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Revolvers in the corporate elite

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Stigler Center

for the Study of the Economy and the State

Revolvers in the Corporate Elite

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Revolvers in the Corporate Elite

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December 13, 2024

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How do firms employ political connections to deal with their non-market environment? To answer this question, we provide the most comprehensive empirical examination of firms' employment of former public officials —*revolvers*— to date. Building on a rich literature in management and political science, we argue that political skills and connections of revolvers are multidimensional, non-substitutable, and complementary. We investigate the role of revolvers using comprehensive data on the universe of revolvers on boards and in senior management of U.S. publicly traded firms. First, we show that 56% of publicly traded firms employ revolvers and that companies frequently employ multiple revolvers. Second, revolver hiring and roles in firms crucially depend on the revolver's background. Firms hire different types of revolvers in response to different shocks to their non-market environment, and the arrival of a revolver increases the firm's propensity to lobby. Finally, we find that revolver arrivals increase firm financial performance, which is partly driven by federal contracts, and that multiple different types yield higher returns. Our results have implications for the strategic linkages between corporate non-market strategies, the returns to political connections, and effective hiring in top-level companies.

Key Words: Revolving door, Executives, Corporate boards, Non-market strategy

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1 Introduction

The *revolving door* phenomenon—the movement of government officials to private sector jobs, and vice versa—is one of the most prominent manifestations of relationships that corporations build with the government (Blanes et al., 2012; Lester et al., 2008; Egerod Tran, 2022; Hadani Schuler, 2013). Research has long established that firms can benefit from *revolvers*’ human and social capital in multiple ways (Egerod, 2022; Heese, 2022; Conti Valentini, 2018), but these political connections also come with costs (Bertrand et al., 2018; Huang Thakor, 2024; Gu et al., 2020). Former government officials may lack the business acumen required for private-sector roles, as their public service experience may not align with corporate demands (Fan et al., 2007). Some scholars have even argued that appointing multiple revolvers leads to diminishing returns, as each additional hire provides redundant resources (El Nayal et al., 2021).

This prediction is only meaningful if the skills and connections of public officials are more or less the same. While the literature on appointing revolvers as a corporate political activity is extensive, it tends to treat revolvers as a homogeneous resource. However, this overlooks *who* these revolvers are and *how* their distinct skills and connections are utilized. In this paper, we argue that revolvers vary dramatically in their capabilities, and that many firms curate portfolios of revolvers with very particular sets of skills to address specific challenges in their non-market environment. Contrary to the redundancy predicted in prior research, firms may thus benefit from employing multiple revolvers with different backgrounds simultaneously.

We investigate how political connections are deployed as a corporate political activity (CPA), along three core questions: 1) Do firms employ revolvers strategically to deal with the firm’s non-market environment? 2) Once they are in the firm, how do revolvers shape non-market strategy? 3) Are strategies that integrate revolvers successful in improving corporate performance? Examining these questions requires data on multiple types of revolvers and a broad swath of the firm’s non-market interactions. We find that while revolvers are often hired to deal with specific non-market events, they are integrated into the firm and get their own strategic agency. These strategic actions have significant downstream consequences for the firm. These findings allow us to address a significant gap in the existing literature, which has focused solely on how political connections influence corporate outcomes but has overlooked how and why politically connected personnel shape firms’ strategic behavior. This is a *sine qua non* for developing theories of political

connections in non-market strategy and for making sense of the often mixed evidence regarding the impact of revolvers on corporate performance (Hadani Schuler, 2013).

Much of our limited understanding of revolver portfolios stems from the narrow focus of existing studies, which often concentrate on specific groups of revolvers. Studies of high-ranking politicians (Egerod Tran, 2022; Palmer Schneer, 2016) and their staff (Blanes et al., 2012; Bertrand et al., 2014; LaPira Thomas, 2017; McCrain, 2018) are particularly common.¹ This focus is understandable—in the U.S., nearly half of former Senators and Governors transition into corporate director roles (Palmer Schneer, 2016). However, the Senate consists of only 100 members, the U.S. Congress employs some thousand legislative staff, and there are only 50 governors at a time. In contrast, the federal government employs close to 5 million civilian and military personnel, in addition to the almost 20 million people employed by state and local governments. Thus, even if only a small share of these officials become revolvers, the potential revolver pool is far larger and more diverse than is commonly assumed. Moreover, revolvers do not all take passive roles as directors; many transition into active positions and enter senior management.²

Studying revolver portfolios in the corporate elite requires more comprehensive data on revolvers than previously assembled, encompassing both the characteristics of revolvers, the firm's environment, governmental interactions, and corporate performance. To this end, we use data on the universe of former public officials on boards and all available senior managers of U.S. publicly traded firms. This allows us to distinguish between seven types of revolvers—congressional, federal bureaucracy, federal judiciary, state legislatures, state officials, armed forces, and local officials—which offer firms markedly different expertise and networks. We combine this with data on a variety of shocks to the firm's non-market environment (class action lawsuits, increases in regulatory stringency, SEC enforcement actions, and regulatory fines), corporate lobbying, and firm fundamentals. Additionally, we examine government contracts as a potential mechanism through which revolver-centered strategies may affect corporate performance. In doing so, we provide, to the best of our knowledge, the most comprehensive empirical investigation of revolvers in the corporate elite.

We present three sets of results to shed light on our three core research questions. We first

¹An important exception to this is Emery Faccio (2022) who study federal bureaucrats. We extend their approach in a way that allows us to study a broader swath of revolvers.

²A prominent example is Dick Cheney who transitioned directly from Secretary of Defense to his role as CEO of Halliburton Company (Babenko et al., 2022).

document that revolvers are common in the corporate elite: 56% of firms employ a former public official in senior management or as a director at some point in the period we study. This suggests that employing revolvers is much more prevalent than other commonly studied corporate political activities: public firms are between 4 and 7 times as likely to employ a revolver than to lobby or operate a political action committee, respectively. Moreover, the prevalence of different types of revolvers varies markedly. Strikingly, some of the least-studied revolvers—former federal bureaucrats, state officials, and military officials—are the most prevalent. In contrast, former members of Congress and their staffers—the group arguably studied the most—are among the least prevalent. Crucially, we find that firms hire revolvers in response to non-market shocks: revolver hiring increases sharply after class action lawsuits, increases in industry-level regulatory stringency, SEC enforcement actions, and federal regulatory fines. However, firms respond to these shocks by appointing different types of revolvers, with demand varying based on the nature of the event.

We then proceed to investigate the roles revolvers occupy in firms, and how they allow them to shape firm strategy. We explore how firms deploy revolvers in two ways. First, we document the positions revolvers hold on the board and in senior management. We find that different types of revolvers play distinct roles on corporate boards. Federal bureaucrats, and to a lesser extent state bureaucrats, are among the most active, serving on committees related to regulation, compliance, and politics, as well as key governance areas like finance, audit, and compensation. This suggests that bureaucrats contribute not only to non-market strategy but also to broader corporate governance, challenging the notion that their expertise is limited to political matters. In senior management, revolvers are typically employed in roles aligned with their political expertise, being more prevalent in non-market domains such as CSR, policy, communications, and legal, compared to non-political senior managers. A notable exception is armed forces revolvers, who, reflecting their leadership training, are more commonly found in market-related domains like general management, technology, and operations than their non-revolver counterparts. Second, we investigate whether revolvers' roles influence firms' corporate political activity. Using a staggered difference-in-differences approach, we find that hiring a revolver increases the probability of lobbying by 42%.

We conclude our analysis by examining whether the strategies in which revolvers are integrated improve corporate performance. First, using a staggered difference-in-differences ap-

proach. We find that, after a revolver's arrival, firms experience a significant and sustained increase in sales and gross profit. Second, we find evidence suggesting that revolvers complement each other: while hiring one type of revolver increases sales, employing two or three different types leads to larger gains, leveling off with the fourth type. Third, we explore mechanisms linking revolver hiring to increased sales and profits, focusing on expertise, connections, and access to federal procurement. If firms hire revolvers because of their connections, rather than their expertise, more recent revolvers should be associated with more performance increases. In contrast, we find no effect of very recent revolvers with little time between public sector and private sector job. Additionally, longer government tenure is associated with larger increases in sales. Overall, while this is not the final word on this question, this is suggestive evidence that strategies leveraging revolver expertise are on average most effective. Finally, strategies involving revolvers significantly boosts firms' entry into federal procurement, with increases in contract value ranging from 15% to 87%.

In sum, our findings contribute to our understanding of corporate political activity in four ways. First, revolvers are hired to address specific threats in the non-market environment. Second, they are subsequently integrated into the firm in roles that enable them to shape its non-market strategy. Third, these strategies are, on average, successful in generating financial returns, and fourth, government contracts serve as one of several channels through which these returns are realized.

These findings add important nuance to the corporate political activity literature. Much effort has gone into exploring the corporate performance implications of hiring revolvers. To tease out the mechanisms underlying this relationship, scholars have often focused on specific types of revolvers (e.g., Emery Faccio, 2022; Heese, 2022). However, despite the many advantages that come with such focused settings, this work implicitly assumes that different revolvers possess similar skills and connections. Our findings challenge this assumption by providing evidence that firms assemble portfolios of different, complementary types of revolvers in response to the challenges they face. In addition, existing work on political connections tends to focus on hiring revolvers as a strategic tool. However, an important take-away from our study is that revolvers themselves shape corporate political strategy.

This has important implications for theories of how corporations plan and conduct corporate political strategy. Management scholars have long argued that firms can formulate political strate-

gies through a *transactional approach* or a *relational approach* (Hillman Hitt, 1999). Our findings illustrate that firms' revolving door hires reflect both approaches. On the one hand, firms clearly hire former public officials in response to shocks and changes in their (non-market) environment. On the other hand, different types of revolvers are hired in response to different changes, and once these individuals are hired, they are integrated into particular roles in the firm, and affect non-market strategies and interaction with the government. The strategies involving revolvers even shape corporate performance itself. The latter suggests that they keep shaping the firm's reactions to policy changes and the arising of issues, once they are hired.

Ultimately, our results show that revolvers are unique in the space of non-market strategy. An implication which future research should examine further is that revolvers are, on one hand, *tools of strategy* in that firms use their connections and expertise to obtain political goals. On the other hand, our results could suggest that they are *strategists themselves* in that they do not merely execute preordained strategies but actively shape firm behavior, blending their external expertise with internal firm objectives, and potentially even shape the firm's goals.

This paper is structured as follows. First, we discuss the related literature and introduce our research questions. Second, we describe the data sources that we combine to answer these questions. We then present results, structured along our three core research questions. We conclude by discussing how future theoretical work could build on our empirical results.

2 Prior Literature and Research Questions

Extant research broadly differentiates between two reasons for why revolvers are of value to firms. First, revolvers are valuable because of their social capital (Blanes et al., 2012; Fisman, 2001; Bertrand et al., 2014). Government experience allows individuals to develop a network of professional and friendship ties, which they can later exploit to advance their firms' interests (McCrain, 2018). Second, revolvers hold specific human capital. Through their government experience, revolvers have accumulated expertise about policy matters, legislative processes, and the inner workings of the government more broadly (LaPira Thomas, 2017; Miller et al., 2022).

Despite their potential to provide valuable political connections and expertise, the relationship between hiring revolvers and firm performance is less than clear-cut. On the one hand, scholars have argued that revolvers have a positive effect on firm performance. Given that public policy

processes are complex and often difficult to navigate for individuals who lack government experience and political connections (McCrain, 2018), revolvers' social and human capital can help firms identify regulatory loopholes, monitor regulatory developments, direct lobbying efforts, and secure favors from public officials (Ang Jia, 2014). Indeed, empirical evidence documents various benefits of corporate political connections, including preferential access to government-controlled resources such as subsidies (Stuart Wang, 2016) or public procurement contracts (Goldman et al., 2013) and decreased regulatory oversight (Correia, 2014; Heese, 2022; Chen et al., 2022; Egerod, 2022).

On the other hand, the appointment of revolvers may also be associated with significant costs. Scholars have suggested that the skills and connections that government officials develop over their public careers may be a poor fit for many of the tasks they encounter as directors and managers in the private sector (El Naya et al., 2021). As directors, former government officials may lack the monitoring skills and business acumen of non-revolvers. This lack of business experience might be even more salient when revolvers are appointed as senior managers who are actively involved in the firm's day-to-day activities (Fan et al., 2007). Better-educated and more experienced managers are an important driver of firm performance. For instance, managerial ability is related to firms' entry into more profitable markets (Goldfarb Xiao, 2011) and more efficient management of corporate resources (Koester et al., 2017; Holcomb et al., 2009). Given that revolvers' human and social capital is shaped by the demands of public service, revolvers may be a liability in market activities. This is substantiated by some strands of prior research finding no or even negative effects of hiring revolvers (Hadani Schuler, 2013). Thus, prior research views the appointment of multiple revolvers as costly, with diminishing marginal returns. According to this view, each additional revolver "is likely to bring diminishing resource-provisionary benefits to the firm as a result of the redundancy in the type of resources" (El Naya et al., 2021, p. 463).

While these studies provide a strong foundation for whether and why revolvers affect corporate performance, several open questions remain, especially regarding why firms hire revolvers, the extent to which firms assemble a portfolio of different revolvers, and what those revolvers do in the firm given their limited experience. When studying the returns to political connections, research has predominantly focused on members of Congress (Egerod, 2022; Palmer Schnee, 2019), although other types of revolvers, including members of the judiciary (Conti Valentini, 2018), the armed forces (Benmelech Frydman, 2015; Koch-Bayram Wernicke, 2018), and the bu-

reaucracy (Lee You, 2023; Katic Kim, 2024; Fan et al., 2020; Emery Faccio, 2022), have also received increasing attention. However, these studies generally focus on a specific type. This approach allows for precise tests of mechanisms in confined settings. But this also means that non-market strategy scholars have mostly treated revolvers as a homogenous group, implicitly assuming that all revolvers possess the same skills and connections.

We ask whether firms hire different *types* of revolvers depending on the combination of skills and connections they need. The idea that different types of revolvers hold different skills and connections speaks to micro-level theories of political human capital from political science, which suggest that government officials' skills and connections are contingent on the branch of government in which they are employed (LaPira Thomas, 2017; Miller et al., 2022). To understand the implications of the revolving door, we need to consider not only whether firms appoint revolvers but also who these revolvers are and which roles they take on. We follow a question-driven approach (Graebner et al., 2023), meaning that we do not develop formal hypotheses. Instead, we use existing theory from management and political science to derive three broad research questions and return to these questions in our empirical analysis to build the basis for further theory development (cf. Aobdia et al., 2018; Berry et al., 2021).

2.1 Research Questions

Scholars of non-market strategy have long debated whether corporate political strategies are shaped by short-term or long-term considerations. In their seminal article, Hillman Hitt (1999, p.828) identified two distinct approaches to formulating political strategies: (1) the *transactional approach*, which addresses specific policy issues as they arise in the short term, and (2) the *relational approach*, which focuses on building enduring capacities and relationships to influence policy issues over the long term. In the same vein, firms can hire revolvers in reaction to short-term changes in their non-market environment, or ahead of time, in anticipation of future changes.

Hiring revolvers helps firms manage their non-market environment both in the long run and in the short run. In the long run, public officials will often only have limited information about the reality they seek to regulate. Therefore, they seek input from actors with substantive expertise, such as the firms they regulate (Grossman Helpman, 2001). However, since the time and attention of policymakers is limited, they do not have resources to meet with all relevant actors. Thus, having social connections to within the government can help connected firms get a foot in the

door (Hirsch et al., 2023), and then, use their substantive expertise to lobby policymakers and shape legislation and regulation (Miller et al., 2022). In the short run, economic or political crises might force the government to take emergency action (Choi et al., 2021), leaving less time for access for firms during ordinary legislative and regulatory procedures. Similarly, regulatory enforcement, fines, or lawsuits might take the firm by surprise and require connections and substantive expertise at short notice (Gordon Hafer, 2005, 2007). Consequently, a large body of research has investigated the short-term effect of politically connected employees on corporate performance, political access, or intermediate outcomes like government contracts.³

What is missing from this work is under which conditions firms hire certain types of revolvers in the first place. This is important because it informs us about both the types of resources that firms value in revolvers and the extent to which they hire revolvers as part of a short- or a long-term corporate political strategy. While long-term political strategies will be reflected in the equilibrium of hired revolvers of firms at any given point in time, short-term considerations should be observable in short-term hiring of specific revolvers. In the empirical part of this paper, we therefore focus on the extent to which firms hire certain revolvers in response to short-term changes in their non-market environment. This leads us to our first research question.

(1) *Do firms employ revolvers strategically to deal with the firm's non-market environment?*

While revolvers are often hired to deal with short-term, transactional non-market concerns, they are likely to take up roles that shape the firm's strategic concerns once they are in the firm. In a sense, political connections as a strategy takes on a life of its own and becomes *relational* in the parlance of Hillman Hitt (1999). However, since revolvers possess diverse skills and connections, their utility varies across political contexts. As a result, firms should strategically assign different types of revolvers to distinct functional areas and roles. Notably, these roles may span both executive and non-executive positions, reflecting the specific needs of the firm and the contexts in which their expertise is most valuable. Broadly speaking, we can differentiate between at least four types of revolvers with markedly different expertise and types of connections (LaPira Thomas, 2017).

