

Shadow Lobbyists[†]

Rocco d'Este^{*}, Mirko Draca^{**} and Christian Fons-Rosen[‡]

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ABSTRACT

Special interest influence via lobbying is increasingly controversial and legislative efforts to deal with this issue have centered on the principle of transparency. In this paper we evaluate the effectiveness of the current regulatory framework provided by the US Lobbying Disclosure Act (LDA). Specifically, we study the role of ex-Congressional officials who join US lobbying firms in positions that could be related to lobbying activity but without officially registering as lobbyists themselves. We find that firm lobbying revenues increase significantly when these potential ‘shadow lobbyists’ join, with effects in the range of 10-20%. This shadow lobbyist revenue effect is comparable to the effect of a registered lobbyist at the median of the industry skill distribution. As such, it is challenging to reconcile the measured shadow lobbyist effect with the 20% working time threshold for registering as a lobbyist. Based on our estimates, the contribution of unregistered ex-Congressional officials could explain 4.9% of the increase in sectoral revenues, compared to 24.0% for the group of registered officials.

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[‡] Department of Economics, University of Sussex

^{**} Department of Economics & CAGE Research Centre, University of Warwick.

[‡] Department of Economics, University of California, Merced.

1 Introduction

The lobbying of government by special interest groups is one of the most controversial features of modern democratic politics. This is because of the perceived risk of special interest capture that organized, well-funded and well-connected lobbying efforts pose for the policy-making process. Indeed, in the case of the US, federal lobbying is a highly developed and financially significant industry with tight connections to government via a ‘revolving door’ of shared personnel. Between 1998 and 2013, the total amount spent as part of registered federal lobbying activity increased 68% in real terms from \$1.9 billion to \$3.2 billion dollars.¹ The public concern about the role of lobbying was symbolised during the 2016 Presidential election by Donald Trump’s strident call to ‘drain the swamp’ of lobbyist influence in Washington.

Attempts to regulate lobbying and combat the risks of special interest influence have been dominated by a single major policy tool: transparency. Beginning with the Foreign Agents Registration Act (FARA) in 1938 the guiding principle of lobbying regulation in the US has been to balance the freedom to lobby against obligations to report on the nature of the lobbying activity being conducted. Since 1996, the Lobbying Disclosure Act (LDA) has provided the main legal framework for the reporting of lobbying activity at the federal level. The LDA mandated the registration of individuals and organizations involved in lobbying, stipulating specific financial and working time thresholds for this registration requirement to be triggered.

However, in recent years concerns have emerged that the LDA is not completely effective in capturing the full range of lobbying activities at play in Washington. In particular, attention has been drawn to the practical robustness of the working time and financial thresholds for reporting laid out in the LDA. Specifically, a key point of concern has been the so-called ‘20% rule’ for registration. This rule effectively states that individuals who spend less than 20% of their working time on lobbying are not required to register their activities. It is not clear however that this 20% threshold is systematically monitored and enforced.

In particular, the lobbying activities of a number of ex-Congressman have been questioned in light of the 20% rule. The most famous case is that of Thomas Daschle, former Democratic leader in the Senate who joined the law firm Alston and Bird as a ‘policy advisor’ in 2004. Alston and Bird also runs a significant lobbying practice and revenues for this line

¹Calculated via figures from *OpenSecrets.org* using NIPA (National Income Product Accounts) price deflators.

of business increased from \$2.6 million in 2004 to \$6.6 million in 2005 after Daschle joined. Despite this boom in revenues Daschle did not register as a lobbyist, leading to questions about his level of contribution to Alston and Bird’s lobbying practice, that is, whether he was credible as a ‘less than 20%’ lobbyist.²

Another prominent case is that of former House Speaker Newt Gingrich. During the 2012 Presidential election controversy emerged about Gingrich’s role as a consultant for financial institution Freddie Mac. Critics claimed that Gingrich (who it is estimated was paid more than \$1.6 million dollars by Freddie Mac) was utilising his contacts as a very active lobbyist for the company while Gingrich described his role as that of a general strategic advisor, drawing specifically on his expertise as a historian.³

Other investigative accounts (Auble 2012, 2014; Frates 2010) indicate that a range of ex-Congressional staffers and other government officials may also be employed in unregistered roles similar to those of Daschle and Gingrich. The extent of unregistered lobbying is thought to have increased in the late 2000s after the introduction of more regulation of revolving door movements by ex-staffers, creating extra ‘career costs’ of being officially registered as a lobbyist.

In this paper we therefore ask: is there a credible, economically significant pattern of potential unregistered lobbying activity present at the federal level in the US? This is an important public issue because the presence of such unregistered activity would suggest that a critical fraction of paid-for special interest influence is not being measured. Transparency allows informed voters to make ex post evaluations of the interaction of lawmakers and special interests, providing an incentive for lawmakers to align their activities with the public interest. These incentives are naturally blunted when some of these interactions are not observable, as would be the case with a significant pattern of unregistered lobbying.

To answer this question we develop an empirical strategy in line with the recent literature on ‘forensic economics’ which traces out the consequences of (often illicit) hidden actions on observable data (Zitzewitz(2012)). Specifically, we build up a database of all former

²See Scherer (2009) and Frates (2010) for a detailed account of Daschle’s work with health industry clients in particular. It should be noted that Daschle eventually (in early 2016) registered as a lobbyist, nearly 12 years after exiting Congress and during which period he worked for three firms with major lobbying practices (Alston and Bird, DLA Piper, and Baker Donelson)(Arnsdorf 2016).

³Gingrich has a 1971 Phd in European History and his dissertation topic was ‘Belgian Education Policy in the Congo 1945-1960’ (Norman 2012). It was estimated that Gingrich was paid \$1.65 million for 5.5 years of work for Freddie Mac. Contracts and agreements released about the work indicate that \$25,000 per month was paid to his consulting firm, the Gingrich Group, and that the firm reported directly to Freddie Mac’s public policy and lobbying office as part of the arrangement (Eggen 2012).

Congressmen and major Congressional Staffers who, after they exit their positions in the Congress, take up employment in firms that have significant lobbying practices but do not formally register as individual lobbyists themselves. Our detailed database includes the dates at which these ex-officials joined and (if applicable) left these firms. This information allows us to test for a systematic effect of unregistered ex-officials on lobbying firm revenues. Intuitively, while the full extent of the unregistered ex-officials' activities may not be declared we can still back out their level of economic influence from the 'shadow' their presence casts on the firm-level revenue data.

Our empirical strategy therefore focuses on credibly parsing out this effect, dealing with two main challenges. The first challenge is distinguishing the posited shadow lobbyist effect from other correlated effects on firm revenue. The main underpinning of our 'forensic' strategy to deal with this concern is of course the pattern of variation evident in the entry and exit of shadow lobbyists across our sample of firms. In the first instance, this pattern of variation robustly indicates that the shadow lobbyist effect persists after controlling for common shocks and trends affecting all firms or major subsets of firms.

Other exercises we conduct are consistent with the shadow lobbying hypothesis. In particular, an event analysis of unregistered ex-officials joining lobbying firms shows that the associated effects are discontinuous and well-timed with the entry of the posited shadow lobbyists. Furthermore, a placebo analysis using non-registered workers without Congressional experience lets us test whether there is a general 'added input' effect that could be conflated with the entry of shadow lobbyists. For example, as firms add more unregistered workers of any type (not just ex-Congressional personnel) these extra labor inputs could free up the time of the registered lobbyists and boost revenues as a result. However, we find no evidence that these unregistered placebo workers have an impact on lobbying revenues that is in line with this type of mechanism.

The second main challenge for distinguishing the overall pattern of unregistered lobbying and efficacy of current regulation relates to the size of the revenue effects that we pick up. In principle, unregistered lobbying activity is still legitimate within the framework of the LDA as a result of the 20% rule. This therefore provides us with a benchmark for gauging the scope of unregistered activity. Specifically, to be in compliance with the LDA the measured shadow lobbyist effect should be substantially lower than the registered lobbyist effect after taking account of differences in the composition of the two groups along observable and unobservable dimensions.

Using the individual-level data on registered lobbyists we are able to quantify the determinants of lobbyist revenue and provide benchmarks for our measured shadow lobbyist effect. The validity of these benchmarks stems from the fact that the registered and unregistered groups that we are comparing come from the same underlying population - the pool of ex-Congressional personnel.

Our analysis indicates that the shadow lobbyist effect is comparable to that of a registered lobbyist at the median of the (unobservable) industry skill distribution. This sets a very high bar for reconciling the measured shadow lobbyist effect with strict compliance to the 20% rule. Simply put, this implies that shadow lobbyists are achieving a similar revenue effect to the median registered lobbyist but with one-fifth of the time input. In turn, this implies that the shadow lobbyists are either ‘superstar’ workers at the very top of the industry skill distribution or that there may be widespread shortfalls in the adherence to the 20% working time threshold.

Finally, in terms of magnitudes, a basic decomposition of sectoral revenue trends finds that 5.3% per cent of revenue changes amongst the relevant firms can be explained by the shadow lobbyist effect. This can be thought of as an estimate of the value of the potential ‘unaccounted for influence’ associated with the growing number of unregistered ex-Congressional officials working in Washington lobbying firms. This estimate of 5.3% per cent is around one-quarter of the total revenue effect that can attributed to the growth of registered ‘revolving door’ lobbyists at the same firms. Furthermore, note that our estimates are likely to be a lower bound for the overall industry since feasible niches for potential shadow lobbying exist in both the in-house corporate lobbying sector and the ‘deep underground’ of completely unregistered entities such as think-tanks and political strategy consultancies.

The policy implications of this paper are perhaps more pointed than usual. The evidence that we put together strongly suggests that, even if the 20% is being adhered to, the unregistered sub-sector that we measure seems to be a source of important and valuable inputs for Washington lobbying firms. Insofar as transparency policies such as the LDA are meant to capture economically important influence activities, our paper provides an impetus for revising the LDA to better cover this unregistered sub-sector. This could take the form of (for example) better monitoring or a lowering of the 20% threshold.

Related Literature. Academically, this paper contributes to and builds on a number of literatures. Firstly, there is the work on forensic economics as reviewed by Zitzewitz(2012).

Our ‘forensic’ research design is most in line with a varied series of papers in this literature that map hidden behavior into observable information, such as: Hsieh and Moretti(2006) on Iraqi sanctions, Dube et al (2011) on CIA coup authorizations and insider trading, Della Vigna and Ferrara (2010) on illegal arms trade, Downey (2020) on union officer prosecutions, Durante and Zhuravskaya (2015) on Israeli military strategy, Price and Wolfers (2007) on discriminatory behavior in basketball, and Zucman (2013) on the role of tax havens.

Secondly, we contribute to the lobbying literature. There has been an increasing number of papers that directly use the US LDA data to address various political economy questions, for example: Bertrand et al (2014), Bertrand et al (2020) Blanes i Vidal et al (2012), Ferguson et al (2020) Igan et al (2010), Kang (2016), Kerr et al (2014) and Samphantharak et al (2009). Reviews of the topic are given by Bombardini and Trebbi (2020) and de Figueiredo and Richter (2014), while a recent international perspective on the market for lobbying is provided by Della Vigna et al (2016). Our empirical setting also speaks to some recent strands in the theoretical literature on lobbying that have featured an explicit role for lobbying firms as intermediaries (Groll and Thomas 2014,2015; Groll and McKinley 2015) as well as contests for policy-maker attention (Cotton 2016, Cotton and Dellis 2016). Thirdly, our work also contributes to the literatures on political selection (Besley 2005) and the related ‘personnel economics of the state’ (Finan et al 2015). A main concern of these contributions has been the responsiveness of public officials to various types of financial and non-financial incentives (eg. Ferraz and Finan (2011)), which bears on our focus on how the pattern of post-Congressional careers may be changing.

The paper is organized as follows. Section 2 provides the relevant institutional background while Section 3 explains the range of data we have assembled for the study. Section 4 documents important trends and descriptive statistics related to the key distinction between registered versus potential unregistered activity. Section 5 outlines the empirical modelling framework and Section 6 reports the results. The conclusion (Section 7) offers extra interpretation and policy implications.

2 Institutional Background

In this section, we provide some background on the LDA, as well as relevant regulations introduced in 2007 (HLOGA - the Honest Leadership and Open Government Act) and in 2009 (Executive Order 12490 - a major revolving door policy introduced by the Obama

Administration).

2.1 The Lobbying Disclosure Act (LDA) and the 20% Rule.

The LDA was introduced in 1995 as a successor to the 1946 Regulation of Lobbying Act (RLA), which had long been considered unsatisfactory due to its narrow definitions of lobbying activity.⁴ The LDA widened the definition of lobbyists to include those individuals retained financially by any client and also outlined specific activity thresholds for reporting. This threshold was that the lobbying services included ‘more than one lobbying contact’ and that the ‘lobbying activities for that client must amount to 20% or more of the time that the individual expends on services to that client over a 6-month period’ (Congressional Research Service 2020).

