Ashoka University
Economics Discussion Paper 141

Doing More for Less? New Evidence from the United States on Lobbying and Government Contracts

February 2025

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Doing More for Less?
New Evidence from the United States on Lobbying and Government Contracts*

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Abstract

This paper exploits the unanticipated sequestration of federal budget accounts in March 2013 to examine how contractors adjusted lobbying activities in response to the sequester. The sequestration reduced the funds disbursed through procurement. Firms with limited exposure to these cuts reduced lobbying spending after the event, whereas firms with high exposure maintained, or even increased, lobbying expenses. More affected firms appear to have intensified lobbying efforts to distinguish themselves, and to improve their chances of procuring a larger share of the reduced pie. These effects are stronger for government-dependent sectors and sectors where competition is more intense. Firms that increased lobbying obtained more contracts after sequestration. Overall evidence points towards the existence of a preferential treatment motive of lobbying. At the same time, we cannot rule out that lobbying may also serve an information-revealing purpose.

JEL Classification: D72, G38, H57, H61, P16

Keywords: Political connections, lobbying, government spending, procurement

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I. INTRODUCTION

Why do firms lobby? One common explanation is that companies lobby because they get "returns" on their lobbying "investment." These returns can take the form of benefits such as particular policies being enacted as tax provisions or revenues from government procurement contracts. There are multiple empirical challenges in trying to ascertain whether firms lobby to obtain better outcomes for themselves, potentially at the expense of the general public. The challenges are especially acute when lobbying is directed towards policy decisions and implementation. Policies are rarely tailored to a specific firm and broad policy provisions benefit many firms at the same time, creating a free-rider problem. Government procurement, by contrast, offers a distinctive opportunity to study this question because granting of contracts can be measured at the firm level. Even then, endogeneity remains a serious concern in identifying the effects of lobbying because unobserved characteristics may drive both the decision to lobby and the ability to obtain contracts.

In this paper, we look at a specific episode—namely, sequestration of federal budget accounts in March 2013—that reduced the availability of government funds disbursed through procurement contracts and examine how contractors adjusted their lobbying activities in response. We exploit the fact that the sequester cuts were largely unanticipated and distributed by a predetermined formula to a range of government accounts and some were fully spared.[1,2] A simple event study of government-dependent firms

[1] The spared accounts were somewhat concentrated in healthcare-related spending, but the firms receiving contracts under these spending categories spanned a fair range of industries including utilities (22% of total), healthcare (17%), business equipment (14%), finance (11%), manufacturing (8%), chemicals (6%), and telecommunications (4%).

[2] The sequestration on March 1, 2013 was largely unexpected even by the related industry insiders. For example, the Aerospace Industries Association, which represents defense and aircraft manufacturers, spent one and a half years waging a campaign against the threat of sequestration (see "Aerospace Takes Sequester Hit," by Leigh Munsil, Politico, 3/14/2013). The day of the sequestration, the Aerospace Industries Association stated in its press release that "Sequestration cuts were never supposed to happen but were intended to hold the discretionary budget as a hostage to ensure a balanced solution to our nation's fiscal challenges. Well, they've shot the hostage and the American people will take the hit. As March begins, sequestration budget cuts that former Defense Secretary Panetta has likened to "shooting ourselves in the head" will go forward, accelerating the real—though hopefully not fatal—damage to our economy and national security." (PR Newswire, March 1, 2013).

around the sequestration event substantiates our prior that the event was unanticipated.[3] Figure 1 shows that the cumulative abnormal returns of government-dependent firms declined sharply by 2.3 percent during a 3-day window spanning the day before and the day after the event.

We exploit the cross-sectional variation across firms and explore whether there was a difference in the lobbying activities of "affected" versus "unaffected" contractors after the cuts came into effect. For instance, defense contractors were affected considerably by the cuts, but certain categories of health spending were mostly protected. Did the former lobby more or less aggressively following the implementation of the cuts? We construct several measures to define a firm's degree of exposure to the sequester, calculated at the beginning of the sample period, the simplest one defined as the total dollar amount of a firm's contracts in the sequestered accounts, scaled by the total dollar amount of all contracts the firm received.

Our identification strategy relies on the assumption that the sequester was an exogenous event that led to a redistribution of government funds across accounts independently of the political activities and other characteristics of the firms that were previously obtaining contracts from these accounts. Hence, any difference between the lobbying activities of affected and unaffected firms we observe after the sequester is less likely to be explained by differences in firm characteristics and could potentially be attributable to the availability of returns to lobbying investment. Further—and arguably in a more important contribution to the literature—, the sequester event provides a unique case where the treatment was predetermined and not based on arrival of any new information.

Lobbying activities could change following the sequester due to two opposing forces. First, less resources being available to the government for granting contracts (in other words, the shrinking size of the overall pie) would reduce expected future revenues of contractors, make their budget constraints more binding, and

[3] Government-dependent firms are defined using a measure of exposure to government spending developed by Belo, Gala, and Li (2013), utilizing the National Income and Product Accounts (NIPA) of the United States. Figure 1 plots government-dependent firms as those with exposure to government spending above 75th percentile of the sample. Abnormal returns are calculated using the value-weighted market model.

may in turn induce all companies to reduce their lobbying expenditures. Second, as the same number of contractors now compete for a piece of a smaller overall pie, competition may get intense and encourage firms to spend more on lobbying to distinguish themselves from the others, or to start competing for contracts awarded under the unaffected accounts. The overall effect is ambiguous if these forces coexist.[4]

An additional dynamic that may affect lobbying efforts of both affected and unaffected firms is related to the uncertainty about who may be affected by sequestration. While both groups may ex ante ramp up lobbying efforts against government spending cuts, they may decide to reduce the high pre-sequester levels of lobbying to "normal" levels after the cuts are implemented based on their exposure to the cuts.[5] What happens to lobbying after the shock is ultimately an empirical question that we explore by comparing firms with different sequester exposures.

A crucial assumption in this difference-in-difference setting is that of parallel trends: the treated group (sequestered firms, or firms with high exposure to sequester) and the control group (non-sequestered firms, or firms with low exposure to sequester) group should exhibit a common trend before the shock. In other words, for the difference-in-difference approach to be valid, the comparison group must accurately represent the change in outcomes that would have been experienced by the treatment group in the absence of the treatment (sequestration event). This pattern is confirmed in the data using standard statistical tests and plots.

Our findings indicate that after the treatment, i.e., the implementation of the sequester, there is a stark difference in lobbying behavior among firms with different degrees of exposure to the sequester. While

[4] These opposing forces have been recognized by the lobbyists themselves. See, for instance, a report by The Hill citing an industry insider: "some people will put in more resources in order to win the fight for a shrinking pool of funding. […] in some cases, [sequestration] will hurt K Street because it will lead companies to cut costs" (http://thehill.com/business-a-lobbying/285813-lobbyists-fighting-sequester-move-into-a-new-phase). Note that the argument that companies will try to maintain or even increase their lobbying efforts is also consistent with the view that there are large fixed costs to lobbying (see, for example, Kerr, Lincoln, and Mishra, 2014), and companies feel they cannot withdraw from lobbying for fear of losing out (https://www.economist.com/news/special-report/21596674-how-companies-try-influence-governments-grey-eminences).

[5] https://www.heraldnet.com/news/defense-lobbyists-gird-to-fight-sequestration/

firms with little or no exposure to the cuts reduced their lobbying spending after sequestration came into effect, firms that had a high degree of exposure to spending cuts maintained and even increased their lobbying spending after the event. We use a matching strategy, alternative specifications, and a placebo test to establish this result. The magnitude of the estimates in our baseline specification suggests that, while firms with low exposure to the sequester (bottom quartile) cut their lobbying spending by around 12 percent, those with high exposure (top quartile) increased their lobbying spending by 1 percent.[6]

This aligns with a lobbying motive driven, at least in part, by expectations of preferential treatment, such as securing more contracts or protecting market share, though the potential for information sharing among the parties involved as an alternative motive cannot be dismissed. Firms more affected by the sequester likely continued lobbying activities to improve their chances of obtaining better outcomes, i.e., to procure a larger share of the reduced pie. By contrast, less affected firms might have cut their lobbying spending, and reallocated to activities where they likely had a higher return for their investment. At the same time, there may also be some degree of information sharing as contractors may also engage with agencies as part of efforts to inform decisionmakers about their firms' capabilities and operating conditions.

We provide several pieces of additional evidence that may help with the interpretation. Using several measures of competition at the industry, firm, and government agency level, we find that the effect of spending cuts on lobbying spending is stronger when competition is more intense. This finding is in line with the notion that lobbying was driven by an intent to obtain a larger share of the pie and, thus, the efforts increased with competition. Still, it could be that firms lobby more when the pie is reduced because it becomes more important to distinguish themselves from their competitors.

We also find the relation between sequestration and lobbying spending to be more pronounced for government-dependent firms. As these firms rely more on government funding, the gains from preferential

[6] Sequester rules changed starting in October 2013 (the start of fiscal year 2014). For tight identification, therefore, we focus on the period immediately before and after the sequester. For robustness, we also conduct the analysis with a longer sample and find qualitatively similar results (see footnote 9).

treatment in government contracts are likely to be higher for them. Further, we find that sequestered firms continue to target government agencies in their lobbying efforts after sequestration whereas non-sequestered firms more evenly split their efforts between government agencies and Congress. This finding may suggest that those who were affected by the cuts focused on lobbying the entities from whom they needed preferential treatment. Additionally, in most industries, lobbying by individual firms relative to lobbying through industry associations appears to have picked up in the post-sequestration period. It is likely that firms in a given industry would combine forces by lobbying through an association on an issue that is common to them all, which, in our context would imply calling for sequester not to come into effect. Instead, what we find is that firms redirect lobbying efforts after the sequester such that they focus more on making the case for their own individual benefit, that is, to procure government contracts. Overall, the collective evidence we have seems consistent with the presence of a preferential treatment motive for increased lobbying by sequestered firms during the post-sequestration period.

That said, the analyses cannot rule out with reasonable confidence whether lobbying could also have an element of benign motive—good faith negotiation aimed at convincing legislators about the degree of exposure to the sequester, or information transmission between the industry experts and the legislators.

We contribute to the literature in a number of ways. The exogenous nature of the sequestration event helps us establish the direction of causality, i.e., firms modify their lobbying efforts in response to a change in potential returns to lobbying. Others have used similar strategies to show that lobbying appears to be primarily about connections: Blanes-Vidal, Draca, and Fons-Rosen (2012) report that lobbyists lose significant revenue when the senator to whom they are connected leaves office, and Bertrand, Bombardini, and Trebbi (2014) document that lobbyists change the issues they work on when the congressmen to whom they are connected change committees. Connections, however, do not reveal the motivation behind lobbying: they can be used to get access to policymakers or to secure preferential treatment from them. Our contribution is to examine an event where decisions that may otherwise require inputs from affected parties

are instead taken in a predetermined, automatic way and the remaining rationale for the affected parties to exert influence could be largely driven to secure firm-specific, pecuniary benefits.

The details of the implementation of sequester also appear to be less compatible with an alternative class of lobbying models, i.e., the signaling models of information. According to these theories, lobbying firms may have better information than policymakers, and they partly signal their information by endogenously choosing their lobbying effort (see Potters and van Winden, 1992; Lohmann, 1995; Grossman and Helpman, 1999). The across-the-board and predetermined nature of the budget cuts make it less likely that firms modify their lobbying efforts in order to signal information to decision makers. This is because most observable information about the affected and unaffected firms is available publicly. In fact, there are no critical inputs required to determine the amount and allocation of the cuts across budget accounts beyond what is publicly available. Focusing closely around the sequestration event in our analysis, i.e., just the quarter before and after sequestration, also limits the time period that lobbying efforts may signal new information that pertains to these federal contractors. Overall, we find it less likely that more affected firms lobbied more aggressively solely to signal information around a shock the timing of which was largely unanticipated and the implementation of which was based on a pre-determined, publicly-available formula.

That said, it is empirically extremely difficult to pin down the exact motivation for lobbying by federal contractors (or any other industry or special interest group's lobbying). Ultimately, we do not know the specific activities on which lobbying expenditures are spent. Therefore, the estimated coefficients represent an interesting relationship but could lend themselves to several interpretations. While in our unique setting the findings could possibly point towards the greater weight of preferential treatment motive in lobbying spending, we cannot without a doubt rule out that firms may also be trying to persuade decision makers and convey some unobservable information to them.

The rest of the paper is organized as follows. Section II lays out the background, including the related literature. Section III explains how the dataset used in the analyses was constructed. Section IV describes the empirical methodology and presents the results. Section V concludes.

II. BACKGROUND

A. Related Literature

Lobbying is broadly defined as a legal activity that aims at changing existing rules or policies or procuring individual benefits. Private benefits could materialize in the form of preferential access to credit, bailout guarantees, privileged access to licenses, or procurement contracts (Fisman, 2001; Johnson and Mitton, 2003; Faccio and Parsley, 2009; Goldman et al., 2013; Acemoglu et al., 2016).

