, a phenomenon known in the literature as the Tullock's puzzle –from the original discussion of Tullock (1972). A typical example would be the Farm Bill in the United States. In 2000 it included \$22 Billion of subsidies to the U.S. agribusiness lobby vis-à-vis less than \$3.7 Million in campaign contributions from agribusiness special interest groups (PACs) during that electoral cycle. From this perspective, this amounts to \$6,000 of subsidies for every \$1 of political contributions: A rate of return of 600,000%. This should strike the reader as obviously not economically reasonable (competition in the political market should arbitrage away these rents).

The quantitative analysis in Bombardini and Trebbi (2011) shows that one of the reason for this puzzle is that the Ansolabehere et al. approach typically counts political contributions as the only channel of influence, while there may be multiple and less easy to measure ones. For instance, if the electoral weight of a special interest group (its number of employees) is as important as a channel of influence as campaign donations and the cost of buying a vote is relatively high, implied returns for F appear much more reasonable when all is included.²⁴

With the Kang's or Bombardini and Trebbi's political return estimates at hand, one is still short of a welfare assessment or even policy efficiency considerations. What are the distortions induced by these special interest activities relative to a hypothetical counterfactual where lobbying were absent?

In a more recent contribution, Huneus and Kim (2019) offer an answer to this key question by studying input misallocation due to political influence activity in the United States. The authors focus on the question on whether lobbying, which may be employed by specific firms and with different intensity, may be a relevant quantitative mechanism for the creation of wedges between marginal return and marginal cost of input (specifically capital), inducing politically influential firms to grow larger. This is a crucial question in the study of special interest politics, as the

²⁴ Mobilizing the 4 million farmers and agribusiness-connected voters in 2000 surely had a political value. Under this perspective, the rate of return to political activity of the agricultural special interest $\$22 \text{ Billion} / (\$3.7 \text{ Million} + \$400 * 4 \text{ Million}) = \13.7 for every dollar of political contributions at the margin. While still a high figure, it appears as already a more reasonable estimate for the case of agriculture (i.e. not \$6,000). In fact, the paper provides evidence from simulations of average returns to political donations in the range of 10-20% per year. Notice that these considerations are a clear benefit of structurally modeling lobbying as they are based on estimated primitives from the theory.

accumulation of political influence may feed into economic distortions and rent creation. The acquisition of rents fostered by lobbying further feeds back on the resources available for political influence and regulatory capture, in a vicious cycle where profits, anticompetitive pressures, and political clout self-reinforce and perpetuate (Gutierrez and Philippon, 2019).

Huneus and Kim (2019) present a general equilibrium model augmented by a structural framework to allow a precise estimate of the magnitudes of these distortions. This structural approach is based on a model with heterogeneous firms, which have to pay a fixed cost to play a political influence game and subsequently invest a continuous amount on lobbying based on their expected policy returns. The heterogeneity of firms is governed by a multidimensional vector of productivity and lobbying capacity draws (more precisely, a Hicks-neutral productivity term, a lobbying productivity term, and an exogenous wedge type draw). The estimator is first implemented by having a subset of parameters normalized and calibrated. Then, the model is simulated for a certain parameter vector value, including the fixed costs, the variances and covariances of the types distribution, and the returns to lobbying (these are the parameters to be estimated). Drawing from the data generating process, the model produces a series of simulated moments that then can be matched to the data. The empirical moments include the share of firms who lobby for each industry, the dispersion of firm sales within industry (which relates to productivity dispersion), and the relationship between lobbying spending and firm size, which is identified through congressional committee shocks. As typical in this literature, a minimum distance estimator based on the difference between simulated and actual moments is employed. Although theoretical identification (uniqueness of the parameter vector minimizing the criterion) is not assured (and it should be probed by Monte Carlo simulations), the solution proposed by the authors appears stable.

Methodologically, as firm lobbying activities are endogenous to an entire roster of other economic activities driving revenues, the authors focus on identifying a credible shock to lobbying productivity. As it is necessary to emphasize, structural methods are dependent on solid identifying variation as much as reduced-form approaches and therefore this first step is essential. The authors here rely on policy supply shocks: the idiosyncrasies of congressional committee assignments, which vary the specific value of a local political representative to a firm. This form of identification strategy is common in this literature (see the discussion in the

following subsection and Powell and Grimmer, 2016) and relies on the fact that many of the committee membership changes happening in the U.S. Congress are related to party seniority, majority party status, and other presumably exogenous determinants with respect to firm decisions.²⁵

Using this identification strategy, the authors show that a 10 percent increase in lobbying produces a 3 percent increase in revenue. Notice that the exact measurement of which policies are distorted and by how much is not provided. Nonetheless, the estimated model can be ultimately tweaked to answer the counterfactual questions, including shutting down the availability of lobbying and re-computing the model's equilibrium choices and firm size distributions. Firms' federal lobbying is estimated to induce a 22 percent reduction in aggregate productivity in the United States. This is a large negative general equilibrium effect. In addition, 59 percent of this reduction is determined by misallocation of resources to lobbying firms (which are less productive) and 41 percent due to lack entry of new more productive firms.

