The Lion's Share: Evidence from Federal Contracts on the Value of Political Connections

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Abstract

We examine the role of political connections in receiving federal funds during an unexpected surge in government defense spending. While the data do not allow identification of a causal link, the analysis shows that politically connected firms were awarded larger amounts in federal contracts when available funds increased. Defense contracts awarded to firms that lobbied were around one-third higher than contracts awarded to firms that did not lobby. Similar evidence holds for campaign contributions and board connections. The increase in the contract amount is observed primarily for firms with limited ability to efficiently support the Pentagon's efforts and when contracts received less scrutiny. Between political connections and merit as potential channels to affect government contracting, the results mainly, but not exclusively, support the first channel.

1. Introduction

The interaction of corporations and governments is a core dynamic that affects economic systems. This is particularly relevant in areas where there is a high degree of interdependence between the government and the private sector, such as federal procurement contracts. The federal government is the largest single purchaser of goods and services in the United States, with discretionary outlays amounting to about 7.5 percent of gross domestic product (GDP) since 2000. Firms participating in procurement bids often engage in politically targeted ac-

We are grateful to Mehmet Canayaz, Nigel Chalk, Stijn Claessens, Stephan Danninger, Giovanni Dell'Ariccia, Ran Duchin, John Earle, Itay Goldstein, Brandon Julio, Maria Soledad Martinez Peria, Atif Mian, Prachi Mishra, Amit Seru, Amir Sufi, Thomas Stratmann, and seminar participants at George Mason University and the International Monetary Fund for useful comments. We thank Tarek Karam, Jeremy McNees, Mengyun Miao, Huy Nguyen, and Asli Togan-Egrican for excellent research assistance. All remaining errors are our own. The views expressed are ours and do not represent those of any institution with which we are affiliated.

[*Journal of Law and Economics,* vol. 66 (August 2023)]

tivities and hire former public officials and government employees with knowledge of the procedures.

In this paper, we examine the value of political connections by asking whether connections matter for how much a corporation receives in procurement contracts. We focus on the September 2001 terrorist attacks and the war in Afghanistan immediately following, which were unexpected shocks that increased defense spending but were not driven by corporations' political activities. We examine how defense contracts received by corporations following the shocks relate to their existing political connections.[1] This framework also allows us to quantify the value of these connections (in terms of the dollar amount earned through federal contracts). We focus on lobbying, campaign contributions, and board connections as alternative means of establishing political connections. We also focus on revolving-door lobbying to examine how connections through past employment and experience relate to the allocation of federal contracts.

Looking at defense contracts helps to reveal the dynamics between the government and corporations since defense spending constitutes about half of federal discretionary outlays. The defense sector is also one of the most politically active: lobbying expenditures of defense contractors rose from an annual average of about $60 million before 2001 to more than $120 million since 2001, while their campaign contributions reached $360 million in 1990.[2] Moreover, the revolving-door system is quite pervasive: at least 97 former members of Congress lobbied for the largest defense companies from 2003 through 2014 (see Cohen 2015), and 65 percent of defense lobbyists had employment histories in public service.[3]

We find that firms that lobbied received larger defense contracts (defined as those awarded by the US Department of Defense [DoD], also known as the Pentagon) following the unexpected shock in 2001 that increased defense spending. In addition, firms that contributed to political election campaigns and had board connections to the Pentagon received larger contracts after the shock. Firms that lobbied obtained around 35 percent more in defense contracts than those that did not lobby following the unexpected increase in available funding. These statistics are roughly similar when one considers campaign contributions or board connections to the Pentagon instead. Undoubtedly, this point estimate should be interpreted with caution and not generalized to sectors in other settings. That said, overall the findings indicate that political connections may be of considerable value to corporations through the direct channel of higher revenue.

A potential concern is that during a rapid expansion of defense spending, firms obtaining more in defense contracts are those that can easily and quickly scale up their operations, which may also be the more politically active ones. In other words, connected contractors may be awarded more contracts because they are more able to meet the Pentagon's needs during a war. Controlling for firm fixed

[1] For robustness, we also look at political connections in relation to spending by other government agencies (nondefense spending), as there is no similar shock that affected nondefense spending during this time period.

[2] These and other statistics on the political activities of corporations and individuals are from the Center for Responsive Politics.

