

Legislative Capture? Career Concerns, Revolving Doors, and Policy Biases*

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Abstract

While the majority of research on revolving-door lobbyists centers on the disproportionate amount of influence they exhibit during their post-government careers, relatively little attention is given to questions of whether future career concerns affect the behaviors of revolving-door lobbyists while they are still working in the government. Using comprehensive data on congressional staffers, we find that hiring staffers who later become lobbyists is associated with higher Legislative Effectiveness Scores and increases a member's bill sponsorship in the areas of health, environment, and domestic commerce, the topics most frequently addressed by clients in the lobbying industry. We also find that hiring a future revolving-door staffer is associated with granting more access to lobbying firms, particularly when a revolving-door staffer began their lobbying career at a lobbying firm, rather than as an in-house lobbyist within an organization. All of these results are most consistently observed for lower-level personal staff.

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1 Introduction

The lobbying industry has become a lucrative post-government career choice for many US government officials. The number of lobbying firms and individual lobbyists has drastically increased over time, as the number of interest groups and their political spending has skyrocketed (Rosenthal, 2000; Baumgartner et al., 2009; Schlozman, Verba and Brady, 2012). This robust growth in the lobbying industry has brought changes to the labor market for members of Congress and their staff during their post-government careers. Over time, increased numbers of legislators have shifted to the lobbying world after leaving Congress (Lazarus, McKay and Herbel, 2016; Maske, 2017; Weschle, 2018) and a similar pattern has been observed among congressional staffers (Cain and Drutman, 2014; LaPira and Thomas, 2017).

As this “revolving door” phenomenon has become a more prominent force in American politics, most of the extant literature has focused on whether revolving-door lobbyists have disproportionate access to members of Congress due to their connections, thereby distorting representation and the policymaking process. Connections matter in many contexts, but the value of connections is particularly important in the lobbying industry where access to politicians is considered the most important asset (Langbein, 1986; Austen-Smith, 1995; Lohmann, 1995; Wright, 1990, 1996). Recent empirical papers document that revolving-door lobbyists generate large premiums in lobbying revenues from their political connections (Blanes i Vidal, Draca and Fons-Rosen, 2012; Bertrand, Bombardini and Trebbi, 2014; McCrain, 2017) and have a disproportionately large amount of access to their connected politicians (Kang and You, 2018).

Beyond this dominant focus in the literature, one aspect of the revolving door phenomenon that has received little attention is the potential effects of how future career opportunities as lobbyists may influence legislative activities while people are still serving in the government. Although there is a rich literature on how future career concerns influence the behaviors of regulators (Peltzman, 1976; Laffont and Tirole, 1991), for the most part, this literature does not apply in the context of revolving-door lobbyists from Congress, despite the fact that Congress is the government body producing the highest number of revolving-door lobbyists.¹ The literature on the impact of career concerns on regulatory behavior presents two different predictions regarding the effect of a revolving door on regulators. The “regulatory capture” perspective argues that policy distortion can occur while regulators serve in the government due to their career concerns in expectation of rewards such as future job opportunities in regulated firms (Stigler, 1971). On the other hand, the “regulatory schooling” perspective

¹A few exceptions are Santos (2006) and Egerod (2017).

posits that a revolving door can incentivize regulators to exert more effort to enhance their qualifications thereby increasing their market value for post-government careers (Che, 1995).

The same set of arguments can be applied to Congress members and staffers who intend to become lobbyists in their post-government careers. We could expect that congressional offices, where there are members and staffers who later became lobbyists, may grant more access to their future employers or tailor legislative activities for the benefit of prospective future employers. On the other hand, a potential lucrative lobbying career in the future could incentivize congressional personnel to exert more effort in their legislative activities and develop more expertise on specific issues, thereby increasing their market value for prospective employment in lobbying firms or organizations.

In this paper, we investigate whether future career concerns affect the behaviors of revolving-door lobbyists while they are still working in the government. To do that, we focus on congressional staffers because they account for more than a majority of revolving-door lobbyists, despite having received little attention in the literature on the effects of their career concerns. We assemble a dataset including every employee who was a personal or committee staffer in Congress from 2001 to 2014. In total, there are 97,661 unique records in the dataset. For each staffer, we identify the period during in which she worked for personal offices and congressional committees and the compensation she received from each office. We also identify 4,520 staffers who left Congress and became lobbyists. For those who became lobbyists, we track their lobbying activities, including the first year they submitted a lobbying report and the names of their employers.

One important limitation to using congressional staff as a subject to identify the effect of future lobbying careers on present legislative activities is that we cannot link legislative outcomes directly to staffers. Staffers' efforts and incentives are realized through members' legislative activities and votes. While it is true that staff's behaviors are constrained by their Congress members' priorities and agenda, scholars have noted that members delegate substantial autonomy to their staffers due to their own time constraints (Loomis, 1988; Romzek and Utter, 1997). What is more, as Congressional workloads have significantly increased over time (Curry, 2015) and members of Congress must perpetually campaigning due to fundraising pressures and increased electoral competition (Lee, 2016), there is ample reason to believe that a staffs' efforts and inputs could have significant impacts on member-level legislative outcomes. For example, Congress members who shared senior staff members across Congresses show similar voting patterns and legislative activities (Montgomery and Nyhan, 2017).

Accordingly, we constructed a member-level dataset for congressional offices both in the House of Representatives and the Senate for the period from the 107th through the 113th

Congresses. We examine two particular sets of outcomes to see whether hiring future lobbyists as current staff is associated with behavioral changes in congressional offices. First, we examine members' legislative activities. To do so, we use *Legislative Effectiveness Scores* (LES), which measure members' success in moving a significant and substantive legislation through the Congress (Volden and Wiseman 2014, 2017).² We also examine types of bills that legislators sponsor in Congress using the Congressional Bills Project (Adler and Wilkerson 2017). Given that lobbying clients care more about some issues (e.g., health care) than others (e.g., social welfare), it is possible that staffers' future career concerns could be related to the amount they focus on specific sets of issues. To control for heterogeneity across Congress members in terms of their abilities and preferences for hiring specific types of employees, we include a member fixed effect across all specifications, as well as a congressional fixed effect to control for time trend.

Next, we use data on lobbying contacts with lobbying firms collected from the lobbying filings mandated by the Foreign Agent Registration Act (FARA) for the period between 2007 through 2010. FARA, unlike regulations on domestic lobbying under the Lobbying Disclosure Act (LDA), requires that lobbyists representing foreign entities submit a semi-annual report detailing all lobbying contacts, including information on who, when, why, and how those contacts were made. This allows us to identify whether contacts with lobbying firms are held with staffers as opposed to members, and to connect each staffer with staff-level outcomes. We examine whether employing staffers who later became lobbyists is associated with the amount of access granted to lobbying firms.

First, we find that employing a future revolving-door staffer is associated with increased legislative productivity, particularly in the House. Hiring revolving-door staffers correlates with higher LES of members and the total number of bills sponsored from a member's office. We also find that having a future revolving-door staffer is positively associated with bill sponsorship in the issue areas of health, the environment, and domestic commerce. By dividing staffers into higher- or lower-ranked positions based on their job titles, we find that effects on legislative activities are mainly driven by changes in the number of lower-level personal staff members who later became lobbyists.

Second, we find that, in the House, congressional offices with future revolving-door lobbyists as current employees tend to grant more access to lobbying firms that are prospective future employers of the departing staffers. This effect is also most consistently observed for personal staff members who later started their lobbying career in a lobbying firm as opposed to working in an organization as an in-house lobbyist. We also find that the increased

²"A bill is deemed substantive and significant if it had been the subject of an end-of-the-year write-up in the *Congressional Quarterly Almanac*" (Volden and Wiseman 2014).

number of meetings between a congressional office and lobbying firms are mainly driven by contacts with staffers as opposed to direct contacts with members of Congress.

How should we understand the positive relationship between employment choices that staffers made in their post-congressional careers and legislative outcomes? First, it is possible that this relationship is mainly driven by a member-staffer matching. [Easterling \(2007\)](#) shows that members in Congress display significant variation in their policy analytical capacity. Therefore, for example, members with higher LES may prefer to hire staffers who are more capable in drafting legislation, which could be related to the probability of becoming a lobbyist in the future. Although we include a member fixed effect and time-varying member characteristics, lagged member-level variables could be correlated with the number of staffers who later became lobbyists in a given Congress. We show that this is not the case. A member's lagged LES, committee chairmanship, majority power status, and other important characteristics that could influence legislative outcomes do not predict the number of staffers who later became lobbyists.

Second, career concerns can be the mechanism behind this relationship. Consistent with the regulatory schooling hypothesis, it is possible that staffers who want to appeal to lobbying firms and lobbying organizations might exert more effort, which enables their members to be productive legislatively. Given that offices tend to sponsor more bills on commerce, the environment, and health issues - areas most frequently addressed by lobbying clients - this suggests that staffers who later became lobbyists may tailor their efforts to favor the most popular issues for the lobbying industry. Thus, they would expand the "market" for their skills demanded from lobbying clients by sponsoring more bills and advancing those bills in the legislature ([Zheng 2015](#)). Also, as the regulatory capture theory suggests, it is possible that staff with future career concerns might sell access to lobbying firms to secure future employment.

Third, lobbying firms may hire staffers from the most productive congressional offices measured in terms of legislative outcomes. Regarding the FARA access result, it is also possible that frequent interactions between staffers in member's offices and lobbyists leads staffers to accept jobs in the lobbying industry. If lobbying firms and organizations hire former congressional staff based on legislative outcomes and their personal interactions, this explanation is not mutually exclusive from the career concern mechanism.

Our findings document that there are behavioral differences in congressional offices with staffers who later became lobbyists versus congressional offices with no such staff, both in terms of legislative activities and interactions with lobbying firms. These results provide some support for both the regulatory schooling and capture theories of how future career concerns shape the behaviors of government officials. Future lobbying concerns seem to

inspire staffers to exert greater legislative effort and increase their bosses' overall legislative productivity, while presumably developing their own legislative process expertise on certain issues or expanding markets for their future careers. In this way, we provide compelling evidence that the value of revolving door lobbyists is more than connections; it is also policy process knowledge and skill. Additionally, future career concerns seem to be associated with congressional offices granting more access to lobbying firms.

The ways that outside options affect incentives of human capital accumulation are complex. As Che (1995) argues, job markets in private sectors for ex-government officials have two distinctive effects: *ex ante* effects on human capital accumulation, such as investment in skills and knowledge, and *ex post* effects on using acquired human resources on public versus private purposes. Our findings suggest that policy remedies to the revolving-door phenomenon should consider balancing the positive and negative consequences of the existence of the lobbying industry on incentives for congressional personnel.

2 Congressional Staff and Their Career Concerns

Congressional staff members play a vital role in policymaking in Congress. Members of Congress delegate substantial authority to their staff due to their own time constraints and the complexity of legislative activities (Loomis 1988; Whiteman 1995; Romzek and Utter 1997). Over time, congressional workloads have significantly increased (Curry 2015). Yet, members of Congress must also spend considerable amounts of time fundraising and campaigning during congressional sessions, and therefore, their time for policymaking has become more scarce (Groll and Ellis 2017). Despite these challenges, the number of congressional staff workers has been declining since the early 1990s.³ Figure A1 in the Appendix shows the pattern in terms of staff over time. The number of staff employed in the House is currently 12% lower than it was in 1979. In particular, the number of staff working in policymaking roles has decreased while the number of those working in congressional districts for constituency services has increased over time (Petersen, Reynolds and Wilhelm 2010; Baumgartner and Jones 2015; Lee 2016). The workload borne by individual staffers has clearly increased.

There is evidence that staff wield significant influence on policymaking by how they choose to allocate their time and attention across issues (Hall 1993; DeGregorio 1995; Hammond 1996), with some scholars arguing that congressional staffers are issue leaders (Hammond 1990). Montgomery and Nyhan (2017) present evidence that members who shared senior

³Brookings Institute, 2017, "Vital Statistics on Congress" (<https://www.brookings.edu/multi-chapter-report/vital-statistics-on-congress/>).

staff members across Congresses exhibit similar voting patterns and legislative activities. Staffers for congressional committees are also known to develop expertise on the specific issues under their committees' jurisdictions (Patterson 1970; Romzek and Utter 1996). The degree of influence staffers has thus grown commensurately with their responsibilities.