Note here that ‘lobbying contact’ refers to a specific form of lobbying, namely communication with covered executive and legislative branch officials. Furthermore, the need to report is only triggered when all three elements of the statutory definition are met, namely that (i) compensation is involved, (ii) more than one contact per time period is made, and (iii) at least 20% of client-related working time is devoted to lobbying.

Importantly, the definition of lobbying activities counted as part of this 20% is reasonably broad and encompasses both the contact events and the time needed to prepare for them. In practice, this calculation of time spent on lobbying is self-reported and not independently monitored or verified. The Government Audit Office (GAO) does publish an annual report on compliance with disclosure requirements but focuses its efforts on the technical accuracy of the submitted reports rather than potential cases of non-reporting.⁵

Indeed, the GAO also explicitly states that it is not obliged to identify cases of unregistered lobbying as part of its regular investigations. This is apparent in the GAO (2015) report which refers to its’ official mandate, saying that this mandate:

“...does not require us to identify lobbyist organizations that failed to register and report in accordance with LDA requirements. The mandate also does not

⁴This narrow interpretation was fostered by the *United States versus Harriss* Supreme Court decision of 1954. In short, the decision exempted from reporting groups who spent the own money directly to lobby Congress, along with organizations whose primary mission was not lobbying (Straus 2015).

⁵For example, the GAO randomly selects a set of reports and requests documentation from registrants relating explicitly to those lobbying reports. The GAO investigations have typically found that registrants are able to provide evidence of the reported income and expenses in most cases but there are significant gaps in the reporting of the prior government experience or ‘covered positions’ of lobbyists (GAO 2015).

require us to determine whether reported lobbying activity or political contributions represented the full extent of lobbying activities that took place”.

In fact, over the entire history of the LDA the only referral of a case of illegal lobbying occurred in 2014.⁶ As a result, in recent years there has been much criticism of the enforcement (or lack thereof) of the 20% rule for reporting, with even some professional bodies covering lobbyist issues warning that ‘shadow lobbying cannot become the norm’ (Miller 2016).

2.2 Regulation of Revolving Door Movements.

Ongoing controversy over the role of lobbyists contributed to the introduction in September 2007 of a set of reforms as part of the Honest Leadership and Open Government Act (HLOGA). This legislation contained some measures relating to the reporting of activity and campaign contributions but, for the first time, also imposed a set of restrictions on revolving door movements out of Congress.⁷

This was done mainly via the introduction of ‘cooling off’ periods on lobbying activity for staffers and Members who leave employment with the Congress. Senators became subject to a two-year cooling off period during which they were prohibited from making lobbying contact with any current employee or elected office holder in either the House or the Senate. Senior staff from the Senate (defined as those staffers earning at least 75% of a Member’s salary) also faced a 12-month ban on making lobbying contacts with any former Senate colleagues. The remaining, less senior Senate staff faced a narrower ban with a 12-month prohibition on lobbying contacts with their former office of employment within the Congress.⁸ Senior staffers in the House were also subject to this type of narrow ban on lobbying their specific former office of employment for 12 months.

One important point to note here is that these cooling off restrictions do not prevent an ex-staffer or Member from registering as a lobbyist during the defined periods, they simply

⁶In late 2015 it then emerged that lobbying firm the Carmen Group had agreed to pay a \$125,000 settlement for failure to reporting lobbying activity and contributions. The case related to lobbying over emergency loans given to Carmen Group client Xavier University in the wake of Hurricane Katrina (Levinthal 2015). Note that the more recent case of Paul Manafort involved FARA and his unregistered work on behalf of Ukraine-based interests.

⁷In terms of reporting, the frequency of reports was increased to quarterly and new requirements were introduced for the reporting of campaign contribution ‘bundling’ by lobbyists and member travel financed by outside sources.

⁸For example, Senate personal office staff may not lobby their specific former personal office or any committee where they may have had ‘substantive committee responsibilities’. Dedicated committee and leadership office staff face analogous limits. See SOPR (2012) *Guidance on the Post-Employment Contact Ban* for details.

limit their ability to make certain types of contacts. Ex-staffers or Members are therefore still able to register and make lobbying contacts with offices outside of the proscribed areas.

A second wave of revolving door restrictions were introduced in January 2009 as part of the Obama Administration’s Executive Order 12490, which was framed as an ‘Ethics Pledge’ for new appointees in all executive agencies. This applied similar post-employment bans to HLOGA for executive agency staff but also introduced qualitatively new ‘reverse cooling off’ restrictions.⁹ The restriction applied to new appointees and stipulated that they were not allowed to have lobbied the executive agency that they aspired to join for two years *before* the proposed date of appointment (White House 2009).

In September 2009, the Obama Administration then extended the coverage of this reverse cooling off restriction on former registered lobbyists to all executive agency advisory boards and commissions. This move created palpable angst in the lobbying industry and provoked some legal challenges by lobbyists affected by the ban (Smith 2012). The Obama Administration has also granted a number of waivers to Executive Order 12490 since 2009 but the majority of these have been at very senior levels (US Office of Government Ethics 2017). Hence the ‘reverse cooling off’ restriction still represents a major obstacle to ex-lobbyists aspiring to move into executive agency positions over their career.

3 Data

The main dataset used in this study is a firm-level panel constructed from two main sources: the database of lobbying reports released as part of the LDA and a database of political employment in the Congress, mainly sourced from the records kept by the political information company LegiStorm. As we discuss below, a key feature of this political employment database is that it lets us track the movement of ex-staffers into registered lobbying firms in cases where they do not register as individual lobbyists themselves.

3.1 Lobbying Reports Database.

We use the lobbying reports database compiled from the original Congressional office reports by the Centre for Responsive Politics (CRP). This database contains records that are effectively at the contract-level, giving information on the amount of expenditure involved, the registrant,

⁹Specifically, a two-year prohibition on communicating with employees of one’s former executive agency after leaving a position and an even stronger ban on contact for the remainder of the Administration if an appointee left to be an official registered lobbyist.

the lobbyists who participate in the work, and issue-codes describing the policy area of the lobbying activity. The registrants can be divided into two categories: lobbying firms who take on multiple clients on a commercial basis and “self-filing organizations” who conduct in-house lobbying activities. This latter group of self-filing organizations includes corporations as well as peak industry groups and non-profit, single-issue advocates. Reporting of lobbying revenues (for lobbying firms) and lobbying expenditures (for self-filing organizations) was required every 6 months until HLOGA in 2007, which introduced quarterly reporting.

3.2 Political Employment.

Our study also utilizes a database of political employment covering all individuals working in the Congress across personal, committee, leadership, and administrative offices. Our source is the Congressional Staffer Salaries (CSS) database maintained by the political information company LegiStorm. This database is built up from the official published reports of staffer information by the House and Senate, covering the period from 2000 to the present day. The CSS is effectively a payroll database giving information on: the start and end dates of a given employment spell, the office of employment within the Congress, the job title held, and the total salary paid over the duration of the spell. The CSS database is comprehensively coded by LegiStorm with consistent identifiers for offices, members and staffers thereby allowing us to accurately track individual careers over the full period of the data.

Usefully, LegiStorm also maintains a list of former Congressional staffers who register as lobbyists during their careers - their ‘revolving door’ database. LegiStorm updates this list on a weekly basis, comparing lists of ex-staffers with the names of newly registered lobbyists. Importantly, LegiStorm verifies the accuracy of its basic name match with additional information drawn from publicly available biographical information posted on LinkedIn, Facebook, Twitter and company or lobbying firm websites.

Furthermore, in order to extend the coverage of the staffer-turned-lobbyist data backwards prior to the year 2000, we supplement the LegiStorm-based list with information from *lobbyist.info*, a professional directory of lobbyists published by Columbia Books over many decades. For example, using this source allows us to pick up cases where an individual who eventually registered as a lobbyist worked in the Congress during the late 1990s but left before LegiStorm began its CSS database in 2000. This yields an additional 820 revolving door lobbyists.

3.3 Shadow Lobbyist Information.

3.3.1 Basic Approach.

As part of its effort in tracking ex-staffers LegiStorm keeps detailed biographical records of Congressional staffers across a range of career destinations both inside and outside government. This biographical database is very comprehensive, covering 10,200 individuals with government employment experience in Washington. Entries in the biographical database for these post-Congressional employment spells include: name of employer, dates with employer, and job title held.

Crucially, this information on career paths allows us to track cases of ex-staffers who join registered lobbying groups (that is, either lobbying firms or self-filing organizations) *but do not show up in the list of registered ‘revolving door’ lobbyists*. Furthermore, we exclude very junior staffers (eg: interns, staff assistants, assistant advisors) in order to apply a minimum threshold for meaningful Congressional work experience. The resulting group is the class of individuals that we define as potential unregistered or ‘shadow’ lobbyists. Also note that our estimating sample in this paper ends in 2012. This gives us a long time horizon for ensuring that our identified class of shadow lobbyists are not simply slow to register, for example, as a result of the 12-month or 24-month ‘cooling off’ period regulations mentioned above.

In addition to this information on ex-staffers, we also construct our own list of ex-members of Congress working on an unregistered basis in lobbying organizations by taking the list of all members who have exited since 1998 and manually looking up their career destinations in LegiStorm and other online sources.¹⁰

3.3.2 Independent Survey.

As a further check, we also conduct our own survey of the post-Congressional career destinations of former staffers. Here we select a random sample of approximately 300 staffers who left employment in the Congress between 2004-2007 but who do not have records in the LegiStorm biographical database. We then manually search for their post-Congressional career destinations via the usual online sources (LinkedIn, Wikipedia, company websites obtained through Google searches) and check their names against a historical database of lobbying firm employees that we develop. This exercise lets us test the completeness of our shadow lobbyist measure over time. The findings confirm the accuracy of the LegiStorm

¹⁰Our master list of members of Congress comes from the database compiled by Stewart and Woon (2020) which also includes information on the characteristics and experience (eg: committee service) of members.

database in regards to trends in shadow lobbying and we follow up with a further discussion in Section 4, giving precise details of the survey exercise in Appendix A.1.

3.3.3 Other Types of ‘Shadow’ Activity.

Finally, it is useful to note the distinction between the type of potential unregistered ‘shadow lobbyist’ activity that we are examining in this paper versus other possible classes of shadow lobbying.

LaPira and Thomas (2013) investigate potential shadow lobbying in Washington following a broader definition. This definition covers the full set of professionals engaged in policy advocacy roles across both LDA-registered and completely unregistered organizations active in Washington. Examples of policy advocates working in unregistered organizations would include (say) employees in general political strategy consultancies or staff at policy think-tanks. Their definition also covers people working in policy advocacy roles who may or may not have prior government experience. Furthermore, ‘policy advocacy’ in this definition describes a very general set of activities that are likely to be wider than the LDA-based definition of lobbying as activities consciously directed at making contacts with members of the executive branch of government.

In contrast, our definition is restricted to ex-government (specifically ex-Congressional) personnel *working in LDA-registered organizations*. We adopt this approach for two reasons. Firstly, it lets us test for an explicit economic link between lobbying revenues and the presence of posited shadow lobbyists. Secondly, by focusing on registered lobbying organizations we are able to narrow down the focus to entities that are officially active in making contacts with the executive branch. The shadow lobbyists that we are parsing out in our definition are therefore located in organizations that are in the very thick of the business of making contacts and lobbying as described in the LDA.

Briefly put, our definition is aimed squarely at picking up *economic evidence* of potential unregistered lobbying activity and this can only be done in cases where there is some information on revenues ‘above ground’ that can be related to what may be occurring ‘underground’. This is not to discount that viable opportunities for unregistered shadow lobbying exist in other parts of Washington’s policy-making economy. Indeed, LaPira and Thomas (2013) estimate that the size of the ‘policy advocacy’ sector they survey is comparable to that of the registered lobbying workforce. Repeated journalistic investigations (Lipton, Williams and Confessore 2013, Lipton and Williams 2016, Williams and Silverstein 2013)

have questioned the role of a subset of think-tank activities that could be interpreted as unregistered lobbying efforts. The evidence we provide in this paper is therefore likely to be a lower bound for total amount of potential unregistered lobbying that could be taking place in Washington.

3.4 Unregistered ‘Placebo’ Workers.

Along with the information above, we also collect data on lobbying firm employees who are neither registered as lobbyists nor are they ex-Congressional employees. We refer to these employees as the ‘unregistered placebo’ group in our later analysis.