3.2 REDUCED-FORM ECONOMETRIC APPROACHES TO QUID-PRO-QUO LOBBYING

A quid-pro-quo approach to lobbying frames the problem essentially as an exchange of political resources for policy adoption. All the structural papers mentioned in the previous section need to specify explicitly what F demands from P and at what cost and what P is willing to supply to F and to what personal benefit.

This coincidence of policy demand and supply needs not to be resolved through a competitive political market where prices are posted, and most likely it is not.²⁶ Sacrificing realism, it is

²⁵ To be more precise, first the authors connect large public firms and their employment base to certain politician (U.S. Senators representing states where firms have their headquarters). Then, they consider the set of policy issues relevant to those firms among the set of their connected politicians and use shocks to this set to obtain variation to the productivity of lobbying for each firm. Such shocks include how issues relevant to firms vary over time relative (e.g. liability issues for tobacco manufacturers) to the set of politicians to whom the firm may have an electoral connection (e.g. a local senator sitting on the Congressional Judiciary Committee), or how the set of politicians to whom the firm is electorally relevant vary as Congress members move in or out of congressional committees relevant for those firms' policy issues (the value of the same senator moving from the Congressional Judiciary Committee to Armed Services).

²⁶ In fact, some of the early approaches to policy for sale were designed as menu auctions (Grossman and Helpman, 1994) and other quid-pro-quo models rely on bargaining (Goldberg and Maggi, 1999; Bombardini and Trebbi, 2011).

nonetheless useful to present a minimal framework of supply and demand akin to a standard partial equilibrium setting to clarify the different perspective taken by the recent reduced-form papers that we study. Much of the work on reduced-form empirical lobbying that we will discuss in this section focuses either on shocks to F that drive up or down the demand for policy or on shocks on P, which determine the supply of policy for every dollar of lobbying spent.

Assume a stylized functional form for the demand for a policy objective $Q_D = Ap^{-\varepsilon}$ by F and its supply $Q_S = Bp^\eta$ by the policy maker, P, assuming linear pricing and that p is a per unit price of the policy. Typically, this price p will not be a variable that the econometrician observes, so we need to transform this demand system into a system of revenue (or political expenditure) and quantity. Thus, let us define by $l = pQ$ the total amount spent on lobbying, which is the variable we normally observe in federally disclosed reports. We can simply derive demand and supply equations in terms of l and Q : $l_D = CQ^{1-1/\varepsilon}$ and $l_S = GQ^{1+1/\eta}$. It is easy to verify that, if $\varepsilon > 1$ (the elasticity of demand is larger than one), then both schedules will be upward sloping, as depicted in Figure 1.

Using this framework, it is straightforward to reinterpret, for example, policy demand shifters as useful sources of identification to measure $\partial Q_S / \partial l_S$. This is consequential as it allows to answer the question of how much “policy” an extra dollar of lobbying buys. This is, of course, also closely related to the parameter η , since an extremely low value of η implies that policy is essentially “not for sale” and $\frac{\partial Q}{\partial l} \times \frac{l}{Q} = \frac{\eta}{1+\eta}$ approaches zero.

In Figure 1 an increase in the demand for policy, caused by a shift in the parameter C helps to identify parameters of l_S . Such identifying variation is clearly related to the policy needs of firm F (such as the demand of protection from foreign competition in presence of adverse technological or financial shocks²⁷). Similarly, reduced-form papers related to the demand of lobbying services (ultimately related to the demand of policy l_D) can be identified by shifts in l_S . Shocks to politicians P (such as sudden jumps in the ability of a local representative to deliver pork to his constituency) are going to be the key for identification along this dimension.

²⁷ For instance see Adelino and Dinc (2014) and Faccio, Masulis, and McConnell (2006).