First, members of Congress (MCs) and their staff are particularly suited for firms to seek

³For comprehensive overviews see de Figueiredo Richter (2014); Bombardini Trebbi (2020); Wei et al. (2022) or Cui et al. (2018).

influence in the legislative arena (Miller et al., 2022; LaPira Thomas, 2017). In addition, MCs and staffers have a particularly wide net of connections at the federal level through legislators' work in oversight committees (Egerod, 2022), and continuous interactions with bureaucrats about policy implementation (Ritchie You, 2019). Second, federal bureaucrats' knowledge helps understand legality of policies, which agencies can push certain decisions, and how they should be approached (Balla, 1998; Adler Borys, 1996; Sager Rosser, 2009). Given their knowledge, revolvers from both the legislative and executive branches should be particularly useful in translating the firm's problems into suggested policy changes (Drutman, 2015). Moreover, connections of former bureaucrats can support firms to understand better appropriations processes of federal agencies and win public procurement contracts. Third, revolvers from the federal judiciary should be particularly useful in contexts in which the firm faces enforcement action by the bureaucracy, to better understand and possibly challenge, the legality of federal enforcement and fines. Finally, revolvers from the armed forces are particularly valuable to firms involved in government procurement, to navigate the intricate defence procurement process (Karpoff et al., 1999, p. 810). Moreover, while most other revolvers may lack some of the skills required for managerial roles, the military equips individuals with hands-on leadership skills that are difficult to acquire elsewhere—including the private sector (Benmelech Frydman, 2015). Importantly, all of these types, with the exception of those from the armed forces, exist both at the federal level as well as at the state and local levels, further broadening the scope of their potential influence and the contexts in which firms can strategically deploy their expertise.

These very different backgrounds imply that these types of revolvers could occupy very different roles within the firm. In line with their specific expertise, revolvers from the judiciary might be more likely to head legal departments. Moreover, it is possible that revolvers from the armed forces occupy more leadership positions and executive director posts, compared to other types of revolvers. Finally, given their political background, we expect all revolvers to be more likely to serve in roles dealing with regulation or political topics, compared to non-revolver colleagues.

Importantly, if revolvers take up positions where they can shape the firm's strategic considerations, we would also expect them to visibly shape corporate non-market strategy. This should be particularly so if they directly head political, regulatory, or government affairs departments or board committees. Therefore, the arrival of a revolver may also push the firm to engage in other, more long-term, types of political activities such as building a multi-year lobbying presence. This

leads us to our second research question.

(2) How do revolvers shape non-market strategy?

To the extent that revolvers are integrated into a firm's non-market strategy, it raises the question of whether those strategies are more successful than others that do not incorporate revolvers. Furthermore, if revolvers are complements, are strategies that involve multiple types of revolvers even more effective? Prior research has often viewed the appointment of multiple revolvers as costly, with diminishing marginal returns. However, much of this work has either failed to distinguish between different types of revolvers or has examined them in isolation.

Firms may employ revolvers with distinct expertise—such as legislators, bureaucrats, judges, or military leaders—not as redundant hires but to build a diversified portfolio of skills and connections tailored to address a range of challenges. For example, legislative expertise might help shape policy during its formation, regulatory or bureaucratic expertise could aid in navigating enforcement risks, and judicial expertise might be crucial for interpreting policy outcomes. Military leaders, meanwhile, could provide specialized knowledge on procurement or national security priorities. If these skills and connections are truly complementary, the perceived redundancies suggested in prior research may not materialize.

In addition to exploring the complementarity of expertise, it is critical to consider whether the success of such strategies hinges on revolvers' policymaking expertise or their social connections to decision-makers. Expertise might drive success by enabling firms to anticipate and adapt to complex regulatory landscapes (LaPira Thomas, 2017), while connections could facilitate access to policymakers or preferential treatment (Hirsch et al., 2023). One potential channel through which these strategies improve firm performance could be through using expertise and connections to secure more federal funding or contracts. Thus, the final research question we pose is:

(3) Are strategies that integrate revolvers successful in improving corporate performance?

3 Research Design, Data and Methods

To examine these questions, we integrate several data sources. Moreover, we employ various empirical strategies and research designs to shed light on this topic, systematized along our three

questions: a) how non-market shocks motivate firm to hire revolvers, b) the roles of revolvers in firms and how this allows them to shape firm behavior, as well as c) revolver-centered strategies' effects on firm-level outcomes.

In this section, we first describe the numerous data sources, before turning to our strategies for how to use those data sources to shed light on our three RQs.

3.1 Data

Table ?? describes how we measure key variables. To provide a comprehensive account of the revolving door, we use BoardEx data on the careers of directors and senior managers of U.S. publicly traded companies between 2000 and 2020. BoardEx contains information on whether a given job is with a public sector organization and the name of that organization. Our strategy is similar to Emery Faccio (2022) but whereas they only examine federal bureaucrats, we are able to examine a much broader swath of revolver types. Our measurement strategy allows us to categorize *seven different types of revolvers*, depending on their former employment. At the *federal level*, we examine former 1) Members of Congress (MoC) and their staffers, 2) federal bureaucrats, 3) armed forces and 4) employees in the federal judiciary, including both various types of clerks, judges, and U.S. Attorneys. We also include categories at the *state and local level*, including former 5) members of state legislatures, 6) state-level officials, and 7) local-level officials, including city and county officials and members of the local judiciary, such as District Attorneys.

Both at the federal and state levels, former legislators and their staffers are relatively easy to identify, because jobs with the U.S. Congress and state assemblies are named in a relatively consistent fashion. BoardEx has a separate coding for positions with the armed forces, allowing us to classify those jobs using BoardEx data only. However, we take additional steps to ensuring that we only capture revolvers who pursued careers in the armed forces. We do this by only retaining positions as officers in the armed forces. For federal bureaucrats, we used the names of federal agencies in the Government Manual and the Federal Register to classify bureaucratic jobs. In order to classify jobs in the federal judiciary, we simply coded jobs with the federal courts.⁴ Finally, to capture local jobs, we used a relatively simple coding scheme, where we classify public sector jobs that include words referencing a village, town, city, county or a non-federal district.

⁴That is, we coded the U.S. District and Circuit courts as well as the U.S. Supreme Court as a part of the federal judiciary. Additionally, the Bankruptcy and Tax Courts, which are outside of the courts where criminal justice is litigated, were included. Finally, we also included jobs with the U.S. Attorney's office.

Overall, this coding scheme of seven different revolver types allows us to classify approximately 88% of the public sector jobs in BoardEx, with the final 12% not fitting into any of the seven categories, or are not captured by our coding scheme. This classification rate is very high by all standards, and we are satisfied with scheme. Due to data limitations, we cannot make a distinction between bureaucrats and the judiciary at the state-level. We collapse both these types of state revolvers into a common group we call state officials. While this is a limitation, the benefit of even examining state level revolvers from other branches of government than the legislature far outweigh the cost to collapsing them. We also collapse all branches of government at the local level into a single category, because many local governments do not have a separation of powers. Hence, there often is no strong distinction, and to the extent there is, it varies in non-random ways between counties.

To answer RQ1 *whether revolvers are hired to deal with non-market shocks*, we use four different measures of shocks to the firm's environment. *a)* We construct a measure of non-political, legal threats to the firm by looking at class action lawsuits filed against it. To do so, we use Securities Class Action Clearinghouse (SCAC), which monitors investor lawsuits against the firm. We use a binary variable capturing whether or not a lawsuit is filed against the firm in a given year. *b)* We use RegData 4.1 (McLaughlin et al., 2022; Al-Ubaydli McLaughlin, 2017) to measure the stringency with which the federal bureaucracy regulates the firm's industry. The RegData project does this using a text-as-data approach, where they count the number of restrictive words in federal regulation. This number is then linked to the 2-digit NAICS code. As our measure, we use the logged number of restrictive words. *c)* To measure whether the federal bureaucracy initiates any enforcement actions against the company, we use the SEC's accounting and auditing enforcement actions. We use a binary variable capturing whether an investigation is initiated of a given firm in a given year. *d)* To capture the *conclusion* of federal investigations, we also collect data on the size of fines imposed by federal agencies from Violation Tracker. We use the logged dollar value of the firm's total amount of fines for a given year.

To examine RQ2 on the *roles of revolvers in firms and how they allow them to shape strategy*, we use the BoardEx Committee membership data. We use a dictionary of political words to create a binary variable capturing whether a given director is a member of a committee with a political focus. We use the committees that are most common across firms, and create a binary variable capturing whether a director is a member of a "big committee", which includes finance, exec-

	Source	Measures	Variable(s)
RQ1: Do firms employ revolvers strategically to deal with the firm's			
Data Sources and Measurement	<i>BoardEx Employment</i>	Revolver types	Whether or volver type in any give
	<i>SCAC</i>	Securities class action lawsuit filings	Securities c
	<i>RegData</i>	Regulatory stringency	Logged c words in d the firm's 2
	<i>SEC</i>	SEC accounting and auditing enforce- ment actions	Any accou enforcement
	<i>Violation Tracker</i>	Federal regulatory fines	Logged \$U posed by fe
RQ2: Which roles do revolvers have in firms, and how do these roles allow t			
	<i>BoardEx Committees</i>	Membership of board committee	
	<i>BoardEx Organization</i>	Roles in senior management	
	<i>LobbyView</i>	Engagement in federal lobbying	Whether th bying repor
RQ3: Are strategies that integrate revolvers successful in improv			
	<i>Compustat</i>	Firm earnings	Logged sale
	<i>USAspending.gov</i>	Federal procurement contracts	Logged tot eral contrac

The table summarizes the data sources used for analysis, ordered along the main research question (RQ1 to RQ3). Data are from a variety of sources covering revolver types, shocks to firm behavior, firm organization, non-market strategy, and firm financial performance.

utive, fundraising/development, governance, nominating, audit, investment, and compensation. Furthermore, we use reports filed on the Lobbying Disclosure Act (LDA) to assess whether a firm lobbies as part of its non-market strategy. This is the most common form of corporate political activity, and requires long-term relationship building (Drutman, 2015). Hence, provides a strong measure of an active non-market strategy with a political focus. The LDA reports are cleaned and made publicly available by Kim (2018), who also links them to the unique firm identifier used in Compustat (gvkey). This allows us to neatly cross-walk data on the revolving door, firm performance and lobbying activities.

Finally, to examine RQ3 about *whether revolver-centered strategies affect firm operations*, we draw on two different data sources. Compustat provides data on sales and gross profits. Additionally, we use data on federal procurement contracts from USAspending.gov.

3.2 Empirical Strategies

We have just seen how we will measure all our key concepts. Table 1 shows which statistical techniques we apply to this data in order to examine our RQs. First, we investigate RQ1 *whether firms employ revolvers to deal with their non-market environment*. The first step here is to examine *how prevalent revolvers are* and in particular how this prevalence varies across types of revolvers. Next, we examine whether firms use revolvers to deal with non-market threats by examining *when firms hire revolvers*. To do so, we use linear regressions with firm fixed effects. Here, the outcomes are binary indicators for whether a firm hires a certain revolver type, and the independent variables are the non-market shocks we described firms: litigation, increase in regulatory stringency, federal enforcement, and federal fines. This simple firm fixed effects estimation strategy allows us to examine how strongly hiring of different revolver types changes before to after the onset of a shock.

Second, we study RQ2 *whether revolvers shape firm strategy*. To we examine the roles revolvers take in firms, as they will allow them to shape firm strategy. We examine a number of different roles: *a)* we examine which revolvers are involved in daily operations by looking at the proportion of non-executive directors within each revolver type. *b)* We examine two different types of revolver roles: in board committees and types of senior management positions. Here, we will use separate regressions of the board and management roles described above on an independent variable with eight categories — the seven different revolver types and non-political people. This implies that we can compare the prevalence of revolvers in each board and management role across *a)* each revolver type to a non-revolver baseline, and *b)* different revolver types. The final step in examining RQ2 is to study how corporate political activity changes in response to revolver hiring using the lobbying data described above. As explained, this is an important expression of firm non-market strategy. To do so, we use a difference-in-differences research design. We leverage the fact that revolvers arrive at firms at different points in time, allowing us to observe how the firm lobbying at the time of the arrival compared to firms that do not make such a hire.

In the final RQ, we examine whether *strategies integrating revolvers increase corporate performance* by applying the same difference-in-differences design as described above. Furthermore, we whether returns increase with multiple types of revolvers to examine complementarities. To probe the mechanism, we investigate whether firms gain access to federal procurement after hir-

Table 1: Testing the Research Questions and Empirical Expectations

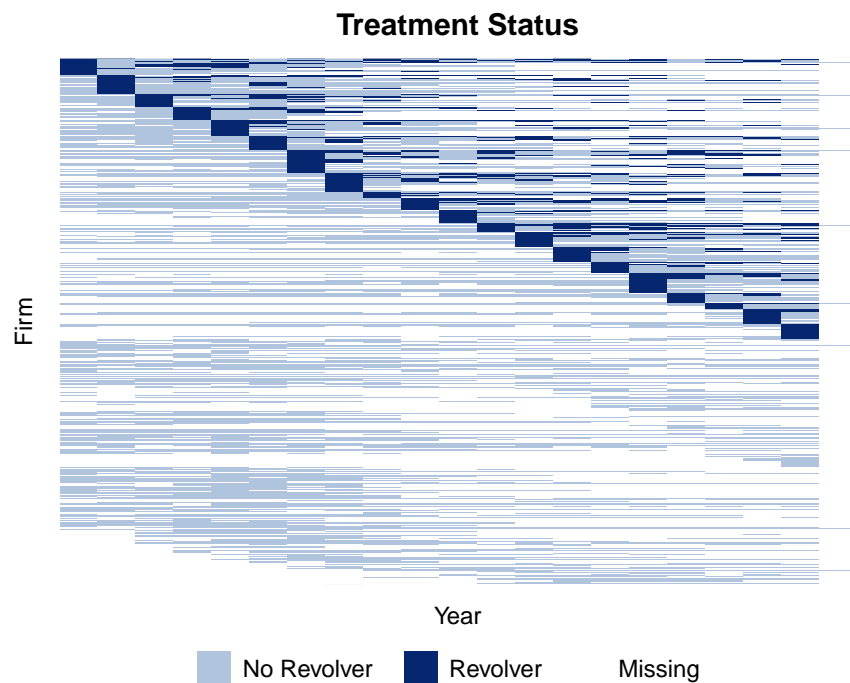
Sub-Question	Empirical Strategy	Technique
<u>RQ1: Do firms employ revolvers strategically to deal with the firm's non-market environment?</u>		
<i>How prevalent are different types of revolvers?</i>	Proportion of firms with each type of revolver	
<i>When do firms hire revolvers?</i>	Examine changes in the probability of hiring each revolver type after shocks to a) private litigation, b) changes in regulatory stringency, c) federal enforcement, d) federal fines	Firm fixed effects regression of hiring revolver types on all different shocks
<u>RQ2: Which roles do revolvers have in firms, and how do these roles allow them to shape non-market strategy?</u>		
<i>Which revolvers are involved in daily operations?</i>	Proportion of each type of revolver that are (non-)executive director	
<i>What do revolvers do on boards?</i>	Committee service of different types of revolvers relative to non-political directors.	Regress committee on variable with director type (no revolver and type of revolver)
<i>What do revolvers do in management?</i>	Management roles of different types of revolvers relative to non-political directors.	Regress role on variable with manager type (no revolver and type of revolver)
<i>Which revolvers change non-market strategy?</i>	Do firms lobby more when a revolver joins? Which types of revolvers drive the effect?	Difference-in-differences (DiD) estimated with Generalized Synthetic Control (g-synth)
<u>RQ3: Are strategies that integrate revolvers successful in improving corporate performance?</u>		
<i>Do revolvers increase sales?</i>	Do firms' sales increase when revolvers arrive (relative to firms that don't hire)?	DiD estimated with g-synth
<i>Do several different types of revolvers increase sales more?</i>	Does this increase become larger when there are more different types of revolvers employed?	DiD estimated with g-synth
<i>Why do revolvers increase sales?</i>	Is the increase driven by more federal contracts?	DiD estimated with g-synth

ing revolvers by using the dollar value of federal procurement contracts as the outcome variable. Importantly, we conduct a subset analysis of firms that were not in the procurement system before our revolver data starts in 2000. This allows us to examine how revolver-centered strategies shape entry into federal procurement. This is an important analytical step, because most firms that receive contracts keep receiving them, which complicates any examination of federal procurement.

There are two challenges in estimating the average treatment effect on the treated (ATT) from this difference-in-differences designs exploring, respectively, lobbying and firm outcomes as dependent variables. First, since revolvers arrive at firms at different points in time, this is a staggered uptake design, implying that we cannot simply estimate a regression with fixed effects for firm and year (Callaway Sant’Anna, 2021). Second, firms that hire a revolver differ substantially from firms that do not, making it difficult to construct a comparable control group.

We use the generalized synthetic control (*g-synth*) estimator (Xu, 2017), which solves both issues. The *g-synth* estimator takes each treated firm and constructs a clean (i.e. not-yet-treated) control group of other firms for it, thereby solving the issues related to staggered uptake. Additionally, *g-synth* ensures that the control group provides a good comparison by weighting non-treated firms that are more similar (in terms of the outcome variable) to the treated ones (before they are treated) more heavily. To do so, the estimator uses an interactive fixed effects model to estimate which firms should receive more weight. For each treated firm, this creates a synthetic control group that can be used to show the untreated counterfactual for each firm. This can be exceedingly powerful: Whenever the estimator functions as intended—as we show that it does here—it ensures that treatment and control firms follow the same trend before treatment sets in. That is, before the firms hired revolvers, they exhibit the same levels and changes in both lobbying, sales, profits and procurement contracts.

This is a strong empirical design because it allows us to zoom in on a specific strategic change—the hiring of a revolver—while holding constant time-invariant factors about the firm—e.g. its culture and what behavior it finds appropriate—as well as time-varying factors like the firm’s size and performance (through the use of a synthetic control group). Additionally, it is well-gearred toward estimating the quantity we are interested in here: the effect of the overall non-market strategy a revolver is integrated in. Importantly, we run multiple robustness checks to stress test our findings from this design.



Timing of Revolvers Arriving

at Publicly Traded Companies. The graph shows arrival timing of revolvers across publicly traded companies, from 2000 to 2020. Along the y-axis, each line represents one firm and along the x-axis, each tile segment represents one year. The graph is ordered by the total number of revolvers hired by a given firm over the whole time period. It shows that many firms hire many revolvers, while others hire none over the time period of investigation. For presentational purposes, 500 firms were sampled at random.

