Bureaucratic Revolving Doors and Interest Group Participation in Policymaking*

Kyuwon Lee† Hye Young You‡

Abstract

There is growing concern about the movement of individuals from private sectors to bureaucracies, yet it is unclear how bureaucratic revolving doors affect connected firms' political participation. We argue that when connected individuals enter government, connected firms reduce their proactive forms of participation because their connected bureaucrats possess firm-specific technical and legal knowledge to help them achieve their policy objectives. We test our intuition by constructing a novel dataset on career trajectories of bureaucrats in the Office of the US Trade Representative (USTR) and firms that are connected to USTR's revolving-door bureaucrats. Empirical results show that firms with connections to USTR bureaucrats decrease their lobbying spending and participation on advisory committees under the USTR. The decrease in political participation is stronger when connected bureaucrats are more influential in policy production. Our findings suggest that decreases in interest groups' political activities might not imply that their influence on policymaking is diminished.

*We thank Royce Carroll, Jon Fiva, Sanford Gordon, Brian Libgober, Julia Payson, Peter Rosendorff, Mike Ting, Elisa Wirsching, and the seminar participants at New York University, Oslo Political Economy Conference, Oxford University, University of Essex, University of Gothenburg, and University of Rochester for their comments and feedback. We also thank Milo Hudson who provides an excellent research assistance.

†PhD Candidate, New York University. Email: kwl313@nyu.edu

‡Assistant Professor, New York University. Email: hyou@nyu.edu

Bureaucrats have significant discretion in formulating policy outcomes and their policy choices affect various stakeholders in society. To shift bureaucrats' policy choices in their favor, interest groups interact with bureaucrats via various actions. Interest groups directly lobby bureaucrats (You 2017), participate in notice-and-comment rulemaking (Yackee and Yackee 2006; Gordon and Rashin 2021; Libgober 2020a), serve on federal advisory committees (Balla and Wright 2001; Moffitt 2014), and lobby legislators who wield oversight authority over bureaucrats (McCubbins and Schwartz 1984; Epstein and O'Halloran 1995; Hall and Miler 2008).

Existing studies on bureaucrat-interest group interactions treat interest groups and bureaucrats as separate actors. However, this distinction is questionable due to an increasing number of individuals who move from the private sector into bureaucracies. This phenomenon, referred to as the bureaucratic revolving door, led to public concern that government officials who have connections to an industry may respond more favorably to information provided by that industry (Mora 2019). For instance, public watchdogs commented that Michael Froman, who was appointed by President Obama to head the Office of the US Trade Representative and previously had worked at Citibank, is "a man who, by background and mindset, responds to Wall Street rather than ordinary people" (Fulton 2015).

To fully understand the effect of the bureaucratic revolving door on policy outcomes, it is crucial to understand how the bureaucratic revolving door affects interest groups' incentives to participate in policymaking. If groups strategically adjust their political participation in expectation that their connected bureaucrats will enact preferable policy outcomes, the degree of interest group influence would not be fully captured by a measure of explicit and proactive forms of interest group activities, such as lobbying spending and participation on advisory committees. Identifying the effects and why they are present is crucial for understanding the implications of the bureaucratic revolving door on interest groups' influence. Nonetheless, to date there have been no studies that directly address this issue.

In this paper, we provide an explanation and empirical tests to examine how the entry of bureaucrats with connections to interest groups affects connected groups' participation in bureau-

cratic policymaking.[1] We argue that interest groups reduce proactive forms of participation as their connected bureaucrats have firm-specific expertise to help them achieve their policy objectives. In bureaucratic policymaking, interest groups primarily focus on delivering firm-specific technical and legal knowledge to bureaucrats who can produce particularistic policy outcomes for firms (You 2017). Examples abound in rulemaking (Croley 1998; Cuéllar 2005; Yackee and Yackee 2006) and in drafting trade agreements (Geewax 2015). The bureaucrat with connections to the interest group better understands interest group-specific legal and technical knowledge because they worked for the interest group in the past. Therefore, he or she can produce policy outcomes for the connected firm more efficiently with less knowledge provided by the firm, and this leads the firm to spend less time and effort participating in bureaucratic policymaking.

To test our intuition on the effect of bureaucratic revolving doors on interest groups' political participation, we focus on the Office of the United States Trade Representative (USTR), a federal agency responsible for developing US trade policies. The USTR is a good setting for our empirical test for several reasons. First, the policymaking environment at the USTR fits well with the informational condition we outline in this paper since trade policymaking requires detailed technical and legal knowledge about goods and services. Second, frequent movement from the private sector to bureaucracy is a necessary condition to test the effect of revolving doors on connected firms' political participation. Many USTR officials worked in private sector firms before coming to the USTR and robust revolving doors into the agency frequently change the composition of the USTR bureaucracy.

We construct the firm$\times$ year-level data for the main analysis. To do so, we start by collecting the list of all USTR officials who served in the agency during the period 1997-2017. For each official, we gather information on their career trajectories using various online sources. This data on career paths enables us to examine which officials are revolving-door bureaucrats and have previous connections with firms. Among the firms appearing in the USTR bureaucrats' career

1. We use the terms 'interest groups' and 'firms' interchangeably in this paper since most of the interest groups to which revolving-door bureaucrats have connections are firms and firms are the most active interest groups in the US (Schlozman, Verba, and Brady 2012).

trajectories, we identify those who are potentially interested in trade policymaking. For each firm in a given year, we track the number of individuals who currently work in the USTR *and* worked for the firm prior to entering the USTR. Using this dataset, we examine whether an increase in the number of connected USTR bureaucrats leads to a change in the connected firm's participation in the policymaking process.

We focus on two main activities of the USTR policymaking process in which firms engage: (1) participation on USTR advisory committees and (2) lobbying activities. While both measures reflect the level of firms' willingness to participate in the policymaking process, firms' participation on advisory committees depends on both the firms' willingness to participate and the agencies' decision to grant participation. It may be the case that firms cannot participate on committees even if they want to. Therefore, examining lobbying activities—a measure involving fewer concerns about bureaucratic-led constraints—as an alternative outcome is crucial to understanding which mechanism drives the results.

Our empirical results show that when an individual with a connection to a firm enters the USTR, there is a decrease in the connected firm's participation on USTR advisory committees, the connected firm's lobbying activities, and lobbying to the USTR and other agencies that are involved in trade policies in particular. We additionally examine heterogeneous effects by bureaucrats' characteristics that are consistent with our expectations. Our intuition expects that depending on the characteristics of connected bureaucrats, some are in better positions than others to efficiently produce policy benefits for their previous employers. We expect the effect of bureaucratic revolving doors to be stronger if (1) connected bureaucrats are more capable of processing technical or legal knowledge provided by their previous employers, and/or (2) connected bureaucrats are more influential within the agency to easily incorporate legal and technical knowledge related to the firms.

To test the first mechanism, we divide connected bureaucrats into those with and without JD degrees. We also divide connected bureaucrats into those whose position in the USTR is industry- and law-focused versus public relations (PR)-focused. To test the second mechanism, we divide

connected bureaucrats by the amount of salary they earn when they enter the USTR, and the degree of the bureaucrats' ideological alignment related to the USTR's median ideal point. We find that the results are consistent with our expectations of bureaucrats' abilities and influence: the reduction in the proactive forms of political participation is more salient for firms with connections to bureaucrats with JD degrees, positions in industry and law-related USTR sub-agencies, higher USTR starting salaries, and closer political preference alignments with the median USTR ideology.

The paper's findings contribute to the existing literature of bureaucracy and interest groups by providing systematic evidence on how revolving doors to bureaucracy affect interest groups' political participation. Despite robust movement from private sectors to the bureaucracy, surprisingly little research exists on this phenomenon. One exception is Hübert, Rezaee, and Colner (2021), which provides a theoretical framework of how policy-motivated individuals' movements to government affect the connected interest groups' influence on policymaking. We provide our theoretical argument and are the first to empirically address this research question using our novel dataset on USTR bureaucrats' career trajectories.

Moreover, our findings suggest that inequalities in political participation do not necessarily decrease as the level of interest group activities declines. Measures such as lobbying spending and participation in rulemaking processes are frequently cited to discuss the degree of inequality in political participation and influence in bureaucracy (Ban and You 2019; Yackee and Yackee 2006). On the surface, a decrease in firms' lobbying activities and participation on federal advisory committees may appear to mean that these firms' influence over the decision-making process is waning. However, considering the presence of the bureaucratic revolving door, we find that connected firms decrease their political activities because they have connected bureaucrats who may produce policy outcomes favorable to the firms. Thus, our paper raises a caution against equating a decrease in interest groups' political activity with a decrease in interest groups' influence in the policymaking process.

How Do Interest Groups Influence the Bureaucracy?