Information on this class of unregistered employees is useful for us because they provide a counterpoint to the observed effects of unregistered ex-Congressional personnel. That is, including these ‘unregistered placebo’ employees in our regressions allows us to model the revenue effects of adding a generic unregistered employee to a firm’s overall staff. It is plausible that our ex-Congressional shadow lobbyists could influence firm revenues mechanically through a simple ‘added input’ effect that is not directly related to lobbying activity and the data on unregistered placebo employees allows us to test for the size of this type of channel.

Collecting data on this class of unregistered employees is a significant challenge to say the least. It requires historical information on a wide range of lobbying firm employees (not just ex-Congressional staff) across a range of firms that simply do not report to a centralised database of any type. Furthermore, individual firms typically only keep lists of their *current* employees on their websites providing very little in the way of historical information.

We tackle this challenge by exploiting the *Wayback Machine*, a digital archive of the World Wide Web maintained since 2001 by the nonprofit Internet Archive organisation. This service enables users to see archived versions of web pages across time. We exploit this facility to extract historical lists of lobbying firm employees at different points in time and retrieve information that has been effectively wiped from the present day versions of lobbying firm websites.

The full details of this exercise are outlined in Appendix A.2.2. In short, we focus on constructing a census of all Washington-based lobbying firm employees relevant to our main sample of firms. This census is centered on the year 2008 and, through name-matching against the lists of registered lobbyists and Congressional staffers, we are able to filter out a group of unregistered firm employees with no Congressional experience. We then randomly sample from this pool of possible ‘unregistered placebo’ employees and research their career

biographies in order to pin down their entry and exit dates of employment at the firms. This allows us to construct a set of unregistered placebo employees similar in size to the set of shadow lobbyists who are the main group of interest.

4 Descriptive Statistics.

In this section, we go over some information that helps establish the background and context of our main empirical strategy. We first discuss patterns in the data on registered lobbying activity, focusing in particular on the flow of ex-staffers into lobbying over time. Secondly, we break down the information we have assembled on shadow lobbyists along similar lines.

4.1 Trends in Registered and Shadow Lobbying.

In Figure 1(a) we plot the total number of registered lobbyists who are active per 6-month period across all types of lobbying firms. As discussed, our focus is on the lobbying firm sector because units in the sector take multiple clients and will therefore see their revenues rise and fall with factors such as the composition of their staff and their connections with the Congress.

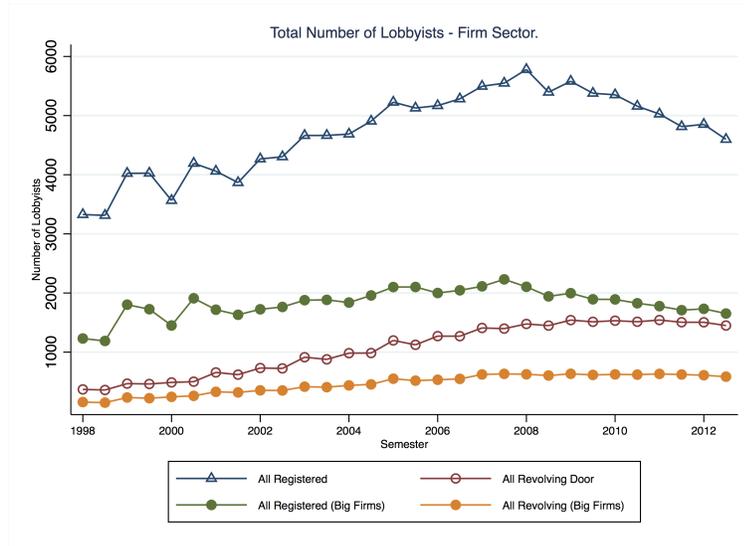
The most notable trend apparent in Figure 1(a) is the growing role of ex-Congressional revolving door lobbyists in lobbying firms. Their share of total headcount increased from approximately 12.5% to 35% over the 14 years covered by our sample. Underlying these trends, the lobbying firm sector is characterised by a skewed distribution in terms of firm size. We define ‘firm size’ here as the average number of registered lobbyists that a firm reports as active and engaged in lobbying contracts per 6-month reporting period. The median lobbying firm has only 1 registered lobbyist, while a firm at the 75% percentile has 2 lobbyists, with a 90% percentile firm featuring 4 lobbyists on average.¹¹

Institutionally, this distribution is down to the fact that the federal lobbying industry is dominated by a combination of many single-person firms, as well as general professional services firms (eg: law or strategy consulting firms) who only have lobbying as a minor part of their overall portfolio. Given this, we report some descriptives in Table 1 according to heuristic firm size cut-offs - less than 5 lobbyists for ‘small’, between 5 and 10 lobbyists for ‘medium’ and 10 or more for ‘large’.

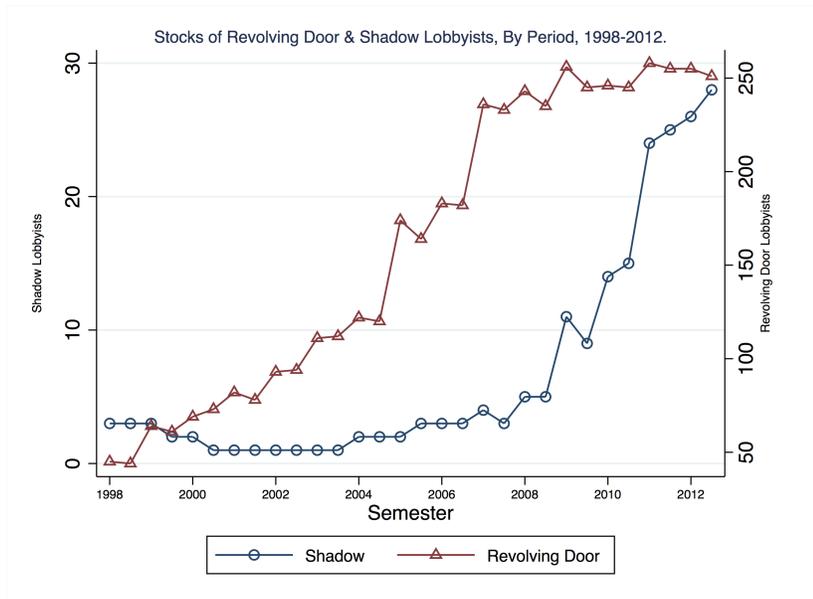
¹¹We plot this firm size distribution in Figure 5 from the 80th percentile onwards.

Figure 1: Trends in the Number of Lobbyists, 1998-2013.

(a) All Lobbying Firms



(b) Shadow Lobbying Firms



Notes: These figures show the stock of lobbyists in lobbying firms by type. Figure (a) shows the total number of registered lobbyists and the ‘revolving door’ lobbyists (registered ex-Congressional Staffers and Congressman) according to all firms and then the big firms (mean lobbyists of 10+) that comprise our main sample. Figure (b) then shows the stock of ‘Shadow’ and ‘Revolving Door’ lobbyists per period in the set of big firms who employ a shadow lobbyist at any point during the sample period (29 firms in total). ‘Shadow’ lobbyists are unregistered ex-Staffers or ex-Congressmen.

The distribution of shadow lobbyists across firm size classes is striking. Shadow lobbyist activity is overwhelmingly concentrated in ‘large’ firms with 10 or more registered lobbying employees on average. Approximately 50.5% (55/109) of shadow lobbyists as we define them work in these 131 large firms (out of the approximate 4,600 firms in the industry). This is compatible with the idea that shadow lobbyists are in a better position to leverage their contacts and experience in support of a larger firm’s overall lobbying activities.

It also clear that smaller firms have a different pattern of participation in the industry and have inherently more limited lobbying practices. Amongst the small firms with 5 or fewer lobbyists the average number of periods in the sample is only 9.2 compared to 21.5 for large firms. This is also reflected in the measure of shadow lobbyist ‘transitions’ that we report in the final row of Table 1. ‘Transitions’ here are defined as the number of discrete shifts in the shadow lobbyist variable, for example, going from zero shadow lobbyists in period t to one lobbyist in $t + 1$. This is the variation that underlies the within-groups and long difference models we use for modelling the revenue effects of shadow lobbying.

The fact that the small firms have a lower average number of periods means that, in many cases, the transitions of our posited shadow lobbyists into and out of firms occur in periods where the firm is not recording revenues. Hence, while the small firms nominally have 43 shadow lobbyists attached to them there are only 16 transitions in practice (as compared to 55 shadow lobbyists and 47 transitions in the case of the large firms). Our main analysis will therefore be conditioned on the set of these large firms although, as part of robustness exercises, we will also present estimates based on wider definitions.

In Figure 1(b) we then plot the numbers of shadow and registered, revolving door lobbyists working in these large firms over time. This shows trivial numbers of shadow lobbyists prior to 2005 with very strong growth from 2007. The number of revolving door lobbyists also grew strongly but this growth was spread out more across all years. By the end of the period, the shadow lobbyist workforce in these firms was 11% as large as that of revolving door lobbyists.

In Figure 2 we then plot the revenue trends for our main sample firms, differentiating between the 29 firms who employ a shadow lobbyist at some point during 1998-2012 and the remaining 91 firms. Lobbying revenues across the industry grew rapidly over this period to approximately \$375 million in total and this growth was heavily concentrated in the shadow lobbyist firms.

Table 1: Descriptive Statistics for Lobbying Firms.

	(1) Small (≤ 5)	(2) Medium (5-10)	(3) Large (10+)
# Firms	4,284	199	131
# Lobbyists	1.70	7.00	20.90
Revenue Per Lobbyist (\$)	95,008	157,474	145153
# Shadow Lobbyists	43	11	55
# Ex-Staffers	36.00	7.00	47.00
Experience in the Congress	4.30	2.60	4.30
# Connections With a Politician	1.40	0.40	1.80
# Connections With a Committee	1.00	0.80	0.90
Republican Affiliated (% share)	0.50	0.67	0.39
Ideology Score (Index from -1 TO +1)	0.07	-0.04	-0.05
% Senior Position in the Congress	0.28	0.00	0.28
% Mid-Rank Position in the Congress	0.55	0.57	0.53
% Low-Rank Position in the Congress	0.17	0.43	0.19
Connection – Party Leadership (% share)	0.61	0.71	0.60
Connection - High Ranking Committee (% share)	0.42	0.28	0.49
Connection – Committee Chair (% share)	0.19	0.00	0.40
# Ex-Congressmen	7.00	4.00	8.00
Republican	0.43	0.25	0.25
Key Committee	0.43	0.25	0.50
Senator	0.29	0.25	0.25
Firm average number of periods	9.2(8.3)	18.7 (10.3)	21.5(10.1)
Total Shadow Lobbyist ‘Transitions’	16	11	47

Notes: Lobbyists is the average number of registered lobbyists that a firm reports across periods. The size bands for firms are then 5 or less registered lobbyists, strictly between 5-10, and 10 or more for column (3) Shadow Lobbyists is the average number of unregistered ex-Staffers and ex-Congressmen employed by firms in a given size group. Firm average number of periods is the average number of periods that firms report non-zero lobbying revenues. Total Shadow Lobbyist ‘Transitions’ is the number of single period, discrete ‘switches’ in the shadow lobbyist variable that occur once the firm revenue panel is constructed.

Figure 2(a) shows that total revenues were comparable for the shadow and non-shadow firms by the end of the sample period.¹² We follow up in Figure 2(b) by plotting average revenues. This shows that the shadow lobbying firms caught up with the non-shadow firms by around 2005 and had 1.5-2.0 times more average revenue by the end of the period. We return to these revenue patterns when discussing trends in our modelling specifications as well as in our assessment of magnitudes.

A key issue in these descriptives is the striking nature of the rise in shadow lobbying from 2007 onwards. This finding caused us to consult the data more closely. In particular, one concern was that the level of shadow lobbying activity was understated before the mid-2000s since LegiStorm (our data source for the shadow lobbying series) was only founded as a company in 2006. We therefore conducted our own survey of ex-staffer biographies to check how many transitions into potential unregistered lobbying may have been missed in the early-mid 2000s. Our sample frame was the set of people who permanently disappeared from the Congressional salaries database in the period 2004-2007 but had no recorded information in the LegiStorm biographies database (ie: the database from which the shadow lobbyist information was collected). Full details are provided in Appendix A. This survey turned up very few ex-staffers working in registered lobbying organizations and, where this occurred, the ex-staffers were working in the class of very small firms that are not the main subject of our analysis. The major implication of this survey then is that the sharp rise in shadow lobbyist numbers from 2007 onwards does appear to be genuine structural development in the lobbying industry.

