The Value of Who You Know: Revolving Door Lobbyists and Congressional Staff Connections

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June 20, 2017

Abstract

Building on previous work on lobbying and relationships in Congress, I propose a theory of staff-to-staff connections as a human capital asset for Capitol Hill staff and revolving door lobbyists. Employing comprehensive lobbying disclosure data matched to congressional staff employment histories, I find that the connections these lobbyists maintain to their former Hill coworkers primarily drive their higher relative value as lobbyists. Specifically, a one standard deviation increase in the number of connections predicts $360,000 in additional revenue during a revolving door staffer's first year as a lobbyist. I also find that the indirect connections lobbyists maintain to legislators through knowing a staffer in a legislative office are of potential greater value than a direct connection to a Senator. By shedding additional light onto what individual-level traits the lobbying industry financially rewards, this paper makes an important contribution to the existing literature on lobbying and the revolving door phenomenon.

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1 Introduction

An uncomfortable fact of life in Washington D.C. is the regular transition of Capitol Hill staffers into high paying lobbying jobs on K Street–often for salaries orders of magnitude more than what they earned on the Hill. The so-called "revolving door" creates, at the very least, the perception of perverse incentives for Hill staffers and their bosses. Further exacerbating the incentives to walk through the revolving door are the long hours and low pay that congressional staff face; a recent survey found that 46% of staffers reported they would look for new work within a year because of the "desire to earn more money" (Congressional Management Foundation 2013; The Hill 2013).

The lobbying industry–a $3 billion industry in 2016–capitalizes on staffers' persistent awareness of valuable outside options. The infamous Jack Abramoff, who stated "almost 90 percent" of staff want to work on K Street, would remind staffers in meetings that they could work at his firm once they left the Hill. After that, he said, "they were already working for me" (Abramoff, 2011, 94-95). Recent empirical work provides evidence that lobbying firms reward congressional staff-turned-lobbyists with higher salaries than their colleagues without Hill experience (Blanes I Vidal, Draca and Fons-Rosen, 2012). In essence, if staff are not explicitly "auditioning" for high-dollar jobs once they have the attention of firms, their incentives for doing so are clear.

The evidence indicates a competitive market for forward-looking congressional staff, suggesting a substantial monetary premium for a staffer with optimal Capitol Hill experience. This paper supports this claim, finding that with one or two years of the "right" kind of additional experience on Capitol Hill, the staffer can increase her expected revenue as a lobbyist by $360,000 in her first year lobbying. After establishing the importance of staff connections, I then measure the value of connections to legislators by determining whether the lobbyist previously worked with at least one staffer in the office. I find that connections lobbyists maintain to offices purely through their staff networks are potentially more valuable than a direct connection to a Senator. A one standard deviation increase in these *indirect*

legislator connections predicts $60,000 in additional yearly revenue when compared to only possessing a *direct* connection to a Senator. Lobbying is a connections-driven business, and those lobbyists with the most robust ties to congressional staff are a valuable asset to firms and their clients.

These results provide important context vis-a-vis existing empirical work, which has shown strong evidence for the value of connections to legislators for revolving door lobbyists (e.g., Blanes I Vidal, Draca and Fons-Rosen, 2012; Bertrand, Bombardini and Trebbi, 2014). However, beyond who the lobbyist worked for on Capitol Hill, to date we know very little about individual-level attributes that the lobbying industry desires in who they hire. This is an important missing piece of the revolving door lobbying story, especially when considering anecdotal evidence of certain staffers pulling in seven figure salaries in their first year off the Hill.[1] Why do firms and clients pay such high sums for former Capitol Hill staffers? What specific traits and types of former Hill staffers do firms value and why? Does it only matter who you used to work for? Employing a comprehensive dataset of lobbying disclosure reports matched to congressional staff employment histories from 2000-2016, I bring new data to bear on these questions.

Additionally, by emphasizing the importance of these lobbyists' congressional staff experience, I show that the focus on connections to legislators is, to a large degree, misplaced. To motivate why this is true, I argue for a theory of lobbying that emphasizes connections, but one where the specific type of connections most valuable for lobbyists are those the lobbyist maintains with their former Capitol Hill coworkers. Time spent as a congressional staffer is a "credentialing experience" that provides the staffer the ability to cultivate unique professional experience and human capital assets (Salisbury and Shepsle, 1981, p.383). Professional networks are a specific asset of a congressional staffer's larger human capital–one that is particularly beneficial in the lobbying industry. As a result, clients are willing to pay

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[1]This is up to 10 times what the staffer made as a Capitol Hill employee, where most senior staff earn around $100,000 a year. http://thehill.com/business-a-lobbying/168709-lobbyists-took-100k-cut-in-pay-to-work-on-the-hill

more for lobbyists with more staff-to-staff connections than they are for lobbyists with fewer such connections.

In sum, existing work paints a picture of revolving door lobbying that suggests firms and their clients desire ex-staffers primarily because they maintain personal connections to members of Congress. Once that connection is removed, their differential value decreases (for Senate staffers, Blanes I Vidal, Draca and Fons-Rosen (2012) show a 24% decrease in revenue). In other words, staffers are desirable lobbyists because of an apparent patron-client relationship with their former boss. Below, I argue that this story overemphasizes the value of legislator connections because it ignores their experience as Hill staffers. Through focusing on the unique experience revolvers gained by working on Capitol Hill, facilitated by matching lobbying disclosure reports to congressional employment records, I show a clear and substantial monetary premium associated with larger staff-to-staff networks. Specifically, a one standard deviation increase in connections over the mean predicts an increase in $360,000 in lobbying revenue in one six month period. I also show evidence that *indirect* connections to legislators, as measured by knowing a staff member in the office, are of potentially greater value to lobbyists (at the mean number of these connections) than possessing a direct link to a legislator via former employment.

The results presented in this paper support the importance of connections for revolving door lobbyists. However, contrary to previous work, the connections firms and their clients most value are those the lobbyist maintains with their former Capitol Hill coworkers. Through shedding new light onto the determinants of monetary value in the lobbying industry, this paper suggests access to key legislative actors (congressional staffers), not necessarily the legislator themselves, is of importance to high-paying private interests. Moreover, this story aligns with previous work on the importance of connections versus expertise in lobbying (e.g., Bertrand, Bombardini and Trebbi, 2014; Cain and Drutman, 2014). An expert lobbyist will not be effective if they cannot also get their message in front of the necessary actors, so a connected lobbyist earns the marginal dollar in the lobbying industry.

This paper proceeds as follows. First, I discuss existing work on lobbying, the revolving door, congressional staff, and relationships in Congress and build a theory of lobbying that emphasizes on the unique role of congressional staff to establish testable hypotheses. Next, I detail the available data and empirical strategy for testing these hypotheses. Using a comprehensive dataset of congressional staff employment records matched to lobbying disclosure filings from 2000-2016, the largest set of data yet employed in empirical revolving door lobbying research, I test the hypotheses, discuss the result, and address alternative explanations for the findings. I conclude with thoughts on the contribution of this study to the existing lobbying literature and our understanding of the revolving door phenomenon. These findings have important normative implications for congressional capacity (e.g., Lowi, 1979) and policymakers seeking to reform staffing issues in Congress.

2 Lobbying, Congressional Staff and Personal Connections

Though the empirical work on revolving door lobbying is still relatively new, extant political science theories on lobbying provide a solid foundation from which to build a theory of revolving door lobbying. This section motivates a theory of personal connections as a valuable human capital asset for revolving door lobbyists by first considering what previous literature theorizes lobbyists do and then by applying this framework to revolving door lobbyists in particular. The result is a theory of connections in revolving door lobbying that focuses on the specific experience of congressional staffers and that lends itself to simple empirical tests.

2.1 Lobbying and the Importance of Who You Know in Congress

Political science literature on the role of lobbyists has a rich theoretical tradition. A substantial body of work focuses on the the informational role of lobbying, arguing that lobbyists utilize their expertise and resources to provide information to resource-constrained legisla-

tors (e.g., Austen-Smith and Wright, 1992, 1994; Ainsworth, 1993, 1997; Hall and Deardorff, 2006; Cotton, 2015; Schnakenberg, 2016). A key tenet of these theories is that lobbyists must first gain access to legislators in order for legislators to trust their information and adequately lower transaction costs–conceptually, they must establish a relationship (see also Hirsch and Montagnes, 2015, on the importance of trust in lobbying). Many scholars conceptualize a quid pro quo arrangement with donations as how lobbyists gain access and build trust (e.g., Wright, 1989; Chin, Bond and Geva, 2000; Cotton, 2009), though empirically identifying the effect of donations is difficult due to issues with endogeneity and homophily (e.g., Baumgartner and Leech, 1998; Hojnacki and Kimball, 1998, 1999; Ansolabehere, De Figueiredo and Snyder, 2003). Hall and Deardorff (2006) note that lobbyists primarily target their legislative allies with their efforts, since these legislators have the lowest 'cost' of attaining access, and develop a theory of legislative subsidy. In essence, "lobbyists serve as 'service bureaus' or 'adjuncts to staff"'(Hall and Deardorff, 2006, p.76).

Taken together, this research suggests that lobbyists primarily target their legislative allies–though not always (e.g., Holyoke, 2003; Kelleher and Yackee, 2009)–and those who are best capable of providing expertise to resource-constrained congressional offices and staff are likely to be the most effective lobbyists. Connections are valuable because they lower the transaction costs for legislators to validate the information provided by the lobbyists (they are more likely to trust a former staffer than a stranger) while simultaneously facilitating the job of a lobbyist gaining access to an office in the first place. In the words of John Boehner, "absent our personal, long-standing relationships" with lobbyists, it is impossible for lawmakers to know who to trust (2006). McGrath (2006, p.74) quotes one lobbyist on the importance of relationships: "Lobbying in particular is very relationship driven...There are three important things to know about lobbying: contacts, contacts, contacts."