Given the division of labor among the US legislative and executive branches in the policymaking process, interest groups have ample opportunities to lobby different branches of government (Boehmke, Gailmard, and Patty 2005, 2013). As the scope and the amount of policymaking administered by federal agencies have increased over time, scholars have identified channels through which interest groups influence bureaucratic policymaking. One prominent strategy employed by interest groups is indirect in nature: lobbying legislators to provide private information that could affect the level of delegation that Congress grants to the bureaucracy. Such legislative lobbying by interest groups can affect bureaucratic decision-making by reducing informational asymmetries between Congress and the bureaucracy (Epstein and O'Halloran 1995). In addition, interest groups can help with congressional oversight of the bureaucracy by alerting legislators to bureaucratic transgressions (McCubbins and Schwartz 1984), or subsidizing legislators to intervene in agency rulemaking as a form of *ex post* oversight (Hall and Miler 2008).

Empirical studies on lobbying show that interest groups also directly lobby bureaucrats mostly through the notice-and-comment rulemaking process (e.g., Yackee and Yackee 2006; Haeder and Yackee 2015; Ban and You 2019; Gordon and Rashin 2021; Libgober 2020a, 2020b). Interest groups can also participate on federal advisory committees in the executive branch. In 1972, Congress passed the Federal Advisory Committee Act (FACA) to gain expertise from groups and individuals who work outside the federal government (Bybee 1994). FACA was part of the efforts to increase public participation in the bureaucratic decision-making process and opened an additional opportunity for interest groups to provide information to agencies. Existing work demonstrates that political actors use advisory committees in a strategic fashion. Moffitt (2010) shows that the Food and Drug Administration (FDA) uses federal advisory committees to protect the agency's reputation. Using data about the Environmental Protection Agency (EPA), Balla and Wright (2001) show that applicants are more likely to serve on the advisory committee if they are endorsed by interest groups actively lobbying members of Congress.

What Happens if Interest Groups Become Bureaucrats?

A key assumption in the existing literature on interest group-bureaucrat interactions is that bureaucrats and interest groups are separate actors. However, movement of personnel between the bureaucracy and interest groups in recent years makes this assumption questionable. Our particular focus is on an increasing number of bureaucrats who previously worked for interest groups before entering the bureaucracy.[2] The Center for Responsive Politics issued a report in 2018 that shows at least 164 ex-lobbyists were serving in the Trump administration (West 2018). One of them, Dan Elwell, who joined the Federal Aviation Administration in 2017, is a former lobbyist for the Aerospace Industries Association of America and American Airlines. The entry of these revolvers to the bureaucracy led the public to question whether these bureaucrats disproportionately represent the interests of their former employers.

Despite frequent discussion and public concerns about the movement of personnel from the private sector to the federal government, there is a limited body of work that examines these dynamics, with two exceptions. One is Gormley (1979) whose work examines the Federal Communications Commission (FCC) and shows that FCC regulatory commissioners who formerly worked in a regulated industry are likely to cast votes that favor the industry. The other exception is Hübert, Rezaee, and Colner (2021) who develop a formal model to study how revolvers into government affect the influence of special interests. They show that when a policy-motivated individual moves from the private to the public sector, it increases the government's policy development capacity and, therefore, changes the bargaining environment in favor of the government.

Our focus is how connections to bureaucrats affect firms' incentives to participate in bureaucratic policymaking to influence policies. To understand this dynamic, it is important to identify (1) what firms try to communicate to bureaucrats through various channels, and (2) what individuals connected to firms bring with them to the government. First, existing literature characterize the

2. While it is also important to study the movement of personnel from the government to the private sector, doing so requires a separate study. Also, there are relatively more studies on the revolving-door phenomenon from government to private sectors (e.g., Blanes i Vidal, Draca, and Fons-Rosen 2012), although most of them focus on individuals from the legislative branch.

bureaucratic policymaking as an environment where firms provide technical and legal know-how to bureaucrats, and bureaucrats produce particularistic policy benefits for the firm based on the firm's inputs (Croley 1998; Cuéllar 2005; Yackee and Yackee 2006; Ban and You 2019). An example of such a policymaking environment is notice-and-comment rulemaking where interest groups provide information and expertise to bureaucrats regarding how particular rules could affect a firm or industry (Libgober 2020a). Another example is the process of drafting trade policy agreements or targeted tariff exclusion processes for Section 301 duties in the USTR. Figure D1 in the Appendix illustrates an example of policymaking in the USTR. It shows a comment submitted by TE Connectivity, a firm specializing in producing connectors and sensor products, to the USTR regarding imposing additional tariffs on European products. In its comment, TE Connectivity lists the very detailed product codes (Harmonized System 8-digit level) on which the firm opposes imposition of additional tariffs. Other comments submitted to the USTR for this proposed tariff schedule are similar in terms of their firm-specific comments.

Moreover, bureaucratic policymaking usually occurs after the legislature makes most of its decisions on the policy agenda. Firms thus engage in *ex post* lobbying of bureaucrats where they discuss particular implementations of bills that the legislature passed (You 2017). During this process, the amount of particularistic policy benefit that bureaucrats can produce for firms is finite. For instance, in the previous example of trade policymaking, the list of these product codes that can be removed from the tariff list is finite.

Given the nature of bureaucratic policymaking, we argue that individuals who move from firms to the bureaucracy bring their firm-specific knowledge to government, and their technical and legal expertise is a useful asset for firms who want their views and preferences incorporated in bureaucratic decisions. The bureaucrat's previous connection to the firm affects how much policy benefit can be produced from the technical and legal inputs provided by the firm. The connected bureaucrat better understands the technical and legal inputs provided by their connected firm since they previously worked for the firm. Therefore, compared to other bureaucrats who are not connected to the firm, the connected bureaucrat can produce the same policy benefits with fewer inputs from the

connected firm. This reduces the firm's needs and incentives to participate in bureaucratic policymaking to deliver firms-specific knowledge. Even without proactive forms of participation, firms' policy objectives can be achieved through their connections to bureaucrats.

There is a well-established literature on revolving doors from government to private sectors. Studies show that those who previously worked in the government bring their clients the connections they formed in the government and their expertise about policies (e.g., Blanes i Vidal, Draca, and Fons-Rosen 2012; Bertrand, Bombardini, and Trebbi 2014). We examine the reverse of this movement and argue that when individuals move from the private sector to the bureaucracy, these revolving-door bureaucrats bring their knowledge about the firms where they were employed to government and its potential use in policymaking allows the firms to continue to influence bureaucratic decisions. Moreover, firm-specific knowledge is valuable for bureaucrats especially if they work in complex policy environments. Often, policymakers depend on industry-specific expertise to develop policies (McCarty 2014), so having a revolving-door bureaucrat with knowledge about the firm's expertise allows more efficient production of particularistic benefits to the firm.

However, one clear difference exists between the two directions of revolving door movements. When firms hire individuals from positions in government, they may need to spend more resources, especially in lobbying, to benefit the connections and expertise possessed by these individuals since firms hire them as lobbyists to have better access to policymakers. Firms may even need to offer jobs to bureaucrats with revolving-door concerns (e.g., regulators) who plan to leave the government if firms want to receive favorable regulatory decisions (Cohen 1986; Cornaggia, Cornaggia, and Xia 2016). In contrast, when a person moves into government from the private sector, the individual connected to the firm becomes a policymaker, so the firm does not need to spend additional resources to have access to them and deliver their knowledge. This implies that revolving doors from the private sector to government is the setting where we should have more concern about unequal representation of different interests. Also, the decrease in visible forms of political participation by the connected firms may mask continued or even increased influence of those firms in the bureaucratic policymaking process.

Data and Stylized Facts

Revolving Doors and Policymaking in the USTR

Among all federal agencies, we select the USTR to test the theoretical implications of bureaucratic revolving doors for several reasons. First, the policymaking environment at the USTR squarely represents the interactions between bureaucrats and interest groups we outline in the theoretical section. Trade policymaking requires very detailed legal and technical knowledge and expertise in traded goods and services. Moreover, interest groups frequently interact with USTR officials to provide information for bureaucrats to include in the finalized text of trade agreements or tariff schedules.[3]

Second, robust movement from the private sector to the bureaucracy is a necessary condition to satisfy the empirical test of the theoretical implications; the USTR satisfies this condition. Many of these officials worked in private sector firms before joining the USTR. This suggests that the frequent movement of senior individuals into the government may have a significant impact on the connected firms' incentives to engage in the USTR policymaking process.

It would have been ideal if we could collect career trajectories of bureaucrats across multiple federal agencies and compare how revolvers into the bureaucracy affect the relevant interest groups' participation in policymaking. However, the aim of our paper is to empirically test the theory, and we chose the USTR based on our understanding that the USTR's policymaking includes typical features of bureaucratic policymaking: exchanges of technical knowledge and expertise. We believe that there are useful insights we still can draw from our sample given the shared nature of the bureaucratic policymaking environment across agencies.