Figure ?? shows how the hiring of revolvers is staggered across time in our data. We sample 500 firms at random in order to make the figure readable, and we order firms by the timing of the hiring. This illustrates a number of important facts for our purposes. *a)* A little more than half of firms have a revolver employed at some point and *b)* most firms that hire one revolver will replace them when they leave. We can also observe *c)* how the control group will include firms that never hire, and those that have not yet hired, which reinforces our usage of the g-synth estimator, rather than just two-way fixed effects. *d)* We see how missingness is scattered across firms. This is both due to firms listing and delisting, and due to missing sales data, as this graph is based on sales.

3.3 Descriptive Statistics

In total, our dataset contains 8,188 publicly traded corporations between 2000 and 2020. Table 2, shows descriptive information about the firms in our data. In the lower panel of Table 2 we also calculate the differences between firms that hire at least one revolver and those that never hire a revolver within the time period of investigation. We find that *firms that hire a revolver are larger* in terms of sales and assets, hold more cash, and are *more profitable* than firms that never hire a revolver, on average. To the extent that revolvers are part of a firm’s non-market strategy, this confirms existing findings from political science showing that firms operating a PAC or engaging in lobbying also tend to be larger than firms that do not (Kim et al., 2023). This also testifies to the necessity of using the g-synth estimator to ensure that firms that hire revolvers are only compared to firms that are very similar in size and other economic characteristics yet do not hire.

4 Results

We present *three sets of main findings* organized our three RQs. First, we present new evidence on the prevalence of revolvers, and what motivates firms to hiring them. We find that all types of revolvers are very prevalent, and that they are hired in response to very different types of external shocks. Second, we open the black box of the revolving door by examining what it is that revolvers do on corporate boards and in management positions. We find that while most revolvers are appointed to non-executive board positions, some types of revolvers are are predominantly appointed to positions in senior management. We also show that revolvers are profoundly in-

Table 2: Descriptive Statistics & Differences between Firms with and without Revolvers.

Panel A: Descriptive Statistics						
Statistic	N	Mean	St. Dev.	Min	Max	
Total Assets	94,261	8,842.645	67,666.860	0.000	3,221,972.000	
Sale	91,764	2,973.797	13,183.500	−6,389.900	521,426.000	
Cash	92,857	363.358	2,478.347	−32.000	159,353.000	
Gross Profit	91,761	994.781	4,538.917	−45,026.000	137,808.000	
Revolver	147,971	0.111	0.314	0	1	

Panel B: Split Sample by:						
	<i>Never Revolver</i>		<i>Ever Revolver</i>		Diff. in Means	Std. Error
	Mean	Std. Dev.	Mean	Std. Dev.		
Total Assets	1647.5	17022.6	12768.5	82917.8	11121.0***	348.5
Sale	663.9	1940.6	4253.5	16230.2	3589.6***	67.6
Cash	80.2	509.3	518.5	3049.2	438.3***	12.8
Gross Profit	207.8	658.4	1430.8	5589.5	1223.0***	23.3
Revolver	0.0	0.0	0.2	0.4	0.2***	0.0

The table shows summary statistics of the full sample of firm-years (top panel) and with the sample split by whether at least one revolver is ever employed at the firm. Firms employing revolvers are significantly larger, have more revenue and free cash flow, and are more profitable than firms that never employ a revolver. *** indicates < 0.01 .

volved in shaping the firm’s non-market strategy. Finally, we show that the arrival of revolvers is associated with increased sales, and that hiring several types of revolvers simultaneously is associated with larger sales increases. We present evidence that this increase is partly driven by increased amounts of federal contracts.

4.1 Do Firms Employ Revolvers Strategically to Deal with the Firm’s Non-Market Environment?

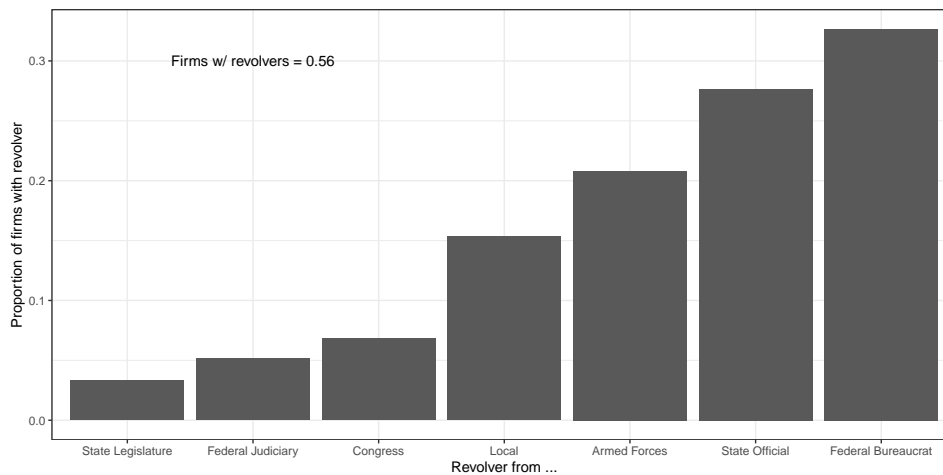
First, we turn to the *prevalence of revolvers across U.S. publicly traded firms*. While an increasing number of studies have examined the revolving door between the U.S. Congress and the private sector, few studies have examined other types of revolvers than MoCs. However, since revolvers will bring different assets with them depending on their background, they are likely to hire different types and into different roles in the firm. Here, we examine our first set of questions regarding when and why revolvers are hired. To do so, we conduct two analyses to document that the skillsets of the different types of revolvers complement each other strategically and that revolvers are hired in response to specific shocks to the firm’s environment.

We find 28,269 individuals in BoardEx who hold positions as senior managers or on boards of publicly traded companies who *also* hold a position as public official at some point in their career.⁵ Figure ?? shows the proportion of firms that have each of our seven types of revolvers appointed in at least one year. Overall, we find that 56% of the firms in our dataset have employed revolvers on their boards of directors or even in senior management positions at some point between 2000 and 2020.⁶ Importantly, more than 30% of firms employ a former federal bureaucrat. Thus, bureaucrats are extremely prevalent in firm leadership and on boards, and several times more so than revolvers with previous work experience in the U.S. Congress (~7%). Moreover, the figure reveals other striking patterns. For instance, State Officials, of which the large majority will be state-level bureaucrats, make up the second largest group, followed by former employees in the armed forces. Revolvers from the federal judiciary, in which the revolving door, to our knowledge, has never been studied, are almost as prevalent as revolvers from Congress. The

⁵The number of observations depends on availability of start and end dates for specific positions. There are 28,269 individuals in publicly traded companies with public sector experience, 24,721 for which experience in publicly traded or private jobs can be calculated (end date for public and start date for private job is available), and 15,234 for which direction of transition (start dates for both public and private job are available) can be determined.

⁶Also, 43% first hold a job at a publicly traded company *before* taking up their first job in a public office. This also provides motivation to further research the under-studied channel from the private sector to public offices (Acemoglu et al., 2016).

median revolver worked four years at the last public office job, has six years of public sector experience in total, and has three years between that job and transitions into a publicly traded company. This indicates that the skills and connections acquired in the public sector might not lose value very quickly. However, 25% of revolvers who change to a publicly traded company in the same year in which they leave public office.⁷



Prevalence of Revolvers in Firms. The figure shows the proportion of publicly traded companies between 2000 and 2020 with at least one revolver, by type of previous public office experience.

How frequent are these corporate political connections compared to other forms of corporate political activities, such as lobbying or campaign donations? Between 2000 and 2020, 7.6 percent of publicly traded companies engaged in lobbying at some point during the period and about 4.9 percent operated a corporate political action committee. Therefore, the revolvers from public office into publicly traded companies are almost an order of magnitude more frequent than these more commonly researched forms of corporate political activity. Public firms are between 4 and 7 times as likely to employ a revolver than to lobby or operate a PAC, respectively.⁸

Second, this leads us to the *firm's motivation for hiring revolvers*. We expect that revolvers are often hired in response to events in the firm's strategic environment. Firms should adapt the composition of their board and management in response to environmental challenges, and when faced with different obstacles, firms should seek out people with the skillsets suited to handle them. To investigate this idea, we run a series of separate regressions of the following form:

⁷See Appendix 6 for more descriptive information on experience of revolvers in the public and the private sector.

⁸The numbers are from Kim et al. (2023). Of course, individual donations, such as by executives can also provide valuable connections to lawmakers, but can either reflect corporate or personal preferences (Gordon Hafer, 2007; Stuckatz, 2022).

$$RevolverType_{itj} = \beta_{jk} Shock_{itk} + \delta_{ij} + \epsilon_{itjk}$$

where $RevolverType_{itj}$ is a series of binary indicators, j , for each of our seven types of revolvers. They take the value 1 if that revolver type is employed at firm i at time t . $Shock_{itk}$ is one of four different variables, k , that capture a shock to the firm's non-market strategic environment: *a*) a binary indicator for a class action lawsuit filed against the firm, *b*) the logged number of restrictive words used in the regulation of the firm's NAICS two-digit sector, *c*) a binary indicator of the SEC initiating an enforcement action against the firm, and *d*) the logged amount of regulatory fines the firm has encountered in that year. These variables are described previously. Seeing as we estimate separate regressions for each of the unique combinations of j revolver types and k shocks, β_{jk} is a separate coefficient for each combination. δ_{ij} is a firm fixed effect, which implies that each of the β 's capture how the likelihood of employing each of the seven types of revolvers changes after the firm has faced one of our four shocks. We rescale the dependent variables using each revolver type's baseline prevalence. This implies that the coefficient captures the change relative to the prevalence of the revolver type.

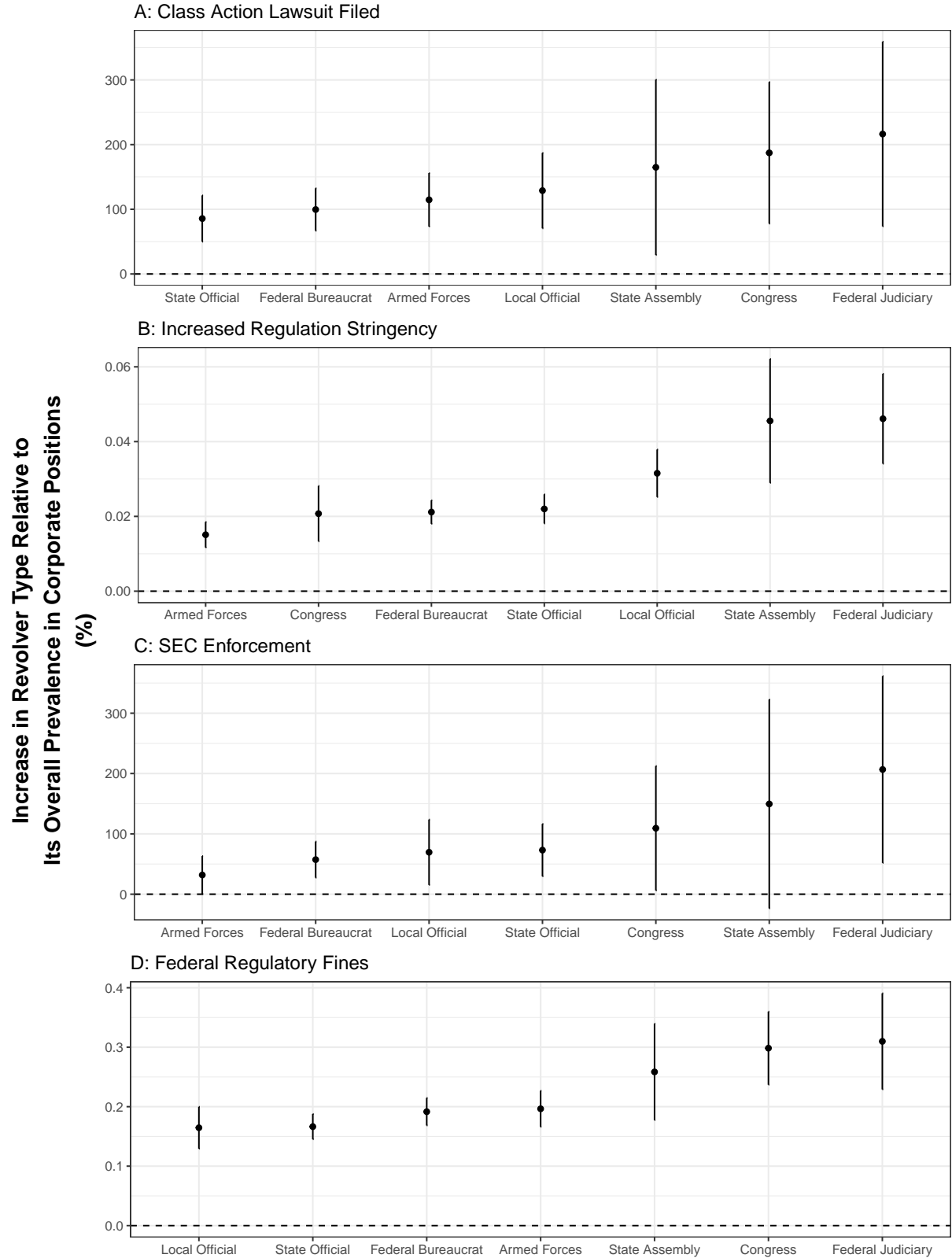
The results are presented in Figure ?? . Three important patterns emerge. First, we observe statistically significant increases in hiring of almost all revolvers in the aftermath of all shocks. Although there are few exceptions, this is very strong evidence that firms hire revolvers in response to non-market shocks. Second, although the independent variables are scaled differently (some are binary, others are logged), it seems that there is a lot of variability in how strongly firms react to the shocks. For example, the filing of a class action suit against the company, or the initiation of an SEC investigation of the company, increases the likelihood of hiring a revolver between 100% and 200%, depending on the type of revolver, relative to the revolver type's baseline prevalence. On the other hand, an increase of 1% in regulatory stringency increases the likelihood of appointing revolvers by between 0.02% and 0.06%. Third, firms appoint very different types of revolvers in response to a shock, and this depends on the nature of the event itself. The effect differences are in many cases statistically significant. For example, congressional revolvers are in high demand when regulatory fines are levied against the company – a 1% increase in federal fines increases congressional revolvers by 0.3% relative to their prevalence. On the other hand, they are not in very high demand, when regulatory stringency increases. Fourth, revolvers from

the federal judiciary are in highest demand after the onset of a shock in all the cases we examine here. This makes sense: the shocks we investigate all have direct legal consequences. On the other hand, it seems puzzling that the demand for bureaucrats (both federal and state) increases relatively little in response to most shocks. However, to keep this analysis simple, we examine the likelihood of hiring *any* bureaucratic revolver. If we were to examine the likelihood of hiring an SEC official, when the SEC starts examining the firm, or the likelihood of hiring an EPA official when the EPA imposes a fine on the firm, the results would likely be dramatically different.

These results provide striking new insights into the revolving door from the public sector into corporate America. While previous work has seldom considered revolvers from the bureaucracy (state and federal), the armed forces, the local level, or the judiciary, their prevalence alone suggests that former research focusing on former politicians has overlooked a large share of former government officials. Additionally, it is clear that firms employ the skillsets of different types of revolvers as strategic complements, to deal with specific changes in their environment. Revolvers are not interchangeable, and a former legislator might not be able to solve the issues that a federal bureaucrat can, but may be able to help in other ways. Therefore, shocks to the non-market environment increases employment of all types.

4.2 Which Roles Do Revolvers Have in Firms, and How Do These Roles Allow Them to Shape Non-Market Strategy?

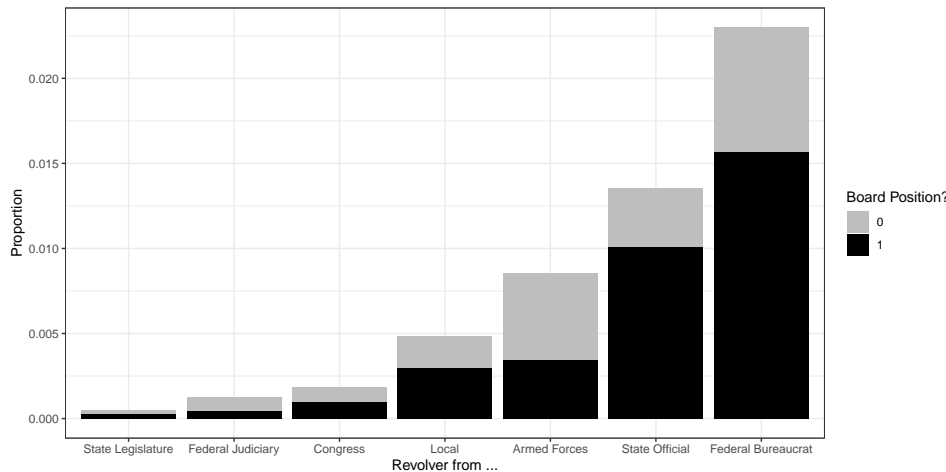
Next, we examine the *role revolvers play in firms*. Crucially, we are interested in whether the revolvers are able to shape the firm's behavior, once they have arrived at the firm – even though they arrive to help deal with a short term shock. Although revolvers are embedded in firms' structures and processes, little is known about how they affect firms' day-to-day activities. In fact, in their review of the literature on corporate political connections, Wei et al. (2022, p. 22) posit that “the underlying elements driving the value of these CPCs [corporate political connections] remain mostly a black box.” We seek to open that black box in two ways: *a*) by examining what it is that revolvers do in firms, and *b*) by investigating whether they shape the firm's non-market strategy.