The value of revolving door lobbyists becomes evident in this context; they have personal connections through previous employment and thoroughly understand the legislative process. In theories of informational and legislative subsidy lobbying, these traits are imperative for

an effective lobbyist to possess. Moreover, existing work employing social network analysis provides evidence that personal relationships affect policy outcomes and legislative activity in Congress (e.g., Koger, Masket and Noel (2009); Ringe, Victor and Carman (2013); Canen and Trebbi (2016); see also Victor and Koger (2016), which examines networks lobbyists create with legislators through donations). Who you know in Congress matters, and lobbyists benefit from having connections to key actors within the legislative process in order to cheaply (in terms of transaction costs) build relationships with members and offices. Given the empirical importance of relationships and the demands placed on congressional offices and their staff (discussed more below), lobbyists with experience as congressional staffers are best able to provide this service and will be the most valuable to firms and their clients. These empirical regularities support theories of informational and legislative subsidy lobbying, and in the next section I detail why revolving door lobbyists are uniquely qualified in this context. But what type of connections are optimal for revolving door lobbyists and why?

2.2 Revolving Door Lobbying and Legislator Connections

Existing work on revolving door lobbying has shown consistent evidence that these lobbyists are unique among the larger population of their peers in terms of what they work on (e.g., LaPira and Thomas, forthcoming; Lazarus and McKay, N.d.) and how they are financially rewarded (e.g., Blanes I Vidal, Draca and Fons-Rosen, 2012; Bertrand, Bombardini and Trebbi, 2014). Additionally, extant research suggests lobbyists who maintain connections to lawmakers garner the highest revenue in the lobbying industry, demonstrating firms and their clients are willing to pay for high quality access (e.g., LaPira and Thomas, 2014; LaPira, Thomas and Baumgartner, 2014).

Recent empirical work has shown strong support for the claim that revolving door lobbyists' value derives from a connection to members of Congress. Blanes I Vidal, Draca and Fons-Rosen (2012) demonstrate that when former Senate staffers lose a connection to the senator for whom they previously worked, they suffer a 24% drop in revenue, which equates

to about \$182,000 a year. Measuring connections as donations from lobbyists to lawmakers, Bertrand, Bombardini and Trebbi (2014) show that lobbyists are primarily valued for their connections to a lawmaker (compared to those who do not have connections) and that lobbyists tend to work in the same policy areas as the lawmakers to whom they are connected.

These findings fit nicely into the aforementioned theories of lobbying and the importance of relationships in Congress. If relationships determine the ability of a lobbyist to work with a legislator and/or her office, then this should be financially rewarded in the lobbying industry. The evidence points to this being the case, indicating that revolving door lobbyists are both more effective lobbyists and see higher relative value when they maintain Capitol Hill connections.

However, thinking about the microfoundations of the previously mentioned theories begins to complicate this story. Lawmakers are significantly constrained in their resources and time (e.g., Grim and Siddiqui, 2013), leaving the vast majority of the day-to-day legislative work to their staff. Further, research and journalistic accounts on congressional staff indicates their independence and influence in the legislative process. Why, exactly, are connections to legislators valuable? Should other types of connections that lobbyists cultivated through Capitol Hill employment be of higher value under similar logic? The next section provides further detail on the role of congressional staff in Congress to suggest that previous work has misplaced its emphasis on the value of legislator connections relative to congressional staff connections.

2.3   Congressional Staff as Lobbyists

Since revolving door lobbyists were once themselves congressional staffers, a story of these lobbyists that does not take into account their employment as public employees misses a key facet of their human capital. Moreover, once we consider their Capitol Hill experience it becomes clear that their differential value in the lobbying industry is more complicated than whether or not they maintain a connection to a lawmaker.

Extant scholarship on congressional staff emphasizes their importance as political actors possessing substantial agency within Congress (e.g., Fox and Hammond, 1977; Malbin, 1980; Salisbury and Shepsle, 1981; DeGregorio, 1988; Hall, 1998; Montgomery and Nyhan, 2016). But what makes a staffer an effective lobbyist? One approach to answering this question is to analyze what types of experience the lobbying industry financially rewards. A key trait of successful staffers and lobbyists is proactivity. For staff, this entails seeking out legislative opportunities for their boss and knowing what is going on in Capitol Hill before everyone else does. Praising two staffers-turned-lobbyists, Rep. Patrick McHenry said the former chiefs of staff "had an uncanny ability to read the pulse of the chambers and think three steps ahead on any given situation" (Wilson, 2014). Building a network to other staffers and offices is one of the best methods to cultivate this trait.

But how do staff build their professional networks on Capitol Hill? Two common and observable paths include extended tenure in one office or moving around the Hill to gain experience in various offices. The first option is potentially problematic for some. Working your way up as a junior staffer relies on people above you leaving (offices cannot create new openings, since they are not allocated additional funding) and your boss may lose an election. A common target of motivated staff is also key policy portfolios–typically the portfolio of the member's committee assignment. Without turnover at this position, it is possible an otherwise qualified staffer may wait years for such a position. You can build a reputation and relationships in one office, but an ambitious staffer may choose the second option.

Jumping offices can speed up the likelihood of landing a key assignment, increase salaries, and build a professional network more quickly. However, the ability to leave one congressional office for another is also a function of your existing connections. The more people you know, the easier it will be to get interviews for new job openings. Building connections in congress represent a positive feedback loop: the more peole you know, the easier it will be to increase your connections.

For lobbyists, their relationships on the Hill–that they cultivated during their time as

staffers–facilitate their new responsibilities. In the language of informational lobbying, relationships lower the transaction costs of working with legislators and their staff, which is beneficial for both parties (e.g., Ainsworth, 1997). Legislators–and by extension their staff–who have a personal relationship with a lobbyist find it "cheaper" to work with the lobbyist. Once lobbyists have established their bona fides with an office and its staff, they can proceed to effectively subsidize the office, in a Hall and Deardorff (2006) sense. Thus, extensive connections to other staff is a vital human capital asset for a staffer-turned-lobbyist.

From the perspective of the firm seeking to hire a lobbyist and the client who pays the contract, they will want to ensure the lobbyist they hire has access to key legislators working on their respective issues (e.g., telecommunications, which could entail appropriations, regulatory policy, and tax policy, among others). The firm who employs the lobbyists knows the best avenue for access is through relationships of former staffers to current staffers. Firms are deeply knowledgeable about the legislative process and understand that the bulk of work is done by the unseen staffers. Therefore when considering who to place on a valuable account, the firm wants the lobbyist with the most connections to key offices, and those connections come through staff-to-former staff connections. When legislators begin to consider new policy, the client's perspectives and recommendations will get recognition at the initial stages–through former staff (now lobbyists) influencing the current staff writing the policy (providing a legislative subsidy).

In sum, revolving door lobbyists' connections to their former staff coworkers are vital for the task of lobbying. Staff are influential in the policymaking process, and access to the key staffer for a policy initiative is an ideal way to get your client's concerns heard. In the words of Rep. John Boehner's former chief of staff, "the most effective lobbyists are the people that have actually been in the position of the people they're lobbying" (Wilson, 2014). Further, the personal relationships the lobbyist maintains with their former coworkers lowers the transaction costs of working with an office, and the more connections the lobbyist has the more likely they will know the right person in the right office. A lobbyist with more

extensive ties to staffers earns the marginal dollar over less-connected lobbyists because they can establish these relationships with more offices.

Hypothesis 1: *Revolving door lobbyists with more connections to congressional staffers will earn more revenue as lobbyists.*

Additionally, the specific type of staff connection may matter. In the previous example, the most valuable point of access for complex regulatory policy may be at the committee level. Some research suggests lobbyists are particularly interested in targeting committees (e.g., Hojnacki and Kimball, 1998; Hall and Deardorff, 2006; Bertrand, Bombardini and Trebbi, 2014). Cain and Drutman (2014) find that the demand for lobbyists with committee experience increased after new regulations made it harder for lobbying firms to hire senior congressional staff. To date, though, no work has analyzed the value of committee connections for lobbyists. This leads to an additional testable hypothesis:

Hypothesis 1a: *Revolving door lobbyists with more connections to committee staffers will earn more revenue as lobbyists.*

Finally, why might connections to legislators be valuable? The above discussion emphasizes the importance and independence of staff in the policymaking process in the context of resource and time constrained elected lawmakers. Since the revolving door lobbyists themselves were once congressional staff their most extensive relationships will be with the staff with whom they previously worked, not necessarily with the member herself. Lobbyists, who have gained access to the office through their personal relationships, work with the *staff* first and foremost. In this context, the value of direct ties to legislators becomes less clear. If lobbyists rely on their connections for access to offices, then their most extensive connections–those they have with their former coworkers–should be the most valuable.

However, a legislator connection could be valuable for two reasons. First, some staff will have genuinely personal relationships with their former boss, particularly if they built a career in one office. If they are able to sell this connection as an asset when seeking lobbying

jobs then it is feasible firms and clients would also be interested in securing close, personal access to certain legislators and pay more for that connection. Second, firms themselves can advertise legislator connections to clients. For instance, a firm hires a well-known senator's chief of staff. It can then sell to clients that they deserve the contract over a competitor because of this new asset.

Nevertheless, I argue for the prominence of staff connections in driving lobbyist value. While a firm may be able to advertise a legislator connection, it also knows when hiring a lobbyist and placing her on a contract that she will still have to perform as a lobbyist. And as previously detailed, the task of lobbying requires extensive ties at the staff level and the marginal dollar will be rewarded to the lobbyist with the most staff connections. In other words, the legislator connection is an added benefit for the lobbyist; the connections they maintain with staff both serve to get their proverbial foot in the door and facilitate the task of informational/subsidy lobbying. A lobbyist with both legislator connections and staff connections should benefit from legislator connections and staff connections, though staff relationships should be the more valuable asset. This leads to the final hypothesis:

Hypothesis 2a: A large congressional staff network will be more valuable than a direct legislator connection for a lobbyist.