[3] This observation is based on data from the Revolving Door database from OpenSecrets.

effects could help to alleviate this concern to the extent that fixed effects capture slow-moving characteristics that have a bearing on such ability (for example, size, expertise, specialization, operating capacity, and efficiency). That said, we also look at how connected firms experiencing an increase in defense contracts differ from others.

Among contractors with political connections, the increase in the size of defense contracts is prominent mainly for firms that were awarded smaller contracts in earlier periods, firms that were underperforming, smaller firms, firms closer geographically to the Pentagon, and firms receiving less scrutinized contracts. These findings are not consistent with the notion that better ability to support war efforts helps firms obtain contracts. The evidence points more toward contracts being awarded to those with political connections rather than by strictly merit-based criteria.

We further carry out a set of robustness tests and alternative specifications by removing the top 10 contractors, controlling for time-varying characteristics correlated with both the amount of contracts received and political activism, and matching politically connected firms with those not connected on contract amounts obtained before the shock and with firms' time-varying characteristics. These results support the baseline findings. We then conduct several placebo tests. Using an alternative placebo sample period for the overall sample and for the top and bottom quartile of contractors and by conducting a placebo sample analysis of nondefense contractors, we find no increase in contracts for firms with political connections after the surge in defense spending.

A main limitation of our analysis is that the data do not allow an exploration of why some firms engage in political activities and other do not. The vast majority of firms in the sample—approximately 90 percent—do not lobby. Hence, the evidence we present can best be interpreted in the context of an equilibrium in which firms sort according to whether they wish to establish political connections, and those that decide to establish political connections receive more contracts in a particular circumstance. While this finding may be generalized to other circumstances with similar demand shocks, it should not be considered evidence that political connections caused contracts to be awarded.

Our paper adds to the mostly contemporaneous studies on federal contracts (Karpoff, Lee, and Vendrzyk 1999; Goldman, Rocholl, and So 2013; Tahoun 2014; Cohen and Malloy 2016; Borisov, Goldman, and Gupta 2016; Ağca et al. 2021; Broogard, Denes, and Duchin 2021) and the broader debate on political connections on several fronts. First, in a setting in which government spending on federal procurement contracts increased unexpectedly, we show that firms with political connections benefit from a substantial payoff during such a spending surge. Second, because of the nature of our study, we are able to put a dollar value on these political connections. Given the importance of defense spending in the US economy (45 percent of discretionary spending and 3.5 percent of GDP),[4] the results hint at a considerable role for political connections in the economy. Third,

[4] Bogusz, Ready, and Salazar (2021) indicate that discretionary spending in 2020 amounted to $1.6 trillion, of which $714 billion was allocated to defense spending.

we distinguish between award channels of defense procurement on the basis of political connections and merit and find support more consistent with the former. Fourth, we consider a diverse set of private and public companies. Thus, our results help in understanding the effects of political connections for a more diverse set of players and complement studies that focus only on public companies. Finally, we examine three important types of political activities—lobbying, campaign contributions, and board connections—within the same framework and explore revolving-door lobbying and campaign contributions considering party affiliations. Thus, we can examine each connection in the same setting and assess its relative importance.

The rest of the paper is organized as follows. Section 2 explains the data and the methodology. Section 3 presents the empirical findings, and Section 4 concludes.

2. Data and Methodology

2.1. Data

We combine four data sets—on lobbying expenditures, campaign contributions, corporate boards of directors, and federal procurement contracts—to examine the relation between procurement contracts granted by the federal government and political activities and connections. Since these data sets do not have a common identifier, they are merged using an initial matching algorithm followed by manual screening and manual matching.

2.1.1. Timeline of the Analysis Period

The shock is the September 11, 2001, terrorist attacks and the onset of the war in Afghanistan a few weeks later on October 7, 2001.[5] This event period covers the procurement contracts awarded between September 2001 and September 2002. The agencies had submitted their requests for fiscal year 2002 (October 1, 2001–September 30, 2002) in fall 2000, and the requests were included in the president's budget by the end of December 2000.[6] Hence, during October 2001–September 2002, the federal budget did not reflect the consequences of the September 11 attacks and the war in Afghanistan.