Moreover, there is a real limitation in terms of the data collection process. Identifying the career trajectories of bureaucrats who move in and out of government service and connecting them to firms and other interest groups is time-consuming, as we explain in detail later in the paper.

3. Appendix A and Table A1 present the details and the summary statistics regarding the general revolving-door phenomenon in the executive branch.

In addition, our analysis requires that we identify a set of relevant interest groups that could be affected by the revolving-door phenomenon, their participation on federal advisory committees and in lobbying activities, each bureaucrat's ideology and educational background, and the exact timing when the connection was formed between a group and a bureaucrat, etc. All of that represents additional burdens on collecting the relevant data across agencies for the extended time period we consider (21 years).

The USTR is responsible for developing and coordinating the United States' trade policies and engages extensively in free trade agreements, bilateral investment treaties, and World Trade Organization (WTO) disputes. The USTR is structured along four organizational lines: regions (e.g., Europe and the Middle East, China Affairs, WTO and Multilateral Affairs), industries (e.g., Agriculture, Intellectual Property, Services and Investment), legal issues (e.g., General Counsel), and public relations (e.g., Congressional Affairs, Public and Media Affairs).

Communication between USTR officials and interest groups occurs frequently via lobbying activities, but it also occurs regularly via advisory committees set by the USTR. The USTR often recruits advisory committee members from private and non-profit interest groups representing various industries. According to meeting logs provided by the FACA database (www.facadatabase.gov), advisory committees and USTR officials meet regularly to discuss the process of trade negotiations. Moreover, the Trade Act of 2002 requires that advisory committees provide the president, USTR, and Congress with reports about the extent to which a trade agreement promotes the economic interests of the United States and whether the agreement achieves the overall negotiation objective set forth in the Trade Act of 2002. The report of the appropriate sectoral or functional committee must also include opinions on whether the agreement ensures equity and reciprocity within the industry sector.

The number of USTR advisory committees in every fiscal year is 27 on average. The number of members varies by advisory committee. Some committees have as many as 30-40 members and some committees have as few as 5-10. Although advisory committee membership turnover is irregular, the USTR attempts to recruit members of advisory committees simultaneously and most

of these members have fixed term limits.[4]

Bureaucrats in the USTR: Career Trajectories and Connections to Firms

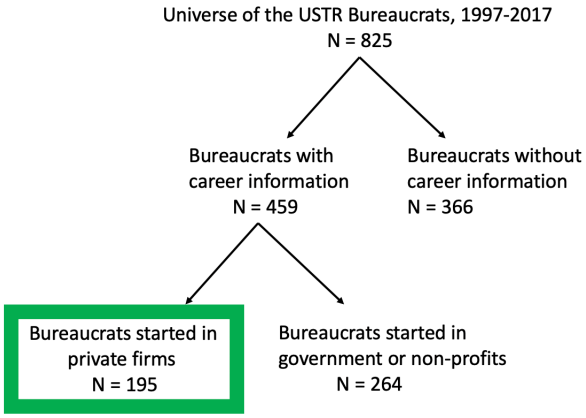
Our main dataset is firm×year-level. To construct the dataset, we first created the list of individuals who worked in the USTR during the period 1997-2017. Our primary data source is the federal Office of Personnel Management (OPM). The data contains detailed information on employees' names, duration of employment, age group, educational level, pay grade, and pay plan. We capture employment information on 825 USTR officials who served in the agency during the period 1997-2017 whose employment information is public. There is significant variation regarding the length of time USTR officials worked in the office. On average, they worked there seven years; the minimum term of work was one year and the maximum was 37 years.

Figure 1 shows the process of the sample construction for our analysis. For 825 bureaucrats who worked at any given period between 1997 and 2017, we collected information on the career trajectories of USTR officials in our list mainly from their LinkedIn webpages (www.linkedin.com). We used other web sources when LinkedIn did not provide the biographical information we required. We tracked the names of firms where USTR officials worked before and after they served in the USTR, their positions in those firms, and the start and end years of their employment. We also collected information on the officials' education if it was available. Among 825 USTR officials, we obtained career path information on 459 officials.

There are 366 USTR bureaucrats for whom we could not find any career trajectory information on the web. When we compare USTR officials with and without career information, there are systemic differences between the two groups. First, many USTR bureaucrats without career information worked in the 1990s and early 2000s when posting career information online was not a common practice. Second, those with online career information spent fewer years in the USTR, workings there for six years on average. On the other hand, those without online career information worked for the USTR for eight years, on average. The OPM data further shows that bureaucrats

4. Detailed explanations about USTR advisory committees are provided in Appendix B.

Figure 1: Sample Construction Process



with online career information, on average, received higher salaries in the USTR when they entered the agency and had higher education levels.

Despite these systemic differences, we argue that the omission of the subset of bureaucrats' career information does not pose a serious threat to our empirical findings. First, most of the bureaucrats for whom we do not have career information started their careers before 2010 when posting a résumé for online networking and job searches was not common.[5] If the omissions are mostly driven by time-trends of posting a résumé online for job searches and online networking and if that is unrelated to the level of their connected firms' political activities, our results would not be biased due to the missing data.

Second, to be included in the dataset for our analysis, bureaucrats must have started their careers in the private sector so they formed connections with firms before joining the USTR. We think it is unlikely that bureaucrats without online career information would satisfy this condition. Table C2 in Appendix D compares the characteristics of bureaucrats and with and without online career information. When we examine the grade at which bureaucrats without online career information joined the USTR, the average General Service (GS) grade was 8. The educational level of GS-8 federal government employees is a bachelor's degree and the starting salary for a GS-8 employee

5. Figure C2 in the Appendix presents the distribution of the first year when bureaucrats with and without career information started working in the USTR.

is $41,723 per year as of October, 2021.[6] The education level of bureaucrats without online career information as of the start of their employment in the USTR is 12.7, which corresponds to a bachelor's degree according to the OPM. The educational requirement and the starting salary for the GS-8 grade—the grade of many of the bureaucrats without online career information when they started in the USTR—imply that most of the bureaucrats without online career information are career bureaucrats who began their careers in government. Therefore, they are unlikely to be included in our final sample even if we had their career information.

To examine the association between 459 USTR bureaucrats and firms that are connected to them, we obtain the list of firms in the career trajectories of those 459 USTR officials. From this list, we focus on a set of connected firms that have an interest in the USTR policymaking process and influencing trade policies, which is the core assumption of our theoretical argument. Our selection of these firms is based on three criteria. First, we focus on firms that we categorize as private firms (e.g., Accenture), lobbying or law firms, or trade associations.[7] Second, among the firms selected based on the first criterion, we focus only on private sector firms that import or export goods and services, or lobbying/law firms that list "international trade/law" as their expertise. Again, this is to ensure that we only focus on firms that are interested in interacting with the USTR. Last, among the firms that meet the first and second criteria, we focus only on those that existed throughout the entire period 1997-2017, which means that they had persistent interest in interacting with the USTR throughout the study time period.

Using the career trajectories of the USTR bureaucrats, we identify 195 revolving-door bureaucrats who have connections—through previously working at the firm or having the firm as a lobbying client—to any firms showing interest in trade policymaking. There are 167 unique firms that formed a connection with these revolving-door bureaucrats. For 167 firms in our dataset, we construct firm$\times$year-level data for the period 1997-2017. At the firm-level, we calculate the number of USTR bureaucrats in a given year who previously formed connections with the firm. Therefore, we can examine how changes in the number of connected USTR bureaucrats are related to the

6. https://www.federalpay.org/gs/2021/GS-8 (accessed October 28,2021).
7. We do not include interest groups or firms that can be categorized as educational or non-profit.

firms' political participation.[8]

Measuring Firms' Political Participation

Our dataset includes dependent variables that measure the intensity of firms' political activities. Our first dependent variable measures the extent to which firms participate on USTR advisory committees. We create a binary indicator that is coded as 1 if the firm served on any USTR advisory committee in a given year, otherwise 0.[9] The data on USTR advisory committees comes from the FACA website (www.facadatabase.gov) and contains detailed information on the names of committee members, the names of committees in which they were members, their term limits, their employers (firms), their positions in the firms, the industry categories that their firm represents, etc.