Despite their significant roles in Congress, congressional staffers' wages have been stagnant or have even declined in real terms (Petersen, Chausow and Wilhelm 2014; Petersen et al. 2015). In contrast, some suggest that lobbying firms pay significantly more to former congressional staff members because they generate significantly higher lobbying revenues for their firms (Birnbaum 2005; Drutman and Furnas 2014). Given the stark difference between lobbying firms and Congress in wages, and staffers' skills are valued in the lobbying industry, it is not surprising that the lobbying industry has become a new home for former congressional staffers over the last decade. One report notes that at least 377 House staffers left Congress to become registered lobbyists over the period between 2009 and 2011 (Drutman 2012). Bertrand, Bombardini and Trebbi (2014) found that around 10% of the 13,720 registered lobbyists about whom they could find background information from www.lobbyists.info had previous work experience in Senators' offices.

The emergence of the lobbying industry and the revolving-door phenomenon generate two main concerns. First, the existence of a market for representation and political access imposes challenges to providing fair opportunities for groups to be represented in the policymaking process. Lobbyists with personal or political connections generate more revenues (Blanes i Vidal, Draca and Fons-Rosen 2012; Bertrand, Bombardini and Trebbi 2014) and revolving-door lobbyists have disproportionate access to Congress members for whom they previously worked (Kang and You 2018). While the media and the public often interpret this by interpreting this empirical pattern as evidence of corruption, it is unclear whether politicians granting disproportionate access to connected lobbyists is a *quid-pro-quo* exchange of contributions or policy favors for access (Grossman and Helpman 1994). Given that connected lobbyists often tend to have more issue expertise or knowledge of political processes, this could be an indication that connected lobbyists provide valuable information to members through better verification technology (Ainsworth 1993; Groll and Ellis 2014) or screening of which interest groups to present to members based on their political merits (Hirsch and Montagnes 2016).

The second concern regarding the rise of the revolving-door phenomenon is that the career concerns of congressional staffers could influence their behaviors while they still serve in the government. Existing literature on how future career concerns influence the behaviors of regulators can inform the study of potential effects of future employment in the lobbying industry on the behaviors of congressional staff. The existing literature on regulators

presents two different predictions regarding the effect of the presence of a revolving door on regulators. The regulatory capture hypothesis argues that policy distortion (i.e., giving favors to regulated firms) can occur while regulators serve in the government due to their career concerns in expectation of rewards such as future job opportunities in regulated firms (Stigler 1971). On the other hand, the regulatory schooling perspective posits that revolving doors can incentivize the regulators to exert more effort to enhance their qualifications and increase their market value in their post-government careers (Che 1995).

The existing empirical studies that have tested these competing predictions present mixed results. Tabakovic and Wollmann (2017) find that examiners at the US Patent and Trademark Office grant significantly more patents to firms that later hire them. Cornaggia, Cornaggia and Xia (2016) find that crediting agency analysts tend to issue higher ratings to firms for which they later worked. In contrast, Lucca, Seru and Trebbi (2014) find that outflow from regulatory agencies to private sector jobs among US banking regulators are higher during periods of intense enforcement and conclude that financial regulators' behavior tends to follow the predictions from the regulatory schooling theory. deHaan et al. (2015) also find that private firms are more likely to hire trial lawyers who were tougher on regulatory enforcement at the SEC.

How would a future career opportunity in the lobbying industry affect behaviors of congressional staffers? The regulatory capture school would predict that congressional offices where there are staffers who later became lobbyists may give more policy favors or access to their future employers - either lobbying firms or organizations - in exchange for future jobs in those organizations. On the other hand, regulatory schooling scholars would predict that there will be changes in the amount of effort exerted by staff to increase their market values, and therefore, we may observe changes in the legislative activities of connected members during the terms of these staffers' careers in Congress. Importantly, however, it is certainly possible that the kinds of legislative activities in which the staffers and members choose to engage may be biased toward specific interest groups or future employers (Hall and Wayman 1990). In this way, even increased legislative productivity may be consistent with the regulatory capture school, if the productivity was biased towards future employers.

Depending on which effect is dominant, the normative implication of the existence of lobbying industry on democracy could be starkly different. If staffers mainly use their government position to sell favors and access to interest groups and lobbying firms to secure their future jobs, this would provide evidence of the public's widespread impression that there is a *quid-pro-quo* type of exchange between government officials and special interests. However, if there is a well-paying private sector where the skills and expertise that staffers accumulate during their tenure in the Congress are highly valued, the existence of the lobbying industry

could attract more talented people into Congress and those people would be incentivized to exert more effort to be highly valued by their future employers. In this situation, much of the public’s and media’s skepticism about the lobbying industry would be misplaced.

3 Data and Stylized Facts

3.1 Congressional Staff Data

We start with the list of all congressional staffers who were enrolled in the payroll system in the US Congress between 2001 and 2014. Legistorm, an online information service that provides information on career histories of congressional staff, assembles the congressional staff salary data from the official records of the House and Senate. Congress publishes a quarterly statement of disbursement (SOD) and the SOD reports all receipts and expenditures for congressional members, committees, and other offices within Congress.⁴ Legistorm supplements the salary data with biographical information for staffers from available sources such as LinkedIn pages.⁵ We purchased the congressional staff data from Legistorm that includes the name of the congressional office, each staffer’s name and title, pay period, and salary paid in that period. We drop staffers if they were interns, part-time or temporary employees, shared employees, or drivers (based on their staff titles) to measure the number of full-time employees in congressional offices. We also drop the staffers whose total number of days worked per Congress is less than 6 months. We aggregate the total salary paid to a staffer from each office by Congress.

Table 1 presents the summary statistics for congressional staffers. Panels A and B present the summary statistics for staffers who worked in members’ personal offices and on congressional standing committees, respectively. On average, more than 13,000 people received a positive payment from personal offices in the Congress in a given term and more than half of the personal staffers were women. The average total compensation in a given term (two years) is around \$90,000. The turnover rate, which indicates the percentage of staffers who were enrolled in the payroll from a member’s office in a given Congress but did not appear on the payroll in the subsequent Congress, is around 37% for personal staffers. Regarding staffers who worked on standing committees in the House and the Senate, the total number of staffers who were enrolled in a payroll in a given Congress is around 2,800 and the percentage of female staffers is around 44%. The average total compensation for a two-year term is around \$135,000 and this is much larger than the average compensation for personal

⁴<https://disbursements.house.gov/archive.shtml>

⁵We have educational attainment information for 35% of the staffers in the payment directory.

staffers. The turnover rate is, on average, 39% across Congresses.

Table 1: Summary Statistics of Congressional Staff

Congress	No. Staff ^a	Female (%)	Average Total Compensation (\$K) ^b	Turnover (%) ^c
<i>Panel A. Personal Office</i>				
107	13,751	56.1	91	37.2
108	14,012	56.1	95	35.3
109	14,303	54.7	93	38.9
110	14,324	54.4	91	36.1
111	14,320	54.5	98	39.3
112	13,793	53.1	94	39.2
113	13,194	52.4	90	-
<i>Panel B. Standing Committee</i>				
107	2,622	44.3	127	37.3
108	2,723	44.3	141	34.9
109	2,822	43.7	135	44.2
110	2,855	45.7	137	36.1
111	3,045	45.4	147	44.2
112	2,755	43.2	134	36.8
113	2,647	43.7	128	-

Note: The unit of observation is staff \times congress. **a.** Total number of personal office staffers who had a payment record and worked more than 6 months. **b.** This is the average total compensation given per congressional term (two years, in 2014 dollar term). **c.** Percentage of staffers enrolled in the payroll in a given Congress but did not appear in the payroll in the subsequent Congress.

3.2 Staff-Turned-Lobbyists Data

Next, we identify staffers-turned-lobbyists from the data on the list of lobbyists from the lobbying disclosure reports filed with the Secretary of the Senate’s Office of Public Records (SOPR) and compiled by The Center for Responsive Politics (www.opensecrets.org). We examine the lobbying reports for the period between 1998 and 2016, given that systematic lobbying data is only available since 1998. If a lobbyist previously worked for the government in any type of position, the list includes a description of that position. Among those descriptions, we select lobbyists with congressional career histories including experience as both personal and committee staff employees in the House and/or Senate. For the selected lobbyists, we use Legistorm to find connected politicians for each lobbyist.⁶

⁶We acknowledge that there were some ex-staffers who did not register as lobbyists, although they were required to do so (Thomas and LaPira 2017). For those ex-staffers, we have no information about when they started lobbying or the clients they represented, which is important information for our analysis. Therefore, we only focus on registered ex-staff-turned-lobbyists.

For each politician-lobbyist pair, we collect information on the year a lobbyist began work in a Congress member’s office and the last year that a lobbyist worked in that member’s office. This allows us to calculate how many future revolving-door lobbyists worked in a member’s office in a given year and how many ‘last-term’ staffers, who became lobbyists in the next congressional session, served the member in a given period. For lobbyists who were personal staffers for Congress members, finding the member connection was straightforward. However, there is a significant fraction of lobbyists who were committee staffers in Congress. Legistorm provides the names of Congress members to whom those lobbyists were connected for some of the cases; but for the majority of the cases, we do not have information about connected members. For those lobbyists, we used information about the time period they served on a specific committee and assign the chairperson of the committee on which that lobbyist worked as a connected politician for a given Congress (Stewart and Woon 2017). We validate the staff-turned-lobbyist’s career descriptions with the actual salary data.

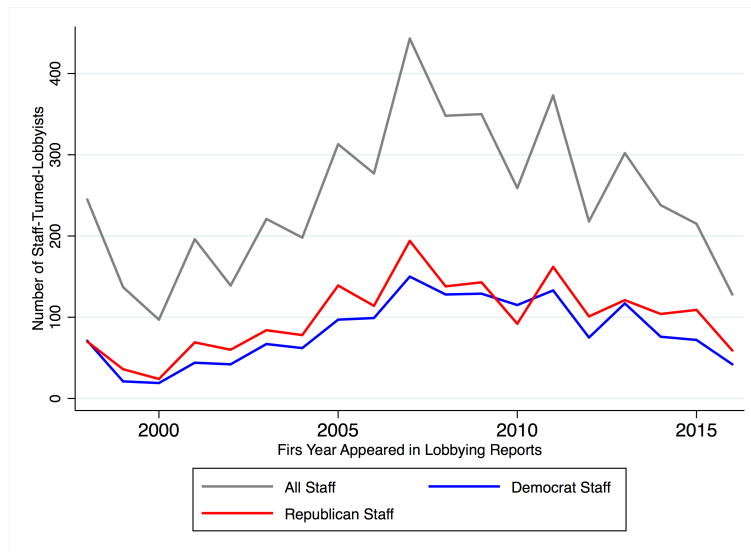
For each ex-staff-turned-lobbyist in our final sample, we find information about their lobbying activities. Specifically, we collect the first year that a lobbyist appeared in the lobbying data. Using the information on ‘registrants’ in the lobbying reports, we identify the employers of ex-staff-turned-lobbyists for each year. This provides the employment history of their lobbying career. We also collect information about the list of bills on which they lobbied on behalf of their clients and identify the Congress, a sponsor, and the originating committee for a given bill. This allows us to analyze whether the legislative activities they performed as a congressional staff member are associated with the lobbying activities they performed as a lobbyist.

There were 4,697 unique lobbyists who had prior work experience in Congress and submitted at least one lobbying report between 1998 and 2016; 4,520 lobbyists appeared in the staff data between 2001 and 2014.⁷ The total number of Congress members who were connected with these ex-staff-turned-lobbyists was 943: 176 members (18.7%) were Senators and 767 members (81.3%) were House Representatives. The median number of connected politicians per lobbyist is 1 and the connected number of politicians per staff ranges from 1 to 8. 82% of ex-staff-turned-lobbyists who worked exclusively as personal staff for a Congress member; 10% exclusively worked on congressional committees. The remaining 8% worked both in members’ personal offices and on committees. Figure 1 displays the number of ex-staff-turned-lobbyists in each year in terms of the first year they submitted a lobbying

⁷177 staffer-turned-lobbyists worked in the Congress before year 2001 so we do not have their detailed salary information. During this time period, former Congress members also joined the lobbying industry. Among the 854 members who served in the House of Representatives from the 107th through the 113th Congresses, 129 members (15.1%) became lobbyists. Among the 179 members who served in the Senate during the same period, 29 members (16.2%) became lobbyists.

report. The line labeled as ‘All Staff’ includes both personal staffers from members’ offices and staffers from standing committees. We divide the personal staffers into Democrats and Republicans based on the party of the member they served during their tenure in Congress and present separate graphs on their first year in lobbying by party line.