Staffers build relationships to catalyze their careers on Capitol Hill which optimizes their likelihood of landing high-dollar lobbying jobs. Further, extensive networks drive the primary variation in lobbyist value as personal connections are the key human capital asset for revolving door lobbyists. Personal relationships with congressional offices enable lobbyists to perform the informational and subsidy tasks of lobbying. Lobbying firms, who deeply understand the workings of Congress, appreciate the value of connections for staff, hiring the best-connected lobbyists and placing them on the highest-value contracts. Finally, contrary to previous work, I argue that the value of legislator connections is overemphasized, and that it is of relatively less value than staff connections. The next section discusses the data and

measurements used to test the hypotheses presented in this section.

3   Data and Empirical Strategy

To identify the value of congressional staff connections for revolving door lobbyists, I need data covering lobbying revenue and employment and congressional staff employment history. Ideally we would have data on lobbyists' salaries, but beyond a handful of journalistic accounts these data are not available. Fortunately, though, the 1995 Lobbying Disclosure Act (LDA) mandated that lobbying firms report their lobbying activity, including the names of individual lobbyists and the revenue that clients pay firms for lobbying activity. The raw data includes over 4.5 million observations. This section details the use of this dataset, matched with congressional staff employment histories, and its strengths and limitations. I then discuss my identification strategy that follows directly from the previously discusses hypotheses that will allow me to make inferences about the value of congressional staff ties for revolving door lobbyists.

3.1   Data Overview

The analyses in this paper use a comprehensive dataset from 2000-2016 of congressional staff employment records matched to the database of lobbying reports released under the LDA. These data are publicly available; the congressional employment records come from quarterly disbursements released by the House and Senate, and the LDA data is available online also via the House and Senate websites. However, this dataset was matched and cleaned by *Legistorm* (2016) in order to clear up the numerous discrepancies and inconsistencies in the raw data. Legistorm, among other tasks, individually checks all congressional staffers' names (and the numerous variations of their names) against names in the LDA data[2]. Because of the extensive manual matching done by Legistorm and the 2000-2016 time period, this is

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[2]An example is in the appendix.

the most comprehensive dataset used in the literature to date.[3] Table 1 shows summary statistics of the overall data, and Table 2 disaggregates the summary statistics based on certain lobbyist characteristics.

Table 1: Summary Statistics - Revolving Door Lobbyists

Statistic	Mean	St. Dev.	Min	Median	Max
Inflation Adjusted Lobbying Revenue	731,675	1,152,915	5,145	329,975	17,714,418
(log) Lobbying Revenue	12.6	1.4	8.6	12.7	16.7
Total Connections	70.3	58.2	1	56	568
Committee Staff Connections	35.1	57.2	1	1	369
Committee Staffer Dummy Variable	0.38	0.48	0	0	1
Republican	0.41	0.49	0	0	1
Legislative Staff	0.48	0.50	0	0	1
Junior Staff	0.11	0.31	0	0	1
Press Staff	0.04	0.19	0	0	1
Graduate Degree	0.55	0.50	0	1	1
Previous Govt. Experience	0.09	0.28	0	0	1

Note: 2,524 Observations.

This represents the subset of revolving door lobbyists who work for firms, as opposed to in-house lobbyists. The data are then further filtered to exclude lobbyists for whom there is not a complete history of congressional staff employment, determined by removing lobbyists whose first congressional staff record was in the year 2000 – the first year in the dataset – since employment prior to 2000 is unobservable in the data (i.e., the data are left-censored). However, connections are still observable if, for instance, a lobbyist first begins in 2001, since employment data exists for the year 2000. As a result, there are also no lobbyist observations for the year 2000. Lobbying revenue was adjusted for inflation to 2016 dollars. Note that education information is available for about 65% of the sample.

My analysis focuses on revolving door lobbyists who work for lobbying firms. I exclude in-house lobbyists from this analysis since revenue for these lobbyists is not reported in LDA disclosures.[4] The revenue attributed to firm lobbyists has meaningful interpretation as reflecting some level of personal worth of the lobbyist's individual production. An interesting

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[3]To clarify, Legistorm created this dataset from the same raw data employed by Blanes I Vidal, Draca and Fons-Rosen (2012) and in some of the analysis of Bertrand, Bombardini and Trebbi (2014). Additionally, other studies use a cleaned version of this data published by OpenSecrets.org. However, this dataset is more comprehensive because a) it captures a longer timeframe, from 2000-2016 and b) contains detailed backgrounds of revolving door lobbyists (i.e., specific offices in which they worked, their job titles, education, etc.).

[4]In-house lobbyists are lobbyists employed by a company to work solely for that company. For instance GM may keep lobbyists on its staff and pay them internally, but it may also hire firms for specific lobbying efforts.

Table 2: Connections Summary Statistics - Revolving Door Lobbyists

Revolving Door Lobbyists	
Total lobbyists	2,524
Fraction with Senate experience	.60
Mean Staff-Office connections	6.3
Most common first lobby year	2007
Lobbyists with Legislator Connections	
Total Lobbyists	1,796
Fraction with a legislator connection	.71
Mean staff connections	69.1
Fraction with House connections	.36
Mean staff connections	51.6
Fraction with > 1 House connections	.08
Mean staff connections	66
Fraction with Senate connections	.41
Mean staff connections	88.2
Fraction with > 1 Senate connections	.04
Mean staff connections	127.2
Lobbyists without Legislator Connections	
Fraction without a legislator connection	.29
Mean staff connections	73.4
Lobbyists with Committee Experience	
Total Lobbyists	950
Fraction with Cmte. experience	.38
Mean staff connections	109.7
Fraction with Cmte. and Member experience	.18
Mean staff connections	126.1

The fractions presented in this table represent fractions of the whole (2,524) lobbyist sample. Staff-Office connections are the connections lobbyists maintain to legislative offices purely via their staff network (discussed more below).

question for future work is if certain characteristics of a congressional staffer predict whether they become a firm lobbyist or an in-house lobbyist.

The LDA data merits additional discussion. The dependent variable comes directly from a field on the LDA reports and is composed of revenue attributed to individual lobbyists aggregated up to semester-level periods. Lobbyists registered under the LDA must report information about their lobbying activities, including revenue for firms lobbying on behalf of a client, or expenses for in-house lobbyists. The revenue is attributed to each lobbyist who works on a specific contract on each report filed. For example, if five lobbyists are on one report that states $50,000 in revenue, each lobbyist has an observation in the data for that report and $50,000 is associated with their name. Following the convention in other empirical work (e.g., Blanes I Vidal, Draca and Fons-Rosen, 2012; Bertrand, Bombardini and Trebbi, 2014), I attribute the total amount of revenue for the report to each lobbyist. In this example, that means each lobbyist will be associated with $50,000 from that report.

I also believe this is an appropriate, if not ideal, way to measure lobbyist value. While salary information would be optimal (and would allow me to extend this analysis to a larger population of lobbyists), this measure captures something close and theoretically interesting. As argued previously, clients know what they want in terms of outcomes and pay firms differentially based on their ability to deliver. Firms place their "best" lobbyists–as I argue, those with the most staff connections–on their most lucrative accounts. Therefore, contract value is an appropriate proxy for lobbyist value.

3.2   Empirical Strategy

The empirical strategy I employ is straightforward. The purpose of these models is to test if the number of connections a revolving door congressional staffer has to other currently serving congressional staffers predicts the revenue they earn in their first year as a lobbyist. Focusing on the lobbyist's first year facilitates a clearer substantive interpretation of the results, since this is when they are most valuable based on their Capitol Hill experience.

Basing the analysis on the first year as a lobbyist isolates their Capitol Hill experience as the trait driving the most variation in their revenue. This also supports the idea that congressional staff are in a sense auditioning for these jobs, so they will advertise their Hill background to potential employers as their most recent experience. Thus, the revenue totals for the first year lobbying are most reflective of the lobbyist's individual Hill background. Significant positive results for this model would support the hypothesis that lobbyists with more extensive ties to staffers are of higher value to lobbying firms. The baseline model is as follows:

$$\log \boldsymbol{R}_i = \beta \cdot \log \mathbf{N}_i + \mathbf{X}_i' \cdot \theta + \gamma_t + \epsilon_i \tag{1}$$

In this OLS model, $\boldsymbol{R}_i$, the outcome variable of interest, is the highest log dollar amount (adjusted for inflation) of revenue per individual lobbyist among their first two periods in the lobbying data after leaving Capitol Hill.[5] The key independent variable, $\mathbf{N_i}$ (`Number of Connections`), is a logged measure of a lobbyist's network as a count.[6] For example, a congressional staffer leaves Capitol Hill to become a lobbyist after a long career and 100 of her former coworkers are still congressional staffers in her first year as a lobbyist. The $\mathbf{N}$ for this lobbyist takes on the (logged) value of 100.[7] Note that one is added to independent variable (before taking the log) because of the presence of some zeros in the data.[8]

In an alternative specification of these models, I substitute $\mathbf{N}_i$ for a count of the unique *legislative offices* (`Staff-Office Connections`) the lobbyist is connected to *only through staff*. Similarly to the staff network variable, this is constructed based on all unique legislative offices within which a staffer in the lobbyist's network works during the lobbyist's first year. This count does not include offices that the lobbyist herself worked in. As my argument

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[5]Further detail and robustness checks on this variable are included in the appendix.

[6]Since the data are right-skewed, I log this variable to account for skewed residuals. I discuss this more in the results.