Our second dependent variable measures the degree of firms' lobbying activities. We create an outcome variable that measures (1) the number of firms' reports on lobbying activities in a given year, (2) the amount of firms' spending on lobbying activities in a given year, (3) the number of firms' lobbying reports that specifically mentioned the USTR and (4) the total number of times a firm mentioned key trade policymaking agencies—the USTR, the Trade Development Agency, the International Trade Commission, and the Department of Commerce—as targeted agencies in their lobbying reports in a given year (Section 17 in the LDA report). We include the variable (4) given that having connected bureaucrats in the USTR could affect how connected firms lobby other agencies involved in trade policymaking. The lobbying data is from LobbyView.org (Kim 2018).[10]

8. There are two types of connections that USTR bureaucrats form with the firms in our sample: having worked in the firm (*direct* connection) or having worked as a lobbyist on behalf of the firm (*indirect* connection). Although it is possible that bureaucrats could have both direct and indirect connections with a firm, there is no such case in our dataset. In the main analysis, we do not differentiate between the two types of connections. However, we present the analysis that differentiates the direct and indirect connections in Tables E1 and E2 in the Appendix. Bureaucrat-firm pairs with a direct connection drive most of the result.

9. We could also create a discrete variable that reflects the total number of USTR advisory committees on which firms served in a given year. We did not use the discrete variable for analyses since this measure has little variation across firms and the analysis using the dummy variable (e.g., whether a firm participated in a USTR advisory committee) delivers a similar information.

10. A registrant (e.g., lobbying firm) submits one quarterly activity report (LD-2) per client, which often includes multiple issues that a registrant lobbied on behalf of a client. The report only discloses the total expenditure involved for all the lobbying activities with no specific references to lobbying expenditures for particular issues. Therefore, we examine additional outcomes in a firm's lobbying activities that capture a firm's lobbying interest in trade issues as robustness checks. Each lobbying report discloses an issue area of lobbying, and we create a binary variable that

While both types of dependent variables reflect the level of firms' desire to participate in the policymaking process, firms' participation on advisory committees also depends on the agency's willingness to grant participation. The agency decides who serves on its advisory committees among those firms that apply for membership. This agency-led constraint on advisory committee membership does not affect our theoretical argument unless the agency limits the connected firm's participation in response to entry of the connected individual to the agency. The agency might do so if it cares about balanced representation in the policymaking process (Balla and Wright 2001).[11] For example, the Industry Trade Advisory Committee (ITAC), one of the federal advisory committees under the USTR's jurisdiction, provides a detailed explanation for the membership, eligibility, selection criteria, and nominating process of an advisory committee member.[12] The ITAC's webpage mentions a few selection criteria, such as industry representation and diversity, in terms of represented sectors or product lines. But there are no specific ethics policies or limitations regarding the eligibility of individuals working at connected firms with the current USTR bureaucrats. Even though there are no formal eligibility criteria, there could be informal rules that the USTR uses when it selects members for its advisory committees. Feinstein and Hemel (2019) provide a detailed account of the composition and operations of advisory committees and one of their findings is that left-leaning individuals (measures based on their campaign contributions) are more likely to select into advisory committees during Democratic administrations and vice versa. This implies that some political considerations, especially agencies with political appointees at the top of the agencies, may play a role in the selection of advisory committee membership.

indicates whether a connected firm submitted any lobbying report that mentioned "Trade" as an issue code for its lobbying activity. Second, we include the number of times the firm mentioned the USTR as its targeted agency across all lobbying reports submitted in a given year. These measures, in addition to the number of reports mentioning the USTR as a targeted agency, alleviate some concerns that the lobbying measures are too broad, and therefore, we might not properly capture the firm's interest in trade policymaking when the connected individual moves to work in the USTR. Tables A2 and A3 in the Appendix show the summary statistics of our main variables.

11. We submitted a Freedom of Information Act (FOIA) request to the USTR for the list of applicants for membership to all USTR advisory committees that were active during the period 1997-2018, as well as their affiliated firm/organization and their position within the firm/organization to check whether the effect is driven by firms' voluntary actions of not applying for the position or the USTR's discretion. The FOIA officer corresponded that such records do not exist and the federal government has no obligation to create, compile, or obtain a record to satisfy a request (DOC-ITA-2020-000050).

12. https://www.trade.gov/become-itac-advisor (accessed Oct 30, 2021).

If such an agency-led constraint is significant, it generates a different empirical expectation: Since the USTR prevents firms from serving as advisory committee members when their connected individuals become bureaucrats, these firms would increase their lobbying activities to compensate for their absence on advisory committees. On the other hand, if the agency does not restrict participation on advisory committees in response to the entry of connected bureaucrats, we would observe a decrease in both the connected firms' participation in advisory committees and lobbying activities.

One crucial assumption underlying the logic above is that lobbying activities have fewer constraints from the USTR side compared to participation on the advisory committees. Therefore, it is a good measure of the firm's willingness for political participation. Lobbying activities are subject to various government regulations and, therefore, it is important to check for any restriction imposed on firms or groups that are connected to revolving-door individuals in the government. After the passage of the 2007 Honest Leadership and Open Government Act (HLOGA), former congressional staffers who became lobbyists were prohibited from contacting their ex-employers and colleagues in Congress for one year if the former staffer made at least 75% of what a member of Congress earns annually ("covered" staff). However, this regulation is about the post-employment of staffers who previously worked in Congress (from government $\rightarrow$ private sector) and the HLOGA did not impose any constraints on lobbying activities of the firms whose former employee entered into government service (private sector $\rightarrow$ government). Therefore, we argue that the measure on firms' lobbying activities is less susceptible to the agency (or government)-led constraints in measuring firms' willingness to participate in the political process.

Bureaucratic Revolving Doors Reduce Connected Firms' Political Participation

The model specification for firm-level analyses is as follows:

$$Y_{jt} = \alpha_j + \delta_t + \beta * Number\ of\ Connection_{jt-1} + \varepsilon_{jt} \quad (1)$$

where j,t indicate a firm and year. We include firm fixed effects (α_j) so that our results are robust to firm-level time-invariant confounders. We also include year fixed effects (δ_t) to account for annual political and economic shocks. The independent variable is $Number\ of\ Connection_{t-1}$, which is the number of USTR bureaucrats in year $t-1$ who previously formed connections with the firm. In a given year, a firm in our sample has 0.14 bureaucratic connection and it ranges from 0 to 4. Y_{jt} is an outcome variable that measures the firm's participation on advisory committees under the jurisdiction of the USTR.

For causal identification, we exploit the within-firm variation by including fixed effects. However, this does not eliminate a concern for unobservable time-varying confounders. This would be particularly problematic if entry to the USTR is highly correlated with the connected firm's underlying conditions that could affect the firm's political participation. We argue it is unlikely that firms persuade individuals to enter and work in the USTR during the time periods firms prefer. Due to the competitive process of hiring federal government officials in the USTR and the unpredictability of its notices for job vacancies, individuals might not be able to enter the USTR at the exact time the firms would prefer.[13] Even when firms' previous employees enter or exit the USTR via political appointment, other factors - such as an appointee's education level, position vacancies, or the interests of political principals - may play a larger role than firm's demands for particularistic benefits at the time of appointment.

Second, we claim that potential confounders in our case are likely to generate upward bias, which is counter to a decrease in firms' political participation. For instance, firms may suddenly encounter trade-related disputes where they feel more need to increase their lobbying activities to the USTR. At the same time, they also may be willing to incentivize previous employees to enter the USTR and work there to serve their firms' interests. The number of firms' trade-related

13. In Figures A4 and A5 in the Appendix, we present the first quarter that all the USTR bureaucrats from 1978 to 2014 and the revolving-door bureaucrats in our sample received their pay, as recorded in the OPM data. It shows that there is no particular pattern in terms of the entry timing of the USTR bureaucrats.

disputes is thus a confounder that generates upward bias in our estimates. If we find a decrease in firms' political participation, that implies that the potential confounders work against our finding. Nonetheless, there can be some confounders that generate downward bias. For example, when a Democratic administration takes over from Republicans, liberal-leaning individuals are more likely to enter the government from the private sector and a liberal-leaning firm—where the liberal-leaning revolvers previously worked—may reduce its political participation. We show later in the analysis section that taking this factor into account does not change the results.

Table 1 presents the results at the firm-level. Column (1) shows the results of firms' participation on USTR advisory committees using the binary indicator as the dependent variable. We find that when the connected individual enters the USTR as a bureaucrat, the connected firm's likelihood of serving on an advisory committee decreases. Substantively, the results in column (1) in Table 2 suggest that an increase of one connected bureaucrat in the USTR is associated with a 5% decrease in the likelihood of a connected firm's participation on a federal advisory committee, which indicates a 15 percentage point decrease (0.05/0.33) from the baseline level of advisory committee participation.