Building upon the private-interest theories of regulation (Stigler, 1971), research on lobbying has developed into two broad strands: studies that focus on the relationship between lobbying activities and specific policies (see, for instance, Grossman and Helpman, 1994; Goldberg and Maggi, 1999; Ludema, Mayda, and Mishra, 2018, for the case of trade policy, Facchini, Mayda, and Mishra, 2008, for the case of immigration policy, Kroszner and Stratmann, 1998; Kroszner and Strahan, 1999, for financial services) and those that aim to explore the consequences of lobbying on firm-specific economic *outcomes* (see, for example, Bertrand et al., 2004; Claessens et al., 2008; Adelino and Dinc, 2014; Agca and Igan, 2020).

Notably, while we focus on lobbying activities, there is a significant body of evidence that has also established the importance of political connections for firm-level outcomes. Issues specific to banking and finance have been studied by, among others, Khwaja and Mian (2005), who find that in Pakistan politically-connected firms obtain exclusive loans from public banks and have much higher default rates, and Raddatz and Braun (2009), who present evidence suggesting that politicians provide for beneficial regulation in exchange for a non-executive position at a bank in the future, consistent with a capture-type private interest story. Faccio (2006) shows that political connections increase firm value and Akcigit et al. (2018) find evidence suggesting that political connections reduce innovation and block competition in the industry. Goldman et al. (2013) and Brogaard et al. (2021) are two closely related papers which focus on procurement contracts. Goldman et al. (2013) find that companies with boards connected to the winning (losing) party experience a significant and large increase (decrease) in procurement contracts after the change in control of both House and Senate following the 1994 election in the United States. More recently, Brogaard et al.

(2021) use detailed data on contractual terms and renegotiations around sudden deaths and resignations of local politicians in the United States and show that politically-connected firms initially bid low and successfully renegotiate contract amounts, deadlines, and incentives, suggesting elements of preferential treatment. We build on these papers by focusing on federal procurement in exploiting the implications of sequestration event on lobbying, particularly by exploiting the differential exposure of firms to the aggregate sequestration in a difference-in-difference setting.

Compared to the existing literature on the relationship between lobbying activities, political connections, and firm-specific policies and outcomes, we answer a different and equally relevant question. While most of the related literature has focused on the effects of lobbying or political connections on policies and outcomes, we focus on the potential motives of lobbying behavior. In this respect, our paper is similar to Kerr, Lincoln, and Mishra (2011) and Hill et al. (2013), though our paper is set in the different context of procurement contracts and offers complementary analyses shedding some light on the specific motive of lobbying in this setting. By concentrating on this question, we aim to deepen the understanding of potential motives behind lobbying behavior. While we cannot definitively rule out multiple motivations, our unique empirical setting allows us to establish with greater certainty that one of the key drivers of lobbying could be the anticipation of preferential treatment. This perspective adds to the existing literature on political connections, procurement, and the motivations behind lobbying, enriching the broader discussion on political relationships and organizational behavior.

B. Sequestration

The Budget Control Act (BCA) was signed into law on August 2, 2011 to solve the debt ceiling crisis. BCA stipulated a joint select committee on deficit reduction (the "super committee") be formed and produce legislation to decrease the federal deficit by $1.2 trillion over 10 years. If the super committee failed to act, automatic across-the-board cuts (known as "sequestration") would go into effect to produce the equivalent amount of budgetary savings.

The super committee co-chairs (Rep. Jeb Hensarling (R-Texas) and Sen. Patty Murray (D-Wash)) released a statement on November 21, 2011 that the committee would be unable to come to a bipartisan agreement before the deadline. While it was well known that the failure of the committee to reach an agreement meant triggering sequestration (with the effective date of January 2, 2013), there were several proposals floated to stop and/or mitigate the cuts and some gained just enough traction to cast doubt on whether the cuts would become effective at all. Indeed, the American Taxpayer Relief Act (ATRA) delayed the sequestration for two months, as part of the package to mitigate the blow from the fiscal cliff. This somewhat raised hopes that Congress would find another fix to again delay or stop the sequestration. For instance, in a post dated February 25, 2013, the Sunlight Foundation reported that big contractors had a lot at stake as the sequestration deadline approached, although many seemed confident that the sequester would not go into effect.[7] But the cuts did come into effect on March 1, 2013. A few days later on March 6, Congress passed a continuing resolution to fund the government through the end of the fiscal year—the bill contained provisions that gave some flexibility to the Pentagon and the Department of Veterans Affairs in the implementation of the sequester.

Sequestration involved: (i) a 10-percent reduction in the caps on new discretionary appropriations for defense programs; (ii) a 7.8-percent reduction in the caps on new discretionary appropriations for nondefense programs; (iii) a 10-percent reduction in mandatory budgetary resources for nonexempt defense programs; (iv) a 7.8-percent reduction in mandatory budgetary resources for nonexempt nondefense programs (except Medicare); and (v) a 2-percent reduction in most Medicare spending.

This information (and a list of the reductions required for each nonexempt budget account) became public knowledge only when the OMB published its report on March 1, 2013.

[7] https://sunlightfoundation.com/2013/02/25/sequester-cuts/ . Also see https://www.washingtonpost.com/business/economy/sequestration-looms-contractors-dont-fret/2013/01/30/3bcf60ea-6b0a-11e2-af53-7b2b2a7510a8_story.html?utm_term=.7479b50308ea

C. Politically Targeted Activities

Although lobbying is commonly recognized to be an influential political economy activity in many countries (Bertok, 2008), the United States is somewhat unique in the disclosure requirements applicable to such activity. Specifically, lobbyists can legally influence the policy formation process through two main channels. First, lobbyists directly engage with the executive and legislative branches of the government to advocate their positions. Second, they can offer campaign finance contributions, in particular, through political action committees (PACs). In one respect, campaign contributions aim at putting or keeping the "right" candidates in office while lobbying seeks to influence the opinion of those who are already holding the power to make the decisions.

Companies and other special interest groups spend billions of dollars each year to lobby the Congress and federal agencies. Some of these retain lobbying firms, many of them located along Washington's K Street; others have lobbyists working in-house. Under the Lobbying Disclosure Act of 1995 (LDA), subsequently modified by the Honest Leadership and Open Government Act of 2007, all lobbyists (acting as intermediaries between legislators/regulators and clients with the aim to voice their opinion on various issues) have to file quarterly reports with the Secretary of the Senate's Office of Public Records (SOPR), provided that they satisfy the conditions specified in the LDA.

"Lobbying activity" is defined in Section 3(7) of the LDA as "lobbying contacts or efforts in support of such contacts, including background work that is intended, at the time it was performed, for use in contacts, and coordination with the lobbying activities of others." While the exact nature of lobbying activities is somewhat elusive, the official description of a lobbyist in the Congress guide to the LDA is "any individual (1) who is either employed or retained by a client for financial or other compensation; (2) whose services include more than one lobbying contact; and (3) whose lobbying activities constitute 20 percent or more of his or her services during a three-month period." Any person meeting these criteria must register as a lobbyist under the LDA.

III. DATA AND EMPIRICAL METHODOLOGY

A. Data sources

By its nature, our analysis requires non-standard data, sometimes only available from non-traditional sources. The sample is constructed by merging data on federal contracts, lobbying expenditures, and other firm-level financial data with the Office of Management and Budget (OMB)'s report on sequestration.

In our study, we look at lobbying activities of firms obtaining federal contracts around the budget sequestration on March 1, 2013 and relate this to sequestration exposure of these firms. Since lobbying activities are reported quarterly, we focus on the quarters before and after the sequestration event. As a result, in our sample, the fourth quarter of 2012 is the pre-event period and the second quarter of 2013 is the post-event period. We do not include the first quarter of 2013 in our analysis since it contains pre-event, event, and post-event dates and thus is confounded. The rest of this section explains the details of each data component used in the study; all variable definitions are summarized in Appendix 1.

1. Federal Contracts

Information on all federal procurement contracts is made publicly available at www.usaspending.gov, as mandated by the Federal Funding Accountability and Transparency Act of 2006. This act requires all federal contract, grant, loan, and other financial assistance awards of more than $25,000 to be displayed on the website. The dataset includes the amount of contract that is awarded, the date the contract is signed, the fiscal year it corresponds to, the details of the federal agency that awarded the contract including the agency and department code, the contracting company, and its parent company. The dataset also includes other details such as the place where the contract is to be performed and contractor characteristics (minority owned business, emerging small business, etc.).

There are four main phases of allocating government contracts (Government Accountability Office report GAO-18-467) [8] : solicitation, initial evaluation, negotiation/discussion, and contract award (see the description of each stage in Appendix 2). Based on this report which examined defense contracts in detail from solicitation to award, close to 70 percent of the contracts are awarded within a year and close to 30 percent are awarded between the first and the second year. Agencies have flexibility on the timing of their contract awards throughout the year.

In constructing our data, we keep only the new contracts and exclude the modified contracts. We also focus on contracts above $150,000 because during our sample period those that are below this amount mainly follow Simple Acquisition Procedure and do not require the formal process in awarding according to the Federal Acquisition Regulation (FAR) (Federal Register 80 (127), July 2, 2015). Thus, we focus on contracts that are acquired through formal process per FAR. We create unique numeric identifiers for the parent companies that are in the federal contract database for our sample period and use these identifiers when matching with lobbying expenditures and company financials.

We use the contracts awarded in the pre-sample period to determine the exposure of each company to the sequestration event before the sequestration took effect. As a result, we focus on federal contracts of all federal agencies in the fiscal year of 2011 and 2012, which runs from October 1, 2010 to September 30, 2012 (the fiscal year for federal contracts starts in October and ends in September).

For each federal contract, we look at the information on the related funding federal agency. Each funding federal agency has various program source accounts which are assigned by the U.S. Department of the Treasury. We use the funding federal agency and the account information to merge the data at the account level with the report released by the OMB on March 1, 2013 to get the sequester ratios applied to each federal agency account.

[8] Government Accountability Office report GAO-18-467, July 2018, Defense Contracts: DOD Should Develop a Strategy for Assessing Contract Award Time Frames.

2. Lobbying

Detailed information on lobbying activities is available through lobbying reports filed with the Senate Office of Public Records (http://www.senate.gov/pagelayout/legislative/one_item_and_teasers/opr.htm). A sample report can be found in Appendix 3. The reports list the name of the firm and the total dollar amount it spent on lobbying activities. It is worth noting that the legislation requires the disclosure of not only the dollar amounts actually spent but also the issues for which lobbying is carried out. Thus, unlike campaign contributions, lobbying expenditures can be associated with targeted policy areas. Finally, the reports must also state the names of the lobbyists that worked on the specific issues reported on behalf of the client.

We extract the lobbying reports filed by federal contractors for our sample period around the sequestration event on March 1, 2013. Total lobbying spending by the federal contractors is calculated for the quarters before and after the event, and the natural logarithm of lobbying spending is used in the analysis.

We further consider the office targeted by lobbying, classifying them under two categories: the Senate and the House of Representatives, or the Federal Agencies (Department of Defense, Department of Transportation, Department of Agriculture, etc.). This helps us uncover whether the lobbying effort has shifted from Congress to agencies after sequestration.

We also compile information on the lobbying expenditures of industry associations. Anecdotal evidence suggests that some industry associations ramped up lobbying to stop the sequester as a whole, while individual company lobbying efforts focused on the particulars of their contracts possibly to protect their share in the shrinking pie.[9] There is no apparent reason for systematic switching of lobbying expenditures to/from associations. Also, we have a difference-in-difference approach and it is not obvious why firms with different sequester exposures would switch spending through associations differently. Because of these

[9] "While individual lobbying firms focused on promoting their clients' projects, the Aerospace Industries Association took the lead in lobbying against sequestration as a whole," according to the Washington Examiner, http://www.washingtonexaminer.com/defense-contractors-go-on-offense/article/2577568

reasons, in our main analysis, we can safely ignore association spending, which is contaminated by the free-rider problem, and instead focus on firms' own lobbying. That said, what happens to association lobbying spending before and after sequestration is useful in bringing an additional piece of evidence for lobbying motive. If firms with high sequester exposure switch from association to own spending more intensely than firms with less sequester exposure do, it would be consistent with these firms seeking preferential treatment after the government spending cuts.

Finally, we check the top lobbying issues provided in the lobbying reports during our sample period to understand the relative importance of appropriations/budget and find that budget/appropriations are in top five lobbying issues that appear across our sample timeline (see Appendix 4, Table A4.1).

3. Office of Management and Budget (OMB) Report

The OMB report contains information about sequester ratios at the agency account level as well as the amount that is sequestrable for each account. The sequester ratios may differ across accounts within the same federal agency. For example, in the Department of Transportation, there are several units such as the Federal Aviation Administration, the Federal Transit Administration, and the Pipeline and Hazardous Materials Administration. Each of these units has one or more accounts.

For the purposes of illustration, consider the Federal Highway Administration, which has three main accounts: the emergency relief program, the payment to the Transportation Trust Fund, and the federal-aid highways. While the first account had a 5-percent automatic cut under sequestration, the latter two accounts were cut by 5.1 percent. The sequestrable amounts for these accounts were $2.02 billion, $6.2 billion, and $739 million, respectively. As a result, these accounts were sequestered by $101 million, $316 million, and $38 million.