[7]All unique connections, as measured by anybody the lobbyist worked with (in the same office) at any period as a staffer, are collected and then filtered down to those who remain congressional staffers in the first year the lobbyist appears in the lobbying data. So if a lobbyist takes a 10 year break before lobbying after leaving Capitol Hill, they will have fewer connections that someone who does not take a break.

[8]There are very few zeroes and, after examination, the lobbyists with zero connections are lobbyists who have a substantial gap between their last year as a staffer and their first year as a lobbyist.

suggests that staff connections are relatively more valuable than legislator connections, this model variation identifies the predicted value of a legislator connection that exists only because the lobbyist knows a staffer in the office.

The vector $\mathbf{X}_i'$ captures individual level covariates. `Republican` is a dummy variable set to one if the lobbyist, as a staffer, ever worked for a Republican. This allows me to delineate different partisanship preferences in the lobbying industry. I also include a dummy variable set to one if the staffer has experience working on a committee (`Ever Committee Staff`) since previous literature has found a higher demand for committee staff as lobbyists (Cain and Drutman, 2014), and a broad literature has established the institutional importance of committees in Congress (e.g., Shepsle, 1978; Lazarus, 2010; Berry and Fowler, 2015). Committee offices are also larger on average, so this adjusts for the larger networks of committee staff.

An additional variable (`Ever Senate Staff`) accounts for the chamber the lobbyist worked in as a staffer, which is set to one if they worked in the Senate. This is also important since Senate staff generally have higher numbers of connections, and I will be able to assess the difference in chamber preferences in the lobbying industry. Finally, I take the title of the last job the lobbyist held as a Hill staffer and bin them based on broad categories of seniority and responsibility[9]. Without these controls, it would be impossible to make inferences about the value of connections since certain job titles and experience (e.g., legislative staff or senior staff) could account for the bulk of the variation in lobbying revenue. This is also a substantive contribution of this paper, since previous work does not have detailed information about the lobbyist's background as a Hill staffer.

The γ_t and ϵ_i variables represent year fixed-effects[10] and a vector of individual specific, mean zero residuals, respectively. Finally, in order to account for the possibility that individual firms drive all of the variation in lobbying revenue, I report models with firm fixed-effects.

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[9]This process is very similar to the one described in Montgomery and Nyhan (2016) and Madonna and Ostrander (N.d.). Further detail is in the appendix.

[10]Year fixed-effects account for any potential year to year fluctuations related to the economy, changes in partisan control of government, or other idiosyncrasies strictly due to timing.

This is a demanding inclusion because there are over 1,000 firms represented in my data of 2,524 observations.

I include an additional set of models in order to identify the additional value of legislator connections for these lobbyists. These models include the same covariates as equation 1 but now include an additional count variable for House and Senate connections, respectively. Formally:

$$\log \boldsymbol{R}_i = \beta_1 \cdot \log \mathbf{N}_i + \beta_2 \mathbf{HC}_i + \beta_3 \mathbf{SC}_i + \mathbf{X}'_i \cdot \theta + \gamma_t + \epsilon_i \tag{2}$$

I include individual count variables, $\mathbf{HC}_i$ and $\mathbf{SC}_i$ for whether a lobbyist maintains a connection to a member of the House or a Senator, as determined by whether a legislator for whom they worked is in office during their first period as a lobbyist. As previous work suggests substantial value for legislator connections (Blanes I Vidal, Draca and Fons-Rosen (2012) find a connection to a Senator predicts \$182,000 in additional revenue for the lobbyist in a year), the inclusion of this measure allows me to assess the value of a legislator connection conditional on the lobbyist's larger professional network.

The second part of Hypothesis 1 predicts that lobbyists with connections to committee staffers garner higher premia as lobbyists because of the pivotal role committees play in the legislative process. I rerun models of the form of equation 1 on the entire set of lobbyists, but I change the independent variable to the number of connections to committee staffers rather than the total number of connections.

It is worth noting the possibility of measurement error in the independent variable. Since my data starts in 2000, I do not have employment history of those prior to this period and thus cannot accurately count connections for congressional staff with employment history prior to 2000. I attempt to mitigate this possibility by subsetting my sample from the nearly 3,500 revolving door firm lobbyists to a smaller set for which I can reasonably assume I have full coverage of their congressional staffer careers. If this still misses some staffers–which it undoubtedly does–it would mean I am under-counting connections for certain lobbyists. Fortunately, this would bias my results in a downward direction.

Additionally, one could be concerned that this count of connections systematically misses the actual size of staffers' relevant networks. For example, perhaps committee staff are systematically under-counted because of the nature of working on a committee introduces them to more staffers, whereas the House and Senate staff counts are more accurate. I do not believe this to be the case. For instance, in Table 2 we see that, on average, staffers with House experience know fewer staffers than those with Senate experience and those with committee experience. Senate staffers and committee staffers should possess more staff connections given the relatively larger size of their offices, which is the case in these data. I also account for these different offices in the models that follow, so it is possible to predict the variation in lobbyist revenue as a function of network size given these concerns. In sum, this measure has reasonable face validity.

4   Results

This section presents results from three sets of models. Table 3 shows the results from regressions in the form of equation 1 that includes the number of total connections, and then the number of committee connections, as the independent variable and a number of covariates. Table 4 includes legislator connections and legislative office connections. I then account for some possible alternative explanations of these results and present plausible robustness checks.

4.1   The Value of a Congressional Connections

The motivating argument in this paper is that lobbyists benefit from extensive ties to their former congressional staff colleagues. The more of these ties, the more valuable they should be as lobbyists. Table 3 shows the results from the first series of models with total congressional staff connections as the independent variable in Models 1-3, directly assessing the first hypothesis. In Model 4, I change the independent variable to a count of committee staff

connections (`Num. Cmte. Connections`). The second part of Hypothesis 1 argues that connections to committee staff should also be valuable, given the importance of committees and their staff in Congress. Model 4 tests this by isolating committee staff connections for lobbyists and including this count as the independent variable. The results show strong support for both elements of the first hypothesis.

Table 3: Total Connections and Lobbying Revenue

	(log) Highest First Year Lobbying Revenue			
	(1)	(2)	(3)	(4)
Number of Connections	0.274***	0.395***	0.339***	
	(0.029)	(0.037)	(0.036)	
Num. Cmte. Connections				0.301***
				(0.051)
Ever Committee Staff		−0.309***	−0.259***	−1.215***
		(0.069)	(0.067)	(0.222)
Republican		−0.042	−0.116**	−0.089
		(0.057)	(0.056)	(0.057)
Ever Senate Staff		−0.216***	−0.188***	−0.009
		(0.060)	(0.059)	(0.056)
Legislative Staff			0.356***	0.430***
			(0.065)	(0.065)
Senior Staff			0.730***	0.863***
			(0.080)	(0.081)
Press Staff			−0.226	−0.227
			(0.156)	(0.160)
N	2,524	2,524	2,524	2,524
R^2	0.073	0.085	0.120	0.102
Adjusted R^2	0.067	0.078	0.112	0.094

*p < .1; **p < .05; ***p < .01

All models include year fixed-effects and robust standard errors are reported in parentheses. The Number of Connections and Num. Cmte. Connections variable is a logged count of total connections.

The models show statistically and substantively significant results. Though the dependent and independent variables are logged, the coefficients on `Number of Connections` and `Num. Cmte. Connections` can roughly be interpreted as the percentage increase in revenue given a one percent increase in connections. Since the dependent variable here is only
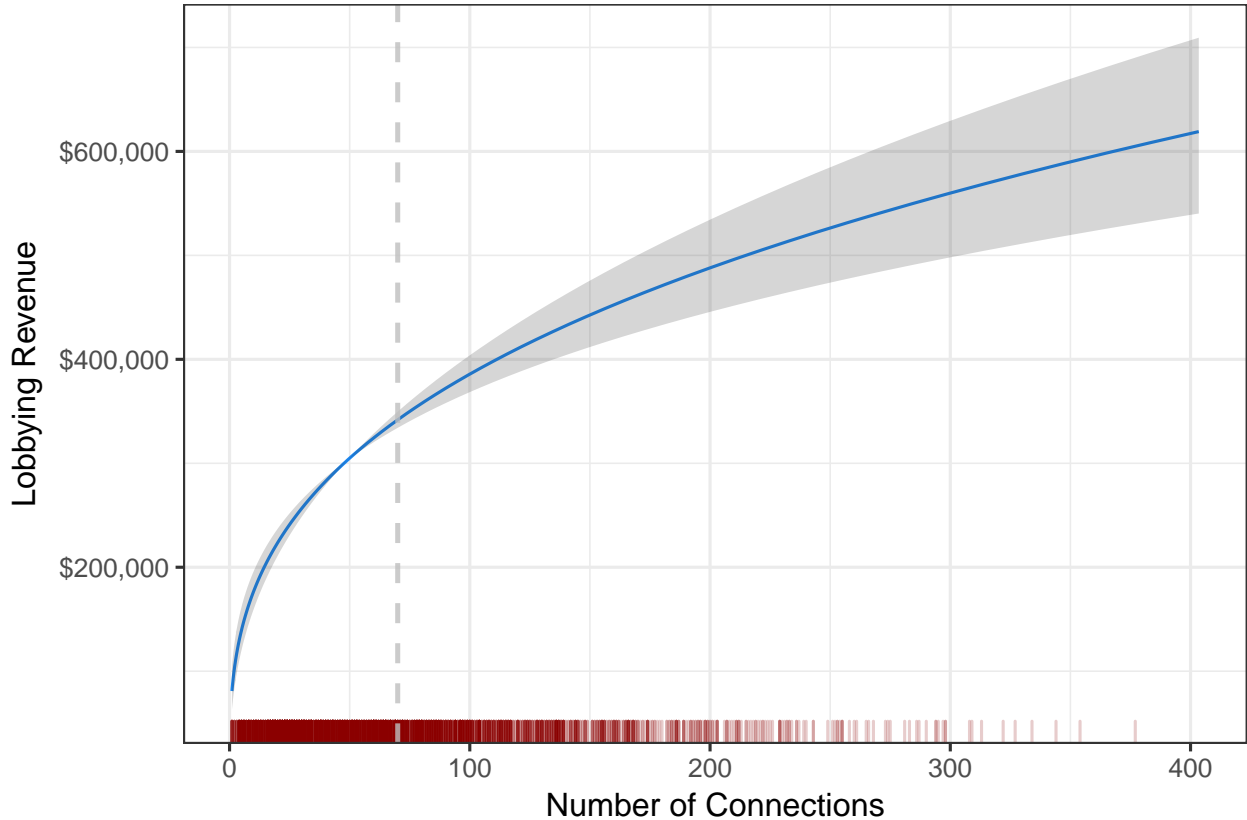
Figure 1: Total Connections and Lobbying Revenue