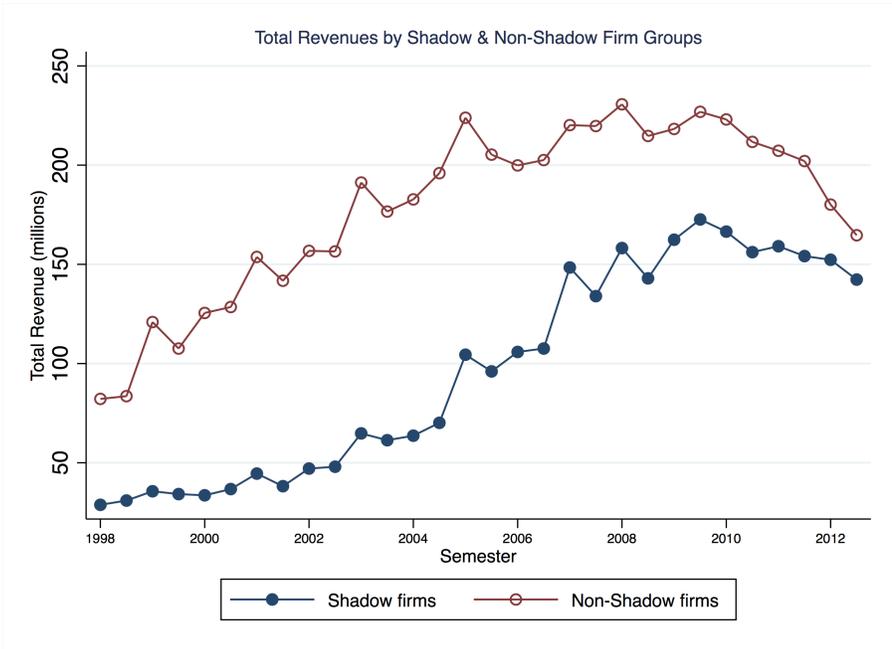
4.2 Characteristics of Shadow Lobbyists.

In Table 2, we provide a detailed comparison of the registered and unregistered ‘shadow’ lobbyists working in the large firm sample. They are also broadly comparable to registered lobbyists in terms of characteristics like connections to senior Congressional figures and committees. If anything, shadow lobbyists have less experience than their registered counterparts (for example, only 28% held Senior job titles prior to entering these lobbying firms compared to 36% for the registered group). We will return to this issue when discussing the implied revenue effects of shadow lobbyists later in the paper.

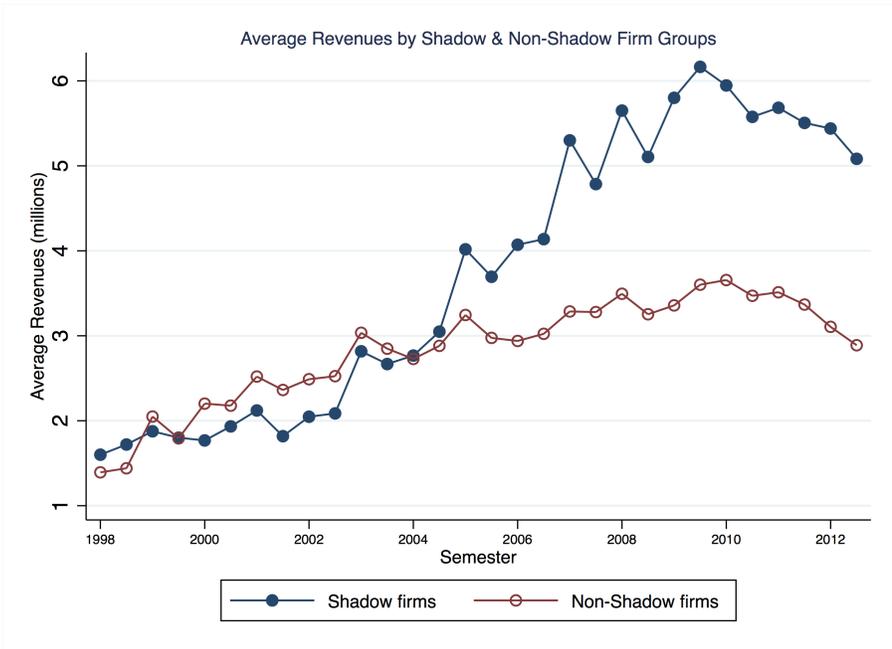
¹²More precisely, the total revenue share of the shadow lobbyist firms was 26-29% in the first two years of the period but 75-85% in the last two years.

Figure 2: Revenues for Shadow and Non-Shadow Firms, 1998-2012.

(a) Total Revenues



(b) Average Revenues



Notes: Figure (a) shows the sum of firm revenues by 6-month period ('Semester') for our regression sample of 'large' lobbying firms. The 'Shadow' group of firms is the set of 29 firms who employ a shadow lobbyist at some point during our 1998-2012 sample period. The 'Non-Shadow' group then represents the remaining 91 firms who never employ a shadow lobbyist. The firms are divided into these groups from the outset (ie: the definitions of the groups are fixed). Figure (b) takes a similar structure and plots the average firm revenues across the two groups by 6-month period.

Table 2: Descriptive Statistics: Registered vs. Shadow Lobbyists.

Variable	Registered Lobbyists	Shadow Lobbyists
Tenure in Congress (years)	4.0	4.3
Tenure in lobbying sector (years)	4.9	2.5
DW nominate ideology score	0.09	-0.05
Republican affiliated (% share)	52%	39%
Senior job titles	36%	28%
Mid ranking job titles	50%	53%
Low ranking job titles	14%	19%
Connection party leadership	45%	60%
Connections high-ranking committee	5%	49%
Connection committee chair	39%	40%
Connections - All Politicians	1.6	1.8
Connections - All Committee	0.6	0.9
Number of lobbyists (ex-staffers)	929	47

Notes: This table shows descriptive statistics for the set of registered lobbyists and shadow lobbyists included in the estimating sample. Senior job titles include: Chief of staff, legislative director, deputy chief of staff, communications director. Mid ranking job titles include: Legislative assistant, staff assistant, legislative counsel, chief counsel, counsel, legislative correspondent, assistant to chief of staff. Low ranking job titles include all other positions. Connections party leadership include connections to Senate or House leaders: Speaker, majority or minority leader, whips. Connections to high rankings committee includes: Appropriation, Finance, and Ways and Means committees.

5 Modeling Framework.

Our research design has two main components: a firm-level study of the revenue effects associated with the presence of unregistered ex-Congressional officials, and a benchmarking exercise that involves an analysis of the determinants of revenue at the level of individual lobbyists. We discuss these in turn.

5.1 Firm-level Revenue Models.

Our approach to studying revenue effects is based on a firm-level panel. The information on different types of registered and potential unregistered lobbyists described in Section 4 is mapped into this panel. The most basic empirical model of revenues we can formulate is as follows:

$$\ln(R_{jt}) = \alpha_j + \gamma_t + \beta Shadow_{jt} + \epsilon_{jt} \quad (1)$$

where $\ln(R_{jt})$ represents the (log) revenues of lobbying firm j in period t ; $Shadow_{jt}$ is a count of the the unregistered ex-Congressional officials working at firm j in 6-month period t ; α_j is a firm fixed effect; γ_t is a time effect defined at the period level; and ϵ_{jt} is the unobserved error term. The inclusion of the α_j fixed effects in this empirical model means that estimates of the β parameter are identified from variation associated with changes in the number of workers represented by $Shadow_{jt}$. Specifically, as a semi-log specification we can then read off the estimated coefficients as the (approximate) percentage change in revenue due to a one-person shift in the number of workers represented by $Shadow_{jt}$.

Our ‘forensic’ design focuses on whether $\beta > 0$ in practice. There are some clear challenges to the interpretation of the naive model of revenues as presented above. Firstly, the $Shadow_{jt}$ variable could be picking up the effects of firm-specific increases in demand for lobbying services. The $Shadow_{jt}$ workers could therefore be employed by firms as a response to this demand shock, plausibly as closely related ‘support workers’ to assist the officially registered lobbyist workforce at the firm. We can deal with the omitted variable bias implied by this hypothesis by including a range of controls:

$$\ln(R_{jt}) = \alpha_j + \gamma_t + \beta Shadow_{jt} + \lambda Registered_{jt} + \delta Unregistered_{jt} + \epsilon_{jt} \quad (2)$$

where the new variable $Registered_{jt}$ is a count of the number of registered lobbyists. If the hiring of unregistered ex-Congress officials is related to a lobbying demand shock then this

should be correlated with the actual registered lobbyists the firm employs from period to period.

We add a further variable $Unregistered_{jt}$ to deal with a second challenge. There could be a general ‘non-registered’ or ‘non-lobbying’ worker effect that is not directly linked to firm-specific increases in the demand for lobbying services. For example, as the firm adds more junior or administrative staff this could free up the time of the registered lobbyists working at the firm. The $Unregistered_{jt}$ variable is therefore a count of unregistered workers at the firm who have no history of employment as Congressional personnel. Hence, this group of workers is a useful counterpoint or ‘placebo’ group relative to the unregistered, ex-Congressional workers measured by $Shadow_{jt}$. That is, the $Unregistered_{jt}$ give us an estimate for the ‘added input’ effects that could be expected from employing a support worker with skills outside those represented by Congressional work experience.

A further general issue is trends in the pattern of revenues (as seen in Figure 2). Total industry revenues grew rapidly over the period that we consider and some firms or (subsets of firms) picked up more of this growth than others. We deal with this in a number of ways. Firstly, we include linear trends in our basic specification by the shadow and non-shadow sub-groups as well as by firm (ie: firm-specific trends). Secondly, we estimate first difference specifications across different time intervals. This has the advantage of differencing out the nonstationarity associated with any trends and also means that the β parameter is now effectively measuring the discrete ‘jump’ in revenues that occurs when a shadow lobbyist joins a firm. To be clear we estimate the following equation:

$$\Delta_k \ln(R_{jt}) = \alpha + \gamma_t + \beta \Delta_k Shadow_{jt} + \lambda \Delta_k Registered_{jt} + \varepsilon_{jt} \quad (3)$$

where α is a constant, and ε_{jt} is an error term. The subscript k denotes the order of differencing. For example, $k = 1$ denotes 1-period (which is 6 months), $k = 2$ denotes 2-periods (12 months) and so on. Hence in this case the β parameter is measuring the shift in revenues between a baseline period and a given period t . In contrast, the within groups specification discussed above is comparing average revenues across periods when shadow lobbyists are active versus the periods when they are non-active at the firm.

As an additional exercise, we also develop an event study specification in order to screen for other unspecified shocks or revenue patterns that may be affecting firms at the time that shadow lobbyists enter. Specifically, we look at period-by-period effects before and after the

entry of our posited shadow lobbyists. This is modelled as follows:

$$\ln(R_{jt}) = \alpha_j + \gamma_t + \sum_{l=-4}^4 \beta_l \text{Shadow}_{j(t_0+l)} + \lambda \text{Registered}_{jt} + \epsilon_{jt} \quad (4)$$

where t_0 is the initial period in which a shadow lobbyist enters a firm and l indexes time periods before and after. We allow for up to four periods before and after entry to the firm (equivalent to two calendar years of pre and post information) in this event specification. The event model is also conditioned on there being no other cases of shadow lobbyist entry over a given 8-period interval. This is so that we can assess the effects of the ‘clean’ entry of a single shadow lobbyist to a firm.

5.2 Benchmarking Exercise.

The second part of our research design asks: is the observed, statistical pattern of revenue shocks we find consistent with a level of worker inputs that plausibly fits with the 20% rule? In principle, the unregistered ex-Congressional officials we study are able to contribute to firm lobbying activities up to this (unmonitored) 20% threshold of time.

The actual revenue that results from this notional 20% of full-time inputs will be shaped by the observable and unobservable determinants of productivity that prevail at the individual level. Having estimates of the parameters on these determinants would therefore let us develop some bounds on the work contributions the shadow lobbyists. The practical question here is: based on their productive characteristics, what revenue effects would we expect from a set of ex-Congressional lobbyists working 20% of the time?

Our window into these determinants is the data on registered lobbyists. Specifically, we develop an analysis of the individual revenues of registered ex-Congressional officials as they come from the same notional population as the unregistered shadow lobbyists. We formulate the following empirical model of individual lobbyist revenues:

$$\ln(R_{it}) = \mu_i + \mu_j + \tau_t + X'_{it}\theta + \varepsilon_{it} \quad (5)$$

where $\ln(R_{it})$ is (log) revenues at the individual lobbyist level while X_{it} is a vector of lobbyist characteristics (such job titles held in the Congress or tenure in the lobbying industry). The terms μ_i and μ_j are lobbyist and lobbying firm fixed effects respectively. Finally, τ_t is a common time effect and ε_{it} is the unobserved error term.