Figure 1: Number of Congressional Staffers-Turned-Lobbyists, 1998 - 2016



A significant increase in 2007 is noticeable and several factors explain this pattern. First, Congress passed the Honest Leadership and Open Government Act (HLOGA) in 2007 as an ethics reform and the law prohibited ex-staff-turned-lobbyists from contacting their former offices or committees in the House, and any offices in the Senate for a certain period of time (Cain and Drutman 2014). Hence, many staffers who had considered lobbying careers may have left their government jobs before the HLOGA passed Congress in 2007 and started their lobbying activities in 2007. Second, there was an expectation that the party in control in the White House was likely to change in the 2008 presidential election and the Democratic candidate, Barack Obama, promised tougher regulations on revolving-door lobbyists if he were to be elected. Just one day after his inauguration in 2009, President Obama issued an executive order banning federal employees from taking jobs in the lobbying industry for two years after leaving government service.⁸ Due to this upcoming changes in the political environment, it is likely that many staffers quit their jobs and moved into lobbying industry.

⁸“Executive Order 13490: Ethics Commitments by Executive Branch Personnel,” January 21, 2009.

3.3 Member-Level Data and Outcome Variables

To explore the impact of hiring future revolvers on legislative outcomes, we create a member-level dataset for every person who served in the House or Senate from the 107th through the 113th Congresses. We calculate the total number of staffers who worked for a member in each Congress and staffers’ mean salaries. Based on the career histories of ex-staff-turned-lobbyists, we also calculate the total number of former personal and committee staff who later became lobbyists for each member in each Congress. Based on the employee’s title during their tenure in the Congress, we consider a person with either the title (Deputy) Chief of Staff or (Deputy) Legislative Director to have been a high-level staff employee; we categorize those with the remainder of titles as low-level employees. We calculate the total number of high- and low-level personal and committee staffers who later became lobbyists for each member in each Congress. By comparing the year a staffer finished working for a member and the first year they appeared in lobbying reports, we also calculate the total number of ‘last-term’ high- and low-level staff who became lobbyists after a given Congress for each member.

Table 2 presents the summary statistics at the Congress-member level regarding Congress members’ staffers and ex-staffers who later became lobbyists. The unit of observation is member \times Congress. Members in the House have, on average, 21 staffers on their payrolls during a given Congress. Among total staffers, 2.4 were high-level staffers and the average number of female staffers was 11. For the Senate, the average number of staffers in members’ personal offices is 52 and more than a majority of the personal staffers were women. House members in a given Congress employed 1.7 personal staffers who became lobbyists at some later point. In the Senate, the average number of personal staffers who later became lobbyists in a given Congress was 4.1 and, on average, 0.74 personal staffers who left Congress after the term. Only committee chairs could be connected to committee staff based on our definition, unless Legistorm mentioned a specific Congress member as a connected politician for a committee staffer. For committee chairpersons who were connected to committee staffers, the average number of committee staffers who worked for a member in a given Congress and later became lobbyists was 11.8 in the House and 10.8 in the Senate.⁹

To measure potential biases and changes in policy outcomes, we use three outcomes. First, we use the *Legislative Effectiveness Score (LES)*, which measures the “ability to advance a member’s agenda items through the legislative process and into law” for members in the House of Representatives (Volden and Wiseman 2014, 2017). This dataset includes the number of bills that each representative sponsored as well as their LES in each Congress.

⁹The average number of committee staffers in a given standing committee in the House is 76 and is 65 in the Senate.

Table 2: Member Level Summary Statistics on Staffers

	House				Senate			
	N	Mean	Min.	Max.	N	Mean	Min.	Max.
Number of Staff	3,080	21	11	35	704	52	24	97
High-level Staff	3,080	2.4	1	8	704	3.7	1	10
Low-level Staff	3,080	18.6	9	49	704	48.5	20	91
Number of Female Staff	3,080	11	2	22	704	28	11	58
Mean Compensation (\$K)	3,080	91	26	177	704	101	49	176
Future Lobbyist Personal Staff	3,080	1.7	0	7	704	4.1	0	16
Future Lobbyist Committee Staff ^a	139	11.8	0	57	130	10.8	0	36

Note: The unit of observation is member \times congress. **a.** This statistics is only provided for members who served as a committee chair.

We examine whether there is a distinct pattern in a member’s legislative productivity after hiring an employee who later became a lobbyist and around the time that one of their staff members departed for the lobbying industry.

Second, we examine whether hiring staffers who later became lobbyists influences the types of legislation that legislators sponsor in Congress. To do this, we use E. Scott Adler and John Wilkerson’s Congressional Bills Project. This data tracks the sponsor of every bill and resolution in Congress from the 80th to the 114th Congress. In addition to sponsorship, the data also categorize all bills into 21 major issue areas.¹⁰ Therefore, we are able to identify whether members with staffers who later became lobbyists tended to sponsor bills on particular topics. This is particularly interesting given that lobbying clients are not equally distributed across issue areas. As Table A2 indicates, after budget and tax issues, health, defense, and energy issues are most often mentioned in lobbying reports, whereas housing and law and enforcement issues are mentioned with less frequency.

Third, we examine whether interactions between a member’s office and lobbying firms vary depending on the composition of staff regarding their future career choices. A member’s office with a staff member who will become a lobbyist may give more access to her future employer as a *quid pro quo* for future job opportunities or to signal her abilities and interests to lobbying firms. Given that domestic lobbying reports under the Lobbying Disclosure Act (LDA) of 1995 do not include information on lobbying contacts, we take advantage of data on lobbying contacts granted to lobbying firms garnered from the filings mandated by the Foreign Agent Registration Act (FARA). Unlike domestic lobbying reports regulated under

¹⁰The major issue areas are: (1) Macroeconomics, (2) Civil rights, (3) Health, (4) Agriculture, (5) Labor, (6) Education, (7) Environment, (8) Energy, (9) Immigration, (10) Transportation, (11) Culture, (12) Law and Crime, (13) Social Welfare, (14) Housing, (15) Domestic Commerce, (16) Defense, (17) Technology, (18) Foreign Trade, (19) International Affairs, (20) Government Operations, and (21) Public Lands. For more specific details, see: <http://www.comparativeagendas.net/pages/master-codebook>.

the LDA, FARA requires that lobbyists representing foreign entities submit a semi-annual report detailing all lobbying contacts, including information on who, when, why, and how those contacts were made (Kang and You 2018). Using lobbying contacts from the FARA reports for the period from 2007 to 2010, we examine whether members increased lobbying contacts with lobbying firms that hired their ex-staffers after they left congressional jobs. One advantage with this outcome measure is that we can directly connect the staffer to each contact because FARA data provides information about the person who was contacted by a lobbyist.

4 Future Lobbyist Staff and Legislative Activities

In this section, we examine if hiring a future revolving-door lobbyist is associated with a member’s legislative activities. The empirical specification is as follows:

$$y_{it} = \alpha_i + \alpha_t + \beta * \text{Lobbyist Staff}_{it} + \Gamma X_{it} + \varepsilon_{it} \quad (1)$$

, where i denotes member and t indicates congress. y_{it} is an outcome variable - LES, number of total sponsored bills, and number of bills in each issue category, which varies by the regression. α_i is a member-level fixed effect (FE) to capture member-specific time-invariant characteristics such as innate ability in legislating and inherent interest in specific topics. α_t is a Congress FE that captures a time trend. *Lobbyist Staff* is a vector of staff-turned-lobbyist-level variables: how many future lobbyists worked as staffers in a member’s office in a given Congress, and how many last-term staff-turned-lobbyists worked as staffers. X_{it} is a vector that includes variables that could affect the legislative activities of members such as their party, institutional position (e.g., leadership or committee chairs), and overall staff size and compensation level.

Table 3 presents the results on overall legislative activities. We present results for the House (Panel A) and Senate (Panel B) separately.¹¹ Columns from (1) through (3) present the results when a rich set of member-level characteristics are included as control variables; Columns (4) through (6) present the results when a member FE is included. First, in the House, the number of staffers and the average staff salary levels are associated with higher LES. Regarding variables on staffers who later became lobbyists, employing a low-level, personal revolving-door lobbyist is associated with a member’s legislative productivity as measured by their LES, the number of bills the member sponsors, and the number of substantive and significant bills the member sponsors.¹² These results are robust when we

¹¹Full regression results are presented in Tables A3 and A4 in the Appendix.

¹²The definition of significant and substantive legislation follows Volden and Wiseman (2014)’s categoriza-

include a member FE. Employing a high-level personal staffer who later became a lobbyist is also associated with an increase in the number of bills that a member sponsored under the member FE model. Having a committee staffer who later became a lobbyist is associated with higher LES and sponsorship of substantive and significant bills but this result is not robust when we include a member FE. Second, in the Senate, overall staff size is associated with higher LES and the number of bills and substantive bills that Senators sponsor. The existence of future lobbyists among high-level staff is associated with a member's overall legislative productivity and this result is not robust to the inclusion of a member FE.

Why do we only observe the effects of low-level staffers who later became lobbyists in the House under the member FE specification, which exploits the within-member variation across Congresses? First, we use member fixed effect so there is less variation in changes in the number of high-level staffers who later became lobbyists than the variation in the number of low-level staffers who became lobbyists. The other potential reason is that for high-level-staff-turned lobbyists, the degree to which the lobbying market influences their incentive to invest in related skills might be weaker than its effect on the incentives of lower-level staffers. High-level staffers are Chiefs of Staff or Legislative Directors and these job titles themselves are proof of their skills and political connections. For lower-level staffers, there may be more competition to be selected by lobbying firms or other organizations and this might drive changes in their levels of effort.

To see if these results are driven by a "last term" effect, we analyze the relationship between the number of personal and committee revolving-door lobbyists in their last term by congressional office and member's legislative productivity. We divide staffers who later became lobbyists into two categories, non-last-term and last-term lobbyist staff, depending on whether the current term is their last term of employment in Congress. Table A5 in the Appendix presents the results. For last-term personal staff, we essentially see no relationship in the House or Senate. The last term results imply that the increased effort of personal staff-turned-lobbyists is not entirely attributable to their last term efforts. Instead, the results in the House suggest that personal staff-turned-lobbyists seem to increase their members' legislative effectiveness throughout their time in Congress.

As Volden and Wiseman (2014) explain, legislative effectiveness is "the proven ability to advance a member's agenda items through the legislative process and into law." In that sense, LES or number of sponsored bills could be an appropriate measure for overall legislative activities. However, it is possible that career concerns of staffers who work for Congress members could influence the types of bills to which members allocate time and energy. For example, given that there are disproportionately more clients who care about

tion scheme.