This figure plots results from Model 3 in Table 3, holding all variables other than the connections count at their mean. The distribution of connections is plotted along the x-axis. The mean of the independent variable is marked by the dashed line. Note: there are two observations with connections counts greater than 400. I censored this figure at 400 for aesthetic purposes.

one six month period, the revenue totals would be doubled to approximate total yearly revenue. Figure 1 presents these results more intuitively. When holding all variables other than the staff connections count at their mean, an increase in staff connections by one standard deviation over the mean number of connections predicts over $155,000 in additional revenue in the lobbyist's first year. However, for lobbyists with certain backgrounds (i.e., some of the coefficients are now zero instead of at their mean) this difference is more pronounced. For a lobbyist who worked for a Democrat in the House as a legislative staffer, and not on a committee, a one standard deviation increase over the mean predicts roughly $360,000 in additional revenue.

Model 4 shows value in committee staff connections as well. One explanation for the large negative coefficient on the committee staff dummy variable is that committee staffers themselves are not valued as "connections lobbyists." However, these results still support the hypothesis that connections to committee staffers are valuable, but they appear to only be valuable for staff from personal offices.

Table 4: Staff Connections, Legislator Connections, and Lobbying Revenue

	(log) Highest First Year Lobbying Revenue				
	(1)	(2)	(3)	(4)	(5)
Number of Connections		0.264***	0.338***	0.316***	
		(0.031)	(0.041)	(0.040)	
Staff-Office Connections					0.025***
					(0.006)
House Connection	0.187***	0.191***	0.119**	0.027	0.032
	(0.046)	(0.046)	(0.051)	(0.051)	(0.055)
Senate Connection	0.281***	0.125**	0.160**	0.087	0.192***
	(0.051)	(0.054)	(0.071)	(0.071)	(0.069)
Ever Committee Staff			−0.197**	−0.214***	0.170***
			(0.078)	(0.077)	(0.064)
Republican			−0.083	−0.130**	−0.191***
			(0.057)	(0.057)	(0.057)
Ever Senate Staff			−0.222***	−0.222***	−0.180**
			(0.080)	(0.079)	(0.081)
Legislative Staff				0.348***	0.360***
				(0.065)	(0.067)
Senior Staff				0.710***	0.672***
				(0.084)	(0.086)
Press Staff				−0.233	−0.270*
				(0.156)	(0.160)
N	2,524	2,524	2,524	2,524	2,524
R^2	0.057	0.083	0.089	0.120	0.104
Adjusted R^2	0.051	0.076	0.081	0.112	0.096

*p < .1; **p < .05; ***p < .01

All models include year fixed-effects and robust standard errors are reported in parentheses. The House and Senate connections variables are counts of the total number of Representatives/Senators still in Congress, that the lobbyist worked for, during their first period as a lobbyist. Staff-Office Connections is a count of the number of legislative offices a lobbyist is connected to via their staff network.

Table 4 presents models which include counts for a connection to a legislator and indirect connections to legislative offices via the lobbyist's staff relationships, allowing me to test my second hypothesis about the relative value of a connection to legislators. The coefficient on the number of total connections remains close to the Table 3 models. In Models 1 and 2 we see what existing work (e.g., Blanes I Vidal, Draca and Fons-Rosen, 2012; Bertrand, Bombardini and Trebbi, 2014) would predict–a legislator connection predicts an increase in revenue and Senate connections are the most valuable. Models 2 through 4 show that the number of staffers a lobbyist knows is significantly predictive of higher lobbying revenue. Model 5 introduces the Staff-Office Connections variable to assess the value of indirect legislator connections. Figure 2 plots of the results from Model 5 as predicted revenue.

Once I include as controls the highest position the staffer worked on Capitol Hill, the predicted value of legislator connections drops and is no longer statistically different form zero. These individual-level covariates were not included in previous studies, and the results here indicate that they were important omitted variables. Lobbyists who worked as senior staffers on the Hill no longer benefit from direct connections to Senators. However, the size of their staff network is still substantially predictive of higher revenue, providing further evidence of the importance of maintaining congressional staff connections.

Model 5 in Table 4 employs a different independent variable (`Staff-Office Connections`). As previously noted, this measures the number of unique legislators lobbyists are indirectly connected to by knowing a staff member in the office. The coefficient on this variable is that for each additional staff-office connection gained the predicted revenue increases by roughly 2.5%. At 8 indirect connections (the mean is 6) the predicted revenue is roughly the same as possessing a Senator connection, so indirect legislator connections are about 12.5% the value of one direct Senator connection. Further, a one standard deviation (6) increase over the mean of this variable (also 6) predicts roughly $85,000 in additional yearly revenue. A substantive interpretation of this finding, however, is to compare the value of staff-office connections to a Senator connection (plotted as the dotted line in Figure 2). At 12 *indi-*
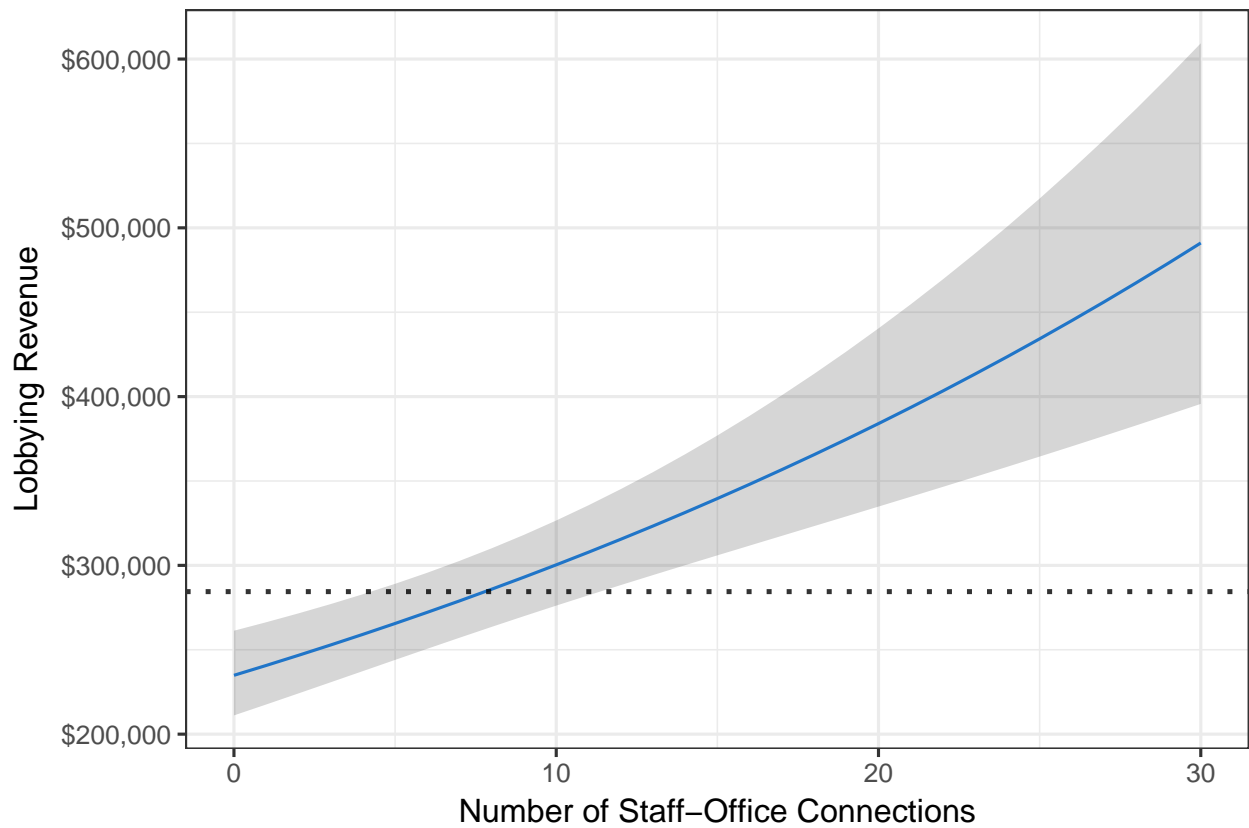
Figure 2: Legislator Connections via Staff and Lobbying Revenue

This figure plots the predicted value of a connection to a legislative office that lobbyists maintain via their congressional staff network (as described above). The dotted line is the predicted value of possessing a connection to a Senator, holding the staff-office connections at zero (i.e., you are only connected to your previous employer and no other offices). The mean value of staff-office connections in the data is roughly 6, and a standard deviation is also 6.

rect legislator connections (a one standard deviation increase over the mean), the predicted yearly revenue is over $60,000 greater than maintaining a *direct* Senator connection. In other words, the lobbyist is relatively better off gaining more staff connections compared to gaining a Senate connection. The staffer faced with a) leaving the Hill while their boss is still in office or b) staying on the Hill for another year or two to gain additional connections even if their boss is leaving office (or might lose an election) is better off choosing the second option.