Table 1: The Effect of Revolving-Door Bureaucrats on Political Participation: Firm-Level

Outcome =	Advisory Committees	Lobbying			
	(1) Any Comm	(2) Num. Report	(3) Spending	(4) USTR	(5) #Trade Agencies
Number of Connections	-0.05** (0.02)	-0.11*** (0.04)	-0.50** (0.21)	-0.03 (0.02)	-0.07** (0.03)
Year FE	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓
Observations	3,507	3,507	3,507	3,507	3,507
adj. R-sq	0.459	0.813	0.788	0.652	0.673
Mean Outcome	0.33	1.28	7.14	0.42	0.73

Notes: Unit of observation is firm × year. Cell entries are regression coefficients with firm-clustered standard errors in parentheses. All the dependent variables related to lobbying activities are log transformed. * p<0.10, ** p<0.05, *** p<0.01.

In addition to a firm's participation on advisory committees, we examine whether having a

connected individual in the USTR as a bureaucrat also leads to a decrease in the connected firm's lobbying spending. Columns (2) through (5) in Table 1 present the results on lobbying activities. We use four lobbying measures: number of lobbying reports submitted, total spending on lobbying, total number of lobbying reports that specifically mentioned the USTR as the contacted agency, and number of times a firm mentioned key trade policymaking agencies as targeted agencies in their lobbying reports. All the dependent variables related to lobbying activities are log transformed. We observe a strong decrease in lobbying activities, which suggests that the agency-led constraint on advisory committees is minimal. Columns (2) and (3) examine the effect of the revolving door on the total number of lobbying reports and total spending by connected firms. There is a statistically significant, negative relationship between having a connected person in the USTR and the connected firm's lobbying spending. Substantively, an increase of one connected bureaucrat in the USTR is associated with an 10.4% decrease in the number of lobbying reports submitted and a 39.4% decrease in annual lobbying spending.[14] Columns (4) and (5) show that firms also decrease their lobbying activities specifically targeting the USTR and other trade-related agencies, although the result for USTR lobbying is not statistically significant.[15]

We argue that the mechanism behind a decrease in firms' political participation is mainly driven by the revolving-door bureaucrats' technical and legal expertise that allows them to understand the connected firms' preference in trade policymaking. However, the observed effect could be driven by time-varying, firm-specific characteristics. For example, as we previously explained, a political turnover from a Republican to a Democratic administration in the White House could affect both the entry of liberal-leaning individuals to the government and a liberal-leaning firm's political participation. To explore this possibility, we collect the CF Scores for firms in our sample to measure their political leanings. The CF Score is an ideology measure based on campaign contributions of individuals, groups, and firms (Bonica 2014). Using the assumption that donors

14. The substantive effects are calculated by the following way: `(exp(-0.11)-1)*100` for (log) number of report and `(exp(-0.50)-1)*100` for (log) lobbying spending.

15. In Section 6, we replicate the analysis at the bureaucrat×firm×year-level and the effects are more salient across all measures of the outcome, including targeting the USTR in lobbying. When we focus only on the direct connection, there is a more robust negative correlation between the number of connections and the number of lobbying reports mentioning the USTR. See Tables E1 and E2 in the Appendix.

contribute to candidates with ideologies similar to their own, discovering who gives to which candidates uncovers the ideologies of donors. More negative numbers in the CF Score denote more liberal ideology and more positive numbers signify more conservative ideology. To categorize firms, we find the CF Scores of their Political Action Committees (PACs): an official arm of firms' political operations in campaigns and to which employees of firms, including top executives, make voluntary donations. Among the 167 firms in our sample, we were able to find the CF Score for 111 firms.

Based on the distribution of the CF Scores, we divide firms into Democratic- or Republican-leaning and create a variable, *aligned*, to capture whether a firm's political stance is matched with that of the incumbent president. We find that the *aligned* variable is not systematically correlated with a firm's political participation. We also find that even after controlling for the political alignment between a firm and the president, our main results are robust.[16]

We also run a placebo test on USTR bureaucrats who form connections with a firm after working in the USTR. We expect that we would not observe the effect among these bureaucrats who are yet to have connections. Our independent variable for the placebo test is *Number of Future Connections*$_{jt-1}$, which is the number of USTR bureaucrats who work in the USTR in year $t-1$ and work in the firm j only after $t-1$. Table 3 presents the results. The prospect of hiring a USTR bureaucrat who will form connections with a firm in the future has no impact on the firm's political participation. This bolsters our argument that a decrease in a firm's political participation arises when individuals who already formed a connection with the firm and have firm-specific knowledge enter the bureaucracy.

Heterogeneous Effects by Bureaucrats' Characteristics

We argue that decreases in firms' political participation is driven by connected bureaucrats who can produce policy benefits for their previous employers more efficiently than non-connected bu-

16. The distribution of the firms' CF Scores is presented in Figure A2 in the Appendix. For more details about how we measure a firm's political leaning and the results, see Table E3 in the Appendix.

Table 2: Placebo Test on USTR Bureaucrats without Prior Firm Connections

Outcome =	Advisory Committees	Lobbying			
	(1) Any Comm	(2) No. Report	(3) Spending	(4) USTR	(5) #Trade Agencies
Number of Future Connections	-0.00 (0.02)	-0.00 (0.04)	0.10 (0.16)	0.03 (0.02)	0.04 (0.03)
Year FE	✓	✓	✓	✓	✓
Firm FE	✓	✓	✓	✓	✓
Observations	3,507	3,507	3,507	3,507	3,507
adj. R-sq	0.457	0.812	0.788	0.652	0.673
Mean Outcome	0.33	1.28	7.14	0.42	0.73

Notes: Unit of observation is firm × year. Cell entries are regression coefficients with firm-clustered standard errors in parentheses. All the dependent variables related to lobbying activities are log transformed. * p<0.10, ** p<0.05, *** p<0.01.

reaucrats. Our argument can be extended further given that even among connected bureaucrats, the degree to which they efficiently produce firm-specific policy benefits could differ depending on their characteristics, such as their educational backgrounds.

In this section, we examine heterogeneous effects by exploiting rich biographical information about USTR bureaucrats. This allows us to identify the mechanisms behind the observed effect. There are two ways in which connected bureaucrats differ from one another with respect to how they can better incorporate firms' legal and technical expertise into policymaking. First, some bureaucrats have better *ability* to understand technical and legal knowledge provided by firms or while working in more technical sub-agencies. Second, some bureaucrats have more *influence* on policymaking processes in the USTR than others.

To examine heterogeneous effects driven by bureaucrats' characteristics, we expand our dataset at the firm×year-level to the data at bureaucrat×firm×year-level. There are 382 pairs of revolving-door bureaucrats and their connected firms. Based on these pairs we construct the USTR bureaucrat ×firm×year data. To illustrate our dataset, we use an example of the former USTR bureaucrat, Timothy P. Stratford, and General Motors as an example and show it in Table 3. For the pair, each of the 21 rows denotes a year during the period 1997-2017. Mr. Stratford served as General Counsel

Table 3: An Example of USTR Bureaucrat× Firm×Year Data

Bureaucrat	Firm	Year	Connected	Work USTR	Division	Starting Salary($)	JD	Ideology
Stratford, Timothy P.	General Motors	1997	0	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	1998	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	1999	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2000	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2001	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2002	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2003	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2004	1	0	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2005	1	1	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2006	1	1	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2007	1	1	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2008	1	1	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2009	1	1	legal	149,200	1	-.708
Stratford, Timothy P.	General Motors	2010	1	0	legal	149,200	1	-.708
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Stratford, Timothy P.	General Motors	2017	1	0	legal	149,200	1	-.708

for General Motors' China operations from 1998 to September 2005. He joined the USTR as the Assistant US Trade Representative for China Affairs in 2005 and was responsible for developing and implementing US trade policy in East Asia.[17]

Connected denotes the timing when the connection was created between the bureaucrat and the firm. Timothy P. Stratford began working for General Motors in 1998, so we can say that the connection was created that year. *Work USTR* shows that Timothy P. Stratford worked in the USTR during 2005-2009. *Division* indicates the sub-agency where he worked within the USTR. *Starting Salary* shows the salary that Mr. Stratford received when he first joined the USTR. *JD* indicates whether Stratford has a law degree. *Ideology* shows Stratford's CF Scores based on his campaign contribution records (Bonica 2014).