Table 3: Future Lobbyists as Staff and Legislative Activities

	(1)	(2)	(3)	(4)	(5)	(6)
	LES	No. Bills ^a	SS Bills ^b	LES	No. Bills	SS Bills
<i>Panel A: House</i>						
No. Non-Lobbyist Staff	0.0386*** (4.73)	0.743*** (6.57)	0.00314 (0.66)	0.0421*** (3.21)	0.506*** (3.82)	0.0126 (1.50)
(ln) Mean Staff Salary	0.359** (2.47)	4.144** (2.22)	0.0560 (0.64)	0.665*** (3.24)	9.884*** (4.88)	0.184 (1.32)
Female Staff Ratio	-0.238 (-0.75)	-4.567 (-1.39)	-0.0468 (-0.31)	-0.0604 (-0.17)	3.766 (1.10)	-0.150 (-0.58)
No. Lobbyist Personal Staff (High)	0.0112 (0.38)	0.474 (1.26)	-0.00152 (-0.08)	0.0387 (0.63)	0.858** (2.13)	-0.00292 (-0.07)
No. Lobbyist Personal Staff (Low)	0.0664** (2.26)	0.990*** (3.41)	0.0309* (1.65)	0.0757* (1.67)	0.969*** (2.96)	0.0339 (1.08)
No. Lobbyist Committee Staff	0.0593** (2.11)	0.0221 (0.14)	0.0627*** (2.83)	0.0289 (0.83)	0.202 (1.52)	0.0456 (1.56)
Member-level Controls	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
<i>N</i>	3070	3070	3070	3070	3070	3070
adj. <i>R</i> ²	0.414	0.139	0.352	0.537	0.582	0.407
<i>Panel B: Senate</i>						
No. Non-Lobbyist Staff	0.0133** (2.30)	0.902*** (4.52)	0.813*** (4.72)	0.000139 (0.02)	0.496** (2.23)	0.291 (1.48)
(ln) Mean Staff Salary	0.0814 (0.23)	4.171 (0.41)	5.860 (0.70)	0.272 (0.60)	17.71** (2.06)	12.19 (1.46)
Female Staff Ratio	-1.230*** (-2.79)	-35.70** (-2.05)	-24.55* (-1.67)	-1.564 (-1.56)	-6.732 (-0.47)	-0.105 (-0.01)
No. Lobbyist Personal Staff (High)	0.0796** (2.19)	2.269* (1.75)	2.686** (2.39)	-0.00253 (-0.05)	1.413 (0.91)	1.261 (0.89)
No. Lobbyist Personal Staff (Low)	-0.0113 (-0.66)	0.154 (0.26)	0.120 (0.24)	-0.00127 (-0.05)	0.596 (0.92)	0.550 (0.94)
No. Lobbyist Committee Staff	0.00750 (0.52)	0.177 (0.58)	0.327 (1.21)	0.0146 (0.84)	0.000544 (0.00)	0.200 (0.75)
Member-level Controls	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
<i>N</i>	697	697	697	697	697	697
adj. <i>R</i> ²	0.446	0.354	0.345	0.601	0.696	0.665

Note: The unit of observation is member \times congress. **a.** Total number of bills that a member sponsored in a given Congress. **b.** Number of significant and substantial bills (Volden and Wiseman 2014). **c.** Number of staffers who worked for a member in a given Congress and did not become a lobbyist later. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

health issues than public welfare in the lobbying process, it is possible that staffers’ career concerns could influence the number of bills in some issue areas if accumulating knowledge in those areas will help staffers in their post-congressional careers in the lobbying industry.

We estimate the following model:

$$y_{ijt} = \alpha_i + \alpha_j + \alpha_t + \beta * \text{Future Lobbyist Staff}_{it} + \Gamma X_{it} + \varepsilon_{ijt} \quad (2)$$

, where i, j , and t denote member, committee assignment, and Congress, respectively. Given that the committee assignment plays a significant role in the types of bills that members introduce, we include a committee fixed effect (α_j). We also include the total number of bills a member introduces in each Congress as a control variable.

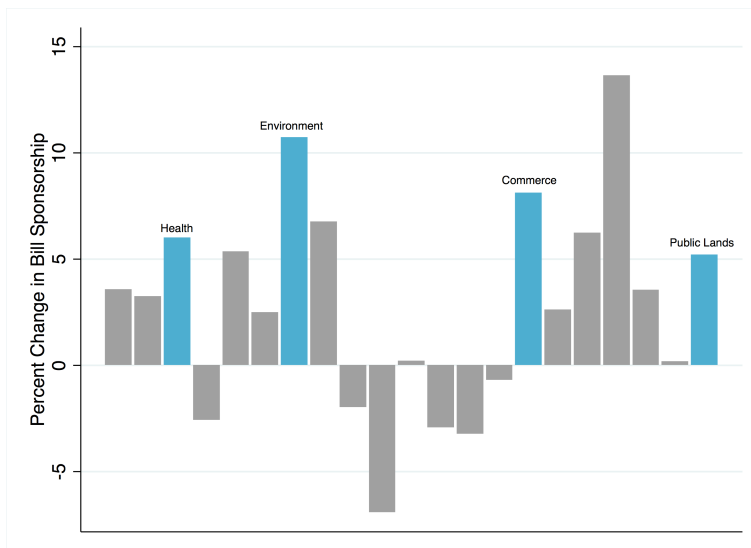
In Figure 2, we present the results of a series of analyses that attempt to determine if hiring a future revolving-door lobbyist is associated with increased sponsorship of particular kinds of bills in the House. Each bar indicates how hiring one additional staffer who later became lobbyist changes the bill sponsorship in 21 different issue areas from the baseline propensity to sponsor a bill in each issue area.¹³ It shows that employing personal staff who later became lobbyists is associated with increased sponsorship of bills on health, the environment, domestic commerce, and public lands. In the Senate, hiring personal staff who later became lobbyists is not associated with increased sponsorship in particular issues.

Although we include a member FE and time-varying characteristics, it is possible that a person who is considering becoming a lobbyist in the future selects into a member’s office where the member is more likely to be legislatively productive and sponsor bills in certain areas. To examine a potential matching between a member and a revolving-door staffer, we examine whether members’ observable characteristics (e.g., legislative outcomes and institutional positions from the previous Congress) predicts the number of future lobbyist staffers in a current Congress. Tables A9 and A10 in the Appendix show that members’ legislative activities and institutional positions, such as committee assignments, do not predict the number of future lobbyist staffers in the current Congress. We also find that sponsorship activities in certain issue areas are also not correlated with recruiting of future lobbyist staff.

We conduct another test to see whether changes in legislative outcomes are driven by changes in the composition of staffers. We exploit the fact that some staffers move between members’ offices. Following [Bertrand and Schoar \(2003\)](#) who estimate the manager fixed effects from a manager-firm matched panel data, we estimate the role of staffers in a framework from a member-staff matched panel data where we can control for observable and unobservable differences across members. We estimate the following model:

¹³For the regression results, see Table A6 in the Appendix.

Figure 2: Future Lobbyist Staffers and Changes in the Bill Sponsorship from the Baseline by Issue, House of Representatives (107th through 113th)



Note: Blue bars indicate the statistically significant results either at 5% or 10% and gray bars indicate insignificant results. The effect is obtained from 21 separate regressions of the number of bills in 21 major issue areas defined by Adler and Wilkerson (2017). Each regression includes congress, committee, and member fixed effects, as well as other time-varying member characteristics.

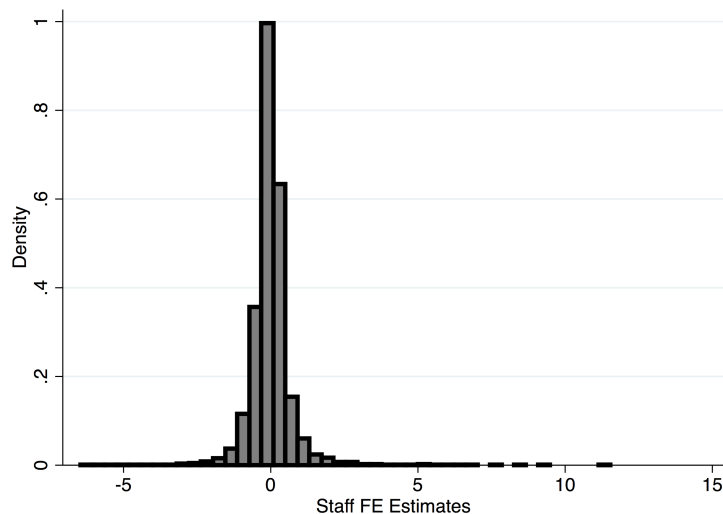
$$y_{ist} = \alpha_i + \underbrace{\alpha_s}_{\text{staff FE}} + \alpha_t + \Gamma X_{ist} + \varepsilon_{ist} \quad (3)$$

, where i , s and t indicate member, staffer, and Congress. We are interested in estimating the staff fixed effects, α_s . Given that staffers do not randomly move among members' offices and staffers who switch congressional offices could be systemically different from those who stay in one office, we do not argue that our results present the causal effect of staffers on members' legislative outcomes. Instead, we examine whether the characteristics of staffers, including whether they became lobbyists, are systematically related to changes in legislative activities of members.

We created a member \times staffer \times Congress (year) data ($N = 58,809$) in the House. Of the set of about 26,480 staffers in our sample, 3,603 staffers moved from one office to another office. Figure 3 presents the distribution of staff fixed effects in the House when the outcome variable of interest is LES. The median staffer fixed effects for the LES is zero but there is a significant variation in terms of staff fixed effect estimates.

Next, we tie the differences in staff fixed effects to observable staff characteristics to examine whether staffers's future career choices are correlated with staff fixed effects that are retrieved from the regression on LES. Specifically, we estimate the following regression:

Figure 3: Distribution of Staff Fixed Effects (Regression on LES)



$$\alpha_s = \beta * Became\ Lobbyist_s + \Gamma X_s + \varepsilon_s \quad (4)$$

, where s indicates a staffer. X_s include a staffer-level characteristics such as gender and holding a graduate degree. Table 4 presents the results. We have staff gender information for 99% of the sample and have the information on education for 37% of the sample. We find that lower level staffers who later became lobbyists are positively related to higher staff fixed effects. This provides further evidence that hiring future revolving-door-lobbyists are related to the legislative productivity of members.

5 Future Lobbyist Staff and Access to Lobbying Firms

While career concerns of staffers could change legislative activities of the members whom they serve, there may be a more direct link between staffers' career concerns and their behaviors: the granting of access to their potential future employers in the lobbying industry. Access to policymakers is one of the most important and scarce resources sought in the lobbying process (Hansen 1991; Lohmann 1995; Wright 1996; Austen-Smith 1995; Blanes i Vidal, Draca and Fons-Rosen 2012; Bertrand, Bombardini and Trebbi 2014) and commercial lobbyists often provide this type of political access as intermediaries between interest groups and policymakers (Groll and Ellis 2014). Career concerns of congressional staffers could lead to granting lobbying firms more access to a member's office for two reasons. First, similar to regulatory capture, it is possible that staffers grant more access as a *quid-pro-quo* for

Table 4: Staff FE and Becoming a Lobbyist

	(1)	(2)
	Staff FE	Staff FE
Female	0.0227** (2.48)	0.0247 (1.62)
Lobbyist Staff (High)	-0.0380 (-1.38)	-0.0247 (-0.67)
Lobbyist Staff (Low)	0.0511*** (2.73)	0.0443** (2.02)
Graduate Degree Holder		0.0166 (1.10)
JD or PhD Holder		0.0256 (1.18)
<i>N</i>	26450	9887
adj. <i>R</i> ²	0.000	0.001

their future jobs in lobbying firms. Second, it is possible that staffers who consider lobbying as a post-government career grant more access to lobbying firms so they may signal their abilities and contributions in specific legislation to lobbying firms. These two motives are not mutually exclusive.

A significant challenge in testing whether a congressional member’s office with more staffers who later became lobbyists tends to grant more access to lobbying firms is the lack of comprehensive information on lobbying contacts. Most empirical studies on US lobbying are based on domestic lobbying reports under the Lobbying Disclosure Act of 1995, which does not include information on lobbying contacts. The LDA requires that lobbyists disclose the names of the government bodies they contact, but it does not require them to specify any further details about their lobbying contacts. To overcome this limitation, we take advantage of information on lobbying contacts from semi-annual reports submitted by lobbying firms under the Foreign Lobbying Registration Act (FARA) for the period from 2007 through 2010 (Kang and You 2018).¹⁴ FARA, unlike LDA, requires that lobbyists representing foreign entities submit a semi-annual report detailing all lobbying contacts, including information on who, when, why, and how those contacts were made. While the data on lobbying contacts are about interactions between policymakers and lobbying firms representing foreign entities,

¹⁴The Foreign Agent Registration Act (FARA) regulates lobbying activities of foreign entities in the United States. FARA was enacted in 1938 in an attempt to prevent the influence of Nazi propaganda on US public opinion (Waters, 1988). Under FARA, any person who represents the interests of a foreign entity or principal by “engaging in political activities, acting as public relations counsel, soliciting money for the foreign principal, dispensing contributions, and representing the principal before any agency or official of the government” is defined as a “foreign agent” (Atieh, 2010). These foreign agents are mandated to be registered and to submit semi-annual lobbying disclosure reports.

among the 93 lobbying firms in our data, 61 firms represented domestic clients in addition to their foreign clients (i.e., they were registered by both the LDA and FARA). This suggests that the conclusions of our study could have general implications for the interactions between congressional offices and lobbying firms in the US.