In order to calculate the exposure to sequestration for the firms that obtain federal contracts, one could determine the sequester ratio at the agency level using two alternatives (see Section III.B for details on the construction of the firm-level measures we use in the econometric analysis). First, we can compute a simple

average sequester ratio for each agency by averaging sequester ratios across accounts. In the example above, this corresponds to 5.07 percent (the average of 5, 5.1, and 5.1 percent) for Federal Highway Administration. Second, we can calculate the weighted average sequester ratio based on the sequestrable amount and the sequester ratio. In the example above, this corresponds to 5.08 percent ((5% * $2.02 billion + 5.1% * $6.2 billion + 5.1% * $739 million) / ($2.02 billion + $6.2 billion + $739 million)).

We merge the federal contract data with the OMB report at the federal agency level. This process requires manual matching of federal agencies as these datasets report federal agencies in different formats. We do the manual matching in the following steps. First, we create unique identifiers for each agency in the OMB report. Second, we keep unique agencies in the federal contract data based on major funding agency category, which is a variable that specifies which agency provides the funding for the contract. In the next step, we manually screen the two datasets and link the agency in the OMB report to the agency in the federal contract data by name. The unique agency identifiers in the OMB report are hence added into the federal contract data.

4. Financial Variables

We consider a number of financial variables that have been reported to explain lobbying behavior in the literature (Kerr, Lincoln, and Mishra, 2011; Hill, Kelly, Lockhart, and Van Ness, 2013). We calculate firm size, R&D spending, industry concentration, and growth opportunities using firm-level data from COMPUSTAT (see Appendix 1 for details).

Size, Tobin's Q and R&D are computed at the quarterly level in the same frequency as the lobbying data, which are reported quarterly. For industry concentration, we use the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg-Phillips Data Library and measure it at the beginning of period.

B. Empirical Methodology

1. Specification

We follow a difference-in-difference strategy to examine lobbying efforts around the unexpected sequestration shock to government spending on March 1, 2013. The treatment in our study, thus, is exposure to sequester. Our empirical model is as follows:

$$Lobby_{i,t} = \alpha + \beta_1 After\ sequestration_t + \beta_2 After\ sequestration_t * Sequester\ variable_i + \gamma X_{it} + n_i + \varepsilon_{it} \quad (1)$$

In equation (1), $Lobby_{it}$ is the natural logarithm of total lobbying amount of firm *i* in quarter *t*, which is either the pre-event quarter (October 1, 2012–December 31, 2012) or the post-event quarter (April 1, 2013–June 30, 2013).[10] $After\ sequestration_t$ is an indicator variable that takes the value of 1 in the post-event quarter and is zero otherwise. $Sequester\ variable_i$ is a measure of sequester exposure using alternative definitions as described in further detail below. We control for X_{it}, a set of firm- and industry-level variables that are considered to be correlated with lobbying in the literature. These variables are firm size, R&D spending, industry concentration, and growth opportunities. The specification also controls for firm fixed effects, n_i. Robust standard errors are clustered at the firm level as our dependent variable is firm-level lobbying.[11] While fiscal spending is cyclical (Liebman and Mahoney, 2017), our estimation focuses on the differential impact between low and high sequester exposure firms, and thus seasonal effects should be similar across both groups. Estimations at the firm level by controlling firm- and industry-level factors mitigate the concern that the results may be an artifact of latent variables correlated with lobbying. We further employ a matching strategy based on sequestration as explained below and use this sample to

[10] In robustness checks, we expand the sample to two quarters before and two quarters after the event. The results are qualitatively similar (see Appendix Table A4.2). We prefer to use only one quarter in the pre- and post-event period, for tighter identification, as expanding the sample would increase confounding factors.

[11] As there is no granular data on firm lobbing per agency, we construct our empirical model at the firm level rather than firm-agency level. Nevertheless, we employ a set of sequester exposure variables for each firm based on firm exposure to each government agency in federal contracts.

conduct our analysis. This approach is useful in ensuring that the evidence is not driven by factors correlated by the probability of sequestration.

To measure exposure to sequestration, we employ three alternative measures and utilize federal contracts awarded in the fiscal years right before the sequestration—namely, fiscal year 2011 and fiscal year 2012 (October 1, 2010–September 30, 2012)—to calculate these measures. The first sequester variable is the *Sequester Exposure*, defined as the total dollar amount of a firm's contracts that would have been in the sequestered accounts according to the sequestration implemented on March 1, 2013, scaled by the total dollar amount of all contracts obtained by that firm. The second and third sequester variables are the *Average Sequester Ratio* and the *Weighted Average Sequester Ratio* measured at the firm level. These sequester ratios use as inputs the agency-account level ratios calculated using information from the OMB report as described in Section III.A. We compute the possible sequestered federal contract ratio at the firm level by multiplying a given federal contract amount obtained by a given firm with the simple or weighted average sequester ratio of the agency that has awarded that contract. We then scale the sum of these possible sequestered federal contract amounts by the total federal contracts obtained by that firm. Thus, these variables indicate the ratio of federal contracts in relation to total contracts that would be sequestered for a given firm assuming federal agencies continue to award contracts in a similar way as they did in the 2011–2012 fiscal years. Appendix Table A4.3 shows the distribution of sequester exposure in our sample. While we have a small number of firms with no exposure to sequester (16 firms), the sample shows wide variation in sequester exposure ranging from 3.1% at the 25th percentile to 7.8% at the 75th percentile.

2. Sample Construction

We start with all new federal contracts above $150,000 at the parent level for the sample period (pre-event period (October 1–December 31, 2012) and the post-event period (April 1–June 30, 2013)), which results in 24,884 federal contracts and 6,181 contractors. We next match these data with lobbying data by fuzzy matching followed by manual screening, which results in 8,519 contracts from 337 contractors. We remove contractors that are not firms (non-profit institutions, local governments, universities) and match them with

COMPUSTAT to obtain data on financial variables, including those firms that have data for both quarters (before and after event). This results in 5,861 federal contract observations from 192 firms. We next aggregate the federal contracts per quarter at the firm level in each quarter based on the sequester exposures of the agencies from which they have received contracts as explained in Section III.A.3.

One potential concern with the difference-in-difference strategy is that firms with exposure to sequester may be different than those that do not. To address this, we use a matching procedure. Sequestered and non-sequestered firms are matched using the amount of federal contracts, lobbying, firm size, and industry in the pre-event period. We employ propensity score matching with 3-nearest neighbors, where each matched firm is included once. In our propensity score matching, the probability of being sequestered is predicted by the natural logarithm of contracts obtained over the previous two fiscal years 2011–2012 (October 1, 2010–September 30, 2012), the natural logarithm of total lobbying expense over the last two quarters before the pre-event date (the 2nd and 3rd quarters of 2012), firm size at the beginning of the sample period (the end of 3rd quarter of 2012), and industry (based on Fama-French 12 sectors). Out of 192 firms, we match sequestered and not-sequestered firms resulting in 138 firms based on this procedure. As a result, our balanced sample consists of 138 firms, and 276 observations.

C. Descriptive Statistics

Table 1, Panel A reports the descriptive statistics for the overall sample period as well as for the quarters before and after the sequestration event on March 1, 2013, as well as for firms with high and low sequester exposure (top and bottom quartile of sample, respectively). The quarter before sequestration corresponds to the pre-event period (October 1–December 31, 2012) and the quarter after the sequestration is the post-event period (April 1–June 30, 2013).

Table 1, Panel A shows that firms spend an average of $560,000 on lobbying and receive $11 million in federal contracts. There is variation across firms in lobbying and federal contracts.[12] The degree of exposure to the sequestration, as captured by the three continuous measures—sequester exposure, average sequester ratio, and weighted average sequestered ratio—vary across firms, with a coefficient of variation (standard deviation/mean) of 50 percent for the first measure and 55 percent for the latter two measures. Firm, industry, and competition variables also vary across firms, indicating a diverse sample. Lobbying, on average, is comparable before and after sequestration ($580,000 before sequester versus $540,000 afterwards). Firm and industry characteristics are also similar before and after sequestration, indicating that the empirical results are not potentially driven by different corporate or industry environment after sequestration. Firms with high sequester exposure are largely similar to those with low sequester exposure on a multitude of attributes. Thus, matching strategy employed in our study is useful in creating comparable samples for firms with different sequester exposures.

Table 1, Panel B reports additional summary statistics on the value of contracts classified by the issuing department. We see a considerable decrease in the value of contracts awarded by all the agencies in our sample in the post-event period compared to the pre-event period except for the Department of Energy, where there is a slight increase.

IV. ANALYSES AND FINDINGS

A. Univariate Results

Did the shock affect the firms with high sequester exposures differently? Table 2 shows the difference in means between the high- and low-exposure groups before and after the event for the matched sample. As discussed, we define high-exposure firms as those that have sequester exposure above 75th percentile, and

[12] Total amount of new federal contracts above $150,000 obtained from agencies that were exposed to sequestration during our sample period is $106 billion. Our sample of 138 firms obtained $47 billion of this funding, representing close to half of the federal contract awards granted in this period.

those that are low exposure are the ones below 25th percentile of the sample sequester exposure. We find that, on average, firms with high sequester exposure spent 12.05 (in natural logarithm) on lobbying before the shock and 12.08 after the shock. In contrast, firms with low sequester exposure spent 12.72 and 12.53 before and after the shock, respectively. In other words, while firms with high sequester exposure kept or even slightly increased lobbying expenses, those with low exposure cut their lobbying after sequestration came into effect. The difference of mean lobbying between high- and low-sequestered firms after sequestration in comparison to before sequestration is 0.22, and it is statistically significant. This difference-in-difference of means indicates relatively higher lobbying levels after the event for firms with high sequester exposure in comparison to those with low exposure. One potential interpretation of this finding is that firms with high sequester exposure maintained their lobbying efforts in order to compete for a larger share of the reduced pie, which is not observed for firms that have less exposure to sequestration.

Figure 2 broadly confirms the existence of parallel trends between the two groups before the event. It shows the difference in lobbying between firms with high and low sequester exposure (top and bottom quartile of the sample based on exposure at the parent-company level) in the quarters before and after the sequestration in the matched sample. The event period (t=0) corresponds to 2013Q1. While the differences are statistically indistinguishable from zero prior to the sequestration event indicating the presence of parallel trends, there is a clear break just after the event period, t=0, with the gap between the two groups widening and becoming statistically significant in the quarter after the event period, t=1.

The difference-in-differences (DiD) approach would yield causal interpretation only when sequester ratios are unaffected by pre-existing lobbying efforts. While anecdotal evidence suggests that certain industry *associations* may have increased their lobbying activities to prevent the sequester, our firm-level analysis in Figure 2 reveals no systematic pre-sequester lobbying differences between firms with high- and low-sequester exposure. This lends support to the validity of our DiD framework.

In line with the findings in Table 2, Figure 2 is also consistent with the notion that firms with more contracts exposed to sequestration continued to lobby intensively, as they competed for a larger share of the smaller

pie after sequestration, which is not observed for firms with low exposure to the sequester. Notably, while high exposed firms appear to have significantly increased their lobbying efforts immediately after the sequestration event relative to low exposure firms, the difference is small and positive in t=2 and turns negative in t=3.

Notably, Figure 2 suggests a transient nature of the effects. Beyond t=1, the figure does not reveal statistically indistinguishable differences between low and high exposure firms. There are two possibilities: the identification could be confounded with many other policy actions as we go into the future. Specifically, t=3 corresponds to October-December of 2013, which falls in fiscal year 2014. Sequester rules, changed for fiscal year 2014. The Center on Budget and Policy Priorities (Kogan, 2012), for example, reported that for fiscal year 2014: "Unlike in 2013, there will be no automatic cut of all affected defense programs by the same percentage; instead, the Appropriations Committees will decide how to live within the newly reduced defense funding caps. For non-defense programs, the process in years after 2013 is the same as in 2013 for entitlements but different for non-defense discretionary programs."

Alternatively, the effects could indeed be transitory, and could reflect a "transition" or "rebalancing" in response to the shock. Importantly, we do not claim permanence in the effects we capture. While the unique setting allows us to isolate motives for lobbying behavior around the sequestration shock, identifying long run motives of lobbying is beyond the scope of the paper.

In what follows, we explore the pattern shown in Table 2 and Figure 2 through panel estimations, focusing on the quarters immediately before and after the sequestration.

B. Panel Estimations

The results from estimating our baseline specification, equation (1) on the matched sample, are presented in Table 3. Columns (1)–(3) report the results with alternative measures of exposure to the sequester shock.