Revolvers are Hired in Response to Specific Changes in the (Political) Environment. Each panel shows seven separate regressions of binary variables capturing the hiring of each revolver type on one of four non-market shocks. The coefficients are scaled by the prevalence of revolvers among firms. Lines are 95% robust confidence intervals with firm-clustering.

4.2.1 What do Revolvers do?

To answer this question, we first examine which *types of positions revolvers hold within firms*. The patterns are presented in Figure ?? . Once again, they show that former federal bureaucrats are most prevalent, in that they make up 2.5% of all senior managers and directors. However, this also provides a striking contrast with the results presented above: more than 30% of firms appoint former bureaucrats at some point during our 20 years of data, but they only make up 2.5% of the population. This suggests that they are highly sought after, and that each individual revolver will hold more positions over a career than the average businessperson. While most revolvers are engaged in board work, there are two important exceptions: Revolvers from the armed forces and the federal judiciary are more often employed in the firm's senior management.



Non-Executive Directors?

Which Revolvers are

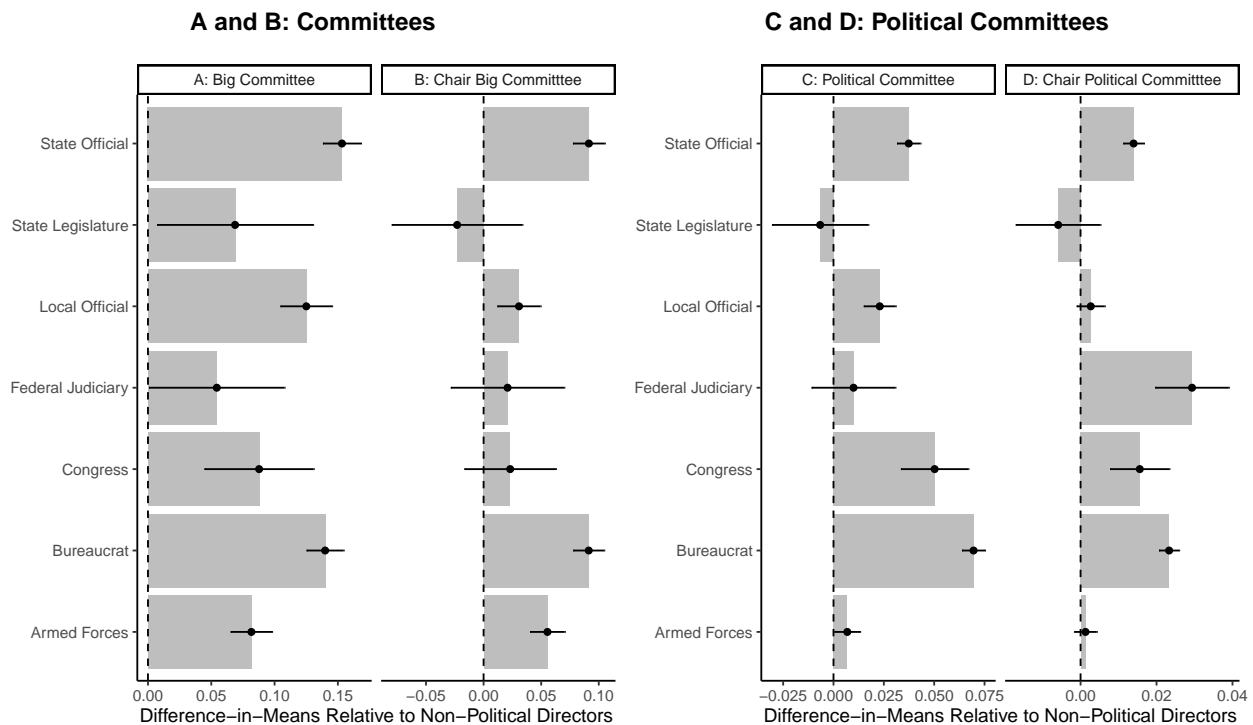
Second, we examine the *roles of different types of revolvers on boards*. In Figure ?? in Panel A and B we show the prevalence of different types of revolvers in important board committees.⁹ The vertical axes show prevalence relative to non-revolver directors, i.e. with no prior experience in politics. The comparison across different revolver types allows us to examine the relative prevalence of different revolver types. Further, Panels C and D shows the prevalence of revolver types on committees dealing with political topics.¹⁰

Overall, we find that different types of revolvers play markedly different roles on corporate boards. Most strikingly, we find that both federal bureaucrats – and to an extent state bureaucrats

⁹We include the following committees in this measure: finance, executive, fundraising/development, governance, and nominating, audit, investment, compensation

¹⁰The following word stems were used to identify committees that had to do with politics, compliance or regulation: "regulat", "government", "public policy", "compliance", "politic", "public affairs", "public relations".

– across all measures are among the most active on corporate boards compared to other types of revolvers. They serve more on committees that work with tasks related to regulation, compliance, and politics. This is likely an important way through which they can affect non-market strategy. Interestingly, they are also more likely to serve on committees prevalent across all firms, including committees on finance, audit, investment, compensation and nomination. This implies that former bureaucrats are *equally involved* in non-market strategy and other forms of corporate governance, contrary to the expectation that their comparative advantage would lie primarily in the political realm. While congressional revolvers are more common than non-revolvers on both big committees and political committees, federal bureaucrats are more common both places. In comparison, armed forces revolvers are highly involved in the big committees, but only slightly more common on political committees than non-revolvers.



The Committee Service of Revolvers on Corporate Boards. This figure shows the differences in means of board of political directors compared to non-political directors. We show the extent to which they serve on ‘big’ (Panel A) committees and political committees (Panel C), and as chairs of those committees (Panels B and D). The whiskers show 95% confidence intervals around the differences in means.

Third, we examine the *roles of revolvers in senior management*. Revolvers’ skills and connections differ from those of non-revolvers. Non-revolvers have, over their careers, honed market-related

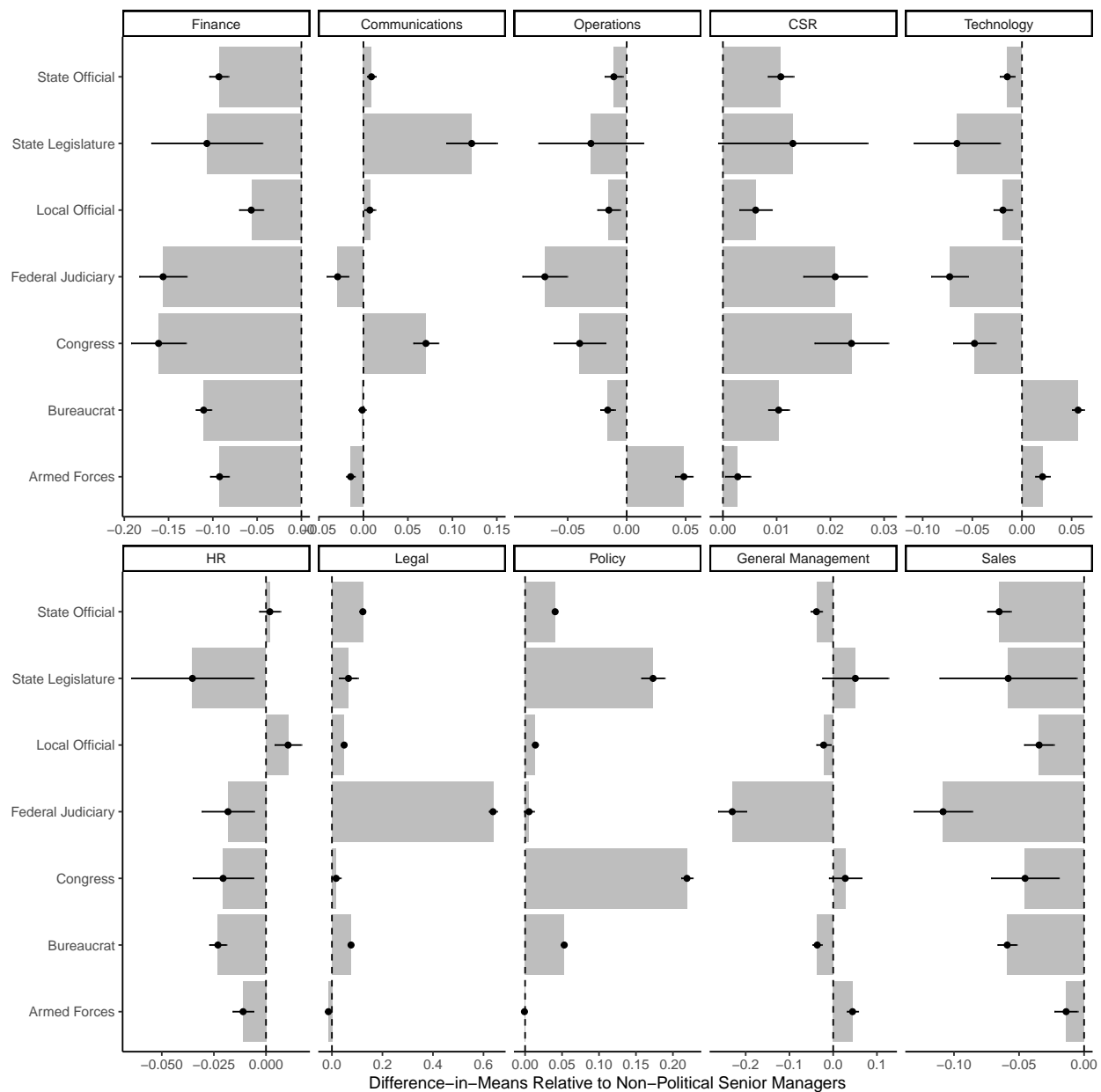
skills and networks, often in specific domains such as finance or sales. Given their lack of commercial experience, former government officials should be less valuable in such market-related roles. Instead, revolvers' skills and connections should be particularly valuable in non-market domains such as policy and corporate social responsibility (CSR). To the extent that firms match senior managers' skills and connections to their resource needs (Pfeffer Salancik, 1978), this pattern should be reflected in the roles revolvers hold.

To assess this idea, we categorize senior managers' job titles into eight categories: finance, communications, operations, CSR, technology, human resources (HR), legal, policy, general management, and sales. Figure ?? shows that, overall, revolvers are indeed employed in roles that match their expertise. Compared to non-political senior managers, revolvers are less prevalent in market-related domains (i.e., domains that match the expertise of MBAs and engineers): general management, finance, sales, HR, operations, and technology. Instead, revolvers are mostly employed in non-market-related domains: CSR, policy, communications, and legal. However, while all revolvers generally are less prevalent in market-related domains, there is one group exception: revolvers from the armed forces, in line with the extensive leadership training the military provides (Benmelech Frydman, 2015), are more prevalent in general management, technology, and operations than non-revolvers.

4.2.2 How do Revolvers Shape Non-Market Strategy?

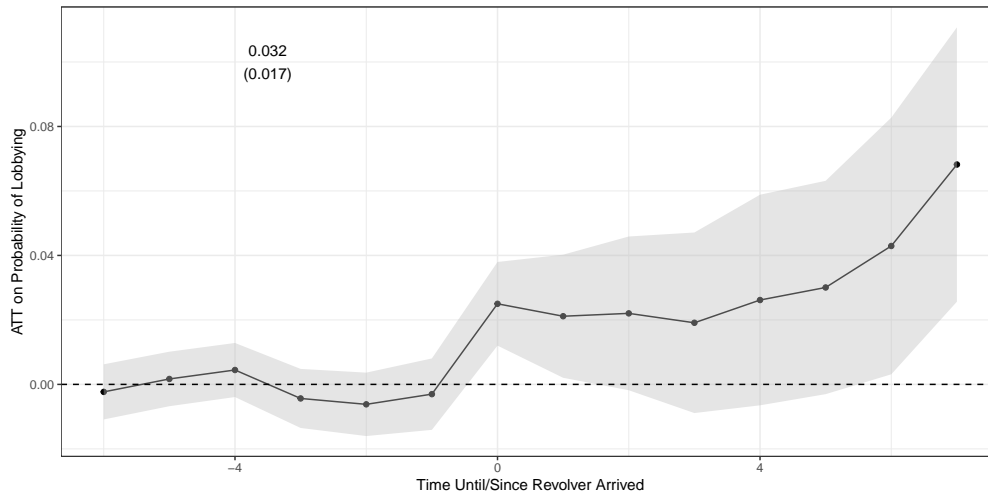
Finally, having established that revolvers are particularly prevalent in non-market-related roles, we explore whether these roles translate into *changes in the firm's non-market corporate political activity*? To measure non-market strategy, we link our data set with corporate lobbying reports filed under the Lobbying Disclosure Act. We use a staggered difference-in-difference design, where we examine whether firms that hire a revolver become more likely to engage in lobbying compared with firms, who have not hired, estimated with the g-synth model (Xu, 2017).

The results are presented in Figure ?. As we can see, the arrival of a revolver is associated with an immediate increase in the probability of filing a lobbying report by 3.2 percentage points, relative to the synthetic control group. This is a substantively large increase of about 42%, considering that the probability that a firm lobbies is very low, with 7.6 percent. In Appendix 9, we show that the effects are concentrated among firms in industries that have a higher level of regulatory strictness, and that revolving door bureaucrats and military officers are associated with stronger



Roles of Revolvers in Senior Management. This figure shows the differences in means of occupations of political senior managers, compared to non-political senior managers. The whiskers show 95% confidence intervals around the differences in means.

increases in the probability of lobbying.

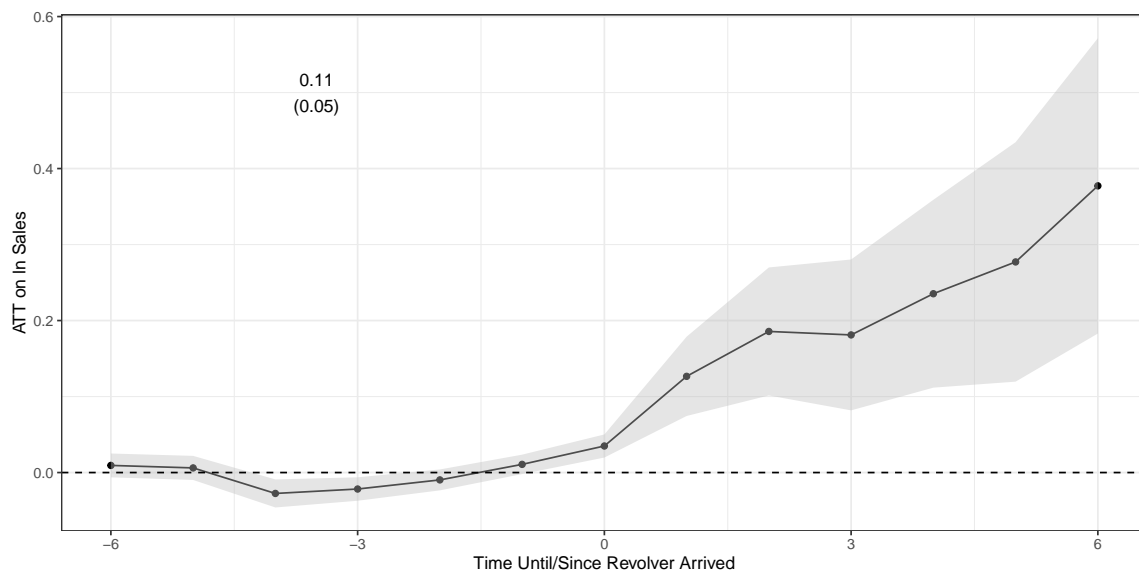


Revolvers Increase Lobbying. The figure shows the results from a generalized synthetic control model of the arrival of any revolver on the probability of lobbying. Robust confidence intervals are 95% clustered at the firm level. A non-parametric bootstrap with 1,000 draws is used.

4.3 Are Strategies That Integrate Revolvers Successful in Improving Corporate Performance?

In the preceding sub-sections, we have presented numerous findings examining the role of revolvers in non-market strategy so far. First, we find that revolvers are very prevalent in publicly traded firms – more prevalent than any other form of corporate political activity. Second, we show that revolvers are hired in response to non-market shocks to firms in a complementary way. Finally, we find that revolvers fill many different roles in the firm and are particularly prevalent in political roles and committees, which seems to affect firms’ non-market behavior. These patterns raise motivate our third and final research question: *do strategies integrating revolvers increase corporate performance?*

To study this, we conduct three sets of analyses. First, we examine whether hiring revolvers is associated with higher sales and profits for the firm. Second, we examine whether strategies integrating multiple different revolver types have a larger effect. Finally, we examine *how* these strategies increase sales by exploring: 1) the duration of public service to distinguish between expertise and connections, and 2) whether revolvers are associated with gaining more government contracts.



Gener-

alized Synthetic Control Estimates of the Effect of Hiring Revolvers on Sales Revenue. The Figure shows the results from a generalized synthetic control model estimating the effect of the arrival of any revolver on the natural log of sales. The average firm sees an increase in sales of 11% compared to the control group when the revolver arrives. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Robust confidence intervals are 95% clustered at the firm level. A non-parametric bootstrap with 1,000 draws is used.

4.3.1 Revolvers and Firm Sales.

We now examine whether the arrival of a revolver is associated with a sudden change in the firm's sales, compared to non-revolver firms that are otherwise similar. Again, we use the generalized synthetic control estimator as described in Section 3.2. The results are presented in Figure ?? below. As we can see, in the period before the revolver arrives (up to time 0), there is no difference in logged sales between the firms that eventually hire a revolver and the synthetic control group of firms that do not. The estimates remain very steadily around zero, and there is very little uncertainty. The g-synth estimator worked as intended, and the treated and control groups on average have the same level of and changes in sales in the absence of revolvers.