We study the lobbying activities of foreign governments, as opposed to foreign businesses.¹⁵ We focus on lobbying firms' activities regarding legislative issues during 2007 through 2010, covering two Congresses (the 110th and the 111th Congresses).¹⁶ To do so, we analyze all lobbying reports that include congressional contacts via phone calls or in-person meetings.¹⁷ In these reports, we identify 20,606 records of contacts between lobbying firms and others, consisting of contacts to members of Congress or congressional committees (73.5 percent), the executive branches of the federal government (18.8 percent), the media (2.9 percent), and others (4.8 percent) such as members of think tanks, labor unions, firms, universities, and non-profit organizations. We do not consider emails or social encounters as contacts, since they are most likely to be one-sided. In total, there are 676 reports of lobbying activities reported by 98 lobbying firms on behalf of 70 foreign governments in the data.

We focus on lobbying contacts made to congressional offices. Another advantage of the FARA lobbying contact data is that it allows us to observe staff-level outcomes. FARA reports indicate whether contacts were made directly with members or with staffers.¹⁸ Based on this information, we can examine whether a staffer gave more access to the lobbying firm that became her future employer, not just the total number of contacts given to all lobbying firms present in the data. In the House, there were 8,030 contacts with lobbying firms and 68% of them (5,420) were made directly with staffers as opposed to Congress members. In the Senate during the same period, there were 3,663 contacts made to Senate offices and 81% were contacts with staffers. Table 5 presents the summary statistics for contacts made between congressional offices and lobbying firms that represented foreign entities in a given period.

We estimate the following model:

¹⁵After Congress passed the LDA in 1995, foreign businesses that have subsidiaries in the US have been allowed to report their lobbying activities via the LDA, instead of through FARA. As a result, most of the foreign entities that submitted reports under FARA since 1995 are foreign governments.

¹⁶Although some foreign governments hire in-house lobbyists, their activities seem relatively limited regarding lobbying contacts. In our dataset, 94.3 percent of lobbying contacts were made by lobbying firms, while the remainder was by in-house lobbyists.

¹⁷In our study, we focus on legislative lobbying. Therefore, lobbying firms exclusively focused on media and/or executive contacts or legal advice are not included in the analysis.

¹⁸For cases when the contacts were made with staffers, we know the name of the contacted person for 60% of all contacts with staff. Therefore, we are able to identify whether a staffer who met with lobbying firms became a lobbyist later, and which lobbying firm hired her.

Table 5: Access Granted to Lobbying Firms, 2007-2010

	N	Mean	SD	Min.	Max.
<i>Panel A. House</i>					
No. Meeting	872	5.1	7.8	0	72
No. Phone Call	872	4.0	7.1	0	69
No. Member Contact	872	2.9	4.4	0	50
No. Staff Contact	872	6.9	11.1	0	104
<i>Panel B. Senate</i>					
No. Meeting	195	9.0	8.0	0	49
No. Phone Call	195	9.3	11.6	0	95
No. Member Contact	195	3.5	3.3	0	21
No. Staff Contact	195	15.8	15.7	0	93

Note: Unit of observation is member \times congress.

$$y_{ijt} = \alpha_j + \alpha_t + \beta * \text{Lobbyist Staff}_{ijt} + \Gamma X_{ijt} + \varepsilon_{ijt} \quad (5)$$

, where i, j, t denote member, committee assignment, and Congress, respectively. X_{ijt} include a member-level characteristics such as committee assignment, leadership position, and party. y_{ijt} is an outcome variable that indicates the frequency of contacts with lobbying firms. α_j and α_t indicate committee FE and Congress FE, respectively.¹⁹

Table 6 presents the results.²⁰ Panels A and B present the results for House staff and Senate staff, respectively. Panel A shows that, similar to the results for legislative productivity, most of the statistically significant effects are confined to low-level, personal-staff-turned-lobbyists. Hiring an additional low-level staffer who later became a lobbyist increased the total amount of access that office granted to lobbying firms. In particular, the total number of contacts that lobbying firms had with staffers, presumably a behavior over which staffers have more control, significantly increased if a member's office had a lower-level staffer who later became a lobbyist. We do not observe a similar pattern in the Senate.

The positive relationship between the number of future lobbyists and the amount of access granted to lobbying firms by the member's office can be driven by two different mechanisms. First, it is possible that staffers with lobbying career aspirations grant extra access to lobbying firms in an attempt to secure future lobbying employment. On the other hand, it is also possible that frequent interaction between a member's office and lobbyists, driven by other unobserved factors, caused staffers to pursue careers in the lobbying firms

¹⁹Due to the data's relatively short time span (2007-2010), including a member FE significantly reduces the variation we can exploit. Therefore, we include a committee FE to control for the demand for access from lobbying firms that represent foreign governments.

²⁰Full regression results are available in Tables A7 and A8 in Appendix A.

in the future. While it is challenging to distinguish these two different mechanisms, it is noticeable that offices with many staff-turned-lobbyists show different behaviors regarding interactions with lobbying firms than members' offices with fewer or no staff who later became lobbyists.

6 Conclusion

In this article, we study the relationship between hiring congressional staffers who later became lobbyists and behavioral changes in Congress members' office in terms of legislative outcomes and the amount of access granted to lobbying firms. Our findings suggest that congressional offices with more future lobbyists behave differently than those with fewer. Hiring a future lobbyist as a current staffer is associated with increased legislative productivity; more sponsorship of bills on health, the environment, and commerce; and granting greater access to lobbying firms. Overall, these findings are consistent with both the regulatory school and regulatory capture theories on the effects of career concerns. Congressional staffers who exit through revolving doors seem to exert greater legislative effort, increasing the productivity of Congress. However, this productivity appears to be slanted towards the areas of policy that lobbying markets tends to value. Furthermore, congressional offices with more future lobbyists also tend to grant more access to lobbying firms. Together, these findings suggest that the revolving door positively impacts the productivity of Congress. However, it tends to do so in a way that appears to be in line with what the lobbying market desires. What is more, the revolving-door market also seems to incentive staffers to grant extra access to lobbying firms, potentially biasing representation in favor of lobbying interests.

Beyond the specific findings in this article, we believe that this work questions and highlights the aspects of the revolving door that should receive more focus in the future. While the vast majority of the important literature on the revolving-door phenomenon has focused on how bias enters after staffers leave Congress, we assert that policy bias and unequal access to politicians attributable to the revolving door might actually begin before staffers leave government. In our view, this is the component of the revolving door that is too often ignored and needs to be more seriously considered as a source of potentially bias in the policymaking process. When we consider the pre-exit effects of the revolving door, the public policy implications and normative connotations of revolving doors are less clear. The revolving door seems to incentivize productive legislative behavior. In this way, the revolving door might be good for congressional capacity. However, this increased activity also appears to be slanted towards specific groups, potentially biasing policy in favor of lobbying interests.

While we document a meaningful and robust relationship between the composition of

Table 6: Future Lobbyists as Staff and Access to Lobbying Firms

Outcome =	(1) Total Contact	(2) Member Contact	(3) Staff Contact
<i>Panel A. House</i>			
No. Non-Lobbyist Staff	-0.0741 (-0.46)	-0.00181 (-0.04)	-0.0413 (-0.32)
(ln) Mean Staff Salary	3.100 (1.30)	0.464 (0.58)	2.495 (1.34)
Female Staff Ratio	-2.322 (-0.48)	-0.560 (-0.40)	-1.197 (-0.31)
No. Lobbyist Personal Staff (High)	-0.160 (-0.23)	0.0597 (0.26)	-0.0657 (-0.13)
No. Lobbyist Personal Staff (Low)	0.0327 (0.08)	-0.0243 (-0.16)	0.150 (0.45)
No. Lobbyist Personal Staff (High) × Hired by Lobbying Firms	-0.461 (-0.31)	-0.0888 (-0.17)	-0.303 (-0.27)
No. Lobbyist Personal Staff (Low) × Hired by Lobbying Firms	4.441*** (2.63)	1.181** (2.37)	3.330*** (2.70)
No. Lobbyist Committee Staff	-0.226 (-1.23)	-0.0190 (-0.26)	-0.238* (-1.85)
Member-level Controls	✓	✓	✓
Congress FE	✓	✓	✓
Committee FE	✓	✓	✓
<i>N</i>	872	872	872
adj. <i>R</i> ²	0.363	0.289	0.364
<i>Panel B. Senate</i>			
No. Non-Lobbyist Staff	0.186 (1.52)	0.0172 (0.63)	0.185* (1.74)
(ln) Mean Staff Salary	3.482 (0.52)	0.129 (0.08)	5.476 (0.90)
Female Staff Ratio	-25.28* (-1.85)	-4.475 (-1.53)	-20.15 (-1.61)
No. Lobbyist Personal Staff (High)	-1.428 (-0.60)	0.0916 (0.22)	-1.592 (-0.71)
No. Lobbyist Personal Staff (Low)	1.165 (0.94)	0.248 (0.81)	0.947 (0.86)
No. Lobbyist Personal Staff (High) × Hired by Lobbying Firms	0.843 (0.43)	-0.183 (-0.51)	1.044 (0.56)
No. Lobbyist Personal Staff (Low) × Hired by Lobbying Firms	-0.996 (-1.10)	-0.200 (-0.92)	-0.760 (-0.91)
No. Lobbyist Committee Staff	0.0311 (0.05)	-0.0906 (-0.74)	-0.0186 (-0.03)
Member-level Controls	✓	✓	✓
Congress FE	✓	✓	✓
Committee FE	✓	✓	✓
<i>N</i>	195	195	195
adj. <i>R</i> ²	0.420	0.238	0.418

Note: The unit of observation is member × congress. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member level.

congressional offices in terms of the number of future revolving-door lobbyists and their legislative behaviors, more work is needed to discover other sources of bias that career concerns might influence. Additionally, more research is needed to fully characterize the level of business or ideological bias associated with the pre-exit effects of the revolving door. While we have taken great steps to show that the revolving door incentives increased legislative productivity and access-granting to lobbying firms, more work is needed to see if this creates pre-exit policy biases in Congress.

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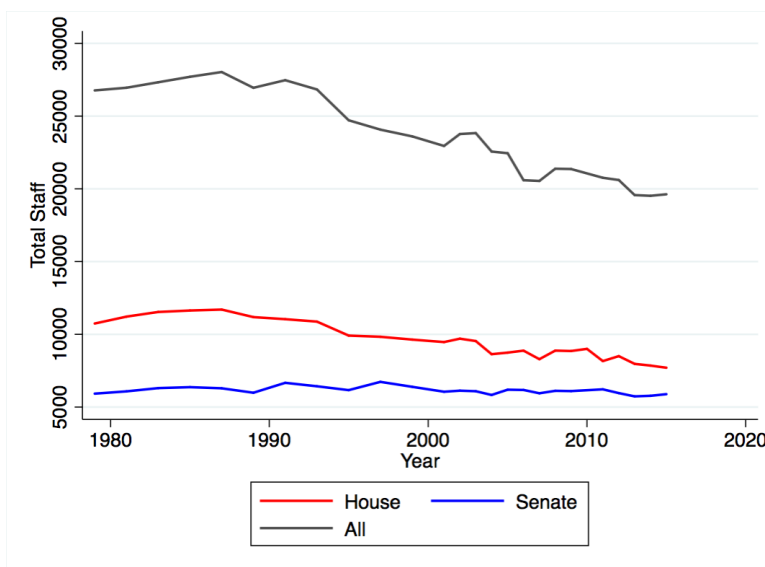
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A Appendix: Figures and Summary Statistics

A.1 Number of Congressional Staff Over Time

Figure A1: Number of Congressional Staff Over Time, 1979 - 2015



Note: Both *House* and *Senate* totals include personal, committee, leadership, and the Officers of the House staff. *All* includes total House and Senate staff, as well as staff in joint committees and supporting agencies such as the Congressional Research Service, CBO, GAO, OTA, and Capitol police, and miscellaneous functions. Data source: “Vital Stats for Congress,” 2017, *The Brookings Institute*.