The baseline effect, i.e., the effect for firms with low sequester exposure, is negative. Thus, the control sample, which consists of firms with low sequester exposure, cut their lobbying spending post event, as

indicated by the estimated coefficient on "after sequestration" without the interaction terms in all columns. We find a statistically significant, positive association of sequester exposure with lobbying post sequestration in Columns (1)–(3). This association is also significant in economic terms: For example, the estimates in Column (1) suggest that increasing sequestration exposure by one standard deviation (0.36) corresponds to 10% more lobbying. For the average sample lobbying of $560,000, this value corresponds to $56,000 increase in lobbying expenses. Based on the results in Column (1), firms in the top quartile of sequester exposure increased lobbying by around 1 percent whereas those that are at the bottom quartile reduced lobbying by 12 percent. The magnitude of lobbying spending for high exposure firms is even larger for the measures in Columns (2) and (3), than in Column (1).[13]

Overall, the findings from Table 3 suggest that while firms with low sequester exposure cut their lobbying spending after the sequestration shock, firms with a greater degree of exposure to the shock increase their lobbying spending post sequestration.[14]

In Table 4, we conduct two placebo exercises. In the first one, March 1, 2014 is considered as the placebo event date. The sequestration variable in this case takes a value of 1 for the post-event period, which is the quarter after sequestration (April 1–June 30, 2014) and is zero for the pre-event period, the quarter before the sequestration (October 1–December 31, 2013). In the other one, for the sample period used in our baseline analysis (October 1, 2012–June 30, 2013), we allocate sequester exposure randomly (with beta distribution (βeta (0.358, 0.126)) so that mean and standard deviation of sequester exposure are equal to those observed in the sample sequester exposure (0.74 and 0.36, respectively). There are no significant coefficients obtained in the placebo exercises. Thus, we *do not* find any evidence for firms with a higher degree of sequester exposure maintaining or increasing their lobbying spending after the sequestration event

[13] For robustness, we repeat the analysis using the full sample, even though the identification is less tight without the matching. These results are qualitatively similar.

[14] For robustness, we also run estimations with semiannual intervals instead of quarterly ones. For this specification, the pre-event period corresponds to July–December 2012 and the post event period is April–September 2013. The results are comparable to those reported and are not presented for brevity.

in these samples. The placebo tests confirm that the findings are indeed more likely to be driven by the sequestration shock rather than represent a "typical" behavior of firms.

We conduct a series of robustness checks, the results of which are reported in Table 5. In Columns (1)–(3), we interact the exposure variables with earlier periods to see if there are any pre-treatment differences in trends between the treatment and control groups. We find no significant coefficients in the earlier quarters, indicating that the parallel trends assumption holds for our sample. In Columns (4)–(6), we differentiate between Indefinite Delivery Contracts (IDC) (Blanket Purchase Agreements and Delivery Orders) and Definitive Contracts or Purchase Orders. These contracts cover the award types in our sample. IDC offer more flexibility in terms of timing and quantity, allowing for multiple orders over a period as needs arise. In contrast, Definitive Contracts and Purchase Orders specify fixed terms for time and quantity and thus are more rigid.[15] In our sample, the average ratio of IDC to total contracts is around 42 percent (see Table 1). We label the firms for which the IDC ratio is above median as high IDC firms and assign an indicator of one for these firms. This indicator is zero otherwise. Our results show no differential effect for IDC contracts. Finally, we consider an alternative matching process. Instead of matching on the logarithm of total contracts, we match on the amount of total contracts without this transformation, in addition to size, lobbying, and industry as before. The results in Columns (7)–(9) are comparable to those in the baseline.[16] Overall, these tests show that our baseline results are not driven by potential differences in pre-trends and are robust to different contract types and alternative matching procedures.

C. Discussion of Findings

Our findings are consistent with the notion that firms that are more adversely affected by the sequester engage in lobbying with the decision maker in order to increase their chances of procuring a greater share

[15] See Federal Procurement Data System for details: https://www.fpds.gov/help/Indefinite_Delivery_Contract.htm

[16] We also carry out two additional robustness tests: removing large defense contractors (those above median in terms of total contracts in the pre-sample period) and removing contractors that obtained above-median total contracts in the pre-sample period. The results are comparable to the baseline.

of the reduced size of the pie.[17] This evidence seems in line with the explanation that lobbying might have been driven in part by expectations of preferential treatment in the form of more contracts or protection of market share. Nevertheless, it is also plausible that information sharing plays a role in this context as well, since presenting more information about a firm or product through lobbying may potentially increase the probability of being awarded a contract as fund availability comes under pressure. Telling these two alternative explanations apart from each other is very difficult with the available data, and we do not attempt to do so. Rather, we offer some extensions of the empirical findings to shed a bit more light on the potential motivation of contractors during the sample period.

We first examine lobbying activity with respect to competition and government dependence. We extend the model in equation (1) as follows:

$$Lobby_{i,t} = \alpha + \beta_1 After\ sequestration_t + \beta_2 After\ sequestration_t * Sequester\ variable_i + \beta_3 After\ sequestration_t * Z_{it} + \beta_4 After\ sequestration_t * Sequester\ variable_i * Z_{it} + \gamma X_{it} + n_i + \varepsilon_{it} \quad (2)$$

In equation (2), Z_{it} corresponds to variables related to competition or government dependence.

With regards to competition, if indeed lobbying is driven by an intent to obtain a larger share of a reduced pie, we should find the effect on lobbying spending to be stronger when there is high competition.[18] We use measures of competition at the industry, firm, and agency level. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips

[17] Grotteria (2019) develops a game-theoretic model on firm lobbying for monopolistic rents and predicts that expected firm returns are higher for firms that lobby more.

[18] This conjecture is informed by the traditional models of the determination of government policy, in which special interests engage in a kind of "direct competition" for sharing welfare and opposing sides offset each other. In these models, the political strength of a group is explained by the size of its economic stake and hence the associated lobbying effort (Persson and Tabellini, 2000). If one allows "indirect competition" where special interest groups exert effort in persuading the public to indirectly influence the government, this conjecture may not hold (see Yu, 2005).

Data Library, determined at the beginning of the period. Industries that have industry concentration below sample median are flagged with low industry concentration indicator of one, and this indicator is zero otherwise. Competition at the firm level is high based on the ratio of a firm's competitive contracts to total contracts, and those above the sample median are flagged with a high firm competition indicator of one, and this indicator is zero otherwise. Competition at the agency level is flagged as high if the ratio of agency-level competitive orders to agency-level total orders are above the sample median and tagged with a high agency competition indicator of one, and this indicator is zero otherwise.

The results are reported in Table 6. In Panel A, we interact industry concentration with the main variables of interest as laid out in equation (2) and find that our findings are driven by firms in industries with low concentration, or high level of competition. In Panel B, using the same approach, we use a measure of competition at the firm level. Once again, we find that our findings are driven by firms facing a high level of competition. In Panel C, we define competition at the agency level, where it is considered high if a firm primarily obtains contracts from agencies issuing more competitive orders than the median and find that agency level competition is not the main driver. Thus firm- and industry-level competition appear to be the main drivers of our findings. Overall, we find that lobbying spending increases more in the post-event period for those facing a higher degree of competition at the firm and industry level. This finding is consistent with the hypothesis that lobbying after the event is likely to be driven by a motive to procure a larger share of the pie, which is more prevalent with high competition. More intense competition, however, may also prompt firms to share more information about themselves to improve their chances of selection, meaning we cannot entirely discount the possibility that lobbying could also involve information sharing.

In our next analysis, we consider government dependence to examine if there is a more pronounced effect for these firms. We measure government dependence two ways, utilizing firm level, and industry level information. To look at government dependence at the firm level, we calculate the ratio of total federal contracts obtained by firms in relation to total sales in the period at the beginning of our sample period (using 2011 and 2012 fiscal year data). We consider those that are above the median as highly government

dependent firms. The variable Z_{it} in equation (2) is defined by an indicator variable that that takes the value of one for these firms. In the second approach, government dependence is calculated following Belo, Gala, and Li (2013) where industry exposure to government spending shocks is measured using NIPA tables. We use 2-digit SIC level in determining the government dependence for our sample. The results are reported in Table 7. Independently of the dependence measure employed, lobbying increases more after sequestration for government-dependent firms that have higher sequester exposure. Again, finding that lobbying spending increases relatively more for firms that are more government dependent and, hence, that are likely in more need of procuring government contracts points towards a motive to obtain a larger share of a reduced pie, consistent with a preferential treatment argument. It is, however, also possible that government-dependent firms may share information through lobbying to help federal agencies make more informed decisions to increase their chances of being selected.

We further analyze lobbying spending based on the entity that is being lobbied—a government agency or Congress. The agencies are directly in charge of granting the contracts, therefore lobbying directed towards these entities is likely to be reflective of a motive to obtain more or larger contracts. Lobbying Congress, on the other hand, is likely to be more general, and not directly related to any a particular contract. If, for example, sequestered firms lobby more intensely towards agencies than non-sequestered firms do, it would be more consistent with these firms seeking preferential treatment for the contracts after the cuts. As discussed above, the lobbying reports do not provide any split of the lobbying expenses. Therefore, we collect the list of entities each firm lobbies, and split the lobbying spending equally among these entities, and compute the relative lobbying spending towards an agency vis-à-vis Congress. Table 8 presents the results. While the relative lobbying directed towards agencies declined for firms with high and low sequester exposure after the event, it declined *less* for firms with high sequester exposure. The difference-in-difference estimate, though not very strong (significant at the 12 percent level), may provide some suggestive evidence on lobbying for preferential treatment. In other words, firms that have high exposure to sequester may have kept up their lobbying efforts towards federal agencies after sequestration, supporting

the view that they focused their lobbying efforts on the entities from whom they needed to obtain a larger part of a reduced pie. It is, however, also possible that firms more exposed to sequester use lobbying to share pertinent information about the firm to influence decisions in their favor in a more constrained environment.

Another finding is that contractors do not often switch across agencies they lobby for and are persistent in their relationships. For the sample period from 2008–2012, on average, a typical contractor works with the *same* two agencies, i.e., they tend to keep their relationships. Therefore, sequestered firms maintain their lobbying efforts with the same agency after the sequestration event, probably to increase their chances of getting a contract from the same agency. This evidence is consistent with the preferential treatment motive while it cannot rule out potential information sharing between firms and agencies that occur through time to build trust and relationship.

For the analysis above, we focused on lobbying by individual firms without considering any lobbying through associations. What happens to association lobbying spending before and after sequestration could be informative: while lobbying through associations is likely to be related to issues that concern all members of an association, a firm's own lobbying may instead focus on issues related to that specific firm. Thus, if, for example, sequestered firms switch from lobbying through their respective association to their own lobbying more intensely than non-sequestered firms do, it would be consistent with the notion that these firms focus more on themselves, which provides some evidence for seeking preferential treatment after the cuts. Unfortunately, we do not have the lobbying expenditures through associations at the firm level. Therefore, we provide the findings at the aggregate level. By looking at association lobbying listed for the top 50 lobbyists in a given industry for each quarter,[19] we determine relative lobbying through individual firms vis-à-vis associations for the subsample of firms for which association lobbying data is available. Figure 3 shows that firm lobbying with respect to association lobbying picks up following the sequestration.

[19] This data is obtained from the Center for Responsive Politics. The available industries that are in this subsample are air transportation, banking, chemicals, manufacturing, oil and gas, and telecommunications.

This finding may provide some evidence, albeit indirect, consistent with preferential treatment motive for lobbying to procure contracts.[20]

Finally, we consider whether there is any evidence that firms with high sequester exposure were able to reach the outcome they were seeking through lobbying. Such outcomes can be defined simply as receiving more contracts after sequestration. In a complementary sense, obtaining these contracts may have also been beneficial in that firms with high sequester exposure end up having better performance compared to others after the sequestration.

We consider the amount of contracts received after sequestration. In Table 9, we provide a simple mean difference test by dividing the sample into 4 quartiles based on the difference in lobbying between the post-event (after sequestration) and pre-event (before sequestration) periods and examining contracts obtained in each quartile for both high and low sequester exposure firms (top and bottom quartile of the sample, respectively).[21] In the high sequester exposure sample, lobbying firms obtain more contracts, indicating that firms that lobby obtain more from the reduced pie of sequestered federal contracts. We do not find such effects for firms with low sequester exposure. For high sequester exposure firms, there is a monotonic trend between the change in lobbying and contracts obtained, which is not observed for low sequester exposure firms. Overall, these findings suggest that firms with high exposure to sequestration that engaged in lobbying secured significantly more contracts after the shock. This finding is consistent with the notion of preferential treatment associated with lobbying. That said, it does not rule out the possibility that agencies awarded more contracts to firms about whom they had more information, which may have been shared through lobbying.[22]

[20] We also explore whether there is heterogeneity across firms with in-house vs external lobbyists. There are not any statistically significant differences across these two types of firms in lobbying spending after the sequestration event.

[21] The cutoffs for these quartiles are -0.19, 0 and 0.16.

[22] An additional insight could come from an examination of firm performance. As indicated by Krueger (1974), the value of rents corresponds to the volume of resources that could be used for other activities without loss of distributive

It is empirically extremely difficult to pin down the most likely motivation for firms' lobbying. Ultimately, we do not know the exact activities on which lobbying expenditures are spent. Signaling models of information are the other major alternative theory of lobbying, which assert that lobbying firms have better information than policymakers and partly reveal their information by endogenously choosing their lobbying effort (Potters and van Winden, 1992; Lohmann, 1995; Grossman and Helpman, 2001). One implication of these class of models could be that lobbying spending serves as a signal to enhance the credibility of the lobbying firms' messages to the policymakers. Theories of preferential treatment, on the other hand, suggest that lobbying firms compete for influence over a policy by strategically choosing their contribution to politicians (Bernheim and Whinston, 1986; Grossman and Helpman, 1994).