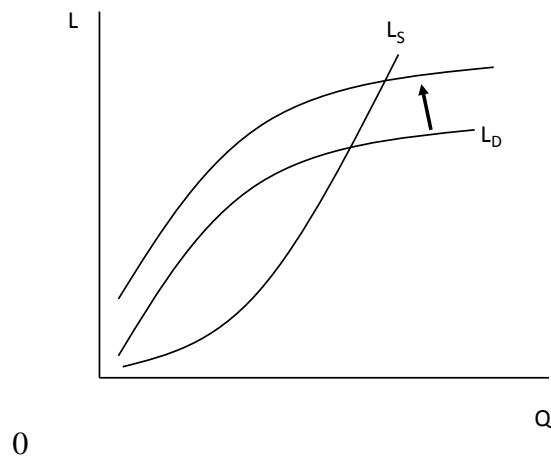


Figure 1: Demand and Supply for Policy Variable Q

Policy Supply and Identification through Shocks to F

The concept of identifying policy supply conditions through firm demand shifters is exemplified by De Figueiredo and Silverman (2006). They study the process by which universities (special interests that for all intents and purposes here will be considered equivalent to F) lobby to obtain federal earmark grants. The authors specify a policy demand side in which universities decide how much to invest in lobbying expenditures based on its expected productivity in obtaining grants. In fact, the authors set out to estimate a parameter of the production function for earmarks, namely the productivity of lobbying expenditures. As anticipated before, one can reinterpret this parameter as a policy supply characteristic, in that it is related to the inverse of the supply slope, i.e. $\partial Q_S / \partial l_S$ and to the effect of an additional dollar of lobbying the amount of earmark grants won by the university.

To obtain identification, the authors exploit the fact that different universities face different overhead rates. High overhead rates make grants more valuable for a university, because the institution retains a higher percentage of the grant to cover university-wide costs. Therefore, higher overheads induce a shift in the demand for the policy, which can then be used to estimate how public policy responds to lobbying. In a first stage regression, lobbying expenditures are significantly predicted by overhead rates. According to a second stage regressions De Figueiredo and Silverman cannot reject the hypothesis that an extra dollar of lobbying yields a one dollar

increase in earmarks for those universities without any representation in the Senate or House Appropriations Committees (that is, without a politician representing the electoral constituency in which the university is located). For universities with connections to the Appropriations Committees, the extra dollar spent on lobbying yields between \$4.52 and \$5.24 additional earmarks, suggesting that the supply of earmarks is not independent of lobbying efforts.

A similar pattern of behavior is found in the lobbying activity of U.S. cities set to obtain additional federal funding. Goldstein and You (2017) study cities of population greater than 25,000 in the period between 1999 and 2012. As identifying variation the authors rely on the mismatch in terms of political control between the city and the corresponding state budgetary authority (say, a Democratic party controlled city in a Republican controlled state, possibly at odds with each other). Such political mismatch appears to induce a substantial under provision of funding for local public goods supply. Lobbying the federal government, then, is the result of the city government trying to complement through access to discretionary federal grants and earmarks such funding deficit. Differently from the case of universities, it is unclear from the paper whether this political influence effort on the part of municipal governments is entirely successful. Based on an instrumental variable estimates²⁸, the approximate return for \$1 of lobbying spent estimated by Goldstein and You is \$1.02 for earmarks and \$0.47 for 2009 Economic Recovery Act grants, the two outcome measures considered by the authors.²⁹

It is, however, worth remarking one specific issues raised by Goldstein and You: federal lobbying in this case may be benign and efficiency enhancing, in the sense of actually being effective at rebalancing the distortions induced by the political opposition between city and state governments. This is an issue, for instance, if the equilibrium absent lobbying is further from the social optimum due to distortions from partisan frictions.³⁰

Kerr, Lincoln and Mishra (2014) describe a shock to the demand side of policy in the specific context of work visa caps. They exploit the pre-determined expiry of a temporary H1B visa cap

²⁸ The authors employ geographic distance from Washington DC as their IV. This is a common identification approach, used for similar instances in Igan, Mishra and Tressel (2009) and Lambert (2019), but arguably subject to criticism from a standpoint of exclusion restriction.

²⁹ A cumulate measure of total federal transfers to the municipality should be employed to precisely estimate the effective rate of return to lobbying and the supply elasticity. Unfortunately, this is not considered in the article.