After the arrival of a revolver, however, the two groups diverge markedly, as the firms that experiences the arrival of the revolver see a sudden and large increase in sales compared to the firms that remain untreated. The 95% confidence interval does not overlap zero, and the estimates are statistically significant. Our results suggest that the typical firm sees an 11% increase in sales compared to the synthetic control group over the full period after the revolver arrives. Next, to probe the robustness of this finding, we run a number of additional specifications, which we

present in Table 3. Panel A shows the estimated impact during the first three years after the revolver arrives, corresponding to the first three years of our main specification. The estimated increase in sales is between 4.5% and 8.5% – a meaningful but not astronomical increase. This likely presents a better estimate than the 11% increase observed over the full post-treatment period, as this covers many years and there bakes in many other factors.

Table 3: Effect of Revolver Arrival on Firm Sales

	<i>Dependent variable:</i>		
	Logged Sales Revenue		
	t + 1 years	t + 2 years	t + 3 years
	(1)	(2)	(3)
Panel A: Unadjusted Sales			
Revolver Arrives	0.045* (0.024)	0.072** (0.031)	0.085** (0.041)
Panel B: Adjusted for Simultaneous Hires			
Revolver Arrives	0.056* (0.029)	0.092** (0.040)	0.100** (0.042)
Panel C: Adjusted for Total Assets			
Revolver Arrives	0.069** (0.032)	0.105** (0.047)	0.090* (0.054)
Panel D: Total Assets & Simult. Hires			
Revolver Arrives	0.069** (0.033)	0.107** (0.048)	0.093* (0.056)
Panel E: Gross Profits as DV			
Revolver Arrives	0.039** (0.018)	0.076*** (0.024)	0.064*** (0.028)
Treatment Events	956	799	715

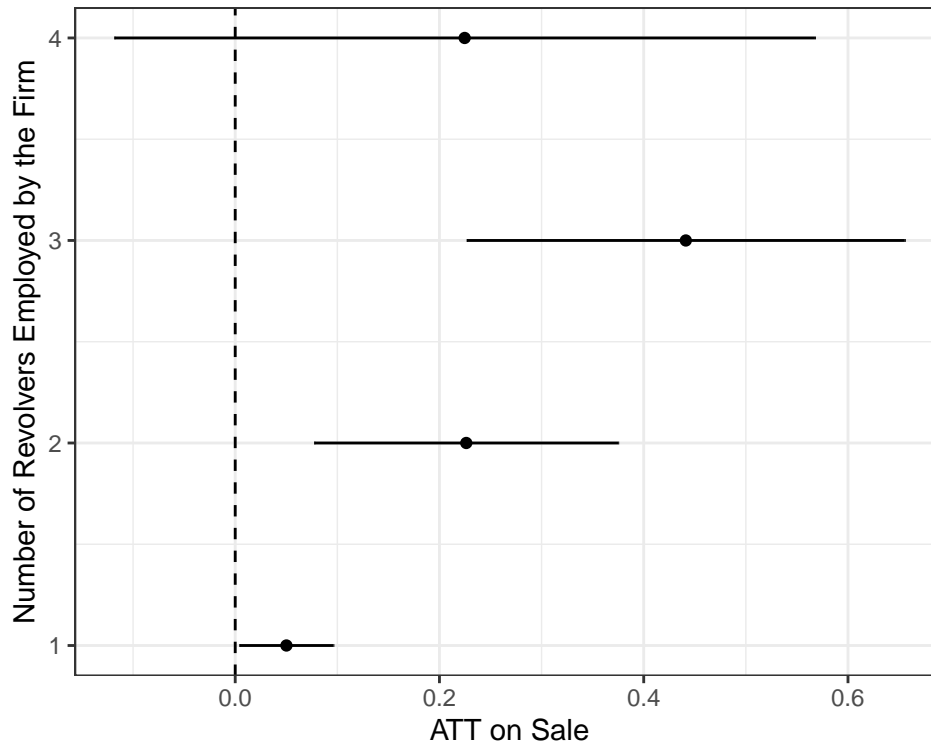
The table shows the results from a generalized synthetic control model estimating the effect of the arrival of any revolver on the natural log of sales and gross profits for the first three years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. *p<0.1; **p<0.05; ***p<0.01.

An important threat to identification is what firms do simultaneously while starting their revolver-centered strategy. Crucially, the firm might undergo simultaneous changes in its organization, such as overall expansion in its senior staff, which could drive part of the increase in sales revenue. These changes might have nothing to do with the non-market strategy which revolvers are a part of, implying that we have to deal with them. To deal with this, we use BoardEx data

to compute the number of new non-revolver arrivals in management or board positions in each year and add this variable as a control in the g-synth model. This effectively adjusts our estimates for the major organizational changes which will entail increases in the number of personnel. The results are presented in Panel B, and we can see that they are not substantively different. Hence, the effects are unlikely to be driven by simultaneous growth in senior management hiring.

Panel C estimates the effect of revolver arrival on sales while controlling for pre-hiring total assets. The estimated effect sizes are slightly larger but not substantively different from our previous results. Panel D includes as controls both the number of simultaneous appointments and total assets, again, with little changes to coefficient sizes or significance. We estimate increases in sales on assets by between 7% and 11%. In Panel E, we use gross profits as the outcome variable. The results show that the arrival of the revolver is associated with increases of between 3.9% and 7.6% in profits. We run a number of robustness checks in Appendix 10. First, we show that we can obtain similar results by using alternative estimators of staggered difference-in-differences. Specifically, we use the techniques proposed by Borusyak et al. (2024) and Callaway Sant’Anna (2021). We also control for industry level heterogeneity by matching (using inverse probability weighting) on NAICS 6-digit codes before running the estimation. This allows us to control for industry, even while including firm fixed effects. In difference-in-differences parlance, this implies imposing a conditional (rather than global) parallel trends assumption, where valid causal inferences can be drawn if firms follow parallel trends within industries. All estimates from this very constrained specification are in the same range of 4% to 11% and statistically significant.

Next, we examine how different types of revolvers may play a role. In particular, we investigate how hiring multiple types simultaneously may lead to complementarities. To examine this, we estimate the g-synth model, and then aggregate the estimated ATTs among firms that have, respectively, one, two, three or four different types employed simultaneously. The results are presented in Figure ???. As we can see, hiring one type alone is associated with a sales increase, but hiring two or three leads to a *larger* increase, leveling off with the fourth different type, with the estimate becoming more noisy. In Appendix 8, we show that firms, indeed, do act as if revolvers of different types are complements as (1) a significant number of firms hire multiple types, and (2) they tend to hire different types together. In Appendix 10.3, we take further steps toward dealing with other factors besides the revolver-centered strategy we are interested in by using the death of a board member as an instrument for hiring revolvers. We find that it is a



Multiple Revolver Types.

Higher Returns for

strong instrument for hiring revolvers, and further uncover large increases in firm sales after the instrumented revolver arrival. Finally, in Appendix 12 we show that the arrival of all types is associated with higher sales, although some are too noisy to be statistically significant.

This supports our theoretical expectation – and our previous empirical findings – that different revolver types complement each other. Critically, this finding also helps explain contradictory evidence in prior work on political connections. El Nayal et al. (2021), for instance, predict that the performance benefits of revolvers should decrease after the first appointment because the added value of yet another revolver does not justify its costs due to revolvers’ lack of business acumen. However, they do not find support for this prediction, at least in developed markets. Our findings hint at an explanation, suggesting that this effect may depend not so much on whether but more on *which* revolvers are employed simultaneously. To examine the extent to which we are able to reconcile previous research with our approach, in Appendix 11, we approximately replicate the finding in Hadani Schuler (2013) and extend their analysis with our revolvers data. The findings suggest that using our broader measurement of revolvers allows us to reconcile some of the mixed findings in the literature.

4.3.2 Mechanisms: How do Revolver-Centered Strategies Increase Firm Sales?

In our final set of analyses, we explore potential *mechanisms linking revolver-centered strategies and increases in sales*. First, we examine whether strategies that rely on revolver expertise or connections are most effective in improving firm outcomes. Second, we examine whether the increase in sales and profits is driven by increased access to the federal procurement system.

Expertise and Connections: As we have elaborated on earlier, former public officials can help firms navigate interactions with government, both through their expertise and their connections (Bertrand et al., 2014; Miller et al., 2022). To examine whether strategies that rely on expert or well-connected revolvers are most successful, we investigate whether the effect differs by revolvers with *a)* long or short tenure in public service, and by *b)* left public service recently or a long time ago. If strategies relying on revolver expertise drives the finding, the increase in sales should be concentrated among revolvers with longer tenures, and the effect should not depend on how long ago they left public service. On the other hand, if strategies based on connections to current decision-makers drive the results, the increase in sales should be concentrated among more recent hires, as revolver's contacts will likely still be employed in public service. The effects should then decrease over time, as the revolver's contacts become less current, due to retiring or changing workplaces.

In Table 4, we examine whether the increase in sales is contingent on the revolver's length of tenure in public service. In Panel A, we show that longer tenure is associated with higher increase in sales. For revolvers that only had one year or less of tenure in public office, we find no increase in sales. Panel B shows that the increase is strongly concentrated among revolvers with between 2 and 10 years of public service, while Panel C shows that the effect drops off and approaches zero for revolvers with between 11 and 20 years of experience. This suggests that there is an optimal level of public experience, and that after some level of regulatory expertise, additional time in public service does not allow the revolver to accrue additional skills that are helpful to the firm.

Next, in Table 5 we examine whether effects are contingent on the time since the revolver left public service. We find little evidence that this is the case. In Panel A, we examine immediate hires, where the revolver comes to the firm from public service within one year. Panel B shows the subset if hires between two and five years since public service, while Panel C shows revolvers

Table 4: Effect Increases with Duration of Public Service

	<i>Dependent variable:</i>			
	ln Sales Revenue			
	t+1	t+2	t+3	t+4
	(1)	(2)	(3)	(4)
Panel A: 1 Year of Public Service				
Revolver Arrives	0.004 (0.038)	−0.009 (0.053)	−0.028 (0.070)	−0.029 (0.080)
Treatment Events	138	106	82	71
Panel B: 2-10 Years of Public Service				
Revolver Arrives	0.058*** (0.022)	0.044 (0.042)	0.040 (0.056)	0.035 (0.062)
Treatment Events	818	644	576	484
Panel C: 11-20 Years of Public Service				
Revolver Arrives	−0.018 (0.012)	−0.041 (0.031)	−0.071 (0.052)	−0.164** (0.082)
Treatment Events	261	171	153	119

Notes: The table shows the results from three generalized synthetic control models within subsets of data including revolvers with a) only 1 year of public service, b) between 2 and 10 years of public service, and c) between 11 and 20 years of public service, respectively. We estimate the effect of the arrival on the natural log of sales for the first three years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. *p<0.1; **p<0.05; ***p<0.01.

that left public service between 6 and 20 years ago. Importantly, there is no strong evidence that effects are concentrated among very recent public servants, and while there is some indication that the effects differ in the longer term, neither the marginal effects, nor the differences between them, are statistically significant.

Overall, while these analyses do not provide the final word on the expertise versus connections discussion, they do lend most credence to the view that revolvers arrive at the firm with expertise on the content of political regulation and how it is forged. This type of knowledge makes them a valuable asset when crafting a firm's non-market strategy.

Table 5: No Additional Effect of Hiring Recent Public Servants

	<i>Dependent variable:</i>			
	ln Sales Revenue			
	t+1	t+2	t+3	t+4
	(1)	(2)	(3)	(4)
Panel A: 1 Year or Less Since Public Service				
Revolver Arrives	0.037 (0.025)	0.033 (0.045)	-0.014 (0.060)	-0.138* (0.075)
Treatment Events	407	310	280	234
Panel B: 2-5 Years Since Public Service				
Revolver Arrives	0.047** (0.022)	0.031 (0.038)	-0.044 (0.051)	-0.020 (0.056)
Treatment Events	570	432	407	326
Panel C: 6-20 Years Since Public Service				
Revolver Arrives	0.017 (0.013)	0.051** (0.020)	0.041 (0.037)	0.051 (0.046)
Treatment Events	778	578	506	413

Notes: The table shows the results from three generalized synthetic control model within subsets of data including revolvers that arrived at the firm a) within 1 year of leaving public service, b) between 2 and 5 years of leaving public service, and c) between 6 and 20 years of leaving public service, respectively. We estimate the effect of the arrival on the natural log of sales for the first four years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. *p<0.1; **p<0.05; ***p<0.01.

Revolvers and federal procurement: Extant research suggests that revolvers' expertise and connections may be particularly useful when it comes to government procurement (Flammer, 2018; Emery Faccio, 2022). We examine whether the firm is able to enter the federal procurement system, and if that accounts for part of the increase in sales.

Government procurement accounts for around 10% of the U.S. GDP. As such, the U.S. government constitutes a significant, and often the single largest client for many U.S. businesses. Winning government procurement contracts, however, is subject to political influence (McDonnell Werner, 2016; Lee, 2023), and thus contingent on a firm's political capital. Work by Kim (2019) and Ridge et al. (2017) shows that lobbying increases firms' likelihood of winning public procurement contracts. Similarly, Tahoun (2014) documents that the provision of government procurement contracts increases with share ownership by U.S. Congress members. Thus, insofar as the appointment of revolvers helps firms navigate the bureaucracy and facilitates the provision of favors, we expect the appointment of revolvers to have a similar effect (cf. Emery Faccio, 2022; Goldman et al., 2013).

To test this, we use data on federal procurement. We examine the *extensive margin of federal procurement* by focusing on firms that have not previously obtained contracts. Thus, we estimate whether entry into the procurement system increases after the appointment of a revolver. We do this by excluding firms that had contracts with the federal government before year 2000, where our revolver data begins. This allows us to examine whether firms that never had a government contract before systematically start gaining them after they hire a revolver. This is necessary, because many of the firms that win federal contracts keep winning them over time. Hence, without excluding the firms that have always been in the system, it is very difficult to isolate the effect of hiring revolvers from being a political insider.

For estimation, we once again we rely on the difference-in-differences design estimated with g-synth. The results with logged value of federal contracts the dependent variables are found in Table 6. However, using a binary indicator of winning contracts produces similar results. As we can see, hiring revolvers is associated with a very sizable increase in federal procurement of between 15% and 87%. The estimates grow over time and are mostly statistically significant. Overall, this suggests that strategies employing revolvers increase the firm's sales, in part, because they help the firm obtain more federal procurement contracts.

Table 6: Mechanism Behind Sales Increase: Revolvers and Federal Procurement

	t+1	t+2	t+3	t+4
	(1)	(2)	(3)	(4)
Revolver Arrives	0.148 (0.106)	0.348* (0.191)	0.609** (0.247)	0.872** (0.343)
Treatment Events	888	759	675	586

Notes: The table shows the results from a generalized synthetic control model estimating the effect of the arrival of any revolver on the logged value of federal procurement contracts. We consider the first four years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is the same as in the main results to facilitate comparison. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

5 Discussion

Our results highlight four important findings on firms' motivations to hire revolvers, the roles they fulfill on boards and in senior management, and their potential effects on company strategy and performance. First, the revolving door is more prevalent than previously thought, with 56% of U.S. publicly traded firms employing at least one former public official on their board or in senior management. Thus, if thought of as part of a firm's non-market strategy, hiring revolvers is almost an order of magnitude more frequent than the more commonly investigated corporate political activities of campaign donations or lobbying. Second, revolvers are hired in response to changes in their environment, and different types of revolvers are hired in response to different changes. This implies that revolvers are likely complementary in terms of their expertise and their political connections. Third, once hired, former officials are very active on both the board and in senior management. However, they are particularly well-integrated into firm's activities related to non-market strategies, that is, legal, communication, CSR, or political committees. In line with this descriptive finding, we show that the arrival of a revolver in a firm increases the likelihood that the firm starts lobbying. Finally, we show evidence that the strategies that integrate revolvers are associated with increased financial performance in terms of sales and gross profits. Strategies that integrate revolvers with longer government tenure have stronger effects, while those that

integrate revolvers that transition directly from public service do not exhibit stronger effects. This is consistent with the idea that the value of revolvers is in their expertise, rather than their political connections. We also investigate the mechanisms behind this sales increase and find evidence of increased public procurement contracts following the arrival of a revolver at a firm.

This paper provides a comprehensive overview of the revolving door among U.S. publicly traded companies, their antecedents, and effects of hiring former government officials. While our approach to mapping revolvers is, to the best of our knowledge, the largest and most comprehensive effort to date, it has limitations and leaves some questions that are beyond the scope of this paper. First, BoardEx provides population-level data only for directors. Information on senior managers is at the discretion of BoardEx, and not necessarily consistent across firms. We also do not have information on employees who are neither directors nor senior managers. We thus likely underestimate the true number of revolvers in the corporate elite but in particular in corporations more generally. Though beyond the scope of this paper, future research could use more complete data on rank-and-file revolving door employees to supplement our findings about the corporate elite.

Second, our empirical approach is geared toward estimating the effect of a broad set of non-market strategies of which hiring revolvers is one part. Indeed, we show that the arrival of the revolver is accompanied by multiple strategic changes for the firm and in its environment. Therefore, we caution against interpreting the effects of revolvers on sales, procurement, and lobbying as driven by the revolver alone. Our difference-in-differences design deals with many confounding threats, by comparing firms that are very similar and controlling for organizational restructuring. However, firms use revolvers as part of their broader non-market strategy. This leaves two interpretations of our findings: 1) the arrival of a revolver may by itself increase firm sales, or 2) revolvers are integrated into a wider strategy, and it is this strategy which leads to increased sales. In the latter case, the revolver is part of a team which in unison increases firm sales. Our framework does not provide strong predictions about which should be the case. In either case, the revolver is a valuable asset, which enables the firm to deal with its environment. However, it is worth noting that the estimated impact on sales and profits is quite sizable for one person. Hence, the most realistic interpretation for an effect of the size that we uncover is that the revolver is an integral part of the successful non-market strategy pursued by the company. This interpretation fits our evidence on why revolvers are hired and how they are integrated

into strategic decision-making. Future research should dig deeper into this question and explore further the mechanism linking revolver hiring and firm financial performance.