The main finding in our paper is that firms with a greater degree of exposure to the sequester shock were more likely to maintain their lobbying efforts once the shock hit. In this setting, there is, in fact, more limited information to be signaled by firms to the decision makers, as the exposure to the sequester shock is predetermined and publicly available information. Therefore, it is less likely that firms with greater exposure to the shock lobbied intensively in order to signal substantial specific information which the decision makers did not know about, although we cannot totally rule out this possibility. It is also not the case that these firms lobbied to influence the formula that would determine their exposure to the sequester. Furthermore, the findings are obtained using a matching exercise and, hence, are unlikely to be driven by characteristics that convey firms' ability to fulfill contracts.[23]

In the end, however, it is possible that, firms may still be trying to persuade policymakers through some information at the same time as they are lobbying for preferential treatment. In other words, lobbying is

services from an initial position of rent seeking activity. We find no difference in the returns on assets or equity, investment, or sales of lobbying sequestered firms compared to others after the sequestration.

[23] Also note that the concern that certain firm characteristics that determine their ability to fulfill contracts may jointly drive their lobbying and contract rewards is more relevant when the shock to government spending is positive. For instance, contractors that has spare capacity or the ability to quickly ramp up production activities may receive more contracts because of this capacity/ability when more contracts are made available to meet additional spending needs as a consequence of an exogenous shock (e.g., a hurricane). In our setting, the shock is negative, so firms' ability to adapt fast is less likely to be a driver of the procurement officers' decision making.

likely driven by a mix of multiple motives. It is virtually impossible to separate completely the information content in lobbying spending. What we can perhaps establish with greater confidence based on several strands of evidence in this paper is that there is a perceivable element of preferential treatment motive for lobbying spending.

V. CONCLUSION

This paper studies the effect of sequestration of federal budget accounts on lobbying activity of federal contractors. We carefully construct a database at the firm level combining information on firm characteristics and lobbying expenditures. We explore if there was a difference in the lobbying activities of "affected" versus "unaffected" contractors after the government spending cuts came into effect.

We show that firms with high exposure to sequester lobbied more intensively after the sequestration event, compared to low-exposure firms. We further find that these lobbying activities are more intense when there is high competition and when firms are more government dependent.

We provide suggestive evidence that firms that were more adversely affected by the sequestration increased lobbying efforts to the federal agencies so as to increase their chances of procuring a greater share of the reduced size of the overall pie. The findings suggest preferential treatment as an important motive for these lobbying activities to gain a competitive edge through influence. This motive was likely combined with the intent to transmit information to agencies and legislators.

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Figure 1. Market Reaction to Sequestration

This figure reports the market reaction to the announcement of budget sequester on March 1, 2013, represented as event day 0 in the figure. Cumulative abnormal returns are calculated based on weighted market model. Government-dependent firms are determined following Belo, Gala, and Li (2013), who compute an indicator of industry exposure to government spending based on NIPA input-output accounts. Those industries above the 75th percentile of government spending exposure based on 2-digit SIC codes are considered to be government-dependent.

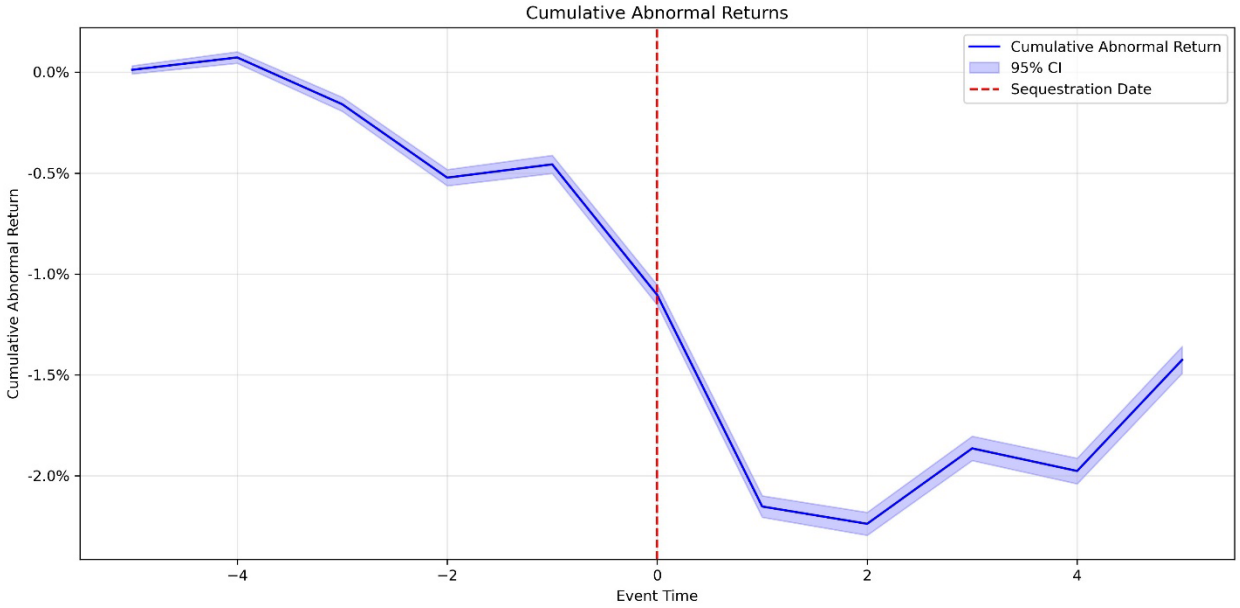


Figure 2. Trends in Lobbying around Sequestration

This figure shows the difference in firm lobbying amounts for firms with high and low exposure to sequestration. High and low exposure are determined by exposure in top and bottom quartile of the sample. The event period (t=0) corresponds to the first quarter of 2013. Exposure is at the parent company level as defined in Appendix 1. (Firm's exposure to sequestration is defined as the total dollar amount of a firm's sequestered contracts, scaled by total dollar amount of a firm's all contracts.) The estimating equation is specified as follows:

$$Lobby_{i,t} = \alpha + \beta_1 After\ sequestration_t + +\beta_2 * After\ sequestration_t * High\ exposure + n_i + \varepsilon_{it}$$

The sample covers quarterly data over April-June 2011 to the October-December 2013; we run separate regressions for each semi-annual period. $After\ sequestration_t = 1$ for the second quarter within the semiannual period considered, and *zero* otherwise. The event quarter is dropped from the regressions, as this quarter includes both pre and post sequestration effects due to the timing of the sequestration in March 2013. For the period that contains the event period (January–March 2013), the estimations use data from pre-event quarter (October–December 2012) to post-event quarter (April–September 2013), excluding the event quarter. Coefficient β_2 is plotted for each period, along with the 95-percent confidence interval and the p-value.

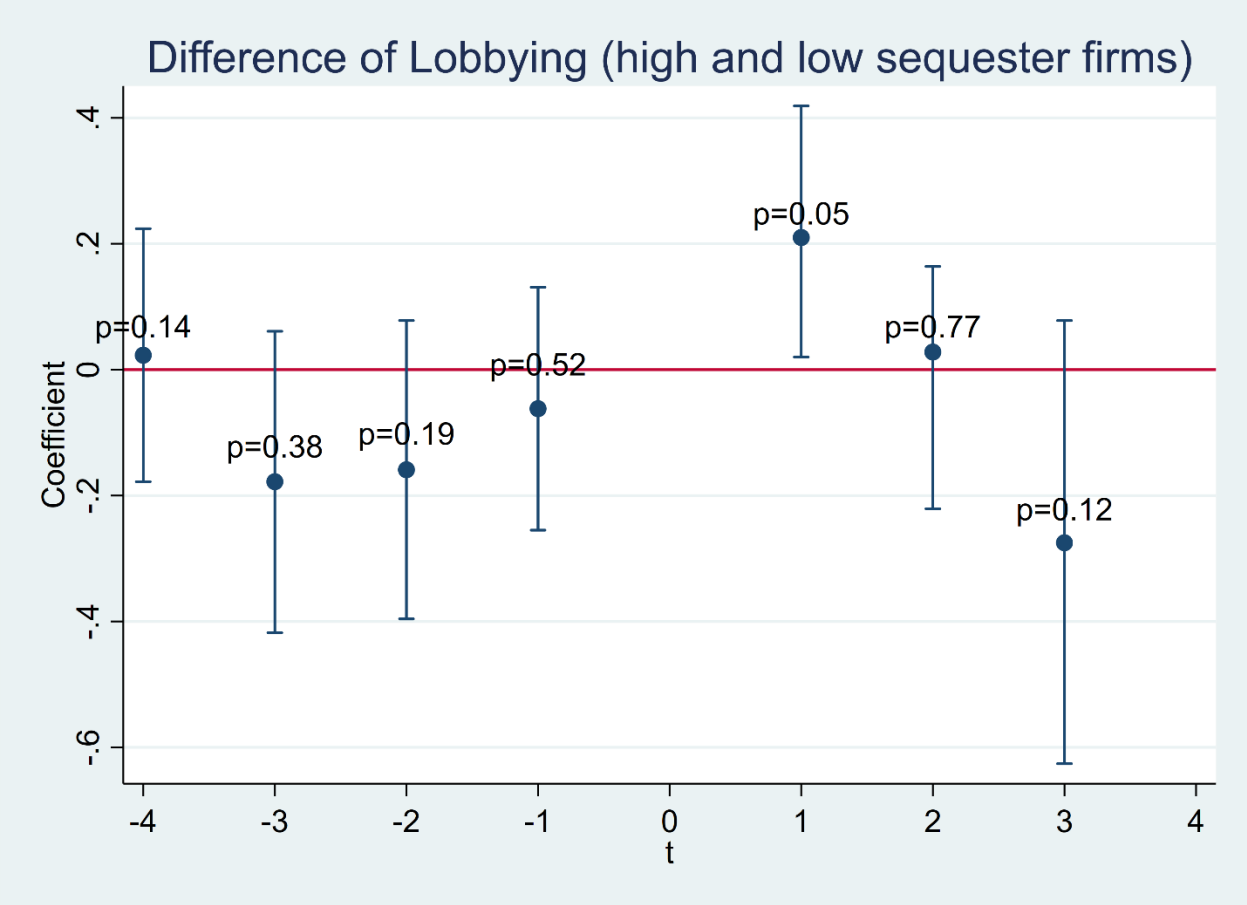
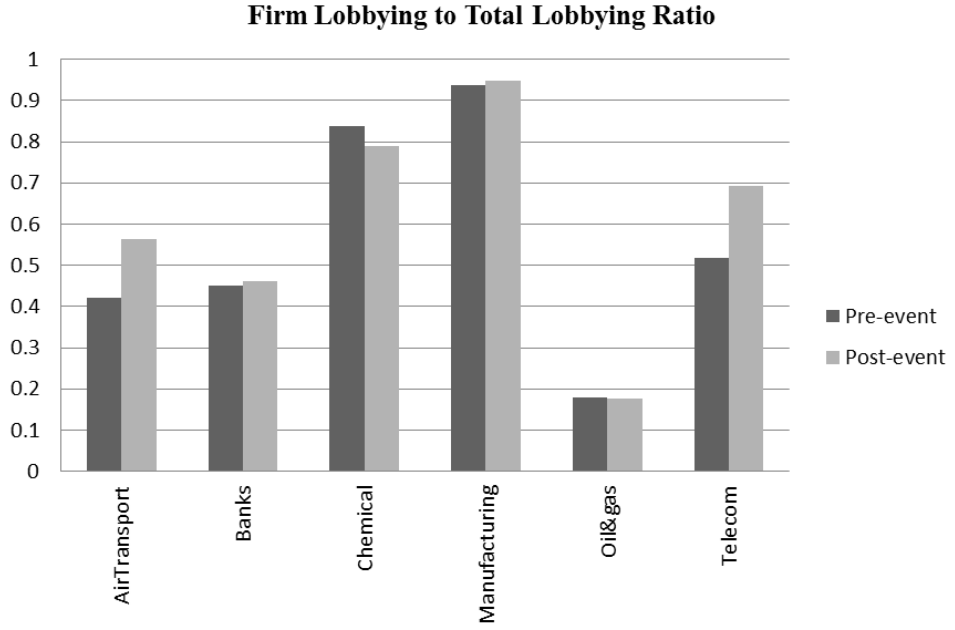


Figure 3. Firm lobbying to total lobbying around sequestration

This figure shows the ratio of firm lobbying amount to total lobbying amount for the firms in the sample, where total lobbying includes both firm lobbying and the lobbying by associations in their respective industries. The first graph shows the levels in the pre-event and post-event period, and the second graph shows the change from pre-event to post-event period. Pre-event period corresponds to the quarter before the sequestration on March 1, 2013, which is the 4th quarter of 2012, and post-event period corresponds to the quarter after the sequestration, which is second quarter of 2013. The values are reported for the subsample of firms where there are association lobbying reports for their respective industries. Association lobbying in a given industry is determined according to the top 50 lobbyists listed in Center for Responsive Politics.