³⁰ Such frictions can take many forms, including inefficient policy enactment or lack of response to crises. See also Mian et al. (2010, 2013) for how electoral constituencies may not be effective in preventing this.

to study the reaction in the lobbying effort by firms differentially affected by the cap reduction. Firms are classified as dependent on high-skill immigration based on the ethnic composition of their innovators and their past filings to the Department of Labor of Labor Condition Applications.³¹

The authors find that, after the visa cap reduction, F's lobbying focused on high-skill immigration doubles as a share of total lobbying. Firms classified as high-skill-immigration-dependent under the paper's criteria increase their lobbying and the effect is much stronger for those firms that lobbied in the past on any issue (not just immigration). The authors attribute this persistency to a large initial fixed cost for firms to start lobbying, compared to the fixed cost of lobbying on a specific issue such as immigration. As we have seen in Section 2, such fixed costs appear a realistic dimension of the data.³²

Policy Demand and Identification through Shocks to P

Shocks to the ability of P to deliver policy favorable to F are ideal sources of identification for tracing the profile of F's policy demand function. In addition, as firms demand policy favors and because policy favors require lobbying efforts, firms will demand services by lobbyists (L). This section will present a few reduced-form applications that operate in this space and show the identification role of shocks to P in this case. It will also show how information on the market for L may be ultimately useful for learning about l_D .³³

In the group of papers estimating the effects of shocks to political targets P on lobbying, Blanes i Vidal, Draca, and Fons-Rosen (2012) is remarkable for its simplicity and sharpness. The article investigates the value of political connections in lobbying by estimating the revenue loss experienced by former Senate staffers-turned-lobbyists when the Senator for whom they worked exits politics. To be more precise, the authors evaluate how ex-government officials convert their

³¹ LCA's are necessary to hire a worker under the H-1B visa program.

³² More generally, these results have also important implications about the dangers of policy hysteresis and lack of representation in a system where entry costs are prohibitive for a large fraction of the entities affected by policy.

³³ We wish to point out that the use of shocks to P may also be useful to detect more subtle and opaque forms of political influence. Bertrand, Bombardini, Fisman, and Trebbi (2018) present evidence that this may be the case for political charitable giving by S&P and Fortune 500 corporations, for example, based on the changes in the direction of their grants. The authors estimate about \$2.9 Billion of political charitable giving per year.

acquired political connections into lobbying revenues and, through this, they can produce an inference of the market valuation for political connections by corporate clients.³⁴ The econometric framework is extremely terse: A difference-in-differences setting where the exit of the politician is considered exogenous to the revenue dynamics of ex-staffers. Essentially, those lobbyists who lost a political connection are being compared with ex-staffers who did not. We notice here that the authors' working assumption is that the events driving the exit of Senators being orthogonal to the fortunes of their connected lobbyists, a strong assumption, if one considers that Senators may strategically retire whenever their party's fortunes are turning.

In a key finding, revolving-door lobbyists, i.e. the former aides turned lobbyists, experience a persistent 24% drop in lobbying revenues when a connected US Senator exits office. Further, ex-staffers are also less likely to become lobbyists if their patron exits the Senate. Losses in lobbying revenue vary intuitively with the political power of the Senator: Lobbyists connected to Senator in the powerful Finance and Appropriations Committees or the Ways and Means Committee have bigger drops in revenues at exit, while lobbyists having connections outside these committees have statistically insignificant drop in revenues.³⁵

Political shifters are also useful in answering broader special interest politics questions about the market for L. "*What do lobbyists exactly do?*" is one of these questions. As mentioned in the Introduction, some believe that lobbyists mainly provide the firms and other special interests they represent with access to politicians in their "circle of influence" and essentially help facilitate vote-buying. Others believe that lobbyists' main role is to provide information and expertise to congressmen to guide the legislative decision-making process (at the very least, lobbyists trade associations promote this view). Bertrand, Bombardini and Trebbi (2014) evaluate the relative economic importance of these two views of lobbying.

The authors' main empirical approach consists in asking whether L mainly "sticks to" P, as a political connection a la Blanes i Vidal et al., or whether L mainly "sticks to" specific policy issues. If lobbyists provide companies with access to politicians within their "circle of

³⁴ As standard, revenues generated by lobbyists from each client are obtained from reports compiled by the CRP from SOPR. The directory www.lobbyist.info is instead used to obtain career history and other observable characteristics (gender, education, etc.) of lobbyists, while the data on former staffers is obtained from Congressional Staffer Salaries database maintained and published from LegiStorm 2012.

³⁵ Surprisingly such effects are also insignificant for staffers-turned-lobbyists in the House of Representatives.

influence,” one would expect lobbyists’ job assignments to be determined mostly by the identity of the politicians, independently of the specific issues being decided upon. A logical implication is then that a lobbyist should “follow” a closely connected congress member as she or he moves from one committee assignment to another. In contrast, if L mainly provides expertise, one would expect L to be much more strongly attached to specific issues of competence (and hence specific committees or subcommittees), independently from which P’s populate them or whether P moves.