A.2 Characteristics of Staffers in Congress

In total, there are 57,153 unique staffers from members’ offices and committees who have records of the payment from the Congress during the period from 2001 to 2012 who are not interns, temporary or shared staffers. We have a salary information for every staffer in the data. However, regarding other personal characteristics, the number of staffers for whom we have information varies because Legistorm relies on online sources, such as LinkedIn, for personal information such as educational attainment or age. For example, we know the gender of 55,047 (95%) people in our sample; the party affiliation of 24,634 (43.1%) people; the age of 11,113 (19.4%) people; and the educational attainment of 16,276 (28.5%) people. Given that we do not have the complete information for some characteristics, we can only provide limited summary statistics based on the available information.

Table A1: Staffer Personal Characteristics

Characteristics	Non-Lobbyist Staff		Lobbyist Staff	
	Obs.	Statistics	Obs.	Statistics
Female	51,888	26,560 (51.9%)	3,159	1,209 (38.3%)
Mean Compensation (low-level) ^a	82,878	\$67,654	4,548	\$80,012
Mean Compensation (high-level) ^b	7,565	\$165,695	2,095	\$160,182
Held High Staff Position ^c	39,771	1,836 (4.6%)	2,388	481 (20.1%)
Republican ^d	21,503	10,483 (48.7%)	3,131	1,740 (55.2%)
Mean Age (while serving) ^e	9,721	36.4	1,392	41.4
Degree Info Available ^f	53,979	14,177 (26.3%)	3,174	2,099 (66.1%)
Graduate Degree Holder ^g	14,177	6,567 (46.3%)	2,099	1,231 (58.6%)
J.D. or Ph.D Holder ^h	14,177	2,920 (20.6%)	2,099	658 (31.3%)
Elite University Graduate ⁱ	14,177	2,328 (16.4%)	2,099	375 (17.8%)

Notes: **a.** Average sum of salaries given to low-level staffers in a given Congress (two years). The unit of observation is staff \times Congress. **b.** Average sum of salaries given to high-level staffer in a given Congress (two years). The unit of observation is staff \times Congress. **c.** Whether a staffer held any high-staff position during her tenure in Congress. **d.** Staffer's party ID. **e.** Average of age of staffer when they served in Congress. **f.** Whether a staffer's educational attainment data is available. **g.** Whether a staffer has a graduate degree. **h.** Whether a staffer has either JD or/and Ph.D degree. **i.** Whether a staffer graduated from top 30 most selective universities based on the average SAT scores as of 1990.

A.3 Lobbying Issues

From the period between 1998 and 2014, there were 736,116 unique lobbying reports submitted. The Lobbying Disclosure Act (2 U.S.C. ξ 1604(b)) requires registrants to report specific information on the nature of their lobbying activities on quarterly activity reports (LD-2), including disclosing the general lobbying issue area code(s). There are 76 pre-determined general issue codes. A lobbying report could contain multiple general lobbying codes if a client lobbied on multiple issues in a given period. Table A2 presents the number of lobbying reports submitted under each general code between 1998 and 2014.

Table A2: Number of Lobbying Reports Submitted by Issue, 1998 - 2014

Code	Description	No. Report	Code	Description	No. Report
ACC	Accounting	2472	HOM	Homeland Security	25457
ADV	Advertising	2896	HOU	Housing	15709
AER	Aerospace	5442	IMM	Immigration	17440
AGR	Agriculture	32779	IND	Indian/Native American Affairs	15281
ALC	Alcohol & Drug Abuse	2935	INS	Insurance	15006
ANI	Animals	4046	LBR	Labor Issues/Antitrust/Workplace	29110
APP	Apparel/Clothing Industry/Textiles	1518	INT	Intelligence and Surveillance	1473
ART	Arts/Entertainment	4382	LAW	Law Enforcement/Crime/Criminal Justice	16902
AUT	Automotive Industry	5409	MAN	Manufacturing	6483
AVI	Aviation/Aircraft/Airlines	17335	MAR	Marine/Maritime/Boating/Fisheries	13936
BAN	Banking	22121	MED	Medical/Disease Research/Clinical Labs	13084
BNK	Bankruptcy	2036	MIA	Media (Information/Publishing)	1772
BEV	Beverage Industry	4580	MMM	Medicare/Medicaid	51952
BUD	Budget/Appropriations	185689	MON	Minting/Money/Gold Standard	637
CAW	Clean Air & Water (Quality)	21909	NAT	Natural Resources	24451
CMT	Commodities (Big Ticket)	1686	PHA	Pharmacy	9286
CHM	Chemicals/Chemical Industry	5428	POS	Postal	5143
CIV	Civil Rights/Civil Liberties	5122	RRR	Railroads	6936
COM	Communications/Broadcasting/Radio/TV	14501	RES	Real Estate/Land Use/Conservation	8122
CPI	Computer Industry	8661	REL	Religion	910
CSP	Consumer Issues/Safety/Protection	14552	RET	Retirement	11669
CON	Constitution	1893	ROD	Roads/Highway	6267
CPT	Copyright/Patent/Trademark	23389	SCI	Science/Technology	18548
DEF	Defense	80490	SMB	Small Business	7666
DOC	District of Columbia	916	SPO	Sports/Athletics	1654
DIS	Disaster Planning/Emergencies	6971	TAR	Miscellaneous Tariff Bills	311
ECN	Economics/Economic Development	13183	TAX	Taxation/Internal Revenue Code	105986
EDU	Education	45372	TEC	Telecommunications	29385
ENG	Energy/Nuclear	65158	TOB	Tobacco	5141
ENV	Environmental/Superfund	48744	TOR	Torts	6695
FAM	Family Issues/Abortion/Adoption	3283	TRD	Trade (Domestic & Foreign)	46135
FIR	Firearms/Guns/Ammunition	32780	TRA	Transportation	64947
FIN	Financial Institutions/Investments/Securities	1869	TOU	Travel/Tourism	3068
FOO	Food Industry (Safety, Labeling, etc.)	11581	TRU	Trucking/Shipping	2913
FOR	Foreign Relations	15552	URB	Urban Development/Municipalities	8353
FUE	Fuel/Gas/Oil	8928	UNM	Unemployment	995
GAM	Gaming/Gambling/Casino	5671	UTI	Utilities	10025
GOV	Government Issues	27331	VET	Veterans	7945
HCR	Health Issues	101973	WAS	Waste (hazardous/solid/interstate/nuclear)	4850
			WEL	Welfare	3260

B Appendix: Full Regression Results

Table A3: Future Lobbyists as Staff and Legislative Activities: House (107th - 113th)

	(1)	(2)	(3)	(4)	(5)	(6)
	LES	Total Bill	SS. Bill	LES	Total Bill	SS Bill
No. Non-Lobbyist Staff	0.0386*** (4.73)	0.743*** (6.57)	0.00314 (0.66)	0.0421*** (3.21)	0.506*** (3.82)	0.0126 (1.50)
(ln) Mean Staff Salary	0.359** (2.47)	4.144** (2.22)	0.0560 (0.64)	0.665*** (3.24)	9.884*** (4.88)	0.184 (1.32)
Female Staff Ratio	-0.238 (-0.75)	-4.567 (-1.39)	-0.0468 (-0.31)	-0.0604 (-0.17)	3.766 (1.10)	-0.150 (-0.58)
No. Lobbyist Personal Staff (High)	0.0112 (0.38)	0.474 (1.26)	-0.00152 (-0.08)	0.0387 (0.63)	0.858** (2.13)	-0.00292 (-0.07)
No. Lobbyist Personal Staff (Low)	0.0664** (2.26)	0.990*** (3.41)	0.0309* (1.65)	0.0757* (1.67)	0.969*** (2.96)	0.0339 (1.08)
No. Committee Lobbyist Staff	0.0593** (2.11)	0.0221 (0.14)	0.0627*** (2.83)	0.0289 (0.83)	0.202 (1.52)	0.0456 (1.56)
Democrat	-0.413* (-1.70)	-1.714 (-0.47)	-0.0858 (-0.66)	0.587*** (3.16)	1.073 (0.71)	0.277** (2.09)
Majority	0.616*** (11.23)	3.843*** (6.64)	0.242*** (7.29)	0.550*** (8.56)	3.155*** (4.77)	0.179*** (4.36)
DW-NOMINATE	-0.348 (-1.50)	-4.697 (-1.22)	-0.0239 (-0.19)	-1.339 (-1.30)	-1.572 (-0.25)	-1.357* (-1.68)
Budget	-0.141** (-1.99)	-0.714 (-0.94)	-0.0546 (-1.31)	-0.00650 (-0.09)	0.578 (0.61)	0.0114 (0.23)
Committee Chair	2.983*** (7.44)	6.570*** (4.22)	1.673*** (6.29)	3.501*** (6.64)	7.445*** (4.80)	1.991*** (5.60)
Subcommittee Chair	0.344*** (4.22)	0.0908 (0.12)	0.219*** (3.79)	0.346*** (3.58)	1.367* (1.77)	0.269*** (3.57)
Seniority	0.0456*** (3.50)	0.366*** (2.73)	0.0272*** (5.64)	-0.00813 (-0.18)	-0.300 (-0.71)	-0.00995 (-0.18)
Majority Leader	0.374** (2.40)	-0.826 (-0.55)	0.275** (2.36)	0.654*** (3.71)	2.665* (1.96)	0.314** (2.13)
Minority Leader	-0.126* (-1.74)	-0.886 (-0.51)	-0.0269 (-0.68)	0.0779 (0.75)	0.337 (0.16)	-0.0271 (-0.29)
Power Committee	-0.194** (-2.54)	-0.787 (-0.85)	0.142*** (2.95)	-0.291*** (-2.85)	4.141*** (3.42)	-0.0917 (-1.18)
Exit	-0.0898 (-1.61)	-0.847 (-1.29)	-0.0613* (-1.94)	-0.0884 (-1.01)	-0.980 (-1.34)	-0.0686 (-1.14)
Became Lobbyist	-0.0610 (-0.79)	0.537 (0.43)	-0.0227 (-0.45)			
Female	-0.0281 (-0.45)	2.366* (1.88)	-0.00521 (-0.16)			
African-American	-0.113 (-1.12)	1.439 (0.81)	-0.0247 (-0.34)			
Latino	-0.0390 (-0.44)	-1.943 (-1.29)	-0.0683 (-1.50)			
State Legislature	0.118* (1.92)	-0.441 (-0.56)	0.0920*** (2.75)			
Southern Democrat	-0.0410 (-0.59)	-4.419*** (-3.11)	-0.0201 (-0.49)			
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
N	3070	3070	3070	3070	3070	3070
adj. R^2	0.414	0.139	0.352	0.537	0.582	0.407

Note: The unit of observation is member \times congress. a. Total number of bills that a member sponsored in a given Congress. b. Significant and Substantial Bills (Volden and Wiseman 2014). t statistics in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

Table A4: Future Lobbyists as Lobbyists, Last Term, and Legislative Activities: Senate(107th - 113th)