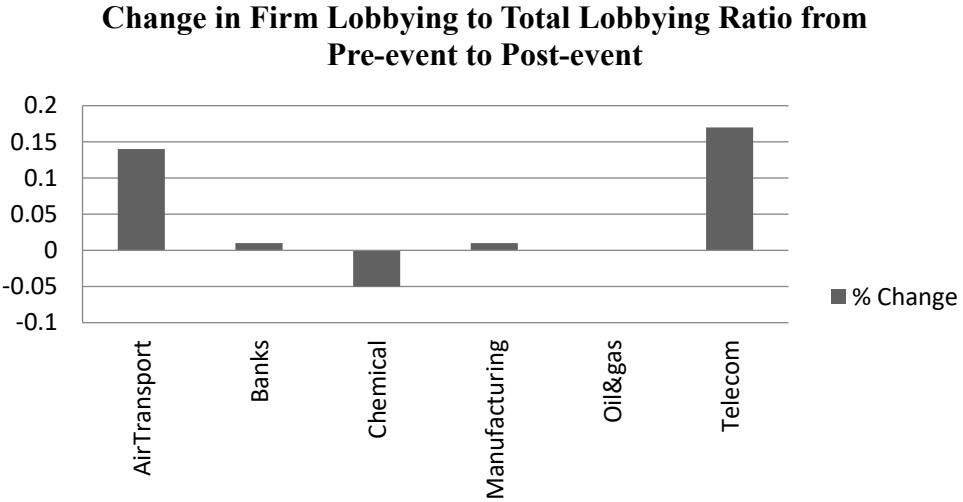


Table 1. Sample Statistics

In this table, Panel A reports descriptive statistics of the variables for the quarters before and after the sequestration on March 1, 2013. In Panel B, we report aggregate sequester ratios for our sample. The quarter before sequestration corresponds to the pre-event period (October 1–December 31, 2012) and the quarter after the sequestration is the post-event period (April 1–June 30, 2013). In Panel A, the table reports results for the matched sample of 138 firms (276 observations), which is created based on nearest 3 neighbor matching. The matching is based on the natural logarithm of total federal contract amounts in 2011 and 2012 fiscal years (October 1, 2010–September 30, 2012), natural logarithm of the total lobby amounts in the second and third quarter of 2012 (April 1–September 30, 2012), firm size and Fama-French 12 industries. Lobby ($millions) is the total lobby amount of each firm in a quarter. Lobby (log) is the natural logarithm of the lobby ($millions). Sequester exposure is the total amount of contracts exposed to sequester as a ratio of total contracts. Average sequester ratio and weighted average sequester ratio represent the ratio of sequestered contracts to total contracts for each firm. In average sequester ratio, sequestered contracts are calculated according to an equally weighted average of each Federal Agency's sequester ratio. In weighted average sequester ratio, the weighted average of sequester ratios for each Federal Agency is considered. In all aforementioned calculations regarding sequestrations, contracts exposed to sequester are determined according to the 2011 and 2012 federal contracts granted. Size is the natural logarithm of total assets. R&D is the research and development expense scaled by total assets. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. ROA and ROE are return on asset and return on equity, respectively, and are adjusted for industry by subtracting mean industry ROA and ROE determined at the 2-digit SIC level from these values. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library, determined at the beginning of the period. Firm level competition is the ratio of competitive contracts to total contracts obtained by each firm. Government agency level competition is the ratio of competitive contracts given in a government agency to total contracts awarded by the same agency. Government dependence at the industry level is industry exposure to government spending measured of Belo, Gala, and Li (2013) at the 2-digit SIC code level. Government dependence at the firm level is based reports total federal contracts obtained as a ratio of total sales. Calculations on competition and government dependence are determined in the 2011 and 2012 fiscal years. Indefinite delivery contract (IDC) is the ratio of IDC (blanket purchase order and delivery order) to total contracts. Federal contracts ($millions) is the total contract amounts for each firm in 2011 and 2012 fiscal years (October 1, 2010–September 30, 2012) and the federal contracts (log) is the corresponding natural logarithm variable. Mean values are reported for the variables for the period before the sequestration (pre-event period) and after the sequestration (post-event period), and for firms with high and low sequester exposure. High sequester exposure observations are those at the top quartile of the sample, and low sequestration observations are those that are at the bottom quartile of the sample. Further details on variable definitions and sources are provided in Appendix 1.

Panel A: Descriptive Statistics

Variables	Mean	Median	Std. Dev.	p25	p75	Mean		Mean	
						Before Seq.	After Seq.	Low Seq. Exposure	High Seq. Exposure
Lobby ($millions)	0.56	0.21	0.90	0.07	0.63	0.58	0.54	0.59	0.53
Lobby (log)	12.27	12.25	1.48	11.16	13.35	12.28	12.26	12.63	12.06
Sequester Exposure	0.74	0.97	0.36	0.48	1.00	0.74	0.74	0.16	1.00
Average Sequester Ratio (%)	4.77	5.00	2.60	3.14	7.34	4.77	4.77	0.01	0.07
Weighted Average Sequester Ratio (%)	4.74	5.00	2.60	3.10	7.30	4.74	4.74	0.01	0.07
Size	9.52	9.51	1.84	8.33	10.68	9.52	9.52	9.77	9.47
R&D	0.01	0.00	0.01	0.00	0.01	0.01	0.005	0.01	0.004
Tobin's Q	1.63	1.33	0.84	1.12	1.84	1.60	1.66	1.74	1.55
ROA (industry adjusted)	0.20	0.29	0.06	0.02	0.44	0.21	0.18	0.34	0.13
ROE (industry adjusted)	-0.01	0.01	0.55	0.00	0.03	0.00	0.03	0.02	0.01
Industry Concentration	0.20	0.13	0.20	0.07	0.27	0.21	0.20	0.19	0.21
Firm Level Competition	0.54	0.61	0.43	0.00	1.00	0.54	0.54	0.59	0.53
Government Agency Level Competition	0.53	0.54	0.06	0.48	0.55	0.53	0.53	0.54	0.52
Government Dependence - Industry Level	0.12	0.11	0.07	0.07	0.12	0.12	0.12	0.12	0.12
Government Dependence - Firm Level	0.015	0.001	0.070	0.000	0.004	0.002	0.002	0.002	0.014
Indefinite Delivery Contract	0.43	0.33	0.43	0.00	0.95	0.43	0.43	0.44	0.42
Federal Contracts ($millions) - Beginning of Period	11.14	3.23	23.56	0.84	10.09	11.14	11.14	14.90	3.57
Federal Contracts (log) - Beginning of Period	14.87	14.98	1.69	13.64	16.13	14.87	14.87	14.87	14.06

Panel B. Aggregate Agency-Level Contracts

		Contracts ($10m)				LogContracts		
Agency	Average Sequester Ratio	Before	After	Difference	Percentage Change	Before	After	Percentage Change
Department of Defense	7.80%	5856	2877	-2979	-51	24.79	24.08	-2.91
Department of the Treasury	5.02%	135	60	-76	-56	21.02	20.21	-3.97
Department of Justice	5.53%	61	14	-47	-77	20.23	18.74	-7.64
Department of State	5.02%	52	24	-28	-53	20.07	19.30	-3.89
Department of Education	5.05%	24	13	-11	-46	19.29	18.68	-3.21
Department of Commerce	5.11%	27	11	-17	-61	19.43	18.49	-4.98
Department of Homeland Security	5.19%	80	63	-17	-21	20.49	20.26	-1.15
Department of Agriculture	5.04%	43	28	-15	-34	19.87	19.46	-2.12
Department of Transportation	5.02%	35	24	-11	-32	19.66	19.28	-1.99
Environmental Protection Agency	5.03%	14	7	-6	-47	18.75	18.12	-3.42
Department of Energy	5.00%	0.08	0.09	0.01	15	13.59	13.73	1.01

Table 2. Comparison of Mean Lobbying across Event Line

This table is the comparison of mean natural logarithm of lobbying for high and low sequester exposure firms in the matched sample across event line. The quarter before sequestration corresponds to the pre-event quarter (October 1–December 31, 2012) and the quarter after the sequestration is the post-event quarter (April 1–June 30, 2013). Two quarters before sequestration corresponds to (June 1–September 30, 2012). Firms are considered to have high sequester exposure if their sequester exposure is above 75th percentile of the sample and have low sequester exposure if sequester exposure is below 25th percentile. The table reports t-statistics in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Panel A: Pre-Event Period

	High sequestration	Low sequestration	Difference
Quarter before Sequestration	12.05	12.72	**-0.67****
			(-2.16)
Two Quarters before Sequestration	12	12.61	**-0.61****
			(-1.98)
Difference	0.05	0.11	
	(0.19)	-0.33	
Difference in Difference			-0.06
			(0.64)

Panel B: Event Period

	High sequestration	Low sequestration	Difference
Quarter after Sequestration	12.08	12.53	-0.45
			(-1.41)
Quarter before Sequestration	12.05	12.72	**-0.67****
			(-2.16)
Difference	0.03	-0.19	
	(0.08)	(-0.57)	
Difference in Difference			**0.22****
			(2.00)

Table 3. Lobbying after Sequestration

This table reports the results on the amount of lobbying in relation to the sequestration on March 1, 2013, using the matched sample of 138 firms created based on nearest 3 neighbor matching with respect to the natural logarithm of total federal contract amounts in 2011 and 2012 fiscal years (October 1, 2010– September 30, 2012), natural logarithm of the total lobby amounts in the second and third quarter of 2012 (April 1–September 30, 2012), firm size, and Fama-French 12 industries. After sequestration variable takes a value of 1 for the post-event period, which is the quarter after sequestration (April 1–June 30, 2013) and is zero for the pre-event period, the quarter before the sequestration (October 1–December 31, 2012). Lobbying is the natural logarithm of total lobby amount for each firm in the pre-event and post-event quarters. Sequester exposure is the total amount of contracts exposed to sequester as a ratio of total contracts. Average sequester ratio and weighted average sequester ratio represent the ratio of sequestered contracts to total contracts for each firm. In average sequester ratio, sequestered contracts are calculated according to an equally weighted average of each Federal Agency's sequester ratio. In weighted average sequester ratio, the weighted average of sequester ratios for each Federal Agency is considered. In all aforementioned calculations regarding sequestrations, contracts exposed to sequester are determined according to the federal contracts obtained in the 2011 and 2012 fiscal years. Size is natural logarithm of total assets. R&D is research and development expense scaled by total assets. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library, determined at the beginning of the period. Details on variable definitions are in Appendix 1. In each estimation, firm effects are included and standard errors are clustered at the firm level. t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)
After sequestration	**-0.232****	**-0.204****	**-0.207****
	(-2.418)	**(-2.187)**	**(-2.211)**
After sequestration*Sequester Exposure	**0.262****		
	(2.188)		
After sequestration*Avg. Sequester		**3.487****	
		(2.022)	
After sequestration*Wgt. Avg. Sequester			**3.565****
			(2.066)
Size	0.495	0.523	0.52
	(0.850)	(0.894)	(0.888)
Industry Concentration	0.146	0.123	0.121
	(0.372)	(0.333)	(0.327)
R&D	-16.60**	-15.49*	-15.55*
	(-1.979)	(-1.925)	(-1.924)
Tobin's Q	0.0344	0.0243	0.0236
	(0.321)	(0.228)	(0.222)
Observations	276	276	276
R-squared	0.039	0.037	0.038

Table 4. Placebo Test

This table presents the results on lobbying for placebo samples. Columns (1)–(3) are based on a placebo period, where March 1, 2014 is considered as the placebo sequestration event date, and Column (4) reports a placebo sample where firms have randomly distributed sequester exposure based on beta distribution, Beta (0.358, 0.126), which provides mean and standard deviation corresponding to those in the sample, 0.74 and 0.36, respectively. For columns (1)–(3), after sequestration variable takes a value of 1 for the post-event period, which is the quarter after sequestration (April 1–June 30, 2014) and is zero for the pre-event period, the quarter before the sequestration (October 1–December 31, 2013). The table presents results of the matched sample. Lobbying is the natural logarithm of total lobby amount for each firm in the pre-event and post-event quarters. Sequester exposure is the total amount of contracts exposed to sequester as a ratio of total contracts. Average sequester ratio and weighted average sequester ratio represent the ratio of sequestered contracts to total contracts for each firm. In average sequester ratio, sequestered contracts are calculated according to an equally weighted average of each Federal Agency's sequester ratio. In weighted average sequester ratio, the weighted average of sequester ratios for each Federal Agency is considered. In all aforementioned calculations regarding sequestrations, contracts exposed to sequester are determined according to the federal contracts obtained in the 2011-2012 fiscal years. Size is natural logarithm of total assets and R&D is research and development expense scaled by total assets given in percentage. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library. Details on variable definitions are in Appendix 1. In each estimation, firm effects are included and standard errors are clustered at the firm level. t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

	Alternative Sequester Date			Random Sequester Assignment
	(1)	(2)	(3)	(4)
After sequestration	-0.0904	-0.0939	-0.0967	0.108
	(-0.670)	(-0.743)	(-0.762)	(1.079)
After sequestration*Sequester Exposure	0.0983			-0.19
	(0.642)			(-1.552)
After sequestration*Avg. Sequester		1.532		
		(0.736)		
After sequestration*Wgt. Avg. Sequester			1.595	
			(0.765)	
Size	0.0516	0.0516	0.0510	0.633
	(0.294)	(0.293)	(0.289)	(1.124)
Industry Concentration	0.0272	0.00862	0.00790	0.137
	(0.0728)	(0.0236)	(0.0216)	(0.374)
R&D	-9.789	-9.880	-9.930	-9.97
	(-1.306)	(-1.347)	(-1.348)	(-1.409)
Tobin's Q	0.0796	0.0740	0.0732	0.006
	(0.402)	(0.373)	(0.370)	(0.0462)
Observations	248	248	248	276
R-squared	0.006	0.007	0.008	0.027