The authors find evidence of lobbyists taking up new issues as the politicians they have been in contact with in the past change committee assignment, which is consistent with a relationship-based view of lobbying. Similarly, they also find that the return premium to being an expert in an issue does not increase when the issue becomes more relevant in Congress. These facts point towards an economic dominance of political access motives over expertise.³⁶

When further sub-sampling the data, the authors find that lobbyists for whom access should be relatively more important in the political market (for instance, former members of Congress turned lobbyists) are more likely to follow their politicians. Moreover, when a new politician is assigned to a congressional committee, it appears that the lobbyists that are active on that committee take steps to gain access to this new politician (in particular in the form of contributions to the politician’s campaign), which is inconsistent with a pure expertise view of lobbying.

Another paper focusing on political shifts to assess influence is DellaVigna, Durante, Knight, and La Ferrara (2016). The paper examines an indirect channel of lobbying to curry favor from conflicted politicians.

Silvio Berlusconi, an Italian politician and media tycoon, was the Italian PM for three terms during the period 1993-2009. His fluctuating political fortunes and movement in and out of office as Italian premier offer the identifying variation at the basis of this article. Market-based lobbying – to use the terminology coined by the authors – takes place by regulated firms via shifting their advertising spending onto Mediaset (Mr. Berlusconi’s firm) TV channels (and

³⁶ This is not to say that the paper does not find evidence of a market value for expertise, which is in fact precisely estimated in the data. See also our further discussion in Section 4.

away from others avenues of commercial advertising) during Berlusconi's periods in office. P, in this application, transitions in and out of power and so do Mediaset advertising revenues.

The authors conjecture that the strategic channeling of advertising spending underlies a quid-pro-quo in exchange for regulatory lenience. In fact, the paper establishes that the strategic shifting of ad spending is exclusive pertinence of firms in heavily regulated industries. Moreover, the large amounts of advertising spending, running in the hundreds of millions of Euros, make for an economically relevant channel.³⁷

To conclude, the discussion about market-based lobbying connects also to a broader literature on identifying the value of political connections for firms. This empirical literature is vast and has in Fisman (2001), Khwaja and Mian (2005), Faccio (2006) some of its earliest and most striking empirical applications. Pertaining more closely to lobbying, Borisov, Goldman and Gupta (2016) focus on the negative shock originating from the 2006 Jack Abramoff legal scandal and the loss of value for corporations engaged in lobbying around that event.

4. INFORMATIONAL LOBBYING: THEORY VS MEASUREMENT

An area of research that has seen slow progress is the one measuring and providing evidence in favor of informational lobbying. The starting point for this approach is a view dear to interest groups and lobbyists themselves and that is that policy making is *complicated* and therefore that P can benefit from receiving information from F, even though such entities have an incentive to skew the information transmitted to the policy maker. There is a rich and nuanced theoretical literature that provides a variety of mechanisms that find a positive role played by communication between F and P. After a brief summary of these theories, we move on to the thornier question of whether the data support the predictions of these theories. The short answer is that the evidence points to some form of information being supplied, but not all the evidence lines up with the type of information that is beneficial to the public at large.

³⁷ To the skeptical reader, we remark that to curry favor in such not-so-subtle fashion is paradoxically legal in Italy, due to the absence of a conflict of interest statute (often debated by parties in opposition to Silvio Berlusconi during his periods in power, but never enacted).

Models of informational lobbying start from the premise that the policy maker is less informed than the interest group, but at the same time she understands that she cannot take the information that F passes to her at face value because it will always tend to distort the information in its favor. There are two broad categories of models: cheap talk models and costly lobbying models. In cheap talk models some information can be credibly revealed only in a “rough” way. An interest group can rarely communicate exactly the value of some important variable, but can communicate whether such value lies in a range.³⁸ The boundaries of such range are given by the group’s incentive to lie. The more aligned its preferences are with the policy maker’s, the more precise the information communicated (Krishna and Morgan, 2001 and Grossman and Helpman, 2001). In the presence of multiple interest groups, this theory predicts a welfare-enhancing role of groups with opposite biases relative to the policy maker preferences, because it induces a less coarse information transmission.³⁹ This is a result we will refer to later in this section.