Before testing the heterogeneous effects, we confirm that the effect observed at the firm-level analysis is also found in the data at the bureaucrat×firm-level. We run the following regression:

$$\begin{aligned} Y_{ijt} = &\alpha_{ij} + \delta_t + \beta_1 * \text{Work USTR}_{it-1} + \beta_2 * Connected_{ijt} \\ &+ \beta_3 * \text{Work USTR}_{it-1} * Connected_{ijt} + \varepsilon_{ijt} \end{aligned} \tag{2}$$

where $i, j, andt$ indicate a bureaucrat, firm, and year, respectively. We include bureaucrat-firm

17. https://www.cov.com/en/professionals/s/timothy-stratford (accessed June 15, 2021).

fixed effects (α_{ij}) so our results are robust to individual-level and firm-level time-invariant confounders. $\beta_1 + \beta_3$ is the parameter of our main interest: Given the connection between an individual and a firm, what is the effect of the entry of the connected individual into the USTR on the firm's spending on lobbying or its probability of serving on a USTR advisory committee? Since we argue for a decrease in firms' political participation, we expect $\beta_1 + \beta_3$ to be negative. On the other hand, β_1 corresponds to our placebo test in the previous section and can be interpreted as how the firm changes its behavior in response to the entry of individuals who become its employees in the future. The coefficient on the "Connected" variable (β_2) indicates how a firm's political participation changed when future revolving-door individuals started working in the firm. Table 4 presents the result. Across all outcome measures, connected firms reduce their participation when the previously connected individuals move to the bureaucracy. The analysis at the bureaucrat$\times$firm-level shows that our result is robust even after controlling for the bureaucrat-firm pair fixed effect and this bolsters confidence in our main result.[18]

Next, we examine the heterogeneous effect of revolving doors into government by the connected bureaucrats' characteristics. We provide four empirical hypotheses that are consistent with our theoretical argument. The first two hypotheses correspond to the mechanism of bureaucrats' *ability*, whereas the last two correspond to the mechanism of bureaucrats' *influence* within the agency. The effect is stronger if connected bureaucrats (1) have a JD degree,[19]; (2) work in the USTR sub-agencies related to industries (e.g., intellectual property), legal issues (e.g., monitoring and enforcement), and regional affairs (e.g., China) rather than congressional affairs and public relations (PR); (3) had a level of USTR salary above the median when they first began working in the USTR; and (4) have a political ideology congruent with the median ideal point of the USTR. Our last empirical hypothesis (4) relates to the extant literature on political leanings of bureaucrats and their agencies (Clinton and Lewis 2008; Clinton et al. 2012; Richardson 2019). Accordingly, each agency has its own political leaning, and bureaucrats whose political ideology is strongly aligned

18. Table E4 in the Appendix presents the results when we use alternative lobbying measures that specifically capture lobbying on trade policies. The results are robust.

19. Trade negotiations and trade disputes with other countries require detailed legal knowledge in goods and services trades. Therefore, bureaucrats with a JD degrees can more efficiently incorporate inputs from connected firms into policymaking.

Table 4: The Effect of Revolving-Door Bureaucrats on Political Participation: Bureaucrat×Firm-Level

Outcome =	Advisory Committes	Lobbying			
	(1) Any Comm	(2) Num. Report	(3) Spending	(4) USTR	(5) #Trade Agencies
Work USTR	0.01	0.01	0.13	0.05**	0.05*
	(0.02)	(0.04)	(0.17)	(0.02)	(0.03)
Connection	0.07**	0.09*	0.20	0.04	0.05
	(0.03)	(0.05)	(0.22)	(0.03)	(0.05)
Work USTR	-0.08**	-0.19***	-0.72***	-0.12***	-0.15***
× Connection	(0.03)	(0.05)	(0.26)	(0.04)	(0.05)
Effect of Entry When	-0.07**	-0.17***	-0.59***	-0.06**	-0.09**
Connection=1 ($\beta_1 + \beta_3$)	(0.03)	(0.04)	(0.22)	(0.03)	(0.04)
Year FE	✓	✓	✓	✓	✓
Bureaucrat-Firm FE	✓	✓	✓	✓	✓
Observations	8,022	8,022	8,022	8,022	8,022
adj. R-sq	0.418	0.846	0.830	0.711	0.719
Mean Outcome	0.41	1.66	8.49	0.61	0.97

Notes: Unit of observation is firm × bureaucrat × year. Cell entries are regression coefficients with firm-clustered standard errors in parentheses. All the dependent variables related to lobbying activities are log transformed. * p<0.10, ** p<0.05, *** p<0.01.

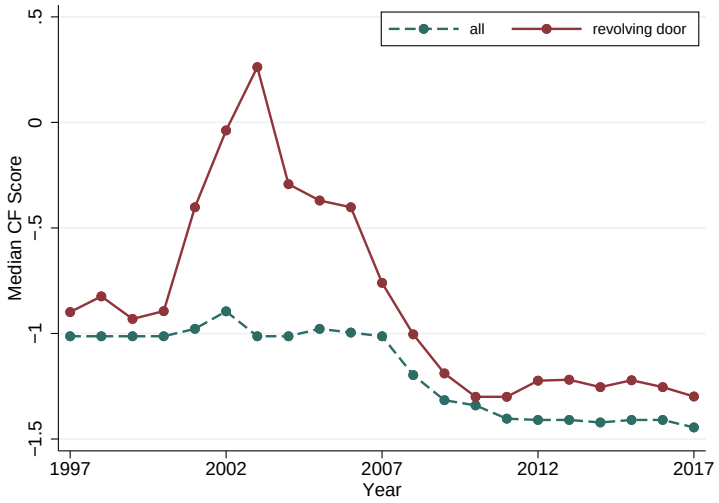
with the agency are more likely to have their voices heard by other bureaucrats who also share the political view of the agency.

To estimate the political ideology of all USTR bureaucrats, we use the campaign finance (CF) scores by Bonica (2014) that estimate donors' ideology from campaign contribution data.[20] The USTR's ideal point in each year is measured by the median CF Score of any USTR bureaucrats who appeared in the DIME data in a given year. Figure 2 shows the ideal point of the USTR during the period 1997-2017. The solid line ("all") represents the median CF Score of all bureaucrats who worked in the USTR in a given year. The dashed line ("revolving door") represents the median CF

20. Out of 195 bureaucrats in our dataset, we found the CF Scores for 102 bureaucrats. Figure A1 in the Appendix presents the distribution of the CF Scores of 102 revolving-door bureaucrats in the USTR. Those without CF Scores did not make campaign contributions. Table A4 in the Appendix compares the characteristics of bureaucrats with and without CF Scores. Table E5 in the Appendix shows that we still observe a decrease in firms' political participation when we restrict our sample to the pairs with the complete demographic information of bureaucrats (i.e., those with CF Scores).

Score of revolving-door bureaucrats who are included in our bureaucrat × firm × year dataset. The results show that across all years, the USTR is dominated by liberal USTR bureaucrats. During the George W. Bush administration, there was an inflow of conservative revolving-door bureaucrats, but this was not enough to pull the USTR's ideal point to the right side of the ideological scale.

Figure 2: USTR Ideal Point During 1997-2017



We estimate the ideological gap between each revolving-door bureaucrat and the median USTR bureaucrat in a given year by calculating the absolute difference between the USTR's median CF Score and the revolving-door bureaucrat's CF Score.[21] We label bureaucrats as 'aligned' if the ideological gap is smaller than 0.54, which is the median ideological gap, otherwise 'non-aligned.' Note that there is a weak correlation between a bureaucrat's ideological gap measure and his initial USTR salary,[22] which suggests that these two measures tap into different aspects of a bureaucrat's influence within the USTR.

Table 5 shows the results of hypotheses (1) and (2). We find that there is a clearer effect across the outcome measures when connected bureaucrats have JD degrees. We also find that the effect is more pronounced in cases where connected individuals move to industry/region-specific sub-

21. Figure A3 in the Appendix presents the distribution of the absolute difference.
22. R-squared for a bivariate regression between these two variables is 0.09.

agencies that deal with technical and legal issues, not to PR-specific agencies that mostly deal with relationships with Congress or the media. These results on heterogeneous effects by the sub-agencies within the USTR provide support for our theoretical argument that emphasizes the informational aspect of bureaucrat-firm interactions.[23]

Testing heterogeneous effects allows us to rule out alternative mechanisms that explain a decrease in firms' political participation, such as connected firms simply shifting from having formal contacts to having informal contacts (e.g., happy hours) with their connected bureaucrats in the agency. This could occur because direct connection to the bureaucracy reduces the need to contact legislators to ask them to interact with bureaucrats to deliver the firm's demands (Acemoglu et al. 2016; Ritchie and You 2019). But this mechanism is not supported by the results in Table 5 that show a strong effect on bureaucrats in industry/region sub-agencies rather than bureaucrats in PR-specific sub-agencies. Responsibilities in PR-specific sub-agencies include social and political interactions with other agencies and legislatures, which would provide more opportunities for informal interactions with their connected firms. Although we cannot rule out this mechanism entirely, the analysis on the heterogeneous effect supports our explanation that focuses on the provision of legal and technical know-how to policymaking.