Table 5. Robustness and Alternative Specifications

This table reports the results on robustness and alternative specifications on the amount of lobbying in relation to the sequestration on March 1, 2013. In the Earlier Periods columns, sequester exposure variables are interacted with quarters before our analysis period. Sample period covers (January 1, 2012-June 30, 2013). Post-event period, is the quarter after sequestration (April 1–June 30, 2013). Periods (t-1), (t-2), and (t-3) are three quarters before the event period, namely (October 1–December 31, 2012), (June 1–September 30, 2012), and (March 1–May 31, 2012). After sequestration takes the value of one in the quarter after sequestration and is zero otherwise. Indefinite delivery contracts (IDC) column differentiates firms with higher ratios of indefinite delivery contracts relative to total contracts. IDC to total contracts ratio is determined for each firm, and those that are above the median are flagged with a High IDC indicator of one; this indicator is zero otherwise. IDC contracts include blanket purchase orders and delivery orders. Alternative matching column matches the firms sequestered and non-sequestered firms using the total amount of federal contracts (rather than natural logarithm of total federal contract amounts), lobbying, firm size, and industry in the pre-event period. We employ propensity score matching with 3-nearest neighbors, where each matched firm is included once. In our propensity score matching, the probability of being sequestered is predicted by the total amount of contracts obtained over the previous two fiscal years, 2011 and 2012 (October 1, 2010–September 30, 2012), the natural logarithm of total lobbying expense over the last two quarters before the pre-event date (the 2nd and 3rd quarters of 2012), firm size at the beginning of the sample period (the end of 3rd quarter of 2012), and industry (based on Fama-French 12 sectors). This alternative matching results in a balanced sample of 116 firms, and 232 observations. Size is natural logarithm of total assets. R&D is research and development expense scaled by total assets. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library, determined at the beginning of the period. Details on variable definitions are in Appendix 1. In each estimation, firm effects are included and standard errors are clustered at the firm level. t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

	Earlier Periods			Indefinite Delivery Contract (IDC)			Alternative Matching		
	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester
After sequestration	**-0.242****	**-0.202***	**-0.204****	**-0.195****	**-0.160***	**-0.163***	**-0.225****	**-0.225****	**-0.227****
	(-2.192)	**(-1.970)**	**(-1.994)**	**(-2.108)**	**(-1.773)**	**(-1.794)**	**(-2.384)**	**(-2.467)**	**(-2.478)**
After sequestration*ExposureVariable	**0.175***	**2.726***	**2.715***	**0.269****	**3.448***	**3.523***	**0.240****	**3.771****	**3.842****
	(1.691)	**(1.737)**	**(1.720)**	**(2.284)**	**(1.927)**	**(1.967)**	**(2.019)**	**(2.081)**	**(2.119)**
Period(t-1)*ExposureVariable	-0.0447	-0.283	-0.341						
	(-0.713)	(-0.340)	(-0.411)						
Period(t-2)*ExposureVariable	0.228	2.795	2.875						
	(1.157)	(1.187)	(1.191)						
Period(t-3)*ExposureVariable	0.56	6.034	6.067						
	(1.449)	(1.110)	(1.114)						
After sequestration*High IDC				-0.0964	-0.213	-0.222			
				(-0.239)	(-0.689)	(-0.718)			
After sequestration*ExposureVariable *High IDC				-0.23	-1.006	-0.817			
				(-0.410)	(-0.205)	(-0.166)			
Size	-0.0828	-0.087	-0.0861	0.522	0.535	0.531	-0.697	-0.688	-0.69
	(-0.405)	(-0.424)	(-0.420)	-0.999	-1.064	-1.057	(-1.240)	(-1.242)	(-1.243)
Industry Concentration	-0.29	-0.315	-0.315	0.204	0.169	0.168	0.235	0.207	0.205
	(-0.787)	(-0.878)	(-0.877)	-0.593	-0.518	-0.514	(0.631)	(0.588)	(0.583)
R&D	0.0231	0.848	0.869	-16.91*	-16.33*	-16.48*	-19.75**	-19.44**	-19.47**
	(0.004)	(0.135)	(0.139)	(-1.962)	(-1.960)	(-1.969)	(-2.338)	(-2.379)	(-2.369)
Tobin's Q	-0.0263	-0.0304	-0.0313	0.045	0.0309	0.0301	-0.102	-0.111	-0.111
	(-0.272)	(-0.308)	(-0.317)	-0.423	-0.290	-0.284	(-1.051)	(-1.173)	(-1.179)
Observations	690	690	690	232	232	232	232	232	232
R-squared	0.029	0.023	0.023	0.072	0.068	0.069	0.049	0.055	0.056
Number of firms	138	138	138	138	138	138	116	116	116

Table 6. Competition

This table reports the results on the amount of lobbying in relation to the sequestration on March 1, 2013 for different completion measures. Panel A gives the results with industry concentration. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library, determined at the beginning of the period. Industries that have industry concentration below sample median is flagged with low industry concentration indicator of one, and this indicator is zero otherwise. Panel B provides results for firm level and agency level competition, respectively. Competition at the firm level is high if the ratio of a firm's competitive contracts to total contracts, and those above sample median are flagged with high firm competition flag of one, and this indicator is zero otherwise. Competition at the agency level is flagged as high if the ratio of agency level competitive orders to agency level total orders are above sample median and flagged as high agency competition indicator of one, and this indicator is zero otherwise. The sample consists of 138 matched firms. After sequestration variable takes a value of 1 for the post-event period, which is the quarter after sequestration (April 1–June 30, 2013) and is zero for the pre-event period, the quarter before the sequestration (October 1–December 31, 2012). Lobbying is the natural logarithm of total lobby amount for each firm in the pre-event and post-event quarters. Sequester exposure is the total amount of contracts exposed to sequester as a ratio of total contracts. Average sequester ratio and weighted average sequester ratio represent the ratio of sequestered contracts to total contracts for each firm. In average sequester ratio, sequestered contracts are calculated according to an equally weighted average of each Federal Agency's sequester ratio. In weighted average sequester ratio, the weighted average of sequester ratios for each Federal Agency is considered. In all aforementioned calculations regarding sequestrations, contracts exposed to sequester are determined according to the federal contracts obtained in the 2011 and 2012 fiscal years. Size is natural logarithm of total assets. R&D is research and development expense scaled by total assets. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. Details on variable definitions are in Appendix 1. In each estimation, firm effects are included and standard errors are clustered at the firm level. t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

Table 6 - *continued*

Panel A: Industry Concentration

	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester
After sequestration	0.0937	0.0759	0.0758
	-1.155	-0.712	-0.711
After sequestration*ExposureVariable	-0.0495	-0.36	-0.36
	(-0.385)	(-0.158)	(-0.157)
After sequestration*Low Ind. Concentration	**-0.563*** **	**-0.477*** **	**-0.481*** **
	(-3.748)	**(-3.041)**	**(-3.077)**
After sequestration*ExposureVariable *Low Ind. Concentration	**0.531** **	**6.659** **	**6.832** **
	(2.546)	**(2.170)**	**(2.241)**
Size	0.613	0.594	0.595
	-1.287	-1.156	-1.157
Industry Concentration	-6.53	-5.455	-5.298
	(-1.039)	(-0.789)	(-0.760)
R&D	0.255	0.228	0.221
	(0.589)	(0.517)	(0.501)
Tobin's Q	0.0245	0.0245	0.0257
	-0.254	-0.255	-0.267
	6.392	6.57	6.566
Observations	276	276	276
R-squared	0.09	0.078	0.079
Number of firms	138	138	138

Table 6 – *continued*

Panel B: Competition						
	Firm Level Competition			Agency Level Competition		
	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester
After sequestration	**-0.233***	**-0.233***	**-0.237***	**-0.461****	**-0.389****	**-0.393****
	(-1.802)	**(-1.848)**	**(-1.869)**	**(-2.004)**	**(-2.142)**	**(-2.157)**
After sequestration*ExposureVariable	0.259	3.839	**3.950***	**0.441***	**5.315***	**5.431***
	(1.583)	(1.616)	**(1.648)**	**(1.717)**	**(1.671)**	**(1.704)**
After sequestration*High Competition	-0.349	-4.167	-4.235	0.278	0.221	0.225
	(-1.585)	(-1.312)	(-1.327)	(1.183)	(1.138)	(1.157)
After sequestration*ExposureVariable *High Competition	**0.322***	**0.270***	**0.272***	-0.144	-0.79	-0.905
	(1.950)	**(1.650)**	**(1.658)**	(-0.504)	(-0.225)	(-0.257)
Size	0.539***	0.539***	0.539***	0.565	0.595	0.593
	(11.060)	(11.120)	(11.110)	(0.941)	(0.984)	(0.980)
Industry Concentration	19.52***	19.60***	19.58***	-19.71**	-18.20**	-18.19**
	(2.750)	(2.720)	(2.710)	(-1.978)	(-2.040)	(-2.025)
R&D	-0.12	-0.15	-0.151	0.127	0.078	0.0763
	(-0.377)	(-0.472)	(-0.478)	(0.335)	(0.230)	(0.225)
Tobin's Q	0.103	0.0962	0.0962	0.0471	0.0371	0.036
	(0.254)	(0.255)	(0.267)	(1.449)	(1.373)	(1.374)
Observations	276	276	276	276	276	276
R-squared	0.09	0.078	0.079	0.061	0.06	0.061
Number of firms	138	138	138	138	138	138

Table 7. Government Dependence

This table reports the results on the amount of lobbying in relation to the sequestration on March 1, 2013 in relation to government dependence. There are two measures used to determine government dependence. One measure considers total federal contracts to sales ratio of each firm at the beginning of the sample period and assigns firms that have a ratio above median an indicator of one for high government dependence, and this indicator is zero otherwise. In the second measure, government dependence of a company is high if its Belo-Gala-Li industry government exposure measure at the 2-digit SIC is above sample median of 0.1 and assigned an indicator of one for high government dependence, and this indicator is zero otherwise. The table presents the estimation results of the matched sample of 138 firms. After sequestration variable takes a value of 1 for the post-event period, which is the quarter after sequestration (April 1–June 30, 2013) and is zero for the pre-event period, the quarter before the sequestration (October 1–December 31, 2012). Lobbying is the natural logarithm of total lobby amount for each firm in the pre-event and post-event quarters. Sequester exposure is the total amount of contracts exposed to sequester as a ratio of total contracts. Average sequester ratio and weighted average sequester ratio represent the ratio of sequestered contracts to total contracts for each firm. In average sequester ratio, sequestered contracts are calculated according to an equally weighted average of each Federal Agency's sequester ratio. In weighted average sequester ratio, the weighted average of sequester ratios for each Federal Agency is considered. In all aforementioned calculations regarding sequestrations, contracts exposed to sequester are determined according to the federal contracts obtained in the 2011 and 2012 fiscal years. Size is natural logarithm of total assets. R&D is research and development expense scaled by total assets. Tobin's Q is market value of assets to book value of assets calculated at the beginning of the period. Industry concentration is the Herfindahl-Hirschman index based on Text-based Network Industry Classifications extracted from the Hoberg Phillips Data Library, determined at the beginning of the period. Details on variable definitions are in Appendix 1. In each estimation, firm effects are included and standard errors are clustered at the firm level. t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

	Contracts/Sales Ratio			Industry		
	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester	Sequester Exposure	Avg. Sequester	Wgt. Avg. Sequester
After sequestration	**-0.233***	**-0.233***	**-0.237***	**-0.303*****	**-0.256****	**-0.257****
	(-1.802)	**(-1.848)**	**(-1.869)**	**(-2.732)**	**(-2.455)**	**(-2.470)**
After sequestration*ExposureVariable	0.259	**3.839***	**3.950***	**0.310****	**3.879****	**3.947****
	(1.583)	**(1.616)**	**(1.648)**	**(2.296)**	**(2.061)**	**(2.096)**
After sequestration*High Government Dependence	-0.349	-4.167	-4.235	-0.0854	-0.922	-0.985
	(-1.585)	(-1.312)	(-1.327)	(-0.285)	(-0.191)	(-0.205)
After sequestration*ExposureVariable *High Government Dependence	**0.322****	**0.270***	**0.272***	**0.373****	**0.338****	**0.340****
	(1.960)	**(1.650)**	**(1.658)**	**(2.403)**	**(2.067)**	**(2.074)**
Size	0.539***	0.539***	0.539***	0.472	0.511	0.51
	(11.060)	(11.120)	(11.110)	(0.831)	(0.894)	(0.889)
Industry Concentration	19.52***	19.60***	19.58***	-16.44*	-14.85*	-14.86*
	(2.750)	(2.720)	(2.710)	(-1.799)	(-1.713)	(-1.708)
R&D	-0.12	-0.15	-0.151	0.216	0.189	0.187
	(-0.377)	(-0.472)	(-0.478)	(0.539)	(0.506)	(0.499)
Tobin's Q	0.103	0.0962	0.0962	0.0769	0.061	0.0607
	(1.449)	(1.373)	(1.374)	(0.676)	(0.523)	(0.521)
Observations	276	276	276	276	276	276
R-squared	0.016	0.018	0.018	0.07	0.064	0.064
Number of firms	138	138	138	138	138	138

Table 8. Agency Lobbying to Congress Lobbying Ratio

This table reports the lobbying activity conducted in the agencies with respect to the lobbying in the House of Representatives and Senate. Total government agencies citations are divided by the total Congress citations in the lobbying bills of the matched sample 138 firms. Comparison of this ratio across the event line is reported. The quarter before sequestration corresponds to the pre-event period (October 1–December 31, 2012) and the quarter after the sequestration is the post-event period (April 1–June 30, 2013). Firms have high (low) sequester exposure if their exposure is top (bottom) quartile of the sample. t-statistics are reported in brackets, where * indicates statistical significance at 12%.