In contrast, theories of costly lobbying are essentially money-burning models where lobbying expenditures serve the purpose of signaling the underlying state of the world to the politician. Potters and van Winden (1992) is an early example where such lobbying costs are fixed and exogenous, but Grossman and Helpman (2001) illustrate how the logic easily extends to lobbying costs that are chosen by the interest group: the higher the cost chosen, the more extreme must be the underlying variable that the policy maker needs to learn about. The important predictions of these models is that welfare can be higher for all parties involved, even when lobbying is an inherently wasteful activity. This welfare result carries through to more sophisticated hybrid models where talk is cheap, but there is a fee for access that can coarsely signal the otherwise unknown preference of the interest group (Lohmann, 1995 and Austen-Smith, 1995). A related, but distinct theory of lobbying is offered by Hall and Deardorff (2006), who hypothesize that information plays the role of a subsidy to otherwise resource-strapped legislators.⁴⁰

³⁸ Full revelation is easier to achieve if information and the policy space are multi-dimensional as in Battaglini (2002), but there are exceptions. We do not discuss here this voluminous literature.

³⁹ The intuition here is that each interest group can credibly communicate in a separate section of the underlying variable and therefore the information becomes more detailed.

⁴⁰ Their theory explains why lobbyists appear to lobby friendly legislators and questions the persuasion role of the process. Schnakenberg (2016) revives the persuasive role of lobbying by postulating that the information provided by interest groups to friendly legislators can be used to persuade their less friendly colleagues.

Let us now turn to whether this potentially virtuous interaction of interest groups with policy makers is supported by the available empirical evidence. It is obviously inherently difficult to measure information exchanges, where what is said by firms to politicians is often not known. This scarcity compounds the already-cited difficulties common to quid-pro-quo studies in measuring policy variables (i.e. the “output” of the lobbying process).

It is because of these difficulties that the evidence we have so far about the extent of informational lobbying is very indirect. One of the ways in which researchers had to creatively circumvent these availability and measurement issues is to look elsewhere for clues about informational lobbying. One example is the intermediary of much lobbying activity, i.e. the lobbying industry. These papers are interesting in their own right because they address the presence of an intermediary that finds no role in the established literature on informational lobbying. But by looking at how the intermediaries behave, they are also able to shed some light on what their clients and their targets are exchanging.

The role assigned to the lobbying industry by recent papers like Groll and Ellis (2014, 2017) and Hirsch, Kang, Montagnes and You (2019) is essentially one of information verification. This adds one more layer to the information transmission by inserting a middleman, that either through reputation or shared preferences, is credible to the politician and can verify or filter some of the information. Because the paper offers nice empirical support to the theory, we focus on Hirsch, Kang, Montagnes and You (2019). The data combines newly collected and available information on contacts between 219 lobbyists representing foreign interests and members of Congress during the 110th and 111th Congress. The Foreign Agents Registration Act (FARA) makes reporting requirements for these lobbyists stricter compared to the LDA. In particular, reports must include the identity of the member of Congress (or her staffer) contacted. The authors explore the relationship between ideological closeness and lobbying contacts by supplementing these data with measures of ideology based on party affiliation,⁴¹ DW Nominate scores and campaign finance-based scores from DIME (Bonica, 2016).

The most interesting empirical regularities that emerge are: i) the presence of any lobbying contact is more likely for lobbyists that are more ideologically aligned with politicians; ii)

⁴¹ Party affiliation is collected from Washington Representatives available at lobbyistinfo.com

conditional on the lobbyist having any contact with the politician, she brings him fewer clients when her ideology is more similar to the politician's and when she has a prior connection to a Member of Congress.

The first empirical finding echoes the familiar pattern that interest groups tend to lobby friendly legislators (Salisbury et al., 1989; Snyder 1990, 1991 and 1992), a fact that has been invoked often in the theoretical literature as a validation of the common prediction that communication is credible only if the preferences of sender and receiver are sufficiently aligned (Helpman, 2001, ch.5). The second empirical result is more nuanced and is partially explained by the model. Lobbyists that are ideologically closer⁴² or connected through past employment to politicians set a higher "certification threshold": the case brought to them by the interest group has to be more favorable to the politician in order to gain representation from the lobbyist. We will return to the difference between these two findings after reviewing another set of results that speak to the informational view of lobbying in Bertrand, Bombardini and Trebbi (2014). In that paper, as previously discussed, the focus was distinguishing between connections and expertise as a source of returns to lobbying. Although the main message of the paper is that connections seem to be driving a lot of the patterns of mobility and returns to lobbying, the authors do not rule out that information was still important in the activity of lobbyists. Let us again point to two specific results. The first is that, whenever politicians do have contacts with those lobbyists that we classified as experts (based on how concentrated their lobbying work was on a specific topic), those lobbyists have a more balanced distribution in terms of party affiliation than the non-experts. This indirectly validates one of the key predictions of informational lobbying models with multiple senders. In those models listening to senders with opposing "biases" generates a better informed P.