Our main interest in this model is the breakdown between the observable and unobservable components, along with estimates of parameters on the observables. To preview the findings, we will see that observables explain a small fraction of lobbyist-level revenues - most of the action lies in the individual fixed effects. This leads us to a strategy for quantifying the role of unobserved skills in the firm-level revenue equations.

Specifically, based on this individual-level model, we can construct benchmarks for the contribution of unobservable lobbyist ‘talent’ to firm revenues. We do this by extracting the estimates of the individual lobbyist fixed effects, $\hat{\mu}_i$ and ranking lobbyists by deciles. Lobbyists in the top decile according to their $\hat{\mu}_i$ can be characterised as the ‘superstars’ with the highest level of unobservable talent for attracting revenue to firms. Indicators for different types of lobbyists can then be aggregated up to quantify the effects of such workers in the type of firm-level models that we use for studying the revenue effects of shadow lobbyists.

Based on this approach, we can denote lobbyists according to their fixed effect by an indicator variable $Star_i^d$ where d indexes the decile. This indicator is then aggregated up by firm-period to get a new count variable $STAR_{jt}^d = \sum_{i=1}^{D_j} Star_{ijt}^d$ (where D_j denotes the number lobbyists of decile type d in firm j). This allows us to characterize the contribution of ‘superstars’ (or indeed, other lower ranked lobbyists) in the firm-level revenue equations as follows:

$$\ln(R_{jt}) = \alpha_j + \gamma_t + \beta Shadow_{jt} + \lambda_1 STAR_{jt}^{10} + \lambda_2 NONSTAR_{jt} + \epsilon_{jt} \quad (6)$$

where $NONSTAR_{jt}$ is a count of all of the registered lobbyists in firm j at time t , excluding those in the top $d = 10$ decile of lobbyists by their individual-level fixed effect. We can break the $NONSTAR_{jt}$ variable to parse out other types of lobbyists, for example $STAR_{jt}^9$ for those in the ninth decile, $STAR_{jt}^8$ for those in the eighth decile and so on. With this information, we can then make an assessment of where (based on the estimated $\hat{\beta}$) the shadow lobbyists may fit in terms of the distribution of lobbyist productivity.

6 Results.

6.1 Baseline Results.

Table 3 shows the results of estimating models equivalent to equations (1) and (2) on our firm-level panel of large lobbying firms who report revenues regularly. Our shadow lobbyist measure pools both unregistered ex-staffers and unregistered ex-Congressmen into the one

count variable. Column (1), representing the naive model, shows that an extra shadow lobbyist is associated with an (approximate) 24.0 percent increase in revenue (although this effect cannot be rejected from a null of zero). The estimate becomes more precise and falls to 19.5 percent when we include a control for the count of all the registered lobbyists working at the firm in column (2). Hence this indicates that shadow lobbyists have an association with revenue over and above any that might occur through a correlation with increases or decreases in the number of registered lobbyists (i.e. a traditional omitted bias argument).

The third and fourth columns disaggregate lobbyists by type. In column (3) it is evident that the shadow ex-staffers and shadow ex-Congressmen have similar point estimates for their associated revenue effects. The breakdown in column (4) then allows us to compare ‘like-for-like’ in terms of effects associated with unregistered shadow lobbyists versus the equivalent registered lobbyists. The effects for registered and unregistered Congressman are similar (in the range of 0.152 - 0.163) while the effect associated with shadow ex-staffers (0.167) is higher than that of registered ex-staffers (0.086). While statistically a null of no difference in the coefficients cannot be rejected (the F-statistic for the difference for ex-Staffers is 1.35[0.248]), the pattern of the effects we see here is of obvious interest for interpreting the potential scope of the activities of shadow lobbyists within these firms. We return to this issue later as part of our benchmarking analysis.

6.2 Robustness.

6.2.1 Correlated Shocks and Trends.

In Table 4 we present a number of robustness checks. As discussed, the main issue for parsing out the potential shadow lobbyist effect is distinguishing the variation in our $Shadow_{jt}$ variable from other potential time-varying influences on firm revenues.

Our baseline specification using a pooled measure of shadow ex-staffers and ex-Congressmen is repeated in column (1) of Table 4. As a simple step for controlling for unspecified time-varying influences we include a lagged dependent variable in column (2). This accounts for both period-to-period persistence in revenues and omitted time-varying factors that we cannot observe but that are plausibly correlated with the (lagged) dependent variable over time. This results in only a limited shift in the calculated long-run coefficient which is still at approximately 19.2 percent.¹³

¹³ie: This is calculated as: $0.109 / (1 - 0.431)$ with respect to column (2), Table 4.

Recall from Figure 2 that revenues for the shadow and non-shadow firms evolve differently for at least part of the sample period. In our later magnitudes section we discuss how shadow lobbying may have contributed to these trends but here we simply include some controls to assess their statistical influence. The two types of trends that we consider are group trends (ie: we include a separate linear trend for the set of 28 firms in our sample who ever have a shadow lobbyist) and firm trends (ie: include a separate linear trend for every firm.) The general effect of including these trend terms in the levels model is to reduce the point estimates of the shadow lobbyist effect to 0.098(0.053) (group trends) and 0.155(0.065) (firm trends).

As discussed, an alternative approach to dealing with trends is to first difference the data over different time intervals. The β parameter in such first difference models effectively measures the ‘jump’ in revenues when there is a discrete change in the number of shadow lobbyists at a firm. By differencing the data, this approach also deals with any nonstationarity associated with trends at the firm or industry sub-group level.

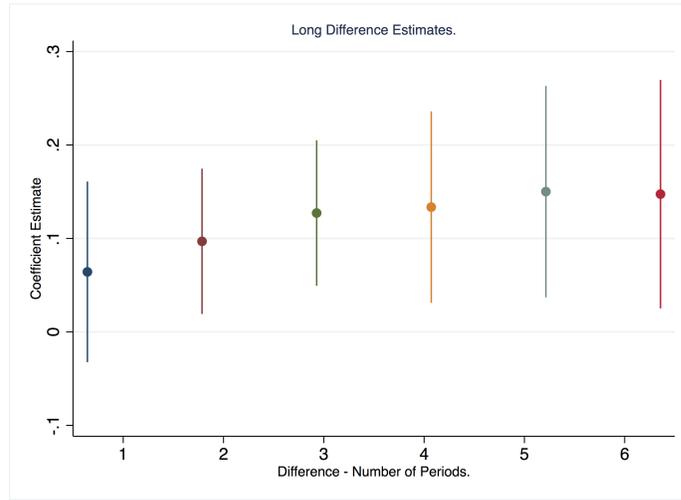
Estimates for 2-periods (1 year) and 4-periods (2 years) are reported in columns (5) and (6) of Table 4. These indicate a revenue jump of approximately 11.5-14.2% when a shadow lobbyist enters a firm.¹⁴ In Figure 3 we trace this across the full range of intervals ranging from 1-period (6 months) to 6-periods (3 years). A statistically significant jump in revenues is apparent from the 12-month model onwards and the effect increases slightly with the length of the interval. The fact that the longer interval models (ie: up to 3 years) hold indicates the revenue effects of a shadow lobbyist are sustained well after initial entry into the firm. Furthermore, note that the range of these estimates is consistent with the range of shadow lobbyist effects seen in the trend models reported in Table 4.

6.2.2 Event Analysis.

The next set of robustness checks use event study style methods to test for the discreteness of the shadow lobbyist revenue shocks that we have detected so far. Importantly, this allows us to assess the extent to which the revenue shocks associated with the shadow lobbyists are discontinuous and are indeed ‘events’ when it comes to the pattern of firm revenues.

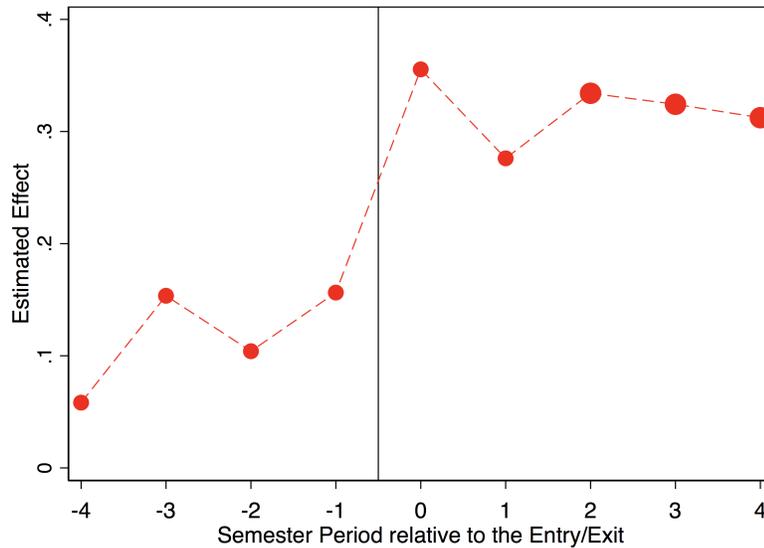
¹⁴Note that the variation used here involves both the entry and exit of shadow lobbyists from a firm. However, the majority (72.3%) of single period transitions of shadow lobbyists are cases of entry.

Figure 3: Long Difference Estimates - Shadow Lobbyist Effect.



Notes: This figure shows the estimates (with 95% confidence intervals) of long difference models of different orders. For example, 1-period corresponds to $(X_t - X_{t-1})$ (6 months), 2-period to $(X_t - X_{t-2})$ (12 months) and so on. All regressions include period fixed effects and control for the total number of registered lobbyists (also in analogous differences), with clustering at the firm-level. 95% confidence intervals are used.

Figure 4: Entry Effects of Shadow Lobbyists.



Notes: This figure shows period-by-period estimates of firm revenues for the subset of ‘clean’ shadow lobbyist transitions where the given transition is the only shadow lobbyist event in a firm over 8 periods (ie: 4 before and 4 after). The p-values of the period effects for the -4 to -1 periods are 0.758, 0.311, 0.558, and 0.393 respectively. The p-values for the ‘post’ periods from 0 to 4 are 0.003, 0.071, 0.007, 0.011, and 0.006. Standard errors are clustered at the firm-level, with period fixed effects and a control for the total number of registered lobbyists.

Table 3: Baseline Firm-Level Revenue Models

	(1) log(Revenue)	(2) log(Revenue)	(3) log(Revenue)	(4) log(Revenue)
Shadow Lobbyists (All)	0.240 (0.154)	0.195*** (0.062)		
Unregistered Ex-Staffers			0.195** (0.075)	0.167** (0.068)
Unregistered Ex-Congressmen			0.175 (0.143)	0.152 (0.107)
Registered Ex-Staffers				0.086*** (0.012)
Registered Ex-Congressmen				0.163*** (0.043)
Registered Lobbyists		0.068*** (0.005)	0.064*** (0.005)	0.060*** (0.006)
Number of Firms	120	120	120	120
Number of Observations	2613	2613	2613	2613

Notes: In all regressions we control for firm and time fixed effects. All standard errors are clustered at the firm level. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$. All reported variables are counts of the number of employees by type at the firm i in period t . Registered employees are those who appear on the disclosed lobbying reports forms. Registered Ex-Staffers represents former Congressional staffers who are registered as lobbyists while Registered Ex-Congressmen measures Ex-Congressmen who are registered. The Shadow Lobbyists (All) variable is comprised of Unregistered Ex-Staffers and Unregistered Ex-Congressmen summed together. The variable Registered Lobbyists represents the the number of registered lobbyists working at the firm who are not already counted as part of variables such as Registered Ex-Staffers and Registered Ex-Congressmen.

To investigate this we look at period-by-period revenues before and after the transitions of shadow lobbyists into a firm. That is, we standardize each entry point as t_0 and track revenues for a total of eight periods (four before and four after) in line with the specification outlined by equation (3). We do this for the subset of transitions where there is an uninterrupted or ‘clean’ four period lead-up and aftermath for the transition event (that is, transitions that are not bunched closely together). Note that this necessarily reduces the number of shadow lobbyist cases that drive the variation. Specifically, 16 shadow lobbyist entry events are involved in this exercise (out of a total of 47 events in the data underlying the core results in Table 3).