	(1)	(2)	(3)	(4)	(5)	(6)
	LES	Total Bill	SS Bill	LES	Total Bill	SS Bill
No. Non-Lobbyist Staff	0.0133** (2.30)	0.902*** (4.52)	0.813*** (4.72)	0.000139 (0.02)	0.496** (2.23)	0.291 (1.48)
(ln) Mean Staff Salary	0.0814 (0.23)	4.171 (0.41)	5.860 (0.70)	0.272 (0.60)	17.71** (2.06)	12.19 (1.46)
Female Staff Ratio	-1.230*** (-2.79)	-35.70** (-2.05)	-24.55* (-1.67)	-1.564 (-1.56)	-6.732 (-0.47)	-0.105 (-0.01)
No. Lobbyist Personal Staff (High)	0.0796** (2.19)	2.269* (1.75)	2.686** (2.39)	-0.00253 (-0.05)	1.413 (0.91)	1.261 (0.89)
No. Lobbyist Personal Staff (Low)	-0.0113 (-0.66)	0.154 (0.26)	0.120 (0.24)	-0.00127 (-0.05)	0.596 (0.92)	0.550 (0.94)
No. Lobbyist Committee Staff	0.00750 (0.52)	0.177 (0.58)	0.327 (1.21)	0.0146 (0.84)	0.000544 (0.00)	0.200 (0.75)
Majority	0.428*** (3.33)	9.597** (2.17)	2.643 (0.94)	0.461*** (2.98)	9.453** (2.26)	3.622 (1.22)
DW-NOMINATE	-0.0196 (-0.18)	-13.32*** (-3.43)	-13.22*** (-4.03)	0.513 (0.02)	881.4 (0.59)	817.5 (0.76)
Powerful Committee	-0.0193 (-0.29)	-1.335 (-0.44)	0.259 (0.10)	-0.0358 (-0.33)	4.091 (1.10)	3.653 (1.15)
Committee Chair	1.076*** (6.50)	6.120 (1.25)	5.492 (1.29)	1.038*** (5.31)	8.602** (2.49)	6.159* (1.95)
Subcommittee Chair	0.0470 (0.35)	-0.796 (-0.18)	4.730* (1.74)	0.0659 (0.43)	-0.397 (-0.10)	4.216 (1.46)
Seniority	0.0260** (2.40)	0.226 (0.65)	0.00187 (0.01)	0.0240 (0.92)	0.0358 (0.05)	-0.437 (-0.72)
Majority Leader	-0.150 (-0.68)	6.457 (0.84)	-3.087 (-0.58)	-0.0143 (-0.07)	6.773 (1.14)	1.760 (0.34)
Minority Leader	-0.0626 (-0.62)	-4.126 (-1.23)	-5.067 (-1.63)	0.0377 (0.23)	-1.492 (-0.33)	0.0412 (0.01)
Up for Reelection	0.0847* (1.80)	7.710*** (4.79)	6.468*** (4.34)	0.0978* (1.72)	6.807*** (4.03)	5.361*** (3.39)
Freshman	-0.435*** (-5.37)	-16.45*** (-5.13)	-12.02*** (-4.69)	-0.373*** (-4.21)	-14.48*** (-4.62)	-11.83*** (-4.17)
African-American	-0.121 (-0.73)	5.340 (0.36)	5.899 (0.50)			
Latino	0.0183 (0.08)	28.16 (1.20)	18.28 (0.94)			
Southern Democrat	-0.278*** (-2.70)	-8.494 (-1.59)	-9.278** (-2.02)			
Female	0.0979 (0.86)	1.326 (0.25)	1.434 (0.31)			
Served in the House	-0.125 (-1.08)	-0.219 (-0.05)	-0.699 (-0.19)			
House LES Score	0.173* (1.85)	2.602 (0.81)	2.978 (1.00)			
State Legislature	-0.0143 (-0.17)	1.583 (0.51)	1.814 (0.68)			
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
<i>N</i>	697	697	697	697	697	697
adj. <i>R</i> ²	0.446	0.354	0.345	0.601	0.696	0.665

Note: The unit of observation is member \times congress. a. Total number of bills that a member sponsored in a given Congress. b. Significant and Substantial Bills (Volden and Wiseman 2014). *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

Table A5: Future Lobbyists as Staff, Their Last Term, and Legislative Activities

	(1)	(2)	(3)	(4)	(5)	(6)
	LES	No. Bills ^a	SS Bills ^b	LES	No. Bills	SS Bills
<i>Panel A: House</i>						
No. Non-Lobbyist Staff	0.0394*** (4.79)	0.750*** (6.61)	0.00371 (0.78)	0.0424*** (3.24)	0.517*** (3.92)	0.0130 (1.55)
(ln) Mean Staff Salary	0.371** (2.56)	4.276** (2.29)	0.0646 (0.73)	0.672*** (3.25)	10.03*** (4.90)	0.191 (1.36)
Female Staff Ratio	-0.230 (-0.72)	-4.510 (-1.37)	-0.0414 (-0.28)	-0.0658 (-0.18)	3.808 (1.12)	-0.151 (-0.59)
No. Non-Last-Term Lobbyist Personal Staff (High)	0.0307 (0.80)	0.753* (1.65)	0.0123 (0.47)	0.0391 (0.49)	1.012* (1.90)	-0.00367 (-0.07)
No. Non-Last-Term Lobbyist Personal Staff (Low)	0.0667** (2.17)	0.945*** (2.87)	0.0330 (1.45)	0.0756 (1.60)	1.086*** (3.10)	0.0344 (0.90)
No. Last-Term Lobbyist Personal Staff (High)	-0.0197 (-0.48)	0.0464 (0.11)	-0.0230 (-0.87)	0.0307 (0.51)	0.645 (1.47)	-0.00822 (-0.19)
No. Last-Term Lobbyist Personal Staff (Low)	0.0699* (1.80)	1.125*** (2.96)	0.0298 (1.34)	0.0761 (1.34)	0.789* (1.89)	0.0339 (1.08)
No. Lobbyist Committee Staff	0.0596** (2.12)	0.0260 (0.16)	0.0628*** (2.83)	0.0285 (0.82)	0.199 (1.52)	0.0453 (1.54)
Member-level Controls	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
<i>N</i>	3070	3070	3070	3070	3070	3070
adj. <i>R</i> ²	0.413	0.139	0.352	0.537	0.582	0.407
<i>Panel B: Senate</i>						
No. Non-Lobbyist Staff	0.0135** (2.27)	0.906*** (4.55)	0.816*** (4.75)	-0.000176 (-0.02)	0.493** (2.24)	0.289 (1.49)
(ln) Mean Staff Salary	0.0885 (0.25)	4.295 (0.42)	5.860 (0.69)	0.258 (0.56)	17.65** (2.01)	12.20 (1.44)
Female Staff Ratio	-1.229*** (-2.75)	-35.86** (-2.04)	-24.80* (-1.68)	-1.575 (-1.58)	-5.974 (-0.42)	0.921 (0.08)
No. Non-Last-Term Lobbyist Personal Staff (High)	0.106** (2.17)	2.965* (1.79)	3.172** (2.20)	0.0128 (0.23)	0.915 (0.55)	0.531 (0.35)
No. Non-Last-Term Lobbyist Personal Staff (Low)	-0.0136 (-0.77)	0.0199 (0.03)	0.0592 (0.13)	0.00427 (0.14)	0.704 (0.95)	0.651 (0.98)
No. Last-Term Lobbyist Personal Staff (High)	0.0293 (0.67)	1.157 (0.72)	1.946 (1.41)	-0.0207 (-0.38)	2.015 (1.11)	2.140 (1.27)
No. Last-Term Lobbyist Personal Staff (Low)	-0.00971 (-0.34)	0.423 (0.41)	0.268 (0.28)	-0.00956 (-0.29)	0.345 (0.34)	0.287 (0.32)
No. Lobbyist Committee Staff	0.00669 (0.47)	0.161 (0.53)	0.315 (1.18)	0.0145 (0.84)	0.0175 (0.06)	0.222 (0.82)
Member-level Controls	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓
Member FE				✓	✓	✓
<i>N</i>	697	697	697	697	697	697
adj. <i>R</i> ²	0.448	0.352	0.342	0.600	0.696	0.664

Note: The unit of observation is member \times congress. **a.** Total number of bills that a member sponsored in a given Congress. **b.** Number of significant and substantial bills (Volden and Wiseman 2014). **c.** Number of staffers who worked for a member in a given Congress and did not become a lobbyist later. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

Table A6: Future Lobbyists as Staff and Legislative Activities by Issue Areas

Issue	House		Senate	
	(1) Average Sponsorship	(2) No. Lobbyist Personal Staff	(3) Average Sponsorship	(4) No. Lobbyist Personal Staff
1. Macroeconomics	0.66 (1.2)	0.0238 (0.97)	1.34 (1.72)	0.00833 (0.13)
2. Civil Rights	0.25 (0.65)	0.00835 (0.48)	(0.68) (1.07)	0.0317 (1.09)
3. Health	1.64 (2.39)	0.0988* (1.73)	4.18 (4.27)	-0.131 (-1.33)
4. Agriculture	0.25 (0.70)	-0.00666 (-0.35)	0.79 (1.45)	0.0474 (1.05)
5. Labor	0.73 (1.39)	0.0395 (1.3)	1.55 (1.98)	-0.0386 (-0.63)
6. Education	0.73 (1.38)	0.0184 (0.49)	1.73 (2.31)	0.0315 (0.43)
7. Environment	0.56 (1.13)	0.0603** (2.48)	1.54 (2.05)	0.0229 (0.36)
8. Energy	0.61 (1.19)	0.0419 (1.35)	1.72 (2.24)	0.09 (1.14)
9. Immigration	0.03 (0.26)	-0.000764 (-0.14)	0.06 (0.45)	0.0129 (1.1)
10. Transportation	0.47 (1.28)	-0.0331 (-0.95)	1.15 (1.78)	-0.00175 (-0.04)
12. Law and Crime	0.76 (1.47)	-0.0225 (-0.72)	1.91 (2.82)	-0.044 (-0.66)
13. Social Welfare	0.32 (0.74)	-0.0104 (-0.63)	0.68 (1.11)	0.0106 (0.35)
14. Housing	0.29 (0.75)	-0.00205 (-0.11)	0.57 (1.0)	0.00743 (0.23)
15. Commerce	1.0 (1.68)	0.0818** (2.37)	2.33 (3.29)	-0.0601 (-0.51)
16. Defense	1.0 (1.70)	0.0268 (0.71)	2.37 (2.88)	-0.109 (-1.16)
17. Technology	0.25 (0.67)	0.016 (0.93)	0.71 (1.36)	-0.0394 (-0.83)
18. Foreign Trade	1.3 (4.2)	0.181 (1.55)	4.46 (12.1)	0.0773 (0.25)
19. International Affairs	0.40 (1.27)	0.0144 (0.63)	0.87 (1.73)	-0.00644 (-0.14)
20. Government Operation	1.3 (1.76)	0.00258 (0.07)	2.63 (2.64)	0.0118 (0.14)
21. Public Lands	1.0 (2.09)	0.0571* (1.68)	3.16 (3.78)	0.0655 (0.76)
Member-level Controls	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓
Member FE	✓	✓	✓	✓
Committee FE	✓	✓	✓	✓

Note: The unit of observation is member \times congress. Numbers under Columns (1) and (4) indicate the average number of bills sponsored in each issue area per member in a given Congress and the numbers in parenthesis shows the standard deviation. Each number under Columns (2), (3), (5) and (6) indicates the coefficient from the separate regressions for each issue area (dependent variables are number of bills introduced by each member in each issue area) for each independent variable of interest. t statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level. The number of observation is 3,070 in the House regressions and 697 in the Senate regressions.