Table 6 presents the results of hypotheses (3) and (4). First, the effect of bureaucratic revolving doors is strongly driven by connected bureaucrats with high initial USTR salaries. Bureaucrats who entered the USTR with salaries higher than the agency's median salary tend to be in higher

23. Individuals might understand firms' technical and legal knowledge better if they moved to the USTR immediately after working for the firm. Table E6 in the Appendix shows that the effect is strongest in the first year when a revolving-door bureaucrat joined the USTR and that the magnitude and the significance of the results decay over time. Individuals might also have more firm-specific knowledge if they engaged in specific tasks while working for the firm, but this cannot be tested due to the limitations of our career data. Although our career data shows the position in which individuals served while working at their firm (e.g., vice president, senior director), this is a noisy measure of their ability to understand the firm's legal and technical information. Holding high positions in the firm does not necessarily mean that individuals are better at understanding the firm's legal and technical matter. This is why we obtain mixed results when we consider whether the length of time a person worked at the firm is associated with a stronger decrease in firms' political participation. Table E7 in the Appendix shows that a longer tenure at the firm is correlated with a stronger decrease in firms' participation in advisory committees, whereas a shorter tenure has a stronger effect on lobbying outcomes. The mixed results could be driven by measurement errors when we measure a person's firm-specific knowledge by how long they worked at the firm or what position they held at the firm. In fact, those who spent less than 3 years in a given firm are more likely to have a JD degree, on average. The likelihood of having a JD degree is 0.52 for those who worked fewer than 3 years in a given firm, and 0.45 for those who worked more than 3 years. The t-test shows that the difference in likelihood is statistically significant at 1% confidence level.

Table 5: Heterogeneous Effects of the Bureaucratic Revolving Door

	JD Degree		USTR Sub-Agency	
	(1) with JD	(2) without JD	(3) Industry/Region	(4) PR
Participation in Advisory Committees:				
Any Comm	-0.05*	-0.08	-0.07**	-0.05
	(0.03)	(0.05)	(0.03)	(0.04)
Lobbying Activities:				
Num. Report	-0.16***	-0.13**	-0.16***	-0.13
	(0.05)	(0.06)	(0.05)	(0.09)
Spending	-0.54*	-0.50*	-0.49**	-0.73*
	(0.30)	(0.28)	(0.24)	(0.40)
USTR Lobbbying	-0.06*	-0.03	-0.06*	-0.04
	(0.03)	(0.05)	(0.03)	(0.05)
#Trade Agencies	-0.08*	-0.06	-0.07	-0.18
	(0.04)	(0.07)	(0.04)	(0.11)
Observations	3,885	4,137	5,544	2,478

Notes: Cell entries are regression coefficients with firm-clustered standard errors in parentheses. All the dependent variables related to lobbying activities are log transformed. * p<0.10, ** p<0.05, *** p<0.01.

ranks and are in better positions to incorporate firm-specific legal and technical expertise in policies. Second, a decrease in firms' political participation occurs when connected bureaucrats have political preferences that are more closely aligned with the agency's median ideal point. Existing literature emphasizes that bureaucratic preference is an important factor in determining policy outcomes (Ting 2002; Gailmard and Patty 2007; Lewis 2008; Bils 2020). If connected bureaucrats share similar ideological preferences with other bureaucrats working in the USTR, the opinions of connected bureaucrats are more likely to be supported by other bureaucrats and, thus, they could have more influence on the USTR policymaking process.[24]

Our findings also suggest that connected firms do not always reduce their political participation when they acquire bureaucratic connections; those behaviors are conditional on an ideological

24. In Table E8 in the Appendix presents the results when we use a different threshold (mean value of the absolute difference in the CF Score) to divide bureaucrats into aligned vs. non-aligned. The results are robust.

Table 6: Heterogeneous Effects of the Bureaucratic Revolving Door

	USTR Initial Salary		USTR Ideological Alignment	
	(1) High Salary	(2) Low Salary	(3) Aligned	(4) Non-Aligned
Participation in Advisory Committees:				
Any Comm	-0.10**	-0.03	-0.04	-0.06
	(0.04)	(0.04)	(0.04)	(0.05)
Lobbying Activities:				
Num. Report	-0.24***	-0.08	-0.23***	-0.11
	(0.07)	(0.06)	(0.07)	(0.15)
Spending	-0.89***	-0.29	-1.06***	-0.25
	(0.31)	(0.27)	(0.37)	(0.54)
USTR Lobbbying	-0.12**	-0.00	-0.07*	-0.07
	(0.04)	(0.04)	(0.04)	(0.09)
#Trade Agencies	-0.12*	-0.06	-0.09	-0.18
	(0.06)	(0.06)	(0.07)	(0.11)
Observations	4,200	3,822	2,476	2,396

Notes: Cell entries are regression coefficients with firm-clustered standard errors in parentheses. All the dependent variables related to lobbying activities are log transformed. * p<0.10, ** p<0.05, *** p<0.01.

match between the agency and the connected bureaucrat. For instance, if a conservative individual who worked for a fossil fuel firm moved to the EPA—which is one of the government's most liberal agencies (Clinton et al. 2012)—we do not expect the connected firm to reduce its participation in the political process since the revolving-door bureaucrat's ideology still would be far from the EPA's median ideal point and revolvers could face significant opposition from career bureaucrats within the agency (Davenport 2020). Overall, the analysis on the heterogeneous effect suggests that revolving-door bureaucrats' *ability* and *influence* to incorporate firm-specific information are the key drivers of a decrease in firms' political participation.

Conclusion

Bureaucrats are actively targeted by various interest groups due to their crucial roles in policymaking. Canonical models of bureaucrat-interest group interactions focus primarily on incentives of interest groups in providing policy-relevant information to bureaucrats through various forms of political activities. The underlying assumption in the models is that a bureaucrat and an interest group are separate agents with distinct preferences. Frequent movements of individuals from the private sector to federal agencies raises a question about this key assumption. What happens to interest groups when individuals connected to those groups become bureaucrats? How do bureaucratic revolvers affect interest groups' political activities?

In this paper, we tackle this question using a novel dataset constructed from career trajectories of USTR bureaucrats and their connected firms for the period 1997-2017. Given that the stereotypical bureaucratic policymaking environment involves firms trying to deliver firm-specific, technical information to bureaucrats, and revolving-door individuals to the bureaucracy possess expertise allowing them to produce the same policy favors with fewer inputs from firms, we expect that the connected firms decrease their political participation when they acquire bureaucratic connections through the movement of revolving door individuals which allow the firms to maintain their influence. We show that if a connected person moves to the USTR as a bureaucrat, then the connected firm is less likely to participate on USTR advisory committees and reduces its overall lobbying spending. We also show that the effect is stronger when connected bureaucrats are more capable of processing firm-specific information and are more influential within the agency in incorporating the information related to the connected firms in policy production.

The normative implications of our research on the bureaucratic revolving-door phenomenon are ambiguous. On one hand, reduced participation in lobbying and advisory committee membership after forming a bureaucratic connection implies that revolvers into the government do not amplify the connected firms' political activities and increase the amount of money spent by interest groups circulating in our political system. On the other hand, our findings imply that interest groups may

not need to spend more money on lobbying and that they allocate more time to participate on advisory committee activities to influence government policies when their connected individuals become bureaucrats. Through personal connections in the bureaucracy, firms could achieve the goals they would have achieved through other channels that require more resource spending. To answer this question, it is important to examine the effect of bureaucratic revolving doors on actual policy outcomes to see a clear mapping from a firm's political participation to the policy outcome the firm receives. A natural extension of our research would be examining policy decisions made by the USTR, such as whether the USTR removes or adds proposed tariff schedules on imported products, as a function of firms' participation in notice-and-comment rulemaking. Examining whether firms that are connected to USTR bureaucrats achieve a similar or higher level of policy favors even when they reduce their political participation would highlight the effect of bureaucratic revolving doors on policy outcomes.

There is a long standing tradition in the study of interest groups that uses political participation, such as contacting policymakers and lobbying spending, as measures of influence (e.g., Schlozman, Verba, and Brady 2012; Page, Bartels, and Seawright 2013). Our result suggests that, when the revolving-door phenomenon exists, decreased levels of political activities by interest groups does not necessarily mean their influence has also declined. Interest groups endogenously reduce their political participation in expectation of the revolving-door bureaucrat's actions. Under this scenario, *less inequality* in political participation among interest groups may imply *more inequality* in political influence if a selected set of interest groups can form a connection with revolving-door bureaucrats.

What are the general implications of our research on the topic of revolvers into the bureaucracy? Our results present some conditions where we observe that bureaucratic revolving doors reduce connected interest groups' political participation. The case we examine in this paper—revolvers in the USTR—satisfies those conditions, but there is a significant variation across agencies regarding their ideologies (Clinton and Lewis 2008; Richardson, Clinton, and Lewis 2017) and the types of individuals who move from the private sector into those agencies. Like the USTR, interac-

tions between bureaucrats and firms involve the exchange of firm-specific technical information for policymaking in agencies, such as the Commodity Futures Trading Commission (CFTC) and the Security and Exchange Commission (SEC). In other agencies, such as the Department of Labor and the Small Business Administration, interactions between bureaucrats and firms might be mostly about allocation of government subsidies and redistributive programs. Federal advisory committees could also play different roles depending on the jurisdiction of the agency. Therefore, it is possible that bureaucratic revolvers could lead to more active interest group participation. Extending our analysis to other agencies and identifying the conditions conducive to firms' varying reactions will enhance our understanding of how bureaucracy and interest groups interact in a complex policymaking environment.