4.2   Alternative Explanations

There are a few alternative explanations for the findings presented above. First, it is possible that the number of connections is just a proxy for the years of experience a staffer has on Capitol Hill. As staff gain experience on Capitol Hill, they likely also gain connections. However, this is not necessarily the case, as I outlined in Section 2. Some staff purposefully expand their networks. Others try to build a career in one office, or the office they work in has low turnover, lowering the count of staffers they know. To address this I include models with a count of the lobbyist's years of Hill experience and years of Hill experience squared. Models 1 and 2 in Table 5 shows that the value of staff connections is somewhat attenuated, but the coefficient is still highly significant and the substantive interpretation remains the same

Second, as De Figueiredo and Richter (2013) correctly note, studies of lobbying often cannot account for the overall "ability" of the lobbyist. So it is possible that when I control for aspects of ability the variation in revenue driven by connections diminishes. Unfortunately measuring lobbying ability is difficult at best. Given the available data, I employ two measures that, to some degree, should capture whether a person may have improved "lobbying ability". Specifically, I include dummy variables for possessing a graduate degree and whether the lobbyist had previous executive branch work experience (e.g., in the White House or an agency). Possessing a graduate degree may benefit the lobbyist by giving them additional,

specific knowledge in certain policy areas (for example, a Master of Public Health degree may add additional value ot the lobbyist due to their expertise in health policy). Similarly, having previous experience in the federal government may endow the lobbyist with difficult to obtain, agency-specific information and facilitate the job of informational lobbying. These do not capture lobbyist ability precisely, but they do begin to address the concerns De Figueiredo and Richter (2013) raise because they should correlate with an individual's overall competence. Models 3 and 4 show that the inclusion of these variables do not change the results.

Third, certain large lobbying firms may be hiring all of the well-connected lobbyists and rewarding them with much larger salaries. In other words, certain firms may account for the variation in revenue. One could imagine that all of the big firms "buy out" the best-connected lobbyists, and that these firms are also the ones that have the biggest contracts. Firm-level fixed-effects can help alleviate this concern, if the results are maintained within the firm. Models 5 and 6 show results including firm fixed-effects with standard errors clustered at the firm level. Despite the demanding inclusion of firm fixed-effects, which amount to over 1,000 additional dummy variables, it is heartening that the results are substantively similar to the initial models. Moreover, the value of staff connections, though again somewhat attenuated, remain precisely estimated despite the loss in degrees of freedom.[11]

Across almost all alternative specifications the primary results remain significant and of a similar magnitude. Years of Hill experience does have a positive relationship with revenue, but the other variables of interest remain largely unchanged. Including indicators for graduate degree and previous government work experience also do not change the results. Finally, the demanding inclusion of firm-level fixed-effects does somewhat shrink the size and precision of the results, but this is expected given the cost in terms of degrees of freedom resulting from including so many dummy variables. More importantly, the network size

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[11]One could imagine a similar story for the last office the lobbyist worked in on the Hill. For instance, the bulk of the high-valued lobbyists could only be coming from a handful of member offices or committees. In the appendix I include robustness checks that model last office fixed-effects.

Table 5: Alternative Explanations for Predicting Lobbying Revenue

	(log) Highest First Year Lobbying Revenue					
	(1)	(2)	(3)	(4)	(5)	(6)
Number of Connections	0.270***	0.248***	0.333***	0.301***	0.202***	0.174***
	(0.040)	(0.044)	(0.046)	(0.050)	(0.043)	(0.049)
House Connection		0.015		0.018		0.075
		(0.051)		(0.058)		(0.051)
Senate Connection		0.087		0.135*		0.088
		(0.071)		(0.080)		(0.080)
Ever Committee Staff	-0.257***	-0.217***	-0.286***	-0.231**	-0.198**	-0.139
	(0.068)	(0.077)	(0.082)	(0.092)	(0.080)	(0.088)
Republican	-0.132**	-0.144**	-0.112	-0.130*	-0.026	-0.047
	(0.056)	(0.057)	(0.069)	(0.069)	(0.067)	(0.067)
Ever Senate Staff	-0.175***	-0.219***	-0.183**	-0.255***	-0.107	-0.109
	(0.059)	(0.079)	(0.072)	(0.094)	(0.068)	(0.089)
Legislative Staff	0.304***	0.297***	0.368***	0.361***	0.167**	0.152*
	(0.067)	(0.068)	(0.085)	(0.086)	(0.083)	(0.083)
Senior Staff	0.605***	0.591***	0.705***	0.684***	0.492***	0.453***
	(0.087)	(0.090)	(0.098)	(0.103)	(0.095)	(0.097)
Press Staff	-0.262*	-0.268*	-0.139	-0.142	0.014	0.009
	(0.157)	(0.157)	(0.203)	(0.204)	(0.177)	(0.176)
Years of Hill Experience	0.069*	0.069*				
	(0.036)	(0.036)				
Years of Hill Exp. (squared)	-0.002	-0.002				
	(0.003)	(0.003)				
Graduate Degree			-0.090	-0.087		
			(0.066)	(0.066)		
Previous Govt. Exper.			0.010	0.020		
			(0.101)	(0.101)		
Firm Fixed Effects?	No	No	No	No	Yes	Yes
N	2,524	2,524	1,665	1,665	2,524	2,524
R²	0.125	0.126	0.136	0.138	0.739	0.740
Adjusted R²	0.117	0.117	0.123	0.124	0.536	0.537

*p < .1; **p < .05; ***p < .01

All models include year fixed-effects and robust standard errors are reported in parentheses. The independent variable is the number of connections a lobbyist has to congressional staffers. Models 3 and 4 are run on a subset of the larger data for which exists education information. Models 5 and 6 include firm-level fixed-effects and standard errors are clustered at the firm level.

variable is still significant at conventional levels.[12]

5   Discussion & Conclusion

This paper has argued that revolving door lobbyists primarily work in an informational role through providing a legislative subsidy. As the theory suggests, lowering the transaction costs associated with establishing relationships to congressional offices facilitates the job of a lobbyist. Revolving door lobbyists are specifically well suited for this task given the key role of congressional staff in the legislative process. These lobbyists benefit from personal relationships with their former colleagues on Capitol Hill – a specific type of human capital unique to revolving door lobbyists – that translates into higher value for firms and lobbying clients.

The empirical results strongly support this story of revolving door lobbying, showing evidence through lobbying revenue that staff connections are highly valued in the lobbying industry. I find that, on average, a one standard deviation increase over the mean number of staff connections predicts $155,000 in additional revenue in the lobbyist's first year off the Hill. For some lobbyists – for example, a Democratic staffer without Senate or committee experience – this figure increases to $360,000. These sums are substantial. While I am cautious to tie these numbers directly to salary, it is not a stretch to imagine such a large gap in revenue translates into higher personal income in a direct way. In short, the lobbying industry places a high price tag on lobbyists that are well-connected to congressional staff.

This analysis also allows me to address existing work on revolving door lobbyists. Specifically, Blanes I Vidal, Draca and Fons-Rosen (2012) find a 24% increase in lobbying revenue associated with a direct tie, via former employment, to a Senator. I find evidence for this result, but when I extend the analysis to include staff connections and individual covariates, the only significant predictors of revenue are the staff connections and individual indicators of Hill experience (e.g., job title, committee experience). I then extend the logic of valuable staff

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[12]Additional robustness checks are presented in the appendix.

connections by examining the connections lobbyists possess to legislators only by knowing a staffer in the office. At one standard deviation above the mean of this type of connection, I find that *indirect* ties to legislators via their staff is predicted to be worth $60,000 more than a direct link to a Senator. Finally, all of these results are robust to variations in model specifications and hold under plausible alternative explanations. What lobbying firms value, and who they reward the marginal dollar to, is lobbyists with more substantial networks on Capitol Hill, regardless of whether they have a connection via former employment.

This study progresses our understanding of the political economy of public sector careers – a vital first step towards answering some of the larger questions in studies of lobbying and private influence in public policy. Among these questions are: is expertise more valuable or do connections drive higher premia for lobbyists? What are lobbyists actually doing when they lobby? How do lobbyists influence the policymaking process? This paper has not solved the connections versus expertise debate, though it presents some suggestive evidence that connections are highly desirable by lobbying firms and their clients. The value I find in indirect ties to legislators via staff is particularly revealing. Future research with more detailed measures of lobbyist expertise is needed to further address this question.

What inferences do we draw from the substantially large monetary value of connections for revolving door lobbyists? The very large premium associated with connections to congressional staffers suggests that gaining access to the legislative process and its key actors is what firms and their clients value. The high revenue attributed to former congressional staffers who become lobbyists, which increases even further based on their Capitol Hill connections, supports the theory of lobbying as a legislative subsidy. Facilitating access to legislators and their staff seems to be an important trait in the lobbyists K Street hires. This finding has increased salience in an era of low congressional capacity, where anecdotal evidence points to lobbyists filling in for staffers (see for example Williams, 2017).

Finally, what insights can we gain from the political economy of the careers of congressional staffers on how lobbying influences public policy? On the one hand, attractive outside

options could induce staffers to work harder for their boss (and the public interest) in order to convince future employers of their ability (e.g., Kedia et al., 2015). The draw of lucrative private employment could induce staffers to place higher importance on private concerns over the public interest. Absent substantial reform, the sheer value of the outside option for underpaid staff will create, at the least, the perception of perverse incentives for them to "audition" for lucrative private-sector jobs while on the public payroll. The asymmetry in salaries and salary growth available to Hill staffers when compared to the private sector, combined with the increasing cost of living in Washington, D.C., exacerbate these incentives. While building institutional expertise could be a net social good (e.g., the mechanism in Gailmard and Patty, 2007), Congress needs to bolster its resources to incentivize these public employees to keep their abilities on Capitol Hill. In sum, this prima facie evidence is strongly suggestive of the influence of privately-funded interests in public policymaking and ascertaining what firms and their clients value in the lobbyists they hire is a promising method for more systematic analyses of these questions.