Table A7: Future Lobbyists as Lobbyists and Access to Lobbying Firms: House (110th - 111th)

	(1)	(2)	(3)
	Total Access	Member Access	Staff Access
LES	1.778** (1.97)	0.663 (1.57)	1.044** (2.02)
Majority Party	-2.214 (-0.68)	-1.020 (-1.02)	-1.236 (-0.48)
DW-Nominate	-0.418 (-0.12)	-0.117 (-0.11)	-0.609 (-0.22)
Budget Committee	-1.004 (-0.85)	-0.339 (-0.68)	-0.701 (-0.83)
Committee Chair	1.908 (0.41)	-0.0709 (-0.05)	2.493 (0.67)
Sub-committee Chair	2.916* (1.91)	0.608 (1.29)	2.467** (2.07)
Seniority	-0.0291 (-0.19)	0.0170 (0.33)	-0.0102 (-0.09)
Majority Leader	1.209 (0.41)	-0.251 (-0.33)	2.028 (0.79)
Minority Leader	-2.232 (-0.67)	-0.548 (-0.41)	-1.333 (-0.52)
Powerful Committee	4.283** (2.10)	1.230** (2.02)	3.009* (1.89)
No. Non-Lobbyist Staff	-0.0741 (-0.46)	-0.00181 (-0.04)	-0.0413 (-0.32)
(ln) Mean Staff Salary	3.100 (1.30)	0.464 (0.58)	2.495 (1.34)
Female Staff Ratio	-2.322 (-0.48)	-0.560 (-0.40)	-1.197 (-0.31)
No. Lobbyist Staff (High)	-0.160 (-0.23)	0.0597 (0.26)	-0.0657 (-0.13)
No. Lobbyist Staff (Low)	0.0327 (0.08)	-0.0243 (-0.16)	0.150 (0.45)
No. Lobbyist Committee Staff	-0.226 (-1.23)	-0.0190 (-0.26)	-0.238* (-1.85)
No. Lobbyist Staff (High) × Hired by Lobbying Firm	-0.461 (-0.31)	-0.0888 (-0.17)	-0.303 (-0.27)
No. Lobbyist Staff (Low) × Hired by Lobbying Firm	4.441*** (2.63)	1.181** (2.37)	3.330*** (2.70)
Congress FE	✓	✓	✓
Committee FE	✓	✓	✓
<i>N</i>	872	872	872
adj. <i>R</i> ²	0.363	0.289	0.364

Note: The unit of observation is member × congress. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

Table A8: Future Lobbyists as Lobbyists and Access to Lobbying Firms: Senate (110th - 111th)

	(1)	(2)	(3)
	totmeeting	nummemcontact	numstaffcontact
LES	4.606*** (3.34)	0.0912 (0.21)	4.922*** (3.99)
Majority Party	7.479 (1.58)	1.374 (1.13)	6.504 (1.56)
DW-Nominate	17.44*** (2.81)	3.301** (2.10)	14.41*** (2.64)
Committee Chair	-2.253 (-0.36)	0.990 (0.80)	-2.087 (-0.38)
Sub-committee Chair	0.963 (0.30)	0.555 (0.69)	0.100 (0.03)
Seniority	0.777** (2.01)	0.197** (2.23)	0.610* (1.73)
Majority Leader	-5.636 (-1.05)	-0.873 (-0.87)	-3.801 (-0.78)
Minority Leader	9.757 (1.38)	1.115 (1.10)	8.682 (1.31)
Powerful Committee	-0.525 (-0.18)	-0.762 (-1.08)	-0.171 (-0.07)
Up for Reelection	1.251 (0.58)	0.920 (1.66)	0.249 (0.13)
Freshman	-3.361 (-1.02)	-1.174 (-1.43)	-2.850 (-0.91)
No. Non-Lobbyist Staff	0.186 (1.52)	0.0172 (0.63)	0.185* (1.74)
(ln) Mean Staff Salary	3.482 (0.52)	0.129 (0.08)	5.476 (0.90)
Female Staff Ratio	-25.28* (-1.85)	-4.475 (-1.53)	-20.15 (-1.61)
No. Lobbyist Staff (High)	-1.428 (-0.60)	0.0916 (0.22)	-1.592 (-0.71)
No. Lobbyist Staff (Low)	1.165 (0.94)	0.248 (0.81)	0.947 (0.86)
No. Committee Lobbyist Staff	0.0311 (0.05)	-0.0906 (-0.74)	-0.0186 (-0.03)
No. Lobbyist Staff (High) × Hired by Lobbying Firm	0.843 (0.43)	-0.183 (-0.51)	1.044 (0.56)
No. Lobbyist Staff (Low) × Hired by Lobbying Firm	-0.996 (-1.10)	-0.200 (-0.92)	-0.760 (-0.91)
Congress FE	✓	✓	✓
Committee FE	✓	✓	✓
<i>N</i>	195	195	195
adj. <i>R</i> ²	0.420	0.238	0.418

Note: The unit of observation is member × congress. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

Table A9: Lagged Member Characteristics and Hiring Future Lobbyist Staff: House (108th - 113th)

	(1) No. Future Lobbyist Staff (High)	(2) No. Future Lobbyist Staff (Low)	(3) No. Future Lobbyist Staff (High)	(4) No. Future Lobbyist Staff (Low)
Lagged LES	-0.0326* (-1.82)	0.00437 (0.14)	-0.0101 (-0.54)	0.00973 (0.28)
Lagged No. Sponsored Bill	-0.000899 (-0.51)	0.00172 (0.68)	0.000400 (0.17)	0.00218 (0.67)
Lagged Majority Party	-0.0326 (-0.78)	-0.0721 (-1.22)	-0.0307 (-0.66)	-0.127* (-1.73)
Lagged Budget Committee	-0.0490 (-0.76)	-0.0112 (-0.13)	0.00125 (0.02)	-0.152 (-1.48)
Lagged Committee Chair	0.00855 (0.07)	-0.0917 (-0.60)	0.0231 (0.21)	0.146 (0.92)
Lagged Subcommittee Chair	-0.0591 (-1.09)	0.0764 (1.01)	-0.0354 (-0.60)	0.109 (1.26)
Lagged Seniority	-0.0183** (-2.45)	0.0125 (1.29)	0.00165 (0.05)	0.106** (2.27)
Lagged Majority Leader	0.235 (1.51)	0.307** (1.98)	0.0503 (0.29)	0.0534 (0.20)
Lagged Minority Leader	0.0410 (0.43)	0.132 (0.91)	-0.134 (-0.75)	-0.240 (-1.03)
Lagged Powerful Committee	-0.0135 (-0.24)	0.0356 (0.49)	-0.0908 (-0.99)	0.0634 (0.52)
Lagged No. Staff	-0.00463 (-0.61)	-0.00565 (-0.52)	0.00130 (0.16)	-0.0164 (-1.20)
Lagged (ln) Mean Staff Salary	-0.0969 (-0.71)	-0.0991 (-0.50)	0.0340 (0.23)	-0.194 (-0.76)
Lagged Female Staff Ratio	0.0490 (0.24)	-0.633** (-2.41)	-0.220 (-0.83)	-0.0643 (-0.17)
Democrat	-0.117* (-1.89)	-0.100 (-1.40)		
Member Became Lobbyist	0.265*** (3.61)	0.303*** (3.14)		
Female Member	0.0339 (0.41)	0.111 (1.19)		
African-American Member	-0.157** (-2.17)	-0.266** (-2.42)		
Latino Member	-0.0200 (-0.20)	-0.333*** (-3.16)		
Member's State-Legislative Experience	-0.0711 (-1.41)	0.0646 (1.04)		
Southern Democrat	-0.0149 (-0.18)	0.0992 (0.89)		
Congress FE	✓	✓	✓	✓
Member FE			✓	✓
<i>N</i>	2221	2221	2221	2221
adj. <i>R</i> ²	0.070	0.158	0.531	0.486

Note: The unit of observation is member \times congress. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Standard errors are clustered at member-level.

Table A10: Lagged Member Characteristics and Hiring Future Lobbyist Staff: Senate (108th - 113th)

	(1) No. Future Lobbyist Staff (High)	(2) No. Future Lobbyist Staff (Low)	(3) No. Future Lobbyist Staff (High)	(4) No. Future Lobbyist Staff (Low)
Lagged LES	0.0216 (0.39)	-0.0750 (-0.58)	-0.0593 (-0.89)	0.0701 (0.52)
Lagged No. Sponsored Bill	-0.00891 (-1.59)	-0.00635 (-0.49)	0.00244 (0.48)	0.00735 (0.52)
Lagged Up for Reelection	0.0267 (0.41)	0.141 (0.93)	0.103 (1.30)	0.199 (1.16)
Lagged Freshman	0.337** (2.53)	-0.408 (-1.62)	0.250 (1.56)	-0.327 (-1.11)
Lagged Majority	-0.203 (-1.18)	-0.262 (-0.85)	-0.0109 (-0.05)	-0.251 (-0.64)
Lagged Committee Chair	0.0602 (0.38)	-0.00461 (-0.01)	0.0468 (0.25)	0.321 (0.88)
Lagged Subcommittee Chair	-0.0379 (-0.23)	0.403 (1.36)	-0.187 (-1.03)	0.0806 (0.23)
Lagged Seniority	0.000993 (0.08)	-0.0162 (-0.54)	-0.0970** (-2.49)	-0.490*** (-6.40)
Lagged Majority Leader	-0.158 (-0.85)	0.404 (0.78)	-0.229 (-0.93)	-0.0445 (-0.09)
Lagged Minority Leader	-0.0877 (-0.42)	-0.244 (-0.63)	-0.205 (-0.93)	0.0948 (0.30)
Lagged Powerful Committee	0.333** (2.57)	0.500* (1.77)	0.200 (0.97)	-0.300 (-0.72)
Lagged No. Staff	-0.0129* (-1.90)	0.0361* (1.84)	-0.0222 (-1.09)	-0.0192 (-0.69)
Lagged (ln) Mean Salary	-0.918** (-2.01)	0.444 (0.40)	-0.388 (-0.40)	0.154 (0.11)
Lagged Female Staff Ratio	-1.122 (-1.60)	-2.553* (-1.81)	0.284 (0.27)	-1.475 (-0.72)
Democrat	0.126 (0.86)	-0.458 (-1.51)		
Member Became Lobbyist	0.0000353 (0.00)	0.501 (0.98)		
Female Member	0.260 (1.63)	0.447 (1.15)		
African-American Member	0.380 (1.54)	-1.199*** (-2.77)		
Latino Member	1.197*** (5.30)	0.113 (0.18)		
Member's State-Legislative Experience	-0.156 (-1.29)	-0.320 (-1.30)		
Southern Democrat	0.397* (1.69)	0.228 (0.56)		
Congress FE	✓	✓	✓	✓
Member FE			✓	✓
<i>N</i>	518	518	518	518
adj. <i>R</i> ²	0.185	0.307	0.535	0.644

Note: The unit of observation is member \times congress. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.

C Appendix. Instrument Variable Analysis (In Progress)

Ideally, to show that career concerns drive the effect we identify, we need to know which staffers aspired to become lobbyists after their congressional careers. We use each staffer’s college information to sort out their aspiration to become a lobbyist. We argue that staffers who attended college in Washington DC, Virginia, and Maryland are more likely to become lobbyists because they might be more exposed to information about a career path in lobbying when they were in college. It is possible that some went to college in the Washington, DC areas to become lobbyists but it is hard to imagine that most of 18-year-old high school students would choose a school in Washington DC areas to become lobbyists. They might have chosen a DC-area school because they are interested in politics, but this logic can be applied to staffers who graduated from non-DC area schools since they all became Congressional staffers. We argue that going to a college (not a graduate school) in the Washington, DC areas can be used as an instrument for the aspiration to become a lobbyist and ultimately the probability of becoming a lobbyist.

Among the 43,484 staffers who worked in the 107th through the 113th Congresses, we have information on educational attainment for 35% (15,603) of the staffers. We calculate the number of staffers who went to college in Washington D.C., Virginia, and Maryland in each member’s office in a given Congress. We use this metric as an instrument for the number of staffers who are future lobbyists.

Table A11 presents the results for the House. Panel B shows the first stage regression result. There is a statistically significant, positive relationship between the number of staffers who went to a college in the DC area and the number of staffers who later became lobbyists. Panel A shows the second stage regression result and there is a statistically significant relationship between the number of staffers who later became lobbyists and the total number of bills that a member sponsored.

Table A11: Using Staffer’s College Decision as an Instrument: House

	(1)	(2)	(3)	(4)	(5)	(6)
	LES	Total Bills	SS Bills	LES	Total Bills	SS Bills
<i>Panel A: Second Stage</i>						
Future Lobbyist Staff	0.195 (0.94)	8.199** (2.30)	0.0684 (0.55)	-0.0849 (-0.42)	5.205* (1.90)	-0.00658 (-0.05)
<i>Panel B: First Stage</i>						
<i>DV = No. Future Lobbyist Staff</i>						
No. DC College Staff	0.13*** (3.46)	0.13*** (3.46)	0.13*** (3.46)	0.14*** (3.88)	0.14*** (3.88)	0.14*** (3.88)
<i>F</i> -statistics	11.97	11.97	11.97	15.07	15.07	15.07
Member-level Controls	✓	✓	✓	✓	✓	✓
Staffer-level Controls	✓	✓	✓	✓	✓	✓
Congress FE	✓	✓	✓	✓	✓	✓
State FE				✓	✓	✓

Note: The unit of observation is member \times congress and the number of observation is 3,070. *t* statistics in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors are clustered at member-level.