References

Acemoglu, Daron, Simon Johnson, Amir Kermani, James Kwak, and Todd Mitton. 2016. "The Value of Connections in Turbulent Times: Evidence from the United States." *Journal of Financial Economics* 122 (2): 368–391.

Balla, Steven, and John Wright. 2001. "Interest Groups, Advisory Committees, and Congressional Control of the Bureaucracy." *American Journal of Political Science* 45 (4): 799–812.

Ban, Pamela, and Hye Young You. 2019. "Presence and Influence in Lobbying: Evidence from Dodd-Frank." *Business & Politics* 21 (2): 267–295.

Bertrand, Marianne, Matilde Bombardini, and Francesco Trebbi. 2014. "Is it whom you know or what you know? An Empirical Assessment of the Lobbying Process." *American Economic Review* 104 (12): 3885–3920.

Bils, Peter. 2020. "Policymaking with Multiple Agencies." *American Journal of Political Science* 64 (3): 634–648.

Blanes i Vidal, Jordi, Mirko Draca, and Christian Fons-Rosen. 2012. "Revolving Door Lobbyists." *American Economic Review* 102 (7): 3731–3748.

Boehmke, Frederick, Sean Gailmard, and John Patty. 2005. "Whose Ear to Bend? Information Sources and Venue Choice in Policy-Making." *Quarterly Journal of Political Science* 1 (2): 139–169.

———. 2013. "Business as Usual: Interest Group Access and Representation Across Policy-making Venues." *Journal of Public Policy* 33 (1): 3–33.

Bonica, Adam. 2014. "Mapping the Ideological Marketplace." *American Journal of Political Science* 58 (2): 367–386.

Bybee, Jay. 1994. "Advising the President: Separation of Powers and the Federal Advisory Committee Act." *Yale Law Journal* 1 (1): 51–128.

Clinton, Joshua, Anthony Bertelli, David Lewis Christian Grose, and David Nixon. 2012. "Separated Powers in the United States: The Ideology of Agencies, Presidents, and Congress." *American Journal of Political Science* 56 (2): 341–354.

Clinton, Joshua, and David Lewis. 2008. "Expert Opinion, Agency Characteristics, and Agency Preferences." *Political Analysis* 16 (1): 3–20.

Cohen, Jeffrey E. 1986. "The Dynamics of the "Revolving Door" on the FCC." *American Journal of Political Science* 30 (4): 689–708.

Cornaggia, Jess, Kimberly Cornaggia, and Han Xia. 2016. "Revolving Doors on Wall Street." *Journal of Financial Economics* 120:400–419.

Croley, Steven P. 1998. "Theories of Regulation: Incorporating the Administrative Process." *Columbia Law Review* 98 (1): 1–168.

Cuéllar, Mariano-Florentino. 2005. "Rethinking Regulatory Democracy." *Administrative Law Review* 57 (2): 411–499.

Davenport, Coral. 2020. "Trump's Environmental Rollbacks Find Opposition Within: Staff Scientists." *The New York Times* March 7 ((https://nyti.ms/2WOsW34)).

Epstein, David, and Sharyn O'Halloran. 1995. "A Theory of Strategic Oversight: Congress, Lobbyists, and the Bureaucracy." *Journal of Law, Economics, & Organization* 11:227–255.

Feinstein, Brian, and Daniel Hemel. 2019. "Outside Advisers Inside Agencies." *Georgetown Law Review* 108 (5): 1139–1211.

Fulton, Deirdre. 2015. "Is US Trade Rep a Wall Street Crony? Groups Demand Transparency." *Common Dreams* May 28 (https://www.commondreams.org/news/2015/05/28/us-trade-rep-wall-street-crony-groups-demand-transparency).

Gailmard, Sean, and John Patty. 2007. "Slackeers and Zealots: Civil Service, Policy Discretion, and Bureaucratic Expertise." *American Journal of Political Science* 51 (4): 873–889.

Geewax, Maryilyn. 2015. "Scrubbing a Trade Deal: Translators Get Behind the Ears of the TPP." *NPR* October 11 ((https://www.npr.org/2015/10/11/447684250/scrubbing-a-trade-deal-translators-get-behind-the-ears-of-the-tpp)).

Gordon, Sanford, and Steven Rashin. 2021. "Stakeholder Participation in Policymaking: Evidence from Medicare Fee Schedule Revisions." *Journal of Politics* 83 (1): 409–414.

Gormley, William T. 1979. "A Test of Revolving Door Hypothesis at the FCC." *American Journal of Political Science* 23 (4): 799–812.

Haeder, Simon, and Susan Webb Yackee. 2015. "Influence and the Administrative Process: Lobbying the U.S. President's Office of Management and Budget." *American Political Science Review* 109 (3): 507–522.

Hall, Richard, and Kristina Miler. 2008. "What Happens After the Alarm? Interest Group Subsidies to Legislative Overseers." *Journal of Politics* 70 (4): 990–1005.

Hübert, Ryan, Janna Rezaee, and Jonathan Colner. 2021. "Going Into Government: How Hiring from Special Interests Reduces Their Influence." *Working Paper* (https://ryanhubert.com/files/hkrc-revolving-door.pdf).

Kim, In Song. 2018. "LobbyView: Firm-level Lobbying & Congressional Bills Database." *MIT Working Paper* (http://web.mit.edu/insong/www/pdf/lobbyview.pdf).

Lewis, David. 2008. *Politicizing Administration: Policy and Patronage in Presidential Appointment.* Princeton University Press.

Libgober, Brian. 2020a. "Meetings, Comments, and the Distributive Politics on Rulemaking." *Quarterly Journal of Political Science* 15 (1): 1–33.

———. 2020b. "Strategic Proposals, Endogenous Comments, and Bias in Rulemaking." *Journal of Politics* 82 (2): 642–656.

McCarty, Nolan. 2014. "Complexity, Capacity, and Capture." In *Preventing Regulatory Capture: Special Interest Influence and How to Limit It,* edited by Daniel Carpenter and David Moss. Cambridge University Press.

McCubbins, Mathew, and Thomas Schwartz. 1984. "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms." *American Journal of Political Science* 28 (1): 165–179.

Moffitt, Susan. 2010. "Promoting Agency Reputation through Public Advice: Advisory Committee Use in the FDA." *Journal of Politics* 72 (3): 880–893.

———. 2014. *Making Policy Public: Participatory Bureaucracy in American Democracy.* Cambridge University Press.

Mora, David. 2019. "Update: We Found a "Staggering" 281 Lobbyists Who've Worked in the Trump Administration." *ProPublica* October 15 ((https://www.propublica.org/article/we-found-a-staggering-281-lobbyists-whove-worked-in-the-trump-administration)).

Page, Benjamin, Larry Bartels, and Jason Seawright. 2013. "Democracy and the Policy Preferences of Wealthy Americans." *Perspectives on Politics* 11 (1): 51–73.

Richardson, Mark. 2019. "Politicization and Expertise: Exit, Effort, and Investment." *Journal of Politics* 81 (3): 878–891.

Richardson, Mark, Joshua Clinton, and David Lewis. 2017. "Elite Perceptions of Agency Ideology and Workforce Skill." *Journal of Politics* 80 (1): 303–308.

Ritchie, Melinda, and Hye Young You. 2019. "Legislators as Lobbyists." *Legislative Studies Quarterly* 44 (1): 65–95.

Schlozman, Kay, Sidney Verba, and Henry Brady. 2012. *The Unheavenly Chorus: Unequal Political Voice and the Broken Promise of American Democracy.* Princeton University.

Ting, Michael. 2002. "A Theory of Jurisdictional Assignments in Bureaucracies." *American Journal of Political Science* 46 (2): 364–378.

West, Geoff. 2018. "Revolving Door: Former Lobbyists in Trump Administration." *Opensecrets.org* July 16 (https://www.opensecrets.org/news/2018/07/revolving-door-update-trump-administration/).

Yackee, Jason Webb, and Susan Webb Yackee. 2006. "A Bias Toward Business? Assessing Interest Group Influence on the U.S. Bureaucracy." *Journal of Politics* 68 (1): 128–139.

You, Hye Young. 2017. "Ex Post Lobbying." *Journal of Politics* 79 (4): 1162–1176.