More broadly, our empirical findings have wide-ranging theoretical implications that we hope future research can build on when theorizing revolvers and political connections. First, we know from previous research that firms acquire politically connected personnel to obtain resources they need and would not otherwise have (Hillman et al., 1999; Wei et al., 2022). However, one potential implication of our results is that revolvers are both tools of strategy and strategists themselves. Revolvers are hired to deal with certain non-market threats, but our results also suggest that their dual role creates a feedback loop where revolvers' own experiences, networks, and expertise shape the strategic priorities of the firm. In this way, revolvers are actors in the intra-firm conflict over how to pursue political goals (Shaffer Hillman, 2000), and the integration of revolvers into strategy-making adds complexity to firms' choice of non-market strategies. This proposition needs more evidence, but if it turns out to be true, firms must consider not only which strategies to pursue but also who will shape and drive these strategies. Firms hire revolvers to take care of non-market threats. However, this reaction to a specific event shapes the tools available to the firm and, hence, the strategies they may pursue in the future. Future work should theorize this further, and provide more evidence on how revolvers shape firm strategy once they are hired.

Second, and relatedly, future work could further investigate what revolvers do in their specific roles in companies and how their previous experience in government affects what they do. This would be one way of examining how revolvers shape firm behavior. In recent years, more fine-grained micro-level data from social media and career websites has become available which could provide more information on the content of their job in a given company. In conjunction with micro-level hiring data from firms, this could shed light on how revolvers fit into an overall hiring and non-market strategy within the firm (Baker et al., 2022). In addition, one could investigate how far they represent the firm on political topics in more public roles, such as speeches, statements during earnings calls, or testimonies in the U.S. Congress.

Third, our results show that longer experience as public official positively moderates the association with firm sales. In contrast, it is not the case that revolvers with very little time between their last government job and their job in a publicly traded company are associated with larger performance increases. This provides suggestive evidence that firms value expertise more in former public officials than connections, on average (Blanes et al., 2012; Bertrand et al., 2014;

Miller et al., 2022). We want to emphasize that this does not mean that connections do not matter. While the broad approach we apply here does provide some suggestive evidence, more focused approaches should be used to delve deeper into the question. Future research could shed more light on this question by zooming in on political connections in specific government agencies and not only track individuals who switch to the private sector, but also, how their interactions with the government agency change over time and when their former colleagues retire or change the workplace. Another possibility would be to measure expertise more directly, for instance, via standardized tests during employment in the public sector.

Finally, after the birds-eye-view presented in this paper, it would be beneficial for future work to return to the study of specific types of revolvers and link those more closely to specific regulatory shocks or specific non-market strategies. Indeed, our broad approach implies that we have to black box many of the findings related to specific revolver types. Future research could, for example, identify bureaucrats from specific agencies and investigate how closely their hiring is related to both agency-specific enforcement and regulatory shocks (Gordon Hafer, 2005). Future work should also investigate more specifically how established political capacities and expertise enable firms to deal more effectively with non-market issues, e.g., shape a new regulation in their favor (Yackee Yackee, 2006), retain political access after changes in administrations, or deal with political uncertainty (Hassan et al., 2019). In addition, this approach would make it possible to investigate the effect of revolver hiring on agency-specific lobbying as well as specific content of lobbying (Huneus Kim, 2021).

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References

- Acemoglu D, Johnson S, Kermani A, Kwak J, Mitton T (2016) The value of connections in turbulent times: Evidence from the united states. *Journal of Financial Economics* 121:368–391, ISSN 0304-405X, URL <http://dx.doi.org/10.1016/j.jfineco.2015.10.001>.
- Adler PS, Borys B (1996) Two types of bureaucracy: Enabling and coercive. *Administrative science*

quarterly 61–89.

Al-Ubaydli O, McLaughlin PA (2017) Regdata: A numerical database on industry-specific regulations for all united states industries and federal regulations, 1997–2012. *Regulation & Governance* 11(1):109–123.

Ang YY, Jia N (2014) Perverse Complementarity: Political Connections and the Use of Courts among Private Firms in China. *The Journal of Politics* 76(2):318–332, ISSN 0022-3816, URL <http://dx.doi.org/10.1017/S0022381613001400>.

Aobdia D, Srivastava A, Wang E (2018) Are immigrants complements or substitutes? evidence from the audit industry. *Management Science* 64(5):1997–2012.

Babenko I, Fedaseyeu V, Zhang S (2022) Executives in politics. *Management Science* ISSN 0025-1909, URL <http://dx.doi.org/10.1287/mnsc.2022.4595>.

Baker A, Larcker DF, McClure C, Saraph D, Watts E (2022) Diversity washing. *SSRN Electronic Journal* ISSN 1556-5068, URL <http://dx.doi.org/10.2139/ssrn.4298626>.

Balla SJ (1998) Administrative procedures and political control of the bureaucracy. *American Political Science Review* 92(3):663–673.

Benmelech E, Frydman C (2015) Military CEOs. *Journal of Financial Economics* 117(1):43–59, ISSN 0304-405X, URL <http://dx.doi.org/10.1016/J.JFINECO.2014.04.009>.

Berry H, Kaul A, Lee N (2021) Follow the smoke: The pollution haven effect on global sourcing. *Strategic Management Journal* 42(13):2420–2450.

Bertrand M, Bombardini M, Trebbi F (2014) Is It Whom You Know or What You Know? An Empirical Assessment. *American Economic Review* 104(12):3885–3920, ISSN 1556-5068, URL <http://dx.doi.org/10.2139/ssrn.1748024>.

Bertrand M, Kramarz F, Schoar A, Thesmar D (2018) The cost of political connections. *Review of Finance* 22:849–876, ISSN 1572-3097, URL <http://dx.doi.org/10.1093/ROF/RFY008>.

Blanes J, Draca M, Fons-rosen C (2012) Revolving door lobbyists. *American Economic Review* 102:3731–3748.

- Bombardini M, Trebbi F (2020) Empirical models of lobbying. *Annual Review of Economics* 12:391–413.
- Borusyak K, Jaravel X, Spiess J (2024) Revisiting event-study designs: robust and efficient estimation. *Review of Economic Studies* rdae007.
- Callaway B, Sant’Anna PH (2021) Difference-in-Differences with multiple time periods. *Journal of Econometrics* 225(2):200–230, ISSN 0304-4076, URL <http://dx.doi.org/10.1016/J.JECONOM.2020.12.001>.
- Chen T, Tan Y, Wang J, Zeng CC (2022) The unintended consequence of land finance: Evidence from corporate tax avoidance. *Management Science* 68:8319–8342, ISSN 0025-1909, URL <http://dx.doi.org/10.1287/mnsc.2021.4191>.
- Choi J, Penciakova V, Saffie F (2021) Political connections , allocation of stimulus spending, and the jobs multiplier. *Finance and Economics Discussion Series 2021-005*. Washington: Board of Governors of the Federal Reserve System. URL <https://doi.org/10.17016/FEDS.2021.005>.
- Conti R, Valentini G (2018) Super partes? assessing the effect of judicial independence on entry. *Management Science* 64:3517–3535, ISSN 0025-1909, URL <http://dx.doi.org/10.1287/mnsc.2017.2794>.
- Correia MM (2014) Political connections and SEC enforcement. *Journal of Accounting and Economics* 57(2-3):241–262, ISSN 01654101, URL <http://dx.doi.org/10.1016/j.jacceco.2014.04.004>.
- Cui L, Hu HW, Li S, Meyer KE (2018) Corporate political connections in global strategy. *Global Strategy Journal* 8:379–398, ISSN 2042-5805, URL <http://dx.doi.org/10.1002/GSJ.1325>.
- de Figueiredo JM, Richter BK (2014) Advancing the empirical research on lobbying. *Annual Review of Political Science* 17(1):163–185, ISSN 1094-2939, URL <http://dx.doi.org/10.1146/annurev-polisci-100711-135308>.
- Drutman L (2015) *The Business of America is Lobbying: How Corporations Became Politicized and Politics Became More Corporate* (Oxford University Press).
- Egerod BCK (2022) The revolving door and regulatory enforcement-firm-level evidence on tax rates and tax audits. *Journal of Politics, forthcoming* .

- Egerod BCK, Tran H (2022) Extremists not on board: Labor market costs to radical behavior in elected office. *Journal of Politics*, *forthcoming* .
- El Nayal O, Van Oosterhout J, van Essen M (2021) Ties that bind and grind? investor reactions to politician appointments to corporate boards. *Journal of Management* 47(2):456–487.
- Emery LP, Faccio M (2022) Exposing the revolving door in executive branch agencies. *Working Paper* .
- Fan JP, Huang J, Oberholzer-Gee F, Zhao M (2020) Bureaucrats as managers and their roles in corporate diversification. *Journal of Corporate Finance* 63:101171, ISSN 0929-1199, URL <http://dx.doi.org/10.1016/J.JCORPFIN.2017.03.006>.
- Fan JP, Wong TJ, Zhang T (2007) Politically connected CEOs, corporate governance, and Post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics* 84(2):330–357, ISSN 0304-405X, URL <http://dx.doi.org/10.1016/J.JFINECO.2006.03.008>.
- Fisman R (2001) Estimating the Value of Political Connections. *American Economic Review* 91(4):1095–1102, ISSN 0002-8282, URL <http://dx.doi.org/10.1257/aer.91.4.1095>.
- Flammer C (2018) Competing for government procurement contracts: The role of corporate social responsibility. *Strategic Management Journal* 39(5):1299–1324, ISSN 10970266, URL <http://dx.doi.org/10.1002/smj.2767>.
- Goldfarb A, Xiao M (2011) Who Thinks about the Competition? Managerial Ability and Strategic Entry in US Local Telephone Markets. *American Economic Review* 101(7):3130–61, ISSN 0002-8282, URL <http://dx.doi.org/10.1257/AER.101.7.3130>.
- Goldman E, Rocholl J, So J (2013) Politically connected boards of directors and the allocation of procurement contracts. *Review of Finance* 17:1617–1648, ISSN 15723097, URL <http://dx.doi.org/10.1093/rof/rfs039>.
- Goodman-Bacon A (2021) Difference-in-differences with variation in treatment timing. *Journal of Econometrics* 225:254–277, ISSN 18726895, URL <http://dx.doi.org/10.1016/j.jeconom.2021.03.014>.
- Gordon SC, Hafer C (2005) Flexing muscle: Corporate political expenditures as signals to the bureaucracy. *American Political Science Review* 99(2):245–261.

- Gordon SC, Hafer C (2007) Corporate influence and the regulatory mandate. *Journal of Politics* 69:300–319, ISSN 00223816, URL <http://dx.doi.org/10.1111/j.1468-2508.2007.00533.x>.
- Graebner ME, Knott AM, Lieberman MB, Mitchell W (2023) Empirical inquiry without hypotheses: A question-driven, phenomenon-based approach to strategic management research. *Strategic Management Journal* 44(1):3–10.
- Grossman GM, Helpman E (2001) *Special interest politics* (MIT press).
- Gu Z, Tang S, Wu D (2020) The political economy of labor employment decisions: Evidence from china. *Management Science* 66:4703–4725, ISSN 0025-1909, URL <http://dx.doi.org/10.1287/mnsc.2019.3345>.
- Hadani M, Schuler DA (2013) In search of El Dorado: The elusive financial returns on corporate political investments. *Strategic Management Journal* 34(2):165–181, ISSN 1097-0266, URL <http://dx.doi.org/10.1002/SMJ.2006>.
- Hassan TA, Hollander S, Lent LV, Tahoun A (2019) Firm-level political risk: Measurement and effects. *Quarterly Journal of Economics* 134:2135–2202, ISSN 15314650, URL <http://dx.doi.org/10.1093/qje/qjz021>.
- Heese J (2022) Does Industry Employment of Active Regulators Weaken Oversight? *Management Science* 68(12):9198–9218, ISSN 15265501, URL <http://dx.doi.org/10.1287/MNSC.2022.4326/ASSET/IMAGES/LARGE/MNSC.2022.4326F1.JPEG>.
- Hillman AJ, Hitt MA (1999) Corporate political strategy formulation: A model of approach, participation, and strategy decisions. *Academy of Management Review* 24:825–842, ISSN 0363-7425, URL <http://dx.doi.org/10.5465/amr.1999.2553256>.
- Hillman AJ, Zardkoohi A, Bierman L (1999) Corporate political strategies and firm performance: indications of firm-specific benefits from personal service in the u.s. government. *Strategic Management Journal Strat. Mgmt. J* 20:67–81, URL [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199901\)20:1](http://dx.doi.org/10.1002/(SICI)1097-0266(199901)20:1).
- Hirsch AV, Kang K, Montagnes BP, You HY (2023) Lobbyists as gatekeepers: Theory and evidence. *The Journal of Politics* 85(2):731–748.

- Holcomb TR, Holmes Jr RM, Connelly BL (2009) Making the most of what you have: managerial ability as a source of resource value creation. *Strategic Management Journal* 30(5):457–485, ISSN 01432095, URL <http://dx.doi.org/10.1002/smj.747>.
- Huang S, Thakor AV (2024) Political influence, bank capital, and credit allocation. *Management Science* ISSN 0025-1909, URL <http://dx.doi.org/10.1287/mnsc.2022.04056>.
- Huneus F, Kim IS (2021) The effects of firms' lobbying on resource misallocation. *Working Paper* .
- Karpoff JM, Lee DS, Vondracik VP (1999) Defense Procurement Fraud, Penalties, and Contractor Influence. *Journal of Political Economy* 107(4):809–842, ISSN 0022-3808, URL <http://dx.doi.org/10.1086/250080>.
- Katic IV, Kim JW (2024) Caught in the revolving door: Firm-government employee mobility as a fleeting regulatory advantage. *Organization Science* 35:281–306, ISSN 15265455, URL <http://dx.doi.org/10.1287/ORSCT.2023.1669/ASSET/IMAGES/LARGE/ORSCT.2023.1669F2.JPEG>.
- Kim IS (2018) LobbyView: Firm-level Lobbying and Congressional Bills Database. *Working Paper* URL <http://web.mit.edu/insong/www/pdf/lobbyview.pdf>.
- Kim IS, Stuckatz J, Wolters L (2023) Systemic links between campaign donations and lobbying. *Working Paper* URL <http://web.mit.edu/insong/www/pdf/campaign-lobby.pdf>.
- Kim JH (2019) Is your playing field unleveled? U.S. defense contracts and foreign firm lobbying. *Strategic Management Journal* 40(12):1911–1937, ISSN 10970266, URL <http://dx.doi.org/10.1002/smj.3061>.
- Koch-Bayram IF, Wernicke G (2018) Drilled to obey? Ex-military CEOs and financial misconduct. *Strategic Management Journal* 39(11):2943–2964, ISSN 01432095, URL <http://dx.doi.org/10.1002/smj.2946>.
- Koester A, Shevlin T, Wangerin D (2017) The Role of Managerial Ability in Corporate Tax Avoidance. *Management Science* 63(10), URL <http://dx.doi.org/10.1287/mnsc.2016.2510>.
- LaPira TM, Thomas HF (2017) *Revolving door lobbying: Public service, private influence, and the unequal representation of interests* (University Press of Kansas).

- Lee K (2023) Electoral turnover and government efficiency: Evidence from federal procurement. *Journal of Politics* .
- Lee K, You HY (2023) Bureaucratic revolving doors and interest group participation in policy making. *The Journal of Politics* 85(2):701–717, URL <http://dx.doi.org/10.1086/722340>.
- Lester RH, Hillman A, Zardkoohi A, Cannella AA (2008) Former Government Officials as Outside Directors: The Role of Human and Social Capital. *Academy of Management Journal* 51(5):999–1013, ISSN 0001-4273, URL <http://dx.doi.org/10.5465/amj.2008.34789675>.
- McCrain J (2018) Revolving door lobbyists and the value of congressional staff connections. *The Journal of Politics* 80(4):1369–1383.
- McDonnell MH, Werner T (2016) Blacklisted Businesses. *Administrative Science Quarterly* 61(4):584–620, ISSN 0001-8392, URL <http://dx.doi.org/10.1177/0001839216648953>.
- McLaughlin P, Nelson J, Powers T (2022) *RegData 4.1 User Guide*. Available at https://quantgov-documentation.s3.amazonaws.com/regdata_4_1_user_guide.pdf.
- Miller DR, McCrain J, Hassell HJ, Egerod BC (2022) Hiring faithful agents, expertise, or connections? a conjoint survey experiment on lobbyist hiring decisions .
- Palmer M, Schneer B (2016) Capitol gains: The returns to elected office from corporate board directorships. *Journal of Politics* 78:181–196, ISSN 14682508, URL <http://dx.doi.org/10.1086/683206>.
- Palmer M, Schneer B (2019) Postpolitical careers: How politicians capitalize on public office. *Journal of Politics* 81:670–675, ISSN 14682508, URL <http://dx.doi.org/10.1086/701762>.
- Pfeffer J, Salancik GR (1978) *The External Control of Organizations: A Resource Dependence Perspective* (Harper & Row), URL <https://www.gsb.stanford.edu/faculty-research/books/external-control-organizations-resource-dependence-perspective>.
- Ridge JW, Ingram A, Hill AD (2017) Beyond Lobbying Expenditures: How Lobbying Breadth and Political Connectedness Affect Firm Outcomes. *Academy of Management Journal* 60(3):1138–1163, ISSN 0001-4273, URL <http://dx.doi.org/10.5465/amj.2015.0584>.
- Ritchie MN, You HY (2019) Legislators as lobbyists. *Legislative Studies Quarterly* 44(1):65–95.