There remains many unanswered questions in the study of lobbying and the revolving door to which this study contributes. For instance, little work currently exists on individual-specific human capital of congressional staffers or lobbyists. Adding more granular measures of these attributes would provide greater insight into who is driven to lobbying and who is successful once there. Also, do revolving door lobbyists continue to rely on connections once they become established lobbyists, or do they develop an additional sort of human capital over time while working in the lobbying industry? A careful panel data analysis would shed light on this question. Additionally, it is likely that certain connections are more valuable than others, a question that lends itself clearly to a more involved social network analysis research design. Finally, what is the relationship between the draw of the outside option – the revolving door – and congressional capacity? Does the regular turnover of staff to higher paying, private sector jobs affect Congress' ability to do its job? Ultimately, the sheer magnitude of the dollar figures associated with walking through the revolving door

demonstrate the importance of further research on revolving door lobbying. Analyses such as the one in this paper help us eventually shed light onto these questions by understanding the labor market and the incentives to which public employees respond.

6 Appendix

6.1 Job Titles

The decisions on how to code staff positions in this paper are largely based on the processes described in Montgomery and Nyhan (2016), Cain and Drutman (2014) and Madonna and Ostrander (N.d.). Fortunately, this process was made easier because of the extensive cleaning of the data done by Legistorm. The tables below detail the list of job titles for each category of position.

Table 6: Senior Staff Position Titles

Chief of Staff*
Legislative Director

*anything containing "Chief of Staff" and not "assistant to"

Table 7: Legislative Staff Position Titles

Legislative Correspondent
Legislative Assistant*
Legislative Aide*
Legislative Coordinator
Legislative Adviser
Policy Analyst
Legislative Fellow
Policy Adviser*
Senior Adviser*
Policy Aide
Policy Director
Director of Policy
Policy Coordinator
Counsel
Policy Specialist
Research Assistant
Policy Analyst
Fellow*
Law Clerk
Research Director
Legislative Research Assistant
Legislative Clerk
Legislative Analyst
U.S. Senate Aide
National Security Adviser
Special Adviser
Appropriations Associate
Legislative Associate
Senior Legislative Associate
Legal Fellow
Transition Aide
Appropriations Director
Adviser
Legislative Liaison

*anything containing

Table 8: Administrative Staff Position Titles

Assistant to*
Executive Assistant
Special Assistant*
Office Manager
Systems Administrator
Employee, Temporary
Administrative Assistant
Receptionist
Administrative Director
Executive Assistant/Office Manager
Assistant to the Senator
Personal Assistant
Systems Manager
Personal Secretary
Director of Administration
Office Administrator
Computer Operator
Secretary
Financial Administrator
Office Coordinator
Special Assistant to the Senator
Archivist
Office Manager/Executive Assistant
Office Page
Front Office Coordinator
Computer Specialist
Director of Information Technology
Data Entry Clerk
Special Projects Assistant
Special Projects Manager
Office Manager/Systems Administrator
Data Entry Specialist
Executive Secretary
Assistant Office Manager
Deputy Systems Administrator
Webmaster
Secretary/Receptionist
Digital Director
Senior Executive Assistant

*anything containing

Table 9: Press Staff Position Titles

Press*
Media*
Communications*
Speechwriter
Public Affairs*
Writer

*anything containing

Table 10: Junior Staff Position Titles

Staff Assistant
Intern
Part-Time
Page

7 Data Description

The data employed in this paper comes from the firm Legistorm. Legistorm takes the raw, publicly available lobbying disclosure data from the House and Senate and cleans then matches it to separate data, also from the House and Senate, detailing congressional staff disbursements. The staff disbursement data includes office, job title and salary information about individual staffers.

Cleaning the lobbying and staff disbursement data is important for this analysis. For instance, the same staffer in one disbursement might be Joe M. Smith but in another may be Joseph Michael Smith. This problem is exacerbated in the LDA reports because of the large number of observations and even larger heterogeneity in how names are reported from report to report. Legistorm unifies these to be the same person (when it is in fact the same person) and assigns them a unique identifier which is present across lobbying reports and congressional employment records.

Additionally, the data are available beginning in 1998, but I begin my analysis in 2000. Legistorm and the Congressional Research Service have suggested that there may be systematic problems in which individual records made it online, since the initial recordings were

done on paper and then manually entered online in the early 2000s by federal employees. These years are excluded from my analysis.

A density plot of the staff connections variable and a histogram of the staff-office connections variable are included in Figures 3 and 4, respecitvely.
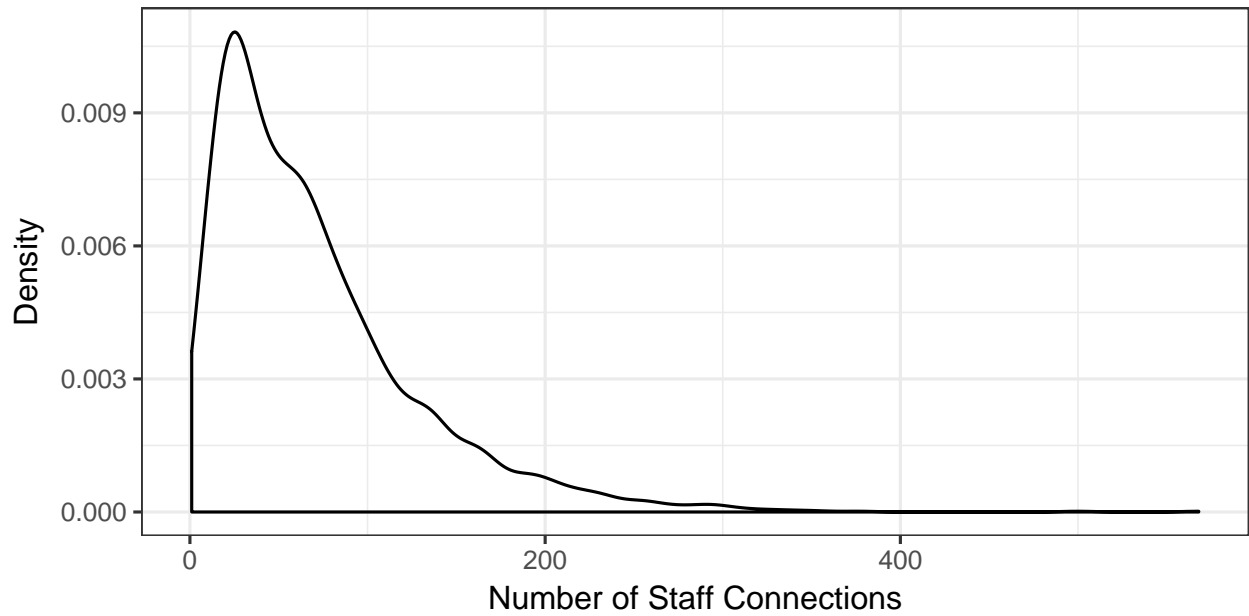
Figure 3: Density of Congressional Staff Connections

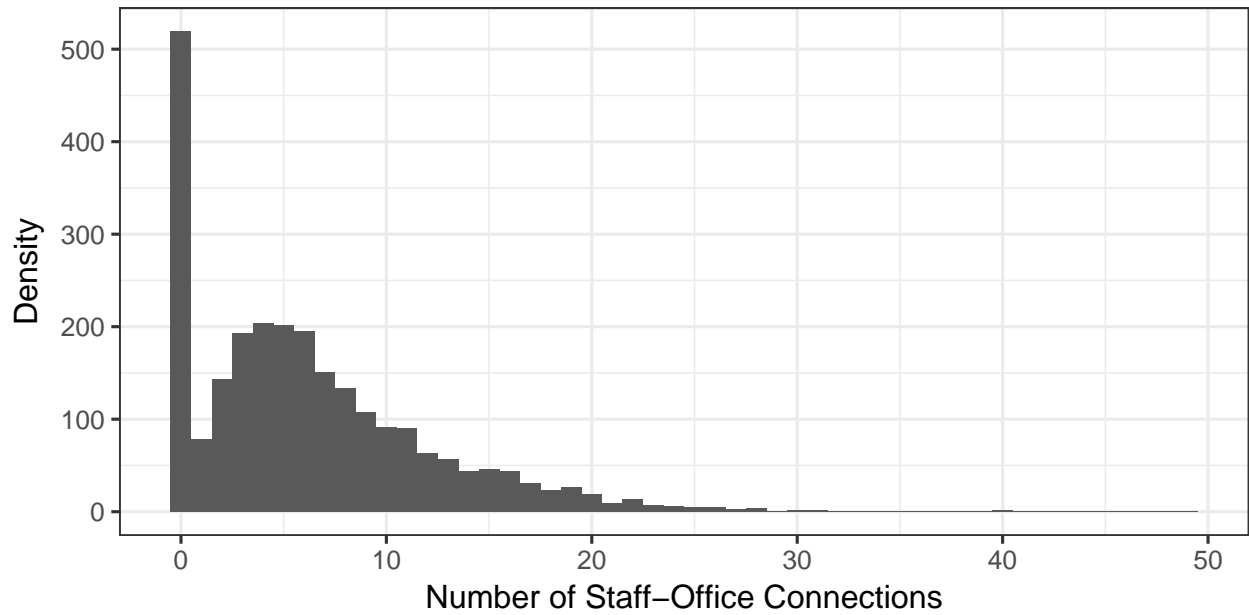*This is the untransformed density of the congressional staff connections independent variable.*

Figure 4: Density of Staff-Office Connections

7.1 Coding Decisions

I chose to operationalize the outcome variable as the highest (six month) period of lobbying revenue during the lobbyist's first year because it avoids possible measurement error related to idiosyncrasies in how revenue is reported. For instance, a lobbyist may have zero revenue in their first period because they are not yet attributed to contracts due to joining the firm late in the quarter/semester. In robustness checks, reported in Table 11, I ran the same models using aggregate first year lobbying totals and the results do not substantively change. Nonetheless, I believe the dependent variable I employ here is the most accurate and substantively interesting.