Table 4: Alternative Firm-Level Revenue Models (Robustness)

	(1) Baseline log(Revenue)	(2) Lagged Depvar log(Revenue)	(3) Group Trends log(Revenue)	(4) Firm Trends log(Revenue)	(5) 2-period Difference Δ_k log(Revenue)	(6) 4-period Difference Δ_k log(Revenue)
Shadow Lobbyists (All)	0.195*** (0.062)	0.109*** (0.035)	0.098* (0.053)	0.155** (0.065)		
Δ_k Shadow Lobbyists (All)					0.115*** (0.043)	0.142*** (0.053)
$\log(\text{Revenue})_{(t-1)}$		0.431*** (0.043)				
Registered Lobbyists	0.068*** (0.005)	0.043*** (0.005)	0.067*** (0.005)	0.055*** (0.006)		
Δ_k Registered Lobbyists					0.048*** (0.006)	0.054*** (0.006)
Number of Firms	120	120	120	120	120	119
Number of Observations	2613	2475	2613	2613	2358	2120

Notes: We control for firm and time fixed effects in columns (1)-(4). The difference specifications in column (5)-(6) include time fixed effects only (firm effects are differenced out). All standard errors are clustered at the firm level. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$. The variables Shadow Lobbyists (All) and Registered Lobbyists are defined as per the notes in Table 2. Column (3) includes a group trend terms defined according to whether a firm ever employs a shadow lobbyist. Column (4) includes firm-specific trends. $\Delta_k \log(\text{Revenue})$ represents the k-period difference in log revenues, where k is the number of periods. Similarly, Δ_k Shadow Lobbyists (All) and Δ_k Registered Lobbyists are k-period differences in the respective variables. Column (5) reports the results of 2-period differencing (1-year) and column (6) reports 4-period differencing (2-years).

The results of this exercise are shown in Figure 4 and indicate that there is a discontinuous jump in revenues at the transition point followed by sustained level of revenues. Notably, the trend in revenue is relatively flat prior to the transitions which again helps to rule out the possibility that the revenue shocks associated with shadow lobbyists are tied up with some type of broader general firm adjustment. Such an adjustment would be plausibly spread out over several periods before the transitions and show up as an anticipation effect. In contrast, the evidence in Figure 4 indicates that the revenue shocks are precisely timed with the observed transitions. While, as mentioned above, Figure 4 is based on a subset of all the shadow lobbyist transitions, we take the results here as an indicator that our main results in Tables 3 and 4 are clearly underpinned by a set of discretely timed, revenue-increasing events that are centered around the entry points of shadow lobbyists into a firm.

6.3 Unregistered ‘Placebo’ Workers.

Our next exercise looks into the general effects of unregistered employees on firm revenue. As discussed, it is plausible that there could be a general indirect effect on lobbying revenues associated with the addition of staff at a firm, even if they are unregistered. Table 5 tests for this by looking at the effects of a set of ‘placebo’ unregistered employees. This is the group of employees with no known experience as Congressional staffers or office holders. The information on this set of employees was assembled from historical *Wayback Machine* data according to the procedure described in section 3.4. This group is comprised entirely of unregistered individuals and is constructed as a random sample equivalent in size to our observed shadow lobbyists (ie: 47 individuals). They represent a useful placebo for our main shadow lobbyist effect, letting us test for the potential size of any pure ‘indirect input’ effect amongst our sample of firms.

Table 5 proceeds in examining this by including the placebo terms separately and then as part of an ensemble model. Columns (1) - (3) use the within-groups model while columns (4)-(7) implement first difference specifications for the 2-period (12 month) and 4-period (2 year) intervals. The estimated coefficients for the different placebo terms tested in columns (2) and (3) are in the range of 0.052 - 0.071 and they are not precisely estimated. Similarly, the estimated coefficients for the placebo terms in the first difference models are at most around one-third of the shadow lobbyist coefficients and are also imprecise. Furthermore, there are negligible shifts in the shadow lobbyist estimates when the placebo terms are included.

In Appendix Table A1 we also test some alternative placebos based on ex-Congressional

staffers who only had junior roles (eg: intern, staff assistant) during their time in the Congress. These include both registered and unregistered ex-staffers. The pattern of results here is similar to that of our *Wayback Machine* placebo. While there is weak evidence that very junior registered ex-staffers may drive a revenue contribution in the within groups model, this is attenuated once the first differencing is implemented. There is no trace of an effect related to unregistered junior staffers.

Two takeaway results useful for our overall study arise from Table 5 and Appendix Table A1. Firstly, we do not pick up any systematic effect of placebo workers on firm lobbying revenues across specifications. As a result, the data do not support the the hypothesis that general ‘support workers’ have a strong influence on firm revenues through channels such as freeing up the time of registered lobbyists. This is important for the interpretation of our shadow lobbyist effect because it implies that the window for our ex-Congressional shadow lobbyists to have a passive, indirect effect on firm revenues is very limited. Secondly, the estimated coefficients on our main shadow lobbyist variables are unaffected by adding the control for unregistered placebo workers, again showing the robustness of the main results to the inclusion of additional time-varying influences on firm revenues.

6.4 Shadow Lobbying in Small and Medium-sized Firms.

As discussed, our estimates are premised on the sample of ‘large’ firms with 10 or more lobbyists where, following Table 1, shadow lobbying activity is heavily concentrated.

We explore the association between revenues and potential shadow lobbyist activity across different firm size bands in appendix Table A2. As discussed, in section 4.1, an issue here is that, while there are 55 posited shadow lobbyists working in these firms over our sample period there are gaps in the revenue data, especially for firms with 5 or fewer registered lobbyists active per period. For example, while there are 43 shadow lobbyists affiliated with this group of firms there are only 16 usable transitions in the firm-level data. In short, many of the small firms have a low attachment to the federal lobbying industry and do not necessarily report lobbying-derived revenues across many continuous periods. Hence, this limits the scope for conducting a robust ‘before-and-after’ comparison of revenues that is implicit in our main within-groups and long difference models.

Table 5: Shadow Lobbyists versus 'Placebo' Unregistered Employees.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	log(Revenue)	log(Revenue)	log(Revenue)	Δ_k	Δ_k	Δ_k	Δ_k
	log(Revenue)						
Shadow Lobbyists (All)	0.195*** (0.062)		0.184*** (0.062)				
Placebo		0.071 (0.052)	0.052 (0.049)				
Δ_k Shadow Lobbyists (All)					0.114*** (0.043)		0.142*** (0.052)
Δ_k Placebo				0.040 (0.027)	0.037 (0.027)	0.012 (0.037)	0.006 (0.035)
Registered Lobbyists	0.068*** (0.005)	0.068*** (0.005)	0.068*** (0.005)				
Δ_k Registered Lobbyists				0.048*** (0.006)	0.048*** (0.006)	0.054*** (0.006)	0.054*** (0.006)
Number of Firms	120	120	120	120	120	120	119
Number of Observations	2613	2613	2613	2358	2358	2120	2120

Notes: We control for firm and time fixed effects in columns (1)-(3). The difference specifications in column (4)-(7) include time fixed effects only (firm effects are differenced out). All standard errors are clustered at the firm level. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$. The variables Shadow Lobbyists (All) and Registered Lobbyists are defined as per the notes in Table 2. The variable Placebo is a count of unregistered employees at the firm who have no experience working in the Congresses. $\Delta_k \log(\text{Revenue})$ represents the k-period difference in log revenues, where k is the number of periods. Similarly, Δ_k Shadow Lobbyists (All), Δ_k Registered Lobbyists and Δ_k Placebo are k-period differences in the respective variables. Columns (4)-(5) report the results of 2-period differencing (1-year) and columns (6)-(7) report 4-period differencing (2-years).

The models reported in appendix Table A2 are inconclusive. Some large, negative effects are apparent in the column (1) and (2) within-groups models, but they mainly dissipate in the long difference models (columns (3) and (4)). Furthermore, the negative effects are most marked in the small firm sample where the firms have relatively short ‘lives’ (ie: 9.2 periods versus 21.5 for the large firm sample - see Table table 1). Overall, this of results does not follow a consistent pattern in the same way that various models for the large firm sample showed a positive association between shadow lobbying and firm revenues.

6.5 Benchmarking.

We now benchmark the magnitude of the shadow lobbyist revenue effects found as part of the previous results. As per section 5.2 we first focus on what can be learned about the determinants of individual-level revenues in the lobbying industry.

6.5.1 Determinants of Lobbyist Revenue.

Appendix Table A3 reports information on the adjusted R^2 from implementations of the lobbyist-level equation eq. (5). The aim of this exercise is to gauge the overall contribution of observables versus unobservables to revenues in this setting. The available observables are: indicators for whether a lobbyist is an ex-staffer; a set of common job titles (defined in terms of highest post held); and periods of experience working in the lobbying industry.

Based on the adjusted R^2 measure a simple dummy indicator of whether a lobbyist is an ex-staffer or ex-Congressman explains an additional 9.1% of the variation in log revenues (column (1)). Adding job titles contributes an extra 0.1% while tenure in the lobbying industry explains a further 3.7% (column (3)). In contrast, the contribution of unobservables is very large: lobbyist-level fixed effects help explain another 55.5% percent of the variation, leading to an R^2 of around 0.69 (column (4)).

In panel (B) of Table A3 we then use the observables to try and explain the lobbyist fixed effects themselves. In this case around 20% of the variation in the fixed effects are explained but only a small portion of this can be accounted for by job titles. It seems clear then that, once the basic fact of having a prior employment connection to the Congress is taken into account, there is limited scope for other observables (eg: job titles, tenure) to explain what drives differences in lobbyist revenues.

6.5.2 Firm-level Models.

Given this evidence on the importance of unobservables in determining revenues we turn to the exercise described in equation eq. (6), that is, use the lobbyist-level information to work out which lobbyists have the largest influence on firm revenues. Appendix Figure 6 plots the distribution of fixed effects for the set of lobbyists working in our sample firms, where we have conditioned on at least three periods of activity in the lobbying industry for inclusion in this analysis. The figure clearly shows how ex-Congressional staffers dominate the industry in terms of average revenues. Our regression exercise then involves dividing this distribution of fixed effects estimates into deciles and constructing firm-level counts of lobbyists by their levels of unobservable contribution.

The results for the firm-level models incorporating these counts are reported in Table 6. In panel (A) we run a within-groups levels specification with a baseline regression in column (1) that compares the shadow lobbyists to all the registered, revolving door lobbyists. This shows a notably higher point estimate for shadow lobbying (0.175 (0.057) versus 0.092 (0.010)), although the coefficients are not formally different (p-value = 0.164, F-stat=1.97). We next break up the revolving door group into below and above median sub-groups in terms of their fixed effects in the underlying individual-level data. This only shows minor differences in the revenue effects of the two groups (column (2)). However, a sharper gradient emerges in column (3) when we separate the top two deciles of revolving door lobbyists into separate variables relative to the lower eight deciles. The 0.173 (0.060) estimate in this column positions the shadow lobbyists as being comparable to the top decile of registered, revolving door lobbyist according to unobserved skill.

However, for robustness purposes we also perform this exercise for the first difference specification, with 2-period (12-month) differences in panel (B) and 4-period (2-year) differences in panel (C). These estimates position the shadow lobbyists more towards the upper middle of the distribution. For example, the 0.108(0.042) estimate in column (6) is above that of the 0.079 (0.009) estimate for deciles 1-8 of unobservable skill but below that of the 9th decile's estimate of 0.161 (0.052). That said, we are careful to note that we are citing differences in point estimates here - it is clear that there is an overlap in the confidence intervals in this case. Hence it is not possible to exactly position the shadow lobbyists in the lobbyists skill distribution based on the available data.

However, a useful insight from this benchmarking exercise is that the shadow lobbyist

effect that we uncover over the course of the paper is a *realistic* one, most likely putting shadow lobbyist around the middle of the skill distribution. That said, an extra dimension of the analysis here is that shadow lobbyists are, following the LDA, presumed to spend no more than 20% of their time on lobbying activities. Simply put, this implies that shadow lobbyists are achieving a similar revenue effect to median registered lobbyists but with one-fifth of the time input.

The fact that the measured shadow lobbyist effect is comparable to a median registered, revolving door lobbyist therefore suggests that either the shadow lobbyists are much higher up in the skill distribution than these estimates nominally suggest, or that they may not be adhering to the 20% rule in practice.

6.6 Magnitudes.

A natural remaining question for the results as presented is: how big are the shadow lobbyist effects that we find in aggregate terms? The benchmarking exercise focused on comparisons of different estimated parameters but there is the more practical question of how much money can be attributed to shadow lobbyist activity in the overall industry context. Further to this, it is clear from the earlier Figure 2 that average revenues grew faster for shadow lobbying firms. This raises the question: to what extent did shadow lobbying drive the differential growth of these firms?

In order to study this we first calculate the predicted contribution of the growth of shadow lobbyists to the change in firm revenues. As a comparison, we also calculate the contribution of the registered, ex-Congressional ‘revolving door’ lobbyists to revenue growth. Recall from Figure 1 that there was also a major influx of registered, revolving door lobbyists into the industry during the mid-2000s.