- Sager F, Rosser C (2009) Weber, wilson, and hegel: Theories of modern bureaucracy. *Public Administration Review* 69(6):1136–1147.
- Shaffer B, Hillman AJ (2000) The development of business–government strategies by diversified firms. *Strategic Management Journal Strat. Mgmt. J* 21:175–190, URL [http://dx.doi.org/10.1002/\(SICI\)1097-0266\(200002\)21:2](http://dx.doi.org/10.1002/(SICI)1097-0266(200002)21:2).
- Stuart T, Wang Y (2016) Who cooks the books in China, and does it pay? Evidence from private, high-technology firms. *Strategic Management Journal* 37(13):2658–2676, ISSN 01432095, URL <http://dx.doi.org/10.1002/smj.2466>.
- Stuckatz J (2022) How the workplace affects employee political contributions. *American Political Science Review* 116:54–69, URL <http://dx.doi.org/10.1017/S0003055421000836>.
- Tahoun A (2014) The role of stock ownership by US members of Congress on the market for political favors. *Journal of Financial Economics* 111(1):86–110, ISSN 0304-405X, URL <http://dx.doi.org/10.1016/J.JFINECO.2013.10.008>.
- Wei Y, Jia N, Bonardi JP (2022) Corporate Political Connections: A Multidisciplinary Review. *Journal of Management* ISSN 15571211, URL http://dx.doi.org/10.1177/01492063221136839/ASSET/IMAGES/LARGE/10.1177_{_}01492063221136839-FIG1.JPEG.
- Xu Y (2017) Generalized Synthetic Control Method: Causal Inference with Interactive Fixed Effects Models. *Political Analysis* 25(1):57–76, ISSN 1047-1987, URL <http://dx.doi.org/10.1017/pan.2016.2>.
- Yackee JW, Yackee SW (2006) A bias towards business? Assessing interest group influence on the U.S. bureaucracy. *Journal of Politics* 68(1):128–139.

Online Appendix

Revolvers in the Corporate Elite

6 Additional Descriptives on Prevalence of Revolvers

Executives and senior managers frequently have public sector experience. Table 6.1 below shows some stylized facts about these revolvers. In total, we find 28,269 individuals in BoardEx who hold positions as senior managers or on boards of publicly traded companies who *also* hold a position as public official at some point in their career.¹¹

	Mean	Min.	25P	Med.	75P	Max.
Experience in the Public Sector						
Number of Public Sector Employers	1.49	1	1	1	2	17
Number of Public Sector Positions	1.76	1	1	1	2	20
Experience in Last Public Sector Job and Private Sector	5.65	0	2	4	8	42
Years between Last Public Sector Job and Private Sector	4.47	0	0	3	7	20
Total Years of Public Sector Experience	8.26	1	3	6	11	63
Experience in Publicly Traded Companies						
Number of Private Sector Employers	1.86	1	1	1	2	63
Number of Private Sector Positions	2.58	1	1	2	3	63
Total Years of Private Sector Experience	10.72	1	4	9	15	68
Direction of Transition						
	Share					
Share, Public Sector → Private Sector	0.57					
Share, Private Sector → Public Sector	0.43					

Table 6.1: Characteristics of Executives and Senior Managers with Public Sector Experience: the table shows some stylized facts on individuals in BoardEx that hold public positions at some point in their career. There are 28,269 individuals in publicly traded companies with public sector experience. The upper two panels show descriptive statistics regarding public sector experience as well as experience in publicly traded companies. The lower panel shows the prevalence of transitions from the public to the private sector and from the private to the public sector. Private sector here means holding a position at a publicly traded company.

First, we note that there are *more transitions from the public sector to the private sector than vice versa*. that about 57% of individuals with public sector experience start a job at a publicly traded company after their public office, whereas 43% first hold a job at a publicly traded company before taking up their first job in a public office. This shows the importance to study the channel investigated in this paper.¹² Second, *revolvers do not change into publicly traded companies right after public office* and tend to collect *multiple years of experience in their last public office job*. The median revolver worked four years at the last public office job before taking up a job in a stock-

¹¹The number of observations depends on availability of start and end dates for specific positions. There are 28,269 individuals in publicly traded companies with public sector experience, 24,721 for which experience in publicly traded or private jobs can be calculated (end date for public and start date for private job is available), and 15,234 for which direction of transition (start dates for both public and private job are available) can be determined.

¹²However, it also provides motivation to further research the under-studied channel from the private sector to public offices (Acemoglu et al., 2016).

traded company, and typically transitions into a publicly traded company three years after finishing their public office job, and half of revolvers take as many years or even longer than that. This indicates that the skills and connections acquired in the public sector might not lose value very quickly, and that many revolvers take on other jobs in-between (e.g., in a charity or a privately-held company), before moving into a publicly traded company. However, there are also many more fast-moving career trajectories, with 25% of revolvers who change to a publicly traded company right in the same year in which they leave public office. While the fast or simultaneous transitions might be quite prevalent and might receive more public attention, the majority of revolvers do not transition instantaneously.

Third, most executives and senior managers *have more experience in publicly traded companies than in the public sector* (median of 9 years, compared to 6 years). This reflects the fact that there are more transitions from public office to a publicly traded company than the other way around. Finally, the *distribution of private sector and public sector experience is skewed*. The median individual holds only one public sector position at one employer, and two different positions at one publicly traded employer. In contrast, some few individuals work in many more public and private sector organisations and positions. Especially the many employers and positions at publicly traded companies are driven by few individuals who hold many board positions across many different countries. This is also relevant for the question whether revolver connections and expertise can complement each other. While most revolvers only come with one relevant public office connection, many companies hire revolvers with a multitude of previous experiences, skills, and connections.

7 Additional Information on the Roles of Revolvers

7.1 Roles on Boards

In the main text, we focus on the roles that revolvers have on board committees. Here, we include additional information on board service: number of boards and committees they served on, the number of years they typically (on average) serve on boards and the proportion who are non-executive directors.

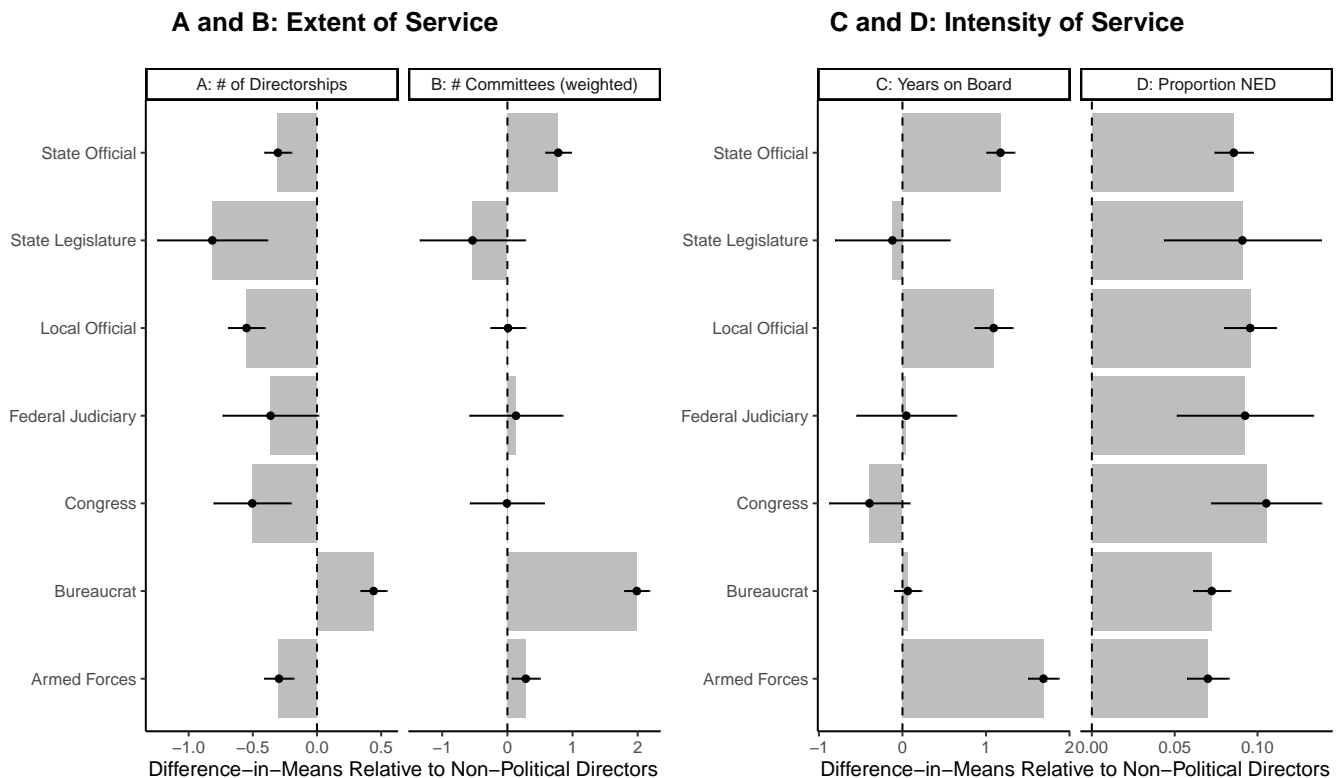


Figure 7.1: Intensity and Extensity of Board Service. *Note: We show the extent of revolvers' service (panel A and B) and length of service (panel C and D)*

7.2 Roles in Senior Management

We will move some of the information on roles in senior management to this appendix.

8 Firms Behave as if Revolvers Were Complements

In the main paper, we present multiple pieces of evidence that different types of revolvers complement each other. We show that firms gain more in sales when they hire multiple different types of revolvers, and that all revolvers are hired more (but in different degrees) in response to non-market shocks.

Here, we study whether firms themselves act as if different types of revolvers' skills complement each other. We do so by examining how often firms hire multiple different types, and whether different types are correlated with each other.

Figure 8.1 shows how common it is to have several different types of revolvers employed at the same time. While most firms only have one type employed at any given point in time, it is also clear that many firms have several. It is not uncommon to have three different types of revolvers employed at the same time – and some firms have as many as seven different types of revolvers employed simultaneously.

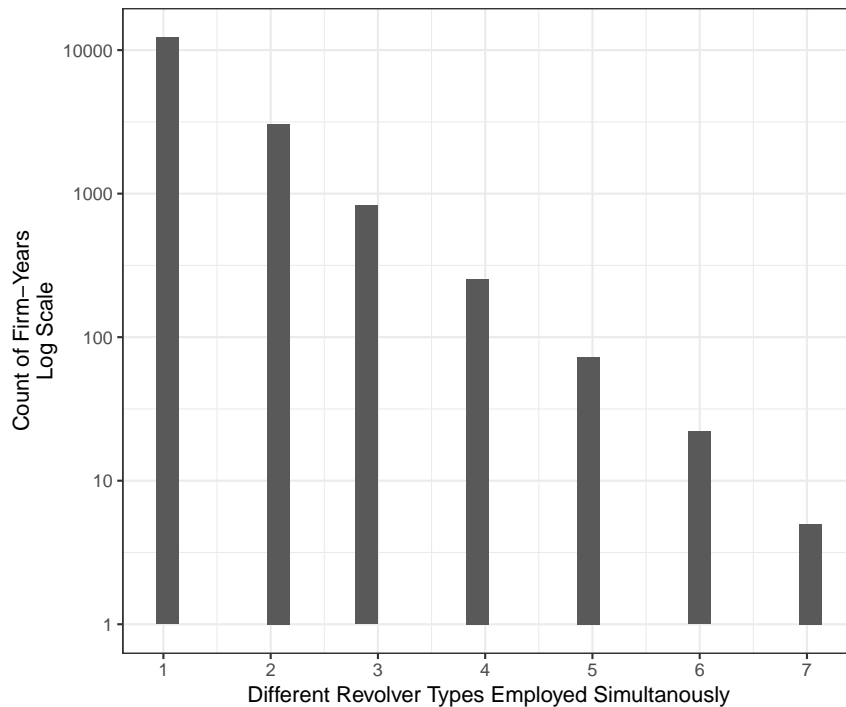


Figure 8.1: Frequency of Employing Multiple Revolvers in the Same Year, 2000 - 2020: The figure shows the frequency of firm-years in which different types of revolvers are employed by the same firm. Many firms hire multiple revolvers in a given year.

Next, we would expect different revolver types to be complements – as they each have different

sets of skills, employing multiple should (up to some point) yield additional benefits to the firm. However, firms will face different strategic circumstances, and need people with the skills to handle exactly them. Therefore, all types of revolvers should not be equally good complements.

To provide a first test of this idea, Table 8.1 presents the correlation between having different types of revolvers employed simultaneously among firms that at some point hire a revolver. Two interesting patterns emerge. First, all types of revolvers are positively correlated, yielding clear evidence that the different revolver types are complements, and not substitutes. Second, the strength of the correlations differ very substantially. For example, firms with federal bureaucrats employed are quite likely to have former Members of Congress, state bureaucrats and/or officers from the armed forces employed simultaneously. On the other hand, when firms have former members of a state assembly employed, they are likely to also have former MoCs and state bureaucrats employed, but the correlations with the other revolver types are quite weak. This implies that while revolvers bring complementary skills with them, some revolvers have skill sets that complement each other more strongly.

	Assembly	Congress	Local	State Bureau	Judiciary	Armed
Bureau	.08***	.19***	.10***	.18***	.11***	.19***
Armed	.05***	.12***	.07***	.10***	.07***	
Judiciary	.04***	.10***	.07***	.09***		
State Bureau	.10***	.12***	.12***			
Local	.06***	.08***				
Congress	.11***					

Table 8.1: Correlations between Multiple Revolver Types at the Same Time: Are Revolvers Complements? The table shows the correlations between different revolver types in the same year. Only firm-years from firms that at some point hire a revolver are included. The table shows that revolver hiring across types is correlated, and that correlations vary between revolver types. The three stars (***) indicate < 0.01 .

9 Heterogeneous Effects of Revolvers on Lobbying

In the main paper, we show that the arrival of a revolver is associated with an increase in federal lobbying by the firm.

As an additional analysis, we examine whether the effects are larger for firms that are exposed to a high level of regulation. To do this, we use data from the RegData project, which uses text-as-data methods to examine how prevalent restrictive words are in rules at the industry-level (NAICS 2-digit level). More restrictiveness should capture how strictly regulated the industry is. We split our dataset into firms below the 25th and above the 75th percentiles in this measure of regulatory strictness. We then estimate a g-synth model with the arrival of any revolver as the treatment variable. Instead of aggregating into an overall average ATT, we compute conditional ATTs within each of these groups of strictly and weakly regulated firms, respectively. Panel B of Figure ?? shows the results, where we use 90% confidence intervals to improve the graph's readability.¹³ The results show that firms with a high degree of regulatory strictness increase their lobbying by several percentage points more than the synthetic control when a revolver arrives. On the other hand, we estimate no statistically significant difference between firms that are the least regulated and the synthetic control; for many periods the estimates are even negative.

Our final theoretical expectation is that because revolvers have different skillsets, the impact on firm lobbying should differ between revolver types. In Figure 9.2, we estimate separate g-synth models for each type of revolver in our dataset. Strikingly, the only statistically significant estimate is for former federal bureaucrats. The estimate suggests that the arrival of that type of revolver is strongly associated with an increase in lobbying compared to the change in the synthetic control group.

¹³The results that are statistically significant at this level are mostly significant at the 95% level, too.

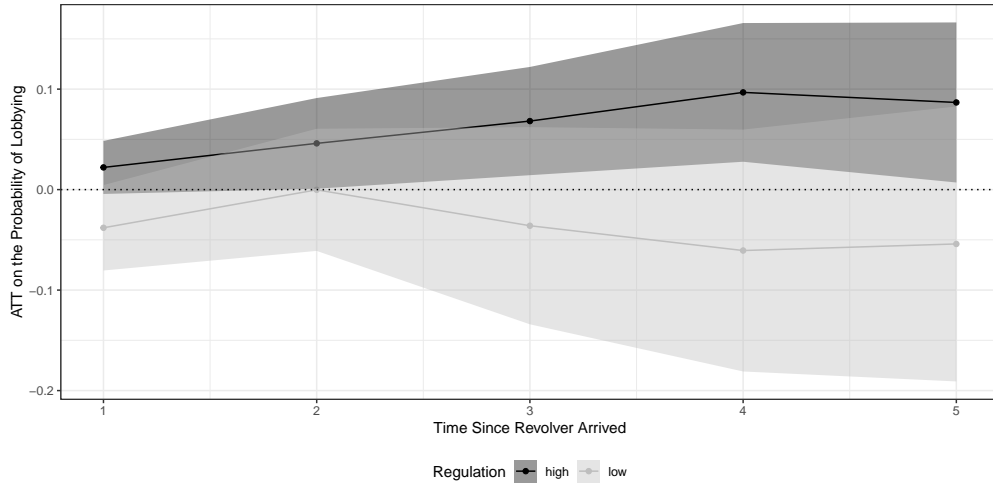


Figure 9.1: Heterogeneous Effects on Lobbying by Strictness of Regulation. The figure shows how this effect differs depending on whether the firm is in a strongly or lightly regulated industry. Confidence intervals are 90%, and a parametric bootstrap with 1,000 draws has to be used to estimate sub-group effects. The dependent variable in both models is a binary indicator of whether the firm files a lobbying report. Hiring revolvers increases lobbying, and the effect is concentrated with firms in strongly regulated industries.