The second relevant finding in Bertrand, Bombardini and Trebbi (2014) is that the returns to lobbyists affiliated (through past employment as staffers for example) with a given party move with the party's fortune in terms of control of the two Chambers of Congress and of the Presidency.

⁴² The model actually predicts that selectivity increases as the ideological distance between the interest group and the lobbyist increases, but such fine prediction is difficult to take to the data.

We believe there is a subtle, but important, distinction to be drawn between the two types of information that these distinct findings point to. While there is information that leads to overall better policy for the general population, there is another type of information that is particularly beneficial to a specific politician or her constituency. While some of these findings can be reconciled with a view where lobbying is a vehicle for communicating information that is useful to maximize general welfare (the first finding discussed above in Bertrand, Bombardini and Trebbi, 2014), it seems that lobbyists accumulate reputation not only in communicating the truth, but also in filtering the dimensions of a given policy proposal that are more salient for a specific politician's (electoral) success. It is otherwise hard to justify why connections are so important in Bertrand, Bombardini and Trebbi (2014) and why more politically aligned lobbyists are more selective in Hirsch et al. (2019).

We conclude this section with a discussion of some recent work that makes use of one of the few comprehensive data sources where the content of messages sent to the policy maker *are* available to researchers. The Administrative Procedure Act (APA) of 1946 formalized the rulemaking process in the US by dictating that all Federal agencies publish a preliminary version of all rules “designed to implement, interpret, or prescribe law or policy” on the Federal Register and allow time for comments by interested parties. The APA also prescribes that agencies take address these comments when formulating the final version of these rules. Some earlier work on the subject by Yackee and Yackee (2006) has made use of the content of comments to 40 rules by 4 agencies to detect a tendency of those agencies to incorporate changes advocate by businesses, relative to non-business commenters. In a recent paper, Bertrand, Bombardini, Fisman, Hackinen and Trebbi (2019) exploit advances in NLP to automate and extend the analysis to a large share of the comments made publicly available by 150 U.S. Federal agencies. Although the focus of the study is the relationship between firms' commenting patterns and that of non-profits recipients of the firms' philanthropic giving, the study showcases the potential for the use of NLP in the study of informational lobbying. For example, the authors detect, by using latent semantic analysis⁴³ that the similarity between the content of comments by a non-profit and its benefactor increases in the time immediately after a donation occurs. A similar technique is used

⁴³ Latent semantic analysis is an established technique that reduces a body of text to a vector of word frequencies and measures the “distance” between texts after further reducing the dimensionality of the vectors via singular value decomposition.

in showing how such co-commenting is associated with an increase in similarity between the firm's comment and the final rule discussion by the agency. While it is currently hard to pinpoint the welfare effect of these messages, or even the exact degree to which policy is affected by these messages, this promises to be a rich path to explore information transmission.

5. LOBBYING OUTSIDE OF THE UNITED STATES: CANADA AND THE E.U.

Lobbying in Canada

Canada passed its Lobbyist Registration Act in 1989, amended by the Lobbying Act of 2008 which strengthened revolving-door provisions and instituted more severe punishment for violations. The Registry of Lobbyists, overseen by the Office of the Commissioner of Lobbying of Canada has been active since 1996. The Registry reports similar data to the US LDA database, with information on clients, registrants and topics discussed. However, the Registry imposes disclosure of the public officials contacted, a feature common to the E.U. registry, but different from the US. Another major difference is the lack of data on fees paid to lobbyists, a feature that makes comparisons in terms of the overall activity with the U.S. difficult. The number of lobbyists engaged offers one comparable dimension. The Commissioner's 2017-18 annual report counts 9,000 lobbyists, with just above 1,000 being external lobbyists and the rest being in-house. This is in stark contrast with the more developed "external" lobbying industry in the US, which we discussed earlier. The sheer number of lobbyists, however, is comparable to the 11,654 count in the U.S. for the same year.

A very small number of academic papers has made use of the Registry data and in the context of specific policy issues, such as international trade (Stoyanov, 2009). An exception is work by Hickey (2014) who finds a much smaller importance of connections in Canadian lobbying compared to Bertrand, Bombardini, and Trebbi (2014), as only 6% of Canadian lobbyists tend to "follow" ministers who are reshuffled to different Cabinet positions.⁴⁴

Lobbying in the E.U.

⁴⁴ The lesser importance of connections in Canada may be due to the fact in a Parliamentary system like Canada parties tend to be more important and personal connections to individual ministers may not be a key asset.