	High Exposure	Low Exposure	Difference
After Sequestration	0.53	0.54	-0.01
			(0.04)
Before Sequestration	0.48	0.60	-0.12
			(0.03)
Difference	0.05	-0.06	
	(0.46)	(0.33)	
Difference in Difference			0.11*
			(1.56)

Table 9. Contracts after Sequestration and Lobbying

This table reports the federal contracts obtained by the federal contractors after the sequestration in relation to the change in lobbying. The results are reported for high sequester and low sequester exposure firms (top and bottom quartile of the sample, respectively). Total contracts obtained over one quarter after the sequestration Contracts (t, t+1) as well as those obtained over the two quarters after the sequester, Contracts (t, t+2) are reported. Contracts and lobbying are natural logarithm of the federal contract amounts and lobbying amounts, respectively. Change in lobbying is the difference in the natural logarithm of lobbying between post-event (April–June 2013) and pre-event (June–December 2012) periods. The changes in lobbying are divided into four quantiles and the results are reported for these quarters. The cutoffs for the change in lobbying quartiles are -0.19, 0, and 0.16. The mean difference tests are reported for the difference between the contracts that are obtained in the highest change in lobbying and lowest change in lobbying quantiles. For the mean tests, t-statistics are reported in brackets, where *, **, and *** represent statistical significance at the 10%, 5% and 1% level, respectively.

	Lobbying Difference Between Post and Pre-Event Periods				
	Q1 - Most Negative	Q2	Q3	Q4 - Most Positive	Q4-Q1
High Sequester Exposure					
Contracts (t,t+1)	3.1	3.7	4.9	5.6	2.5
					(0.98)
Contracts (t, t+2)	4.1	7.6	8.5	9.5	**5.4****
					(2.08)
Low Sequester Exposure	5.4	10.9	4.3	8.7	3.3
Contracts (t,t+1)					(0.88)
Contracts (t, t+2)	5.7	13.5	8.6	9.3	3.6
					(0.90)

Appendix 1. Variable Descriptions and Data Sources

Variable	Description	Source(s)
Lobby (log)	Natural logarithm of the total lobby amount for each quarter	Lobbying Disclosure Act database provided by the United States Senate Office of Public Records (www.senate.gov/legislative/opr.htm).
After Sequestration	Indicator variable that takes a value of 1 for the quarter after sequestration (post-event period: April 1 – June 30, 2013) and is zero for the quarter before sequestration (pre-event period: October 1 – December 31, 2012). Sequestration happened on March 1, 2013.	By authors
Sequester Exposure	Firm's exposure to sequestration is defined as the total dollar amount of a firm's sequestered contracts, scaled by total dollar amount of a firm's all contracts. This ratio is calculated based on the federal contracts obtained in the 2011–2012 fiscal period (October 1, 2010 – September 30, 2012).	usaspending.gov OMB (https://www.whitehouse.gov/omb/budget/Historicals)
Average Sequester Ratio	$\frac{\sum_{k=1}^{K}\sum_{l=1}^{L}\text{contract amount}_{ikl} \times \text{simple average seqratio}_{kl}}{\text{Sum of all contract amount}_{i}}$, where *i* denotes firm, *k* denotes federal agency and *l* denotes federal agency account. Average sequester ratio for each firm. For each firm, the sum of the federal contract amount multiplied by the average sequestration ratio of the corresponding Federal agency's account scaled by the total dollar amount all federal contracts obtained by that firm. The calculation is based on the federal contracts obtained in the 2011–2012 fiscal period (October 1, 2010 – September 30, 2012).	usaspending.gov OMB (https://www.whitehouse.gov/omb/budget/Historicals)
Weighted Average Sequester Ratio	$\frac{\sum_{k=1}^{K}\sum_{l=1}^{L}\text{contract amount}_{ikl} \times \text{weighted average seqratio}_{kl}}{\text{Sum of all contract amount}_{i}}$, where *i* denotes firm, *k* denotes federal agency and *l* denotes agency account. Weighted average sequester ratio for each firm. In the OMB file, some accounts have different sequestration ratios for the same Federal Agency. Weighted average of these ratios based on the amount granted by each Federal Agency account in a Federal Agency is constructed. Weighted Average Sequester Ratio reports, for each firm, the sum of the federal contract amount multiplied by this weighted average sequestration ratio of the corresponding Federal Agency's account scaled by the total dollar amount all federal contracts obtained by that firm. The calculation is based on the federal contracts obtained in the 2011–2012 fiscal period (October 1, 2010 – September 30, 2012).	usaspending.gov OMB (https://www.whitehouse.gov/omb/budget/Historicals)
Federal Contracts	A firm's total federal contract amounts in 2011–2012 fiscal periods (October 1, 2010 – September 30, 2012)	usaspending.gov
Size	Natural logarithm of total assets (ATQ), measured at the beginning of the period	COMPUSTAT

Tobin's Q	(Total assets (ATQ) + Quarter-end share price (PRCC_Q)*Number of shares outstanding (CSHOQ) - Book value of equity (CEQQ))/Total assets, measured at the beginning of the period	COMPUSTAT
R&D	Research and Development Expense (XRDQ), scaled by beginning-of-period total assets (ATQ)	COMPUSTAT
ROA	Return on assets, calculated as (Net Income (NIQ)/Beginning of period total assets (ATQ)	COMPUSTAT
ROA (Industry adjusted)	ROA adjusted to industry by subtracting mean industry ROA values at the 2-digit SIC level	COMPUSTAT
ROE	Return on equity, calculated as (Net Income (NIQ)/Beginning of period stockholders' equity (TEQQ)	COMPUSTAT
ROE (Industry adjusted)	ROE adjusted to industry by subtracting mean industry ROE values at the 2-digit SIC level	COMPUSTAT
Investment	Sum of capital expenditures (CAPXY) and R&D expenditures (XRD) scaled by beginning of period net plant, property, and equipment (PPENT)	COMPUSTAT
Cash Flow	Net income (NI) scaled by beginning of period total assets	COMPUSTAT
Sales	Natural logarithm of sales (SALE)	COMPUSTAT
Industry Concentration	Annual basis Herfindahl-Hirschman Index based on Text-Based Network Industries (TNIC), measured at the beginning of the period	Hoberg-Phillips Data Library
Competition (Firm level)	Ratio of a firm's competitive contracts to total contracts in the 2011–2012 fiscal period. A contract is competitive if "Extend Competed" value is either A (Full and Open Competition) or CDO (Competitive Delivery Order).	usaspending.gov
Competition (Agency level)	$avg.competition.agency_i = \sum_{j=i}^{m} \frac{N_{ij}C_j}{\sum_{j=1}^{m} N_{ij}}$, where C_j is the ratio of competitive contracts to total contracts in agency *j*, N_{ij} is the total number of contracts firm *i* gets from agency *j*, *m* is the number of firms in the sample.	usaspending.gov
Indefinite Delivery Contract (IDC) Ratio	Ratio of IDC contracts (Blanket Purchase Order and Delivery Order) to total contracts	usaspending.gov
Government Dependence (Firm level)	Ratio of total federal contracts to sales (SALE) for each firm.	usaspending.gov, COMPUSTAT
Government Dependence (Industry level)	Industry exposure to government spending based on the Benchmark Input-Output Accounts released by Bureau of Economic Analysis. This measure is used at the 2-digit SIC level for the sample.	Belo, Gala, and Li (2013)

Appendix 2. Four Stages of Government Contracting

Below are the four stages of federal contracting as discussed in the Government Accountability Office Report GAO-18-467.

1. **Solicitation**: Agencies issue a request for proposals (RFP) outlining the government's requirements, contract terms, and evaluation criteria. Contractors must submit proposals by the specified deadline. The solicitation phase begins with the issuance of the RFP and ends when proposals are submitted.
2. **Initial Evaluation**: Submitted proposals are assessed based on technical qualifications and cost. Evaluations ensure that contractors can meet the government's requirements and offer fair pricing. This phase ends when the agency approves negotiations or discussions with the offerors.
3. **Discussion/Negotiation**: Negotiations involve back-and-forth exchanges between the government and the contractors to refine proposals. Offerors may address concerns or clarify past performance. This phase ends when the contracting officer approves the contract award.
4. **Contract Award**: The final phase begins with approval to award the contract and concludes when the contracting officer signs the contract, officially sealing the agreement.

Appendix 3. A Sample Lobbying Report

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510
http://lobbyingdisclosure.house.gov	http://www.senate.gov/lobby

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name ☑ Organization/Lobbying Firm ☐ Self Employed Individual
Thorn Run Partners

2. Address
Address1 1720 Eye Street, NW Address2 Suite 400
City Washington State DC Zip Code 20006 Country USA

3. Principal place of business (if different than line 2)
City State Zip Code Country

4a. Contact Name	b. Telephone Number	c. E-mail	5. Senate ID#
Mr. W. Christopher Lamond	8009442167	clamond@thornrun.com	400534596-24

7. Client Name ☐ *Self* ☐ *Check if client is a state or local government or instrumentality*
Xerox Business Services, LLC and its Affiliates

6. House ID# 411610013

TYPE OF REPORT

8. Year 2012 Q1 (1/1 - 3/31) ☐ Q2 (4/1 - 6/30) ☐ Q3 (7/1 - 9/30) ☐ Q4 (10/1 - 12/31) ☑

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ Termination Date _____ 11. No Lobbying Issue Activity ☐

INCOME OR EXPENSES - YOU MUST complete either Line 12 or Line 13

12. Lobbying

INCOME relating to lobbying activities for this reporting period was:

Less than $5,000 ☐

$5,000 or more ☑ $ 30,000.00

Provide a good faith estimate, rounded to the nearest $10,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSE relating to lobbying activities for this reporting period were:

Less than $5,000 ☐

$5,000 or more ☐ $ _____

14. REPORTING Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature Digitally Signed By: W. Christopher Lamond, Partner **Date** 01/19/2013

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Add additional page(s) as needed.

15. General issue area code FIN

16. Specific lobbying issues

Issues related to the implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act and financial services.

17. House(s) of Congress and Federal agencies ☐ Check if None

U.S. HOUSE OF REPRESENTATIVES, U.S. SENATE

18. Name of each individual who acted as a lobbyist in this issue area

First Name	Last Name	Suffix	Covered Official Position (if applicable)	New
W. Christopher	Lamond			☐
Andrew	Rosenberg			☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☑ Check if None

Appendix 4. Additional Tables

Table A4.1. Top Five Lobbying Issues during the Sample Period

Pre-Event (October–December 2012)	Post-Event (April–June 2013)
BUDGET/APPROPRIATIONS	BUDGET/APPROPRIATIONS
ENERGY/NUCLEAR	ENERGY/NUCLEAR
ENVIRONMENT/SUPERFUND	HEALTH ISSUES
HEALTH ISSUES	TAXATION/INTERNAL REVENUE CODE
TAXATION/INTERNAL REVENUE CODE	TRADE (DOMESTIC/FOREIGN)

Table A4.2. Lobbying over a Longer Horizon

This table reports the results of lobbying estimations over the period June 2012–October 2013, extending the baseline estimations for one quarter before and one quarter after the original sample period.

	(1)	(2)	(3)
After sequestration	**-0.153***	-0.130	-0.127
	(-1.779)	(-1.576)	(-1.545)
After sequestration*Sequester Exposure	**0.180***		
	(1.858)		
After sequestration*Avg. Sequester		**2.273***	
		(1.709)	
After sequestration*Wgt. Avg. Sequester			**2.233***
			(1.687)
Size	0.0728	0.0812	0.0814
	(0.320)	(0.349)	(0.350)
Industry Concentration	-6.957	-6.356	-6.300
	(-1.259)	(-1.146)	(-1.135)
R&D	0.175	0.167	0.168
	(0.463)	(0.456)	(0.459)
Tobin's Q	-0.00313	-0.00796	-0.00789
	(-0.0363)	(-0.0910)	(-0.0898)
Observations	548	548	548
R-squared	0.019	0.017	0.016

Table A4.3. Distribution of Sequester Exposure

Percentile	Sequester Exposure	Avg. Sequester Ratio	Wgt. Avg. Sequester Ratio
10	0.000	0.000	0.000
25	0.484	0.031	0.031
50	0.972	0.050	0.050
75	1.000	0.073	0.073
90	1.000	0.078	0.078