The basic form of the predicted revenue effect is as follows:

$$\Delta \hat{R}_{jt}^{Shadow} = \hat{\beta} \Delta Shadow_{jt} * \bar{R}_{j0} \quad (7)$$

where $\hat{\beta}$ is the estimated shadow lobbyist coefficient, $\Delta Shadow_{jt}$ is the average change in shadow lobbyists for firm j , and \bar{R}_0 is initial average revenues (defined as over the first two periods that firms appeared in our panel). In the second step we sum this predicted effect \hat{R}_{jt}^{Shadow} of shadow lobbying across the 29 relevant firms, denoted as $Predicted^S = \sum_{j=1}^S \hat{R}_{jt}^{Shadow}$ with S as the total number of shadow lobbyist firms.

Table 6: Benchmarking the Effects of Shadow Lobbyists.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Within	Within	Within	2-period	2-period	2-period	4-period	4-period	4-period
	Groups	Groups	Groups	difference	difference	difference	difference	difference	difference
				Δ_k	Δ_k	Δ_k	Δ_k	Δ_k	Δ_k
	log(Revenue)								
Shadow Lobbyists (All)	0.175*** (0.057)	0.159** (0.072)	0.173*** (0.060)	0.103** (0.042)	0.088** (0.040)	0.108** (0.042)	0.117** (0.048)	0.107** (0.052)	0.118** (0.049)
Revolving Door (All)	0.092*** (0.010)			0.087*** (0.010)			0.091*** (0.011)		
Above Median Revolving Door		0.130*** (0.024)			0.162*** (0.029)			0.144*** (0.025)	
Below Median Revolving Door		0.105*** (0.023)			0.106*** (0.016)			0.111*** (0.021)	
Decile 10 - Revolving Door			0.147*** (0.047)			0.196*** (0.053)			0.188*** (0.046)
Decile 9 - Revolving Door			0.100* (0.051)			0.161*** (0.052)			0.139*** (0.050)
Decile 1-8 - Revolving Door			0.087*** (0.010)			0.079*** (0.009)			0.084*** (0.011)
Registered Lobbyists	0.060*** (0.006)	0.061*** (0.005)	0.061*** (0.006)	0.039*** (0.005)	0.039*** (0.005)	0.040*** (0.005)	0.045*** (0.005)	0.044*** (0.005)	0.045*** (0.005)
Number of Firms	120	120	120	120	120	120	119	119	119
Number of Observations	2613	2613	2613	2358	2358	2358	2120	2120	2120

Notes: We control for firm and time fixed effects in columns (1)-(3). The difference specifications in column (4)-(9) include time fixed effects only (firm effects are differenced out). We refer to variables according to the names in levels here but note that columns (4)-(9) are defined as difference specifications. Shadow Lobbyists (All) is defined as per Table 2. Revolving Door (All) is a count of the pooled number of registered ex-Staffers and ex-Congressmen employed at a firm in period t . Above Median Revolving Door is a count of the revolving door lobbyists who fall in the upper half of the individual fixed effects distribution (see section 5.2 for details). Decile 10 - Revolving Door and Decile 9 - Revolving Door are counts of the revolving door lobbyists in the top two deciles of the individual fixed effects distribution. Decile 1-8 - Revolving Door is a count of the remaining in revolving door lobbyists in decile 1-8. Registered Lobbyists is a count of registered lobbyists employed at the firm in period t who are not already counted as part of other variables.

We compare this to the growth of *actual* revenues. This is calculated first by taking the difference between the ‘first period’ and ‘last period’ revenues of each firm. Again, we compute this as an average of revenues in the first two periods and the last two periods of a firm’s presence in the sample, written simply as $\Delta R_{jt} = (\bar{R}_{jT} - \bar{R}_{j0})$ and with the aggregation $Actual^J = \sum_{j=1}^J \Delta R_{jt}$. The share of revenue explained by shadow lobbying is then $\%Shadow = (Predicted^S / Predicted^J)$. An analogous calculation can be made for the share of revenue growth explained by revolving door lobbyists, $\%Revolving$.

The results of these calculations are presented in Table 7. Row (A) shows the ‘industry’ results across the 120 large firms in our sample. This indicates that shadow lobbying can explain approximately 4.3% of total industry revenue growth with the registered, revolving door contribution standing at 24.0%. In row (B) of Table 7 we do these calculations separately according to the sub-groups of shadow and non-shadow firms. This indicates shadow lobbying explains 9.8% of the revenue growth amongst shadow lobbying firms compared to 34.3% for revolving door lobbyists. The revolving door contribution for the non-Shadow sub-group of 91 firms is lower at 15.9%.

Hence, these decomposition results imply that the shadow lobbying firms grew faster both because of their hiring of shadow lobbyist but also because they added more connected, revolving door lobbyists. This is in line with the trends seen Figures 1 and 2. Revolving door lobbyists began increasing around 2005 (see Figure 1) with a consequent uplift in revenues (Figure 2), and this uplift was sustained by the accelerated entry of shadow lobbyists from 2007 onwards. Hence, this indicates that shadow lobbying was a significant driver of the divergence of the shadow sub-group of firms (ie: we mean the 9.8% contribution) but that the rise in revolving door lobbying was more fundamental to growth (ie: the 34.3% contribution).

In closing, we highlight two sets of statistics that encapsulate the magnitudes well. Firstly, the 4.3% of total sectoral revenue growth explained by shadow lobbying can be thought of as a measure of ‘unaccounted for influence’. That is, it is the fraction of industry revenues that can be explained by unregistered ex-Congressional personnel working at lobbying firms in our sample. Secondly, shadow lobbyists are an important component of the overall workforce at the shadow group of firms. By the end of our sample, we estimate that the shadow lobbying workforce is 3.8% as large as the total workforce of LDA registered lobbyists at these firms and 10.7% as large as the workforce of registered, revolving door lobbyists. We think that, along with our estimates of revenue generation, these workforce numbers indicate that shadow lobbyists are clearly non-trivial inputs into the business activities of these firms.

Table 7: Aggregate Magnitudes.

Group	%Shadow	%Revolving Door	Total
(A) Sector (N=120)	4.29	24.00	28.29
(B) Shadow Lobbying Firms (N=29)	9.80	34.30	44.1
(C) Non-Shadow Firms (N= 91)	na	15.90	15.9

Notes: This table shows the results of the calculations described in section 6.6. Row (A) reports the revenue contributions of shadow versus revolving door lobbyists for all firms in our sample. For example, the shadow lobbyist revenue contributions is calculated as $Predicted^S = \sum_{j=1}^S \hat{R}_{jt}^{Shadow}$ with S as the total number of shadow lobbyist firms. The firm-level prediction is calculated as $\hat{R}_{jt}^{Shadow} = \hat{\beta} \Delta Shadow_{jt} * \bar{R}_{j0}$.

7 Conclusion.

In this paper we have tested for economic evidence of unregistered, ‘shadow’ lobbying activity amongst Washington lobbying firms. Our research design has focused on mapping the movements of ex-Congressional politicians and staffers into the lobbying revenue data in order to infer the potential contributions of these personnel. The shadow lobbyist database that we build shows two interesting patterns - a steady increase in shadow lobbying activity from the late 2000s onwards and a very notable clustering of this activity in larger firms where shadow lobbying may be easier to conduct. This could plausibly be because the unregistered ex-Congressional personnel joining these large firms could have more leverage there (ie: they have more co-workers to share tasks with) or because such an environment is more suitable for working close to (or above) the 20% rule for officially registering as a lobbyist.

Our empirical models then indicate that lobbying firm revenues do move significantly with the movements of these unregistered ex-Congressional personnel into and out of firms. In particular, the shifts in revenue we see cannot be conflated with general shocks based on the party affiliations of firms and occur discretely with the entry of shadow lobbyists into a firm. Further to this, we are able to rule out the hypothesis that these revenue effects are the result of a general ‘non-lobbying worker’ effect by looking at a sub-group of unregistered workers with no track record of working in the Congress. We find that no revenue effects are associated with the movements of these unregistered ‘placebo’ workers into and out of lobbying firms.

We stress that our results cannot be interpreted as evidence of illegal or corrupt activity.

The activities of the unregistered shadow lobbyists within the relevant firms are simply not observable using any dataset that we are aware of. However, our benchmarking of the observed shadow lobbyist effects against those for registered ‘revolving door’ lobbyists indicates that they (the shadow lobbyists) have effects that are equivalent to the median ‘revolving door’ lobbyists but with (notionally) one-fifth of the effort. Hence, even if the 20% rule is being adhered to it is clear that unregistered ex-Congressional personnel provide some highly valuable inputs to Washington lobbying firms. Given that transparency policies such as the LDA are meant to capture economically important influence activities our paper provides an impetus for either a program of better monitoring with respect to LDA compliance or a revision of the legislation to make the reporting requirements on activities counted as part of the 20% rule more rigorous.

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A Data Appendix

A.1 Ex-Staffer Employment Destinations - Independent Survey.

We conducted a targeted independent survey (using web-based resources) of staffer employment destinations after leaving the Congress. This was designed to evaluate the completeness of the LegiStorm database and, in particular, check the extent to which LegiStorm’s biographical data is successful in picking up the majority of shadow lobbyist activity in Washington.

The focus of this survey was the cohort of staffers who left the Congress between 2004-2007. We chose this period because it occurs just as LegiStorm was established (circa 2006), creating the concern that the rise in shadow lobbying we see in the data after 2007 might be a result of incomplete coverage earlier on. Targeting this group further, we focus on a subset of 2,700 ‘Top Aides’ (Chief of Staff, Deputy Chief of Staff, Legislative Director, Legislative Assistant, Legislative Counsel, Legislative Correspondent, and Communications Director) most likely to be attracted by unregistered lobbying opportunities.

Out of these 2,700 individuals, we remove three sets of individuals: (i) 500 individuals who are officially registered lobbyists but did not have their employment history tracked by LegiStorm; (ii) 267 individuals who are officially registered lobbyists (as they appear in lobbying contracts tracked down by Opensecrets) with LegiStorm also following their employment history; (iii) 100 individuals who are tracked by LegiStorm while not being officially registered lobbyists. We can remove these 850 individuals as the information we have already allows us to track them in our data.

After subtracting these 850 individuals with biographical data in LegiStorm we are left with 1,849 people whose post-Congress employment destination is unknown. We randomly select 20% of this group for our survey. Their post-congressional destinations have been obtained via a manual search using information from LinkedIn, Wikipedia, and Google. Files containing the outcome of each manual search, notes, and related links for this random sample of ex-congressional staffers are available upon request. Table (A2) shows the job-destinations of a random sample of 381 ex-congressional staffers occupying the following positions during their work spells in Congress: Chief of Staff (32%), Deputy Chief of Staff (3%), Legislative Director (4%), Legislative Assistant (25%), Communications Director (7%), Legislative Correspondent (28%), and Legislative Counsel (2%).

In almost 50% of the cases these workers move to occupy positions in government, politics, and the private and legal sector. In only two percent of the cases did we find

ex-Congressional staffers being employed in lobbying firms within Washington DC, even if not officially registered as lobbyists. For our purposes, it is worth noticing that the lobbying firms in Washington DC hiring these ex-Congressional staffers are quite limited in their activity: Reed Smith (6.8 registered lobbyist per period, on average); Powell Tate (5.1); Jennings Policy Strategy (1.6); DCI group (8.2); Elmendorf Strategy (4.7); Financial Dynamics (1 registered lobbyist). This suggests that LegiStorm’s biographical database is very effective at tracking the movement of unregistered ex-Congressional personnel into large Washington lobbying firms, the main focus of our estimates.

A.2 Digging Deeper: The Wayback Machine

A.2.1 Supplementing the Independent Survey.

The exercise described above did not provide any result for 109 ex-congressional staffers, for whom we were unable to track their career (26% of the sample). To further investigate the presence of potential shadow lobbyists within this pool of 109 ex-congressional staffers we took a different strategy. In this exercise we have attempted to reconstruct the historical list of all workers in lobbying firms contained in our estimating sample. We then checked for the presence of these 109 ‘missing-in-action’ ex-Congressional staffers within these lobbying firms.

To perform this analysis, we used the the *Wayback Machine* digital archive of the world wide web created by the Internet Archive, a non-profit organization, based in San Francisco. The Internet Archive launched the *Wayback Machine* in October 2001. The service enables users to see archived versions of web pages across time. In turn, we are able to do a census of Washington lobbying firm employees using historical information that has disappeared from current versions of company websites.

For each firm in our estimating sample we: 1) searched the most recent company website; 2) copied and pasted the URL into the *Wayback Machine*; 3) searched for the version of the website as close as possible to the year 2008; and 4) downloaded the list of all workers in the firm who were based in Washington DC. We then standardized the names of these workers (eg: removing suffixes, prefixes, titles and nicknames).