Individual European countries have almost no systems to record the activity of lobbyists. According to Transparency International (2015), of the 19 countries examined, only 7 have laws or regulations specifically regulating lobbying activities (Austria, France, Ireland, Lithuania, Poland, Slovenia and the United Kingdom). Although those 7 countries plus the European Commission have a registry, none of them have a mandatory registration requirement and there is no strict enforcement mechanism or oversight. The only measures that appear with some frequency in individual countries are revolving door provisions aimed at reducing public officials' incentives to direct policies in directions favorable to future prospective employers.

Arguably the most important effort in improving the public's knowledge of the organizations trying to influence E.U.-level policy decisions is the registry set up by the Interinstitutional Agreement between the European Commission and the European Parliament in 2011. The voluntary Transparency Register, managed by the Joint Transparency Register Secretariat, has seen a steady increase in registrants, from 5431 in 2012 to 11,901 in 2018. Although the registry is voluntary, there are incentives to register in order to have access to both the European Parliament's premises and to meetings with Commissioners, Cabinet members and Directors-General. As of the spring of 2019, a mandatory version of the registry was under discussion.

Similarly to the SOPR data, the Register collects reports (albeit less frequently filed) by registrants, which can be lobbyists or law firms working on behalf of clients, or the organizations themselves. It reports lobbying expenditures less precisely (in bins rather than specific amounts) and has a space for the topics and legislation object of lobbying, as well the names of the lobbyists with formal accreditation. The registry also includes a record of the firms or organizations on whose behalf a lobbying firm works. An important difference relative to the US data, the registry, similarly to the Canadian counterpart, reports a list of meetings with commissioners and other public office holders.

The amounts are substantial. The Register reports for example that Apple has spent in 2018 between €2 and €2.25 Million to lobby the European Commission and the European Parliament and employed 3.8 full time equivalents. By comparison, it spent \$6.7 Million in the US. Royal Dutch Shell spent €4.5-4.75 Million, while it spent almost \$9 Million in the US. Similarly to the US, firms can lobby directly or through a lobbying firm. The largest registrant in terms of lobbying expenditure is FTI Consulting Belgium, a subsidiary of a K-street firm, which reported

in 2018 close to €7 Million in lobbying costs, quite distant from the top lobbying firm Akin, Gump et al. which declared \$37 Million revenues in 2018. These numbers show that although the institutionalization of lobbying activities may be slow, the value of the lobbying activities in the EU is of considerable magnitude.

Due to the voluntary nature of the Transparency Register and the lack of historical data, academic empirical research on lobbying using EU lobbying reports has been scarce.⁴⁵ A recent paper by Dellis and Sondermann (2017) has undertaken the task of matching the lobbying activity of firms in register with other balance sheet and industry affiliation from Orbis of Bureau van Dijk. The authors are able to find around 2000 firms in the Orbis database, which, should be noted, covers more than publicly traded firms (differently from Compustat). It is therefore not obvious how to compare, in terms of the frequency of lobbying, the almost 800 firms from Compustat identified as lobbying by Huneus and Kim (2019) and this sample.

6. CONCLUSIONS

This paper offers a brief Political Economy overview of recent empirical approaches to the study of special interests politics and lobbying. After a substantial amount of theoretical effort in the 1990s and 2000s on the role and effects of lobbying, careful data work is at this point moving forward the research frontier.

After presenting the main sources of available information and the crucial data disclosure issues, we organize the research between quid-pro-quo and informational work. In the context of quid-pro-quo approaches, we also try to emphasize the few research applications where both policy supply and demand are resolved simultaneously - our preferred perspective to the study of the political behavior of firms. We discuss how some of the approaches reviewed in this article allow to explicitly tackle counterfactual policy outcomes under no lobbying. Ultimately, the welfare effects of lobbying and corporate advocacy should be studied under this perspective. Yet, it seems fair to say, they are still only partially understood and some of the structural modeling displays symptoms of misspecification.

⁴⁵ Greenwood and Dreger (2013) provide an early description of the data and shows that the majority of lobbying entities are businesses or trade associations, with a small fraction of professional lobbyists relative to the US.

The benefits of studying lobbying are high. Income and wealth inequality have been increasing over time within Western democracies and so has political polarization and capture in the eyes of the median voter. The reader interested in how economic concentration transmits into policy inefficiency and into political distortions is well advised to invest effort in the study of lobbying and political influence.⁴⁶ These nonmarket activities appear the main cog in a mechanism through which such economic differences ossify, perpetuate over time, and further amplify inefficiencies in public policy.

⁴⁶ For a related perspective, see also Esteban and Ray (2006).

7. BIBLIOGRAPHY

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