To code which staff shared offices with other staff to create the staff networks independent variable I largely relied on the data as it is structured. However, I made two important decisions. First, I chose to include staff who work in leadership offices with staff who work in that member's personal office. For instance, staff who work for Speaker Paul Ryan are also coded to have worked in his personal office (for the time period he served as Speaker). Second, I found a common accounting method used for Senate staff that places them in an "office" which does not actually exist. The office is called the "Senate Resolution and Reorganization Reserve." This is done purely for accounting reasons while Senators staff up after elections but before taking office (or after sudden death of the Senator in order to keep the staff on payroll). I removed observations with this office title from the data so as not to over count the size of these staffers networks.

Previous government work experience is coded as having worked for any executive branch office, including agencies or the White House. The full list of workplaces includes a string that contained any of the following: "U.S. Office of Personnel Management", "U.S. Securities and Exchange Commission", "U.S. Environmental Protection Agency", "U.S. Chamber of Commerce", "U.S. Embassy", "U.S. Attorney", "White House", "U.S. Department", "Centers for Medicare and Medicaid", "Congressional Budget Office", "Congressional Research Service", "Federal Reserve System", "Office of Management and Budget", "Office of the Secre-

tary of Defense", "Office of the U.S. Attorney General", "Office of the U.S. Trade Representative", "Office of the Vice President", "Social Security Administration", "U.S. General Services Administration", "U.S. Government Accountability Office", "U.S. Immigration and Customs Enforcement", "U.S. International Trade Commission", "U.S. Small Business Administration".

I manually checked the entire list of previous work experience for the lobbyists in the data. The office titles listed here include people who work in sub-agencies within the larger agency. For instance, if somebody worked for the International Trade Commission it would show up in the data as having worked for the U.S. Department of Commerce.

Other relevant coding decisions are discussed in the paper.

7.2   Additional Robustness Checks

Table 11 accounts for two possible threats to the results presented previously. In Models 1 and 2, I remove outliers as defined by observations with staff connection counts above three standard deviations over the mean (which equals 275). Since there are 40 observations with abnormally high connection counts, it is possible that they may be skewing the results. These models show that the results maintain. In Models 3 and 4, which include the full data, I change the operationalization of the dependent variable. Instead of using the highest first year lobbying revenue, which takes the highest amount of revenue reported in one of the two six month periods of the lobbyist's first year, I aggregate both periods together. The results are unchanged by using this version of the independent variable.

In Table 12, I include last office fixed-effects. These fixed-effects are measured as dummy variables for the last office each lobbyist in the data worked for on Capitol Hill (e.g., each member office, committee office, etc.). These fixed-effects account for the possibility that only a handful of offices were sending their staff into lucrative lobbying jobs, driving much of the variation in lobbying revenue. Including these fixed effects does not appreciably change the results.

Table 13 replicates the "Alternative Explanations" table in the body of the paper using

the Staff-Office Connections variable as the independent variable. This includes controlling for years of Hill experience, whether the lobbyist holds a graduate degree and/or previous government experience, and introduces lobbying firm fixed-effects. Though there is some attenuation of the coefficient on this variable, it remains statistically significant across all specifications and the substantive interpretation remains unchanged.

Table 11: Removing Outliers and Alternative Dependent Variable

	(log) Highest First Year Lobbying Rev.		(log) Total First Year Lobbying Rev.	
	(1)	(2)	(3)	(4)
Number of Connections	0.340***	0.316***	0.343***	0.316***
	(0.037)	(0.042)	(0.037)	(0.041)
House Connection		0.021		0.036
		(0.051)		(0.051)
Senate Connection		0.091		0.098
		(0.073)		(0.073)
Staff-Office Connections	−0.261***	−0.217***	−0.276***	−0.224***
	(0.068)	(0.078)	(0.069)	(0.079)
Ever Committee Staff	−0.121**	−0.134**	−0.094	−0.110*
	(0.057)	(0.057)	(0.058)	(0.058)
Republican	−0.193***	−0.233***	−0.196***	−0.229***
	(0.060)	(0.080)	(0.061)	(0.081)
Ever Senate Staff	0.355***	0.348***	0.341***	0.330***
	(0.065)	(0.066)	(0.066)	(0.066)
Legislative Staff	0.733***	0.716***	0.723***	0.699***
	(0.081)	(0.084)	(0.082)	(0.086)
Senior Staff	−0.226	−0.231	−0.287*	−0.294*
	(0.156)	(0.157)	(0.165)	(0.166)
N	2,484	2,484	2,524	2,524
R^2	0.120	0.120	0.120	0.121
Adjusted R^2	0.112	0.112	0.112	0.112

*p < .1; **p < .05; ***p < .01

All models include year fixed-effects and robust standard errors are reported in parentheses. Models 1 and 2 remove outliers as defined by observations possessing more than three times the standard deviation above the mean number of staff connections. Models 3 and 4 report an alternative specification of the independent variable, measured as the total first year lobbying revenue instead of the six month period within their first year that reports the highest revenue.

Table 12: Robustness Check – Including Last Office Fixed-Effects

	(log) Highest First Year Lobbying Revenue			
	(1)	(2)	(3)	(4)
Number of Connections	0.364***	0.319***		
	(0.059)	(0.067)		
Staff-Office Connections			0.029***	0.021**
			(0.009)	(0.010)
House Connection		−0.049		−0.030
		(0.080)		(0.084)
Senate Connection		0.198*		0.321***
		(0.103)		(0.102)
Ever Committee Staff	−0.303**	−0.284**	−0.067	−0.081
	(0.124)	(0.126)	(0.123)	(0.121)
Republican	−0.089	−0.144	−0.112	−0.198
	(0.147)	(0.152)	(0.151)	(0.153)
Ever Senate Staff	−0.167	−0.253	−0.060	−0.202
	(0.177)	(0.183)	(0.180)	(0.187)
Legislative Staff	0.336***	0.339***	0.402***	0.393***
	(0.089)	(0.089)	(0.090)	(0.089)
Senior Staff	0.729***	0.734***	0.765***	0.765***
	(0.114)	(0.114)	(0.117)	(0.116)
Press Staff	−0.128	−0.132	−0.135	−0.140
	(0.205)	(0.205)	(0.203)	(0.203)
N	2,524	2,524	2,524	2,524
R^2	0.376	0.378	0.366	0.371
Adjusted R^2	0.104	0.106	0.090	0.096

$^*p < .1$; $^{**}p < .05$; $^{***}p < .01$

All models include year fixed-effects and last office fixed-effects and robust standard errors are reported in parentheses. The last office fixed-effects are measured as a dummy variable for the last office the lobbyist worked in on the Hill (including committees, administrative, and member offices).

Table 13: Robustness Check – Staff-Office Connections

	(log) Highest First Year Lobbying Revenue					
	(1)	(2)	(3)	(4)	(5)	(6)
Staff-Office Connections	0.020***	0.014**	0.032***	0.026***	0.020***	0.013**
	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)	(0.006)
House Connection		0.022		0.005		0.076
		(0.054)		(0.060)		(0.052)
Senate Connection		0.174**		0.184**		0.146*
		(0.069)		(0.080)		(0.076)
Ever Committee Staff	0.026	0.048	0.113	0.128*	0.038	0.062
	(0.066)	(0.067)	(0.073)	(0.074)	(0.074)	(0.074)
Republican	−0.176***	−0.185***	−0.182**	−0.191***	−0.064	−0.077
	(0.057)	(0.057)	(0.071)	(0.070)	(0.068)	(0.068)
Ever Senate Staff	−0.081	−0.181**	−0.082	−0.204**	−0.051	−0.095
	(0.057)	(0.080)	(0.069)	(0.094)	(0.066)	(0.089)
Legislative Staff	0.285***	0.278***	0.386***	0.382***	0.162*	0.150*
	(0.068)	(0.069)	(0.088)	(0.088)	(0.084)	(0.084)
Senior Staff	0.529***	0.521***	0.668***	0.661***	0.448***	0.421***
	(0.088)	(0.090)	(0.103)	(0.105)	(0.097)	(0.098)
Press Staff	−0.313*	−0.314**	−0.180	−0.176	−0.003	−0.004
	(0.160)	(0.160)	(0.210)	(0.211)	(0.178)	(0.178)
Years of Hill Experience	0.133***	0.128***				
	(0.035)	(0.035)				
Years of Hill Exp. (squared)	−0.005*	−0.005*				
	(0.003)	(0.003)				
Graduate Degree			−0.084	−0.083		
			(0.067)	(0.067)		
Previous Govt. Exper.			0.005	0.016		
			(0.103)	(0.103)		
Firm Fixed Effects?	No	No	No	No	Yes	Yes
N	2,524	2,524	1,665	1,665	2,524	2,524
R²	0.114	0.116	0.123	0.126	0.736	0.737
Adjusted R²	0.105	0.107	0.110	0.112	0.531	0.532

*p < .1; **p < .05; ***p < .01

All models include year fixed-effects and robust standard errors are reported in parentheses. The independent variable is the number of connections a lobbyist has to congressional offices strictly through staff networks. Models 3 and 4 are run on a subset of the larger data for which exists education information. Models 5 and 6 include firm-level fixed-effects and standard errors are clustered at the firm level.

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