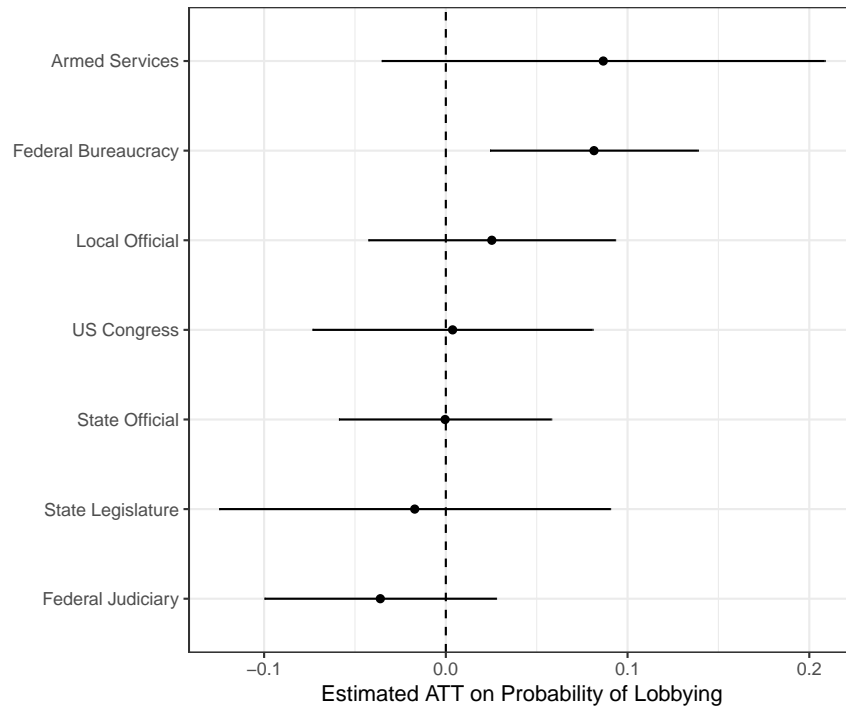


Figure 9.2: The Arrival of Revolvers and Corporate Non-Market Strategy. The Figure shows the results from separate generalized synthetic control models estimating the effect of the arrival of different types of revolvers on the probability of lobbying. Positive effects are associated with armed forces, federal bureaucrats and local officials, but only former federal bureaucrats are estimated with enough precision to be statistically significant. Robust confidence intervals are 95% clustered at the firm level. A non-parametric bootstrap with 1,000 draws is used.

10 Robustness Checks

We run a number of robustness checks. First, we estimate our main models using alternative estimators of difference-in-differences. Second, we include industry fixed effects in our difference-in-differences models. Third, we use the deaths of directors as an instrument for hiring revolvers.

10.1 Estimation with Alternative Difference-in-Differences

Generalized synthetic control (g-synth) is not a widely used estimator. However, it is quite similar to other forms of difference-in-differences estimators with the exception that g-synth matches treated and control units in the pre-treatment period. Still, we need to ensure that our results are not driven by the choice of estimator. In Figure 10.1 we show the estimated impact of the arrival of a revolver for two alternative difference-in-differences estimators. Importantly, both these estimators ensure that no treated units end up in the control group for later treatment events (Goodman-Bacon, 2021).

In Panel A, we use the imputation difference-in-differences estimator Borusyak et al. (2024). This technique proceeds by subsetting to firms that are not yet treated by the arrival of a revolver and estimating a model with fixed effects for firm and year. This is then used to predict the potential sales outcome for firms while they are treated. The effect of the revolver arriving can then be estimated by computing the (average) difference between the imputed and actual firm sales. This is equivalent to estimating the g-synth model with no interactive fixed effects, or to estimating a model with firm and year fixed effects but excluding already-treated firms from the control group. The results maintain

In Panel B, we use the Callaway Sant’Anna (2021) estimator, which works by subsetting the data to all possible two-periods. In particular, for each treatment event, the data is subset to include only the firms that are treated in that cohort and a control group of firms that are not treated. The difference-in-differences is then calculated in that and all other time periods. The effect of revolver arrival can be calculated at, e.g., each relative time-period or the overall time after treatment. We show the estimates for each relative time period since the revolver arrived for both Callaway Sant’Anna (2021) and Borusyak et al. (2024). The results are quite similar to the g-synth estimates in the main paper.

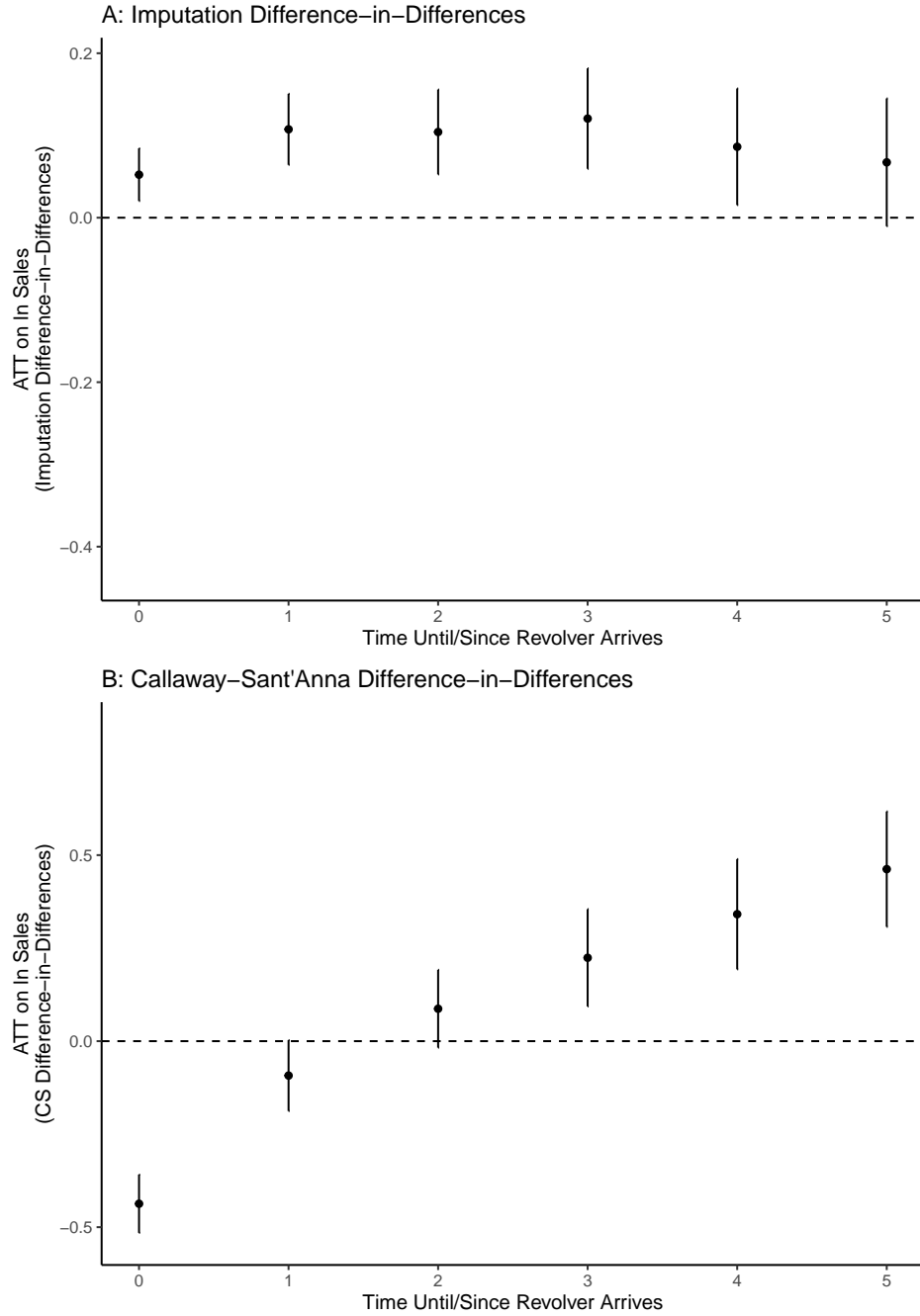


Figure 10.1: Estimating the Impact of Revolvers using Alternative Difference-in-Differences Estimation Strategies.

10.2 Differential Trends by Industry

One important reason for using the Callaway Sant'Anna (2021) technique is that it straightforwardly allows for incorporating non-varying covariates. In this case, we are interested in comparing only firms within the same (NAICS6) industries in our difference-in-differences analysis.

To do so, we use inverse probability weighting on propensity scores obtained in a model with revolver arrival as the outcome and NAICS6 industry codes as the covariate. Including this in the Callaway Sant’Anna (2021) model ensures that the difference-in-differences estimate is only based on a comparison of firms within the same industry.

The results are presented in Figure 10.2 and are show comparably large increases in sales when the revolver arrives.

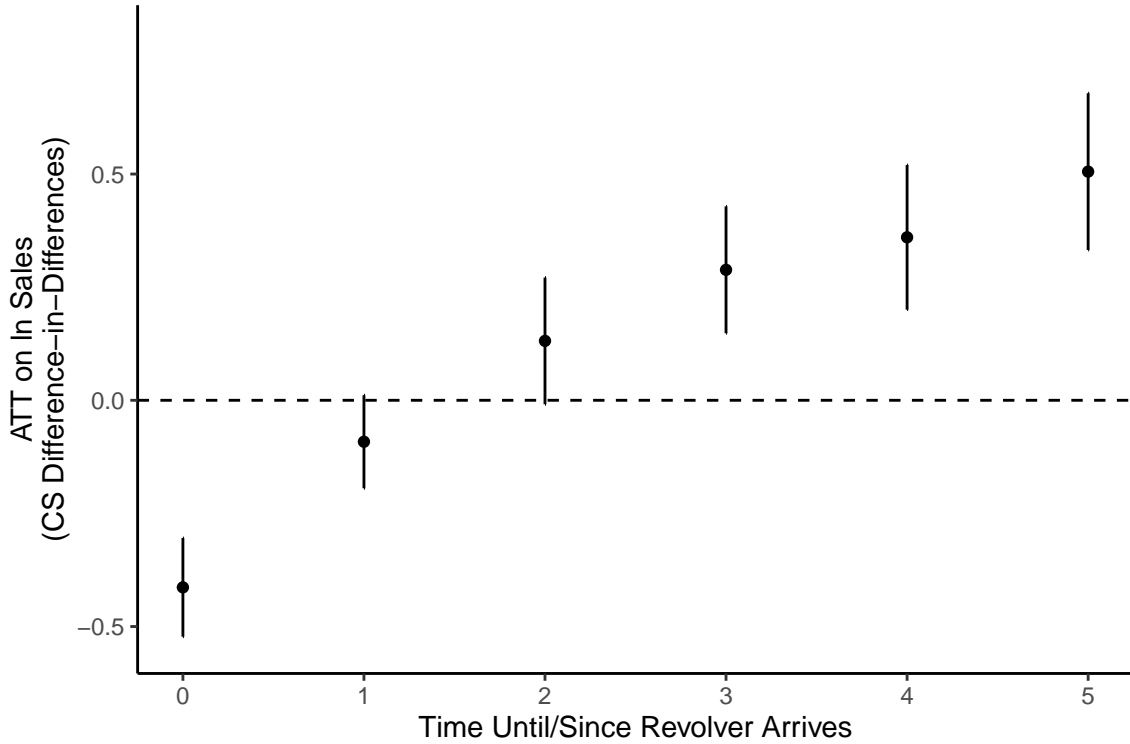


Figure 10.2: Allowing Differential Trends by NAICS-6 Industry.

10.3 Using Director Death as an Instrument

We might be concerned that firms can anticipate the arrival of the revolver, and that this could drive our results. To reassure ourselves that this does not drive the results, we use directors passing away as an instrument for revolvers arriving. If the passing away of a director strongly affects the firm hiring a revolver to replace them, and only affects sales through this channel, we can use this as a valid instrument. Table 10.1 shows the results from the reduced form (rows 1 and 2), the second stage (rows 3 and 4) and the first stage (rows 5 and 6). In all cases, we first estimate a bivariate, pooled model with the instrument and firm-clustered standard errors. Next we add firm fixed effects and NAICS 6-digit industry fixed effects interacted with linear

time. Thus, the specification resembles the one above where we allow for differential trends by industry, only comparing firms within NAICS 6-digit industries.

Examining the first stage, we find that the instrument strongly affects the hiring of revolvers. The first stage F statistic is 418.5 for the bivariate specification and 11.8 for the fixed effects specification. Both above standard thresholds for relevant instruments. The reduced form estimate suggests that director deaths are associated with increased sales. The second stage estimates suggests that firms, which only appoint a revolver, because they experience a director passing away, see sales increases amounting to between 1.1% and 5.5% over the post-arrival period, depending on the specification.

Table 10.1: IV Estimates of Revolver Effect

	independent variable	estimate	std.error	statistic	p.value	stage	specification
1	Director Death	0.0025	5e-04	5.0081	0	Reduced Form	Bivariate
2	Director Death	4e-04	1e-04	4.1491	0	Reduced Form	Firm FE, industry FE x time-trend
3	Revolver Arrive (fitted)	0.0552	0.0026	21.2661	0	2nd Stage	Bivariate
4	Revolver Arrive (fitted)	0.0111	0.004	2.7625	0.0057	2nd Stage	Firm FE, industry FE x time-trend
5	Director Death	0.5022	0.0246	20.4565	0	1st Stage	Bivariate
6	Director Death	0.0405	0.012	3.3597	8e-04	1st Stage	Firm FE, industry FE x time-trend

11 Replicating Previous Studies

To show the value added of our approach, we replicate the results in Hadani Schuler (2013). In the tables below, we first run a g-synth model only with Members of Congress. While this does not exactly resemble the sample of revolvers used in Hadani Schuler (2013), it should come quite close. Therefore, it is best to think of this as an approximate replication. Afterwards, we extend the sample of treated firms to include all revolvers we can assemble data on. We also use the dependent variables Hadani Schuler (2013) use: \ln of total market value and return on sales (ROS; net income before extraordinary items to total revenue). We find null results when only including Members of Congress as revolvers. However, when we use all revolvers we can assemble data on, we find a short-term effect on both market value and ROS.

Table 11.1: Arrival of Revolvers and Firm Market Value

	<i>Dependent variable:</i>		
	In Market Value		
	t+1	t+2	t+3
	(1)	(2)	(3)
Panel A: Members of Congress			
Revolver Arrives	0.067 (0.071)	0.103 (0.130)	0.055 (0.186)
Panel B: All Revolvers			
Any Revolver Arrives	0.081** (0.039)	0.050 (0.057)	0.042 (0.079)
Treatment Events	222	192	178

Notes: The table shows the results from a generalized synthetic control model estimating the effect of the arrival of any revolver on the natural log of market value for the first three years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 11.2: Arrival of Revolvers and Return on Sales

	<i>Dependent variable:</i>		
	Return on Sales		
	t+1	t+2	t+3
	(1)	(2)	(3)
Panel A: Members of Congress			
Revolver Arrives	0.282 (1.713)	−0.341 (2.407)	−0.319 (2.817)
Panel B: All Revolvers			
Revolver Arrives	4.144** (1.976)	4.310* (2.234)	−0.265 (2.713)
Treatment Events	212	190	174

Notes: The table shows the results from a generalized synthetic control model estimating the effect of the arrival of any revolver on the return on sales for the first three years after the arrival. In the underlying interactive fixed effects model, we include fixed effects for firm and year as well as two factors from the full firm-year matrix. The number of factors is chosen through cross-validation. Firm-clustered robust standard errors in parentheses. A non-parametric bootstrap with 1,000 draws is used to compute standard errors. *p<0.1; **p<0.05; ***p<0.01.

12 Heterogeneous Effects on Sales by Revolver Type

In the main paper, we show that the arrival of any type of revolver is associated with an average increase in sales. Here, we differentiate between the impact of various types of revolvers. Figure 12.1 plots the estimated ATTs and their associated 95% confidence intervals separately for each type of revolver in our dataset. With the exception of state officials, hiring any type of revolver is associated with an increase in sales. However, it is only former bureaucrats for whom the estimates are precise enough to be statistically significant. While these results are noisy, they suggest that most different types of revolvers are associated with increased sales, and do not suggest marked heterogeneity.

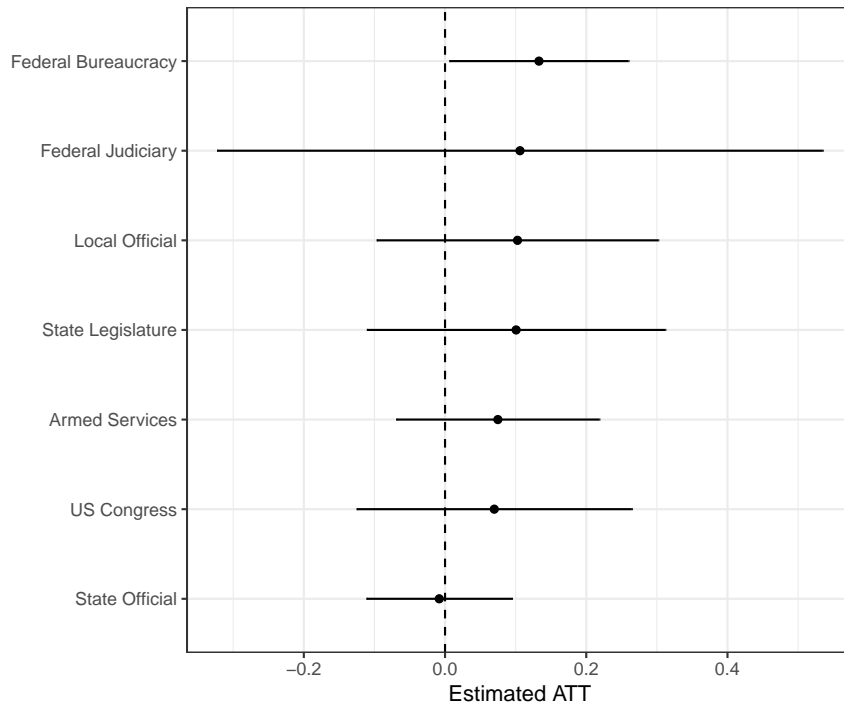


Figure 12.1: Estimated Effects for Different Types of Revolvers. The Figure shows the results from separate generalized synthetic control models estimating the effect of the arrival of different types of revolvers on the natural log of sales. Positive effects are associated with most types, but only former federal bureaucrats are estimated with enough precision to be statistically significant. Robust confidence intervals are 95% clustered at the firm level. A non-parametric bootstrap with 1,000 draws is used.