Our sample of interest covers 137 firms, with shadow lobbyists appearing in in 53 firms. Overall, we were able to compile historical ‘census’ information on 70 of the 137 firms, including 36 of the known shadow lobbying firms. The firms found as part of the this census were predictably larger than average making them easier to track over time.

The final step consisted of a manual search of the names contained in the list of 109 ex-congressional staffers with unknown destinations amongst the list of workers downloaded via the *Wayback Machine*. The manual search did not reveal any single instance in which the given name and surname of ex-Congressional staffers matched that of a worker employed in a lobbying firm. Both lists of workers are available upon request.

Overall, these two exercises reduce concerns about the presence of significant omissions in the tracking of ex-Congressional staffers working on an unregistered basis in our sample of large lobbying firms.

A.2.2 ‘Placebo’ Non-Registered Workers

To construct the group of unregistered ‘placebo’ workers with no experience of working in the Congress we started by using the master list of 6,516 workers obtained via the exercise described above that used the *Wayback Machine*. Recall that this group represents the population of *all* type of employees working in these firms, not just registered lobbyists.

Using a name matching procedure, we removed the registered lobbyists and unregistered shadow lobbyists from this overall list. This left 4,969 workers employed in our lobbying firms in a variety of roles during the period of analysis. We then drew a random sample of 73 workers (as this equals the number of shadow lobbyists in our empirical analysis) who joined 28 lobbying firms.

We then reconstructed their career paths using *LinkedIn* and similar sources. Around 75% of these workers were employed in the role of Associate or Partner, whilst the remainder took up various roles such as Analyst, Counsel, and Senior Associate. We were able to precisely track the semester of entry and exit (if applicable) of these individuals for the lobbying firms in our sample.

We were therefore able to construct a measure of ‘placebo’ workers within firms over time. This analysis reduces the concern that the effects we identify could simply reflect a mechanical increase in lobbying revenue associated with a generic expansion in the labor force within the firm.

Table A1: Alternative Placebos based on Junior Staffers.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				2-period difference Δ_k	2-period difference Δ_k	4-period difference Δ_k	4-period difference Δ_k
	log(Revenue)	log(Revenue)	log(Revenue)	log(Revenue)	log(Revenue)	log(Revenue)	log(Revenue)
Shadow Lobbyists (All)	0.195*** (0.062)		0.186*** (0.061)				
Junior Unregistered Ex-Staffers		0.039 (0.077)	0.053 (0.074)				
Junior Registered Ex-Staffers		0.112* (0.064)	0.110* (0.061)				
Δ_k Shadow Lobbyists (All)					0.116*** (0.044)		0.139*** (0.053)
Δ_k Junior Unregistered Ex-Staffers				-0.009 (0.035)	0.009 (0.033)	-0.049 (0.031)	-0.029 (0.033)
Δ_k Junior Registered Ex-Staffers				0.028 (0.044)	0.027 (0.044)	0.024 (0.043)	0.029 (0.043)
Registered Lobbyists	0.068*** (0.005)	0.068*** (0.005)	0.068*** (0.005)				
Δ_k Registered Lobbyists				0.048*** (0.006)	0.049*** (0.006)	0.055*** (0.006)	0.055*** (0.006)
Number of Firms	120	120	120	120	120	119	119
Number of Observations	2613	2613	2613	2358	2358	2120	2120

Notes: We control for firm and time fixed effects in columns (1)-(3). The difference specifications in column (4)-(7) include time fixed effects only (firm effects are differenced out). All standard errors are clustered at the firm level. $*p < 0.10$, $**p < 0.05$, $***p < 0.01$. The variables Shadow Lobbyists (All) and Registered Lobbyists are defined as per the notes in Table 2. The variables Junior Unregistered Ex-Staffers and Junior Registered Ex-Staffers represent counts of junior ex-staffers (Intern, Page, Staff Assistant, Scheduler) employed at the firm. As per main tables, Δ_k denotes where a variable has been differenced across k-periods. Columns (4)-(5) implment 2-period differencing, columns (6)-(7) implement 4-period differencing.

Table A2: Shadow Lobbying and Firm Revenues in Small and Medium-Sized Firms.

	(1)	(2)	(3)	(4)
	log(Revenue)	log(Revenue)	Δ_k log(Revenue)	Δ_k log(Revenue)
A: All Firms <10 Lobbyists Per Period				
Shadow Lobbyists (All)	-0.262 (0.174)	-0.356** (0.148)	-0.031 (0.076)	-0.156 (0.119)
Registered Lobbyists	0.192*** (0.010)	0.192*** (0.010)	0.145*** (0.007)	0.161*** (0.009)
Number of Firms	3870	3870	3313	2691
Number of Obs	39694	39694	30404	24610
B: Firms with (5< Lobbyists Per Period <10)				
Shadow Lobbyists (All)	-0.014 (0.212)	-0.245* (0.145)	0.080 (0.052)	0.076 (0.120)
Registered Lobbyists	0.144*** (0.011)	0.144*** (0.011)	0.100*** (0.008)	0.111*** (0.008)
Number of Firms	185	185	178	171
Number of Obs	3403	3403	2977	2632
C: Firms with (Lobbyists Per Period <5)				
Shadow Lobbyists (All)	-0.441** (0.178)	-0.364** (0.170)	-0.119 (0.111)	-0.293** (0.141)
Registered Lobbyists	0.269*** (0.010)	0.269*** (0.010)	0.199*** (0.009)	0.238*** (0.010)
Number of Firms	3685	3685	3135	2520
Number of Obs	36291	36291	27427	21978

Notes: All standard errors are clustered at the firm level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Panel (A) reports regressions for the sample of firms with 10 or fewer registered lobbyists on average across periods. Panels (B) and (C) then break this up into sub-groups for 5-10 lobbyists and 5 or less lobbyists respectively. The variable Shadow Lobbyists (All) is discrete, count variable in levels for the within groups models in columns(1) and (2). It is then a k-period long difference in columns (3) and (4). The Registered Lobbyists variable follows a similar structure (we do this labeling in order to make the table more compact). Column (3) is a 2-period long difference models while column (4) is a 4-period model.

Table A3: Observable and Unobservable Determinants of Lobbyist-level Revenues

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	log(Revenue)	log(Revenue)	log(Revenue)	log(Revenue)	Worker FE	Worker FE	Worker FE
Revolving Door (All)	0.649*** (0.037)	0.638*** (0.043)	0.690*** (0.041)	na	0.806*** (0.033)	0.734*** (0.040)	0.559*** (0.037)
Staff Director		0.144 (0.143)	0.243* (0.146)			0.362*** (0.139)	0.301** (0.129)
Chief of Staff		0.207*** (0.078)	0.310*** (0.075)			0.298*** (0.076)	0.166** (0.065)
Legislative Director		0.089 (0.080)	0.146* (0.079)			0.134* (0.077)	0.081 (0.068)
Legislative Assistant		-0.118** (0.059)	0.043 (0.059)			0.138** (0.059)	0.073 (0.056)
Ex-Congressman		-0.031 (0.103)	-0.078 (0.096)			-0.105	0.046 (0.091)
Tenure			0.041*** (0.003)		0.043*** (0.002)	0.044*** (0.002)	0.043*** (0.002)
Adjusted R2	0.091	0.092	0.129	0.69	0.219	0.224	0.432
Lobbyist fixed effects	No	No	No	Yes	na	na	na
Firm fixed effects	No	No	No	Yes	No	No	Yes
Number of Firms	120	120	120	120	120	120	120
Number of Lobbyists	3304	3304	3304	3304	3304	3304	3304
Number of Observations	48018	48018	48018	48018	3304	3304	3304

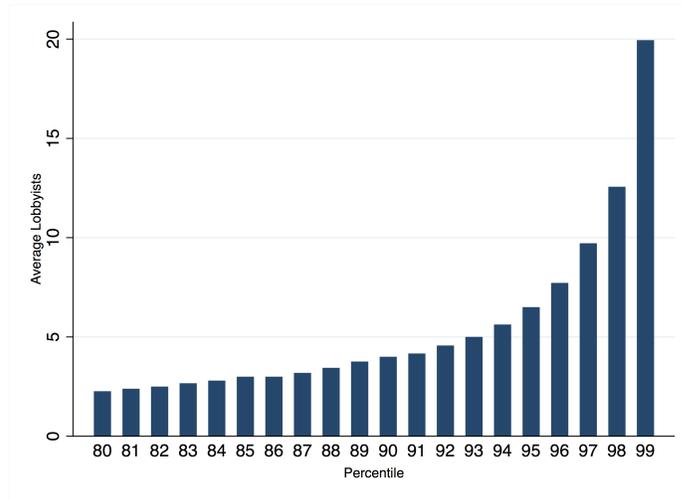
Notes: Columns (1)-(4) estimate lobbyist-level revenue equations for the lobbyists working in our main sample firms. Revolving Door (All) is a dummy for any lobbyist with experience as a Congressional staffer or Congressman. The variables Staff Director, Chief of Staff Legislative Assistant are then dummy variable for whether a lobbyist ever served in that type of position. No coefficients for the positions are defined in column (4) because they are absorbed by the lobbyist fixed effects. Columns (5)-(6) then use estimates of the lobbyist fixed effects as dependent variables. The variable Tenure measures the number of periods a lobbyist has been active in lobbying. This is defined as the total number of periods in Columns (5)-(6).

Table A4: Destinations of a Random Sample of Ex-Congressional Staffers.

Employment Sector	Number Ex-Staffers	% Share
Government	63	0.153
Politics	27	0.066
Deceased	5	0.012
Retired	8	0.019
Legal	42	0.102
University	14	0.034
Private	49	0.119
Lobbying firm (Washington DC)	9	0.022
Non-Corporate Advocacy	2	0.005
Communications	24	0.058
Non-Profit	9	0.022
Health	9	0.022
Education	9	0.022
In-House Lobbying (registred org)	7	0.017
Lobbying firm (outside Washington DC)	11	0.027
Other Type of Employment	15	0.036
Not Found	109	0.265
Total	412	1.000

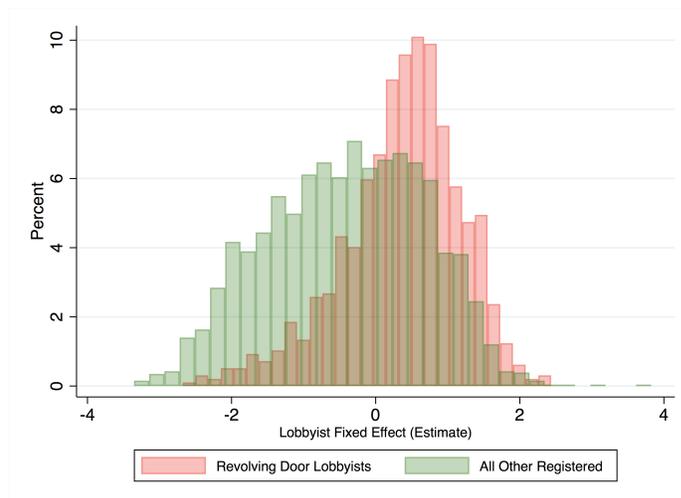
Notes: this table shows the job-destinations of a random sample of 381 workers (corresponding to 20% of our sample, previously employed in Congress occupying positions such as: Chief of Staff (32%), Deputy Chief of Staff (3%), Legislative Director (4%), Legislative Assistant (25%), Communications Director (7%), Legislative Correspondent (28%), and Legislative Counsel (2%). Percentages of job-destinations after Congress do not sum-up to 100%, because some cases the worker switches job and type of industry, or because the position can be defined by two labels (e.g. Government Position in the Health Department). Files containing the manual search, notes, and related links for this random sample of ex-congressional staffers are available upon request. Government positions include security, defense, diplomacy, administration. Politics positions include positions in the White House or non-congressional offices.

Figure 5: Distribution of Firm Sizes.



Notes: The figure shows the distribution of lobbying firm sizes across the 4,616 unique registrants in the lobbying reports data. ‘Firm size’ is defined as the average number of registered lobbyists that a firm reports as active and engaged in lobbying contracts per 6-month reporting period. We plot this number from the 80th percentile onwards. For information, the value at the 50th percentile (median) is 1 while the 75th percentile value is 2 lobbyists.

Figure 6: Distribution of Lobbyist Fixed Effect Estimates.



Notes: The figure shows the distribution of lobbyist fixed effect estimates for the sample of 120 large lobbying firms studied in Tables 3-6. This represents 5,631 unique registered lobbyists where 970 are revolving door lobbyists with previous Congressional work experience. We condition on the lobbyist appearing for at least 5 semesters (2.5 years) in the lobbying reports data before estimating the fixed effects.