[5] On September 18, 2001, President George W. Bush signed into law a joint resolution authorizing the use of force against those responsible for the September 11 attacks. The US military began a bombing campaign against Taliban forces on October 7, officially launching Operation Enduring Freedom. The first wave of conventional ground forces arrived 12 days later. This tight timeline justifies treating the September 11 attacks and the war in Afghanistan as a single event in our analysis.

[6] Most agencies submit their budget requests to the Office of Management and Budget (OMB) between September and December. By the end of December, decisions involving the president and other White House officials are completed. The final document is the president's budget, which is transmitted to Congress generally on the first Monday of February. Committees in the House and the Senate hold hearings and review budget justifications after its transmission. Each chamber then produces its own budget bill. A budget resolution process aims to remove the conflicts between the two bills and send a single bill to the president for approval or veto. The process is expected to be completed by mid-April, which leaves appropriations committees enough time to complete their bills by the beginning of the fiscal year, October 1. If the needed funds are not appropriated, continuing resolutions must be approved to avoid a partial government shutdown.

Pre-event Period
Budget request: September 1999–December 1999 *Fiscal year for approved funding:* October 2000–September 2001 *Sample period:* October 2000–August 2001
Event Period
Budget request: September 2000–December 2000 *Fiscal year for approved funding:* October 2001–September 2002 *Sample period:* September 2001–September 2002
Postevent Period
Budget request: September 2001–December 2001 *Fiscal year for approved funding:* October 2002–September 2003 *Sample period:* October 2002–August 2003

Figure 1. Timeline of the analysis period

The pre-event period is October 2000–August 2001. Budget requests for this period were submitted between September and December 1999. During fall 1999 and the pre-event period, no major events would have affected the agencies' funding requests systematically. This benchmark period is used for comparison with the postevent period.

Between September and December 2001, new budget requests were transmitted to the Office of Management and Budget (OMB) and became part of the approved budget for fiscal year 2003 (October 1, 2002–September 30, 2003). Thus, the contract award period from October 2002 to August 2003 is the postevent period, when the consequences of the September 11 attacks and the Afghan war in October 2001 would be incorporated into the DoD's funding request.[7]

For ease of reference, the timeline for the analysis period is given in Figure 1. The event period (September 2001–September 2002) is not included in the analyses, as the effect of the September 11 attacks for that contract award period is not clear. Budget requests were submitted by December 2000 and hence were not affected by the event. Yet the fiscal period following approval of the budget, that is, October 2001–September 2002, is just after the event, and there may have been additional contracts awarded under temporary budget authority because of the terrorist attacks.

2.1.2. Federal Procurement Contracts

Our federal contract data are from the compilations of the Federal Procurement Data System (FPDS) entries by the Center for Effective Government, an OMB watchdog. The Online Appendix provides detailed information about the procurement process with a particular focus on the DoD's procedures.

[7] We consider the 1-year period after the unexpected shock on September 11, 2001, to examine the value of political connections in obtaining contracts. We do not extend the postevent period beyond 1 year, as the following years correspond to the Iraq war, which started in 2003 and is a different, arguably anticipated, event.

Given the nature of the shock, we focus on the contracts awarded by the DoD, which we refer to as defense contracts.[8] Furthermore, we include only corporations, for which we collect data on contracts, including those for subsidiaries, and then compile the data at the parent company level.[9] We remove all other institutions and agencies such as foundations, associations, universities, and state governments. Contracts involving foreign governments are also dropped.[10] We also exclude the contracts specifically set aside for small businesses or for businesses owned by veterans or minorities—as identified in the FPDS—and observations for which the contract amount is below $100,000. The for applying a dollar amount threshold is that small contracts are processed according to simplified acquisition (micropurchase) procedures such that contracts may be awarded without soliciting competitive quotes and generally involve small businesses. The simplified acquisition threshold was $100,000 until October 1, 2010 (which covers the sample period), and has been $150,000 since then (Ynette R. Shelkin, Defense Acquisition Regulations System, 75 Fed. Reg. 52917–18 [August 30, 2010]). The federal contracts included in the final data set are relatively large and were awarded under standard procedures and full and open competition. For each corporation awarded defense contracts, we calculate the total amount of the contracts obtained over the pre-event period (October 2000–August 2001) and the postevent period (October 2002–August 2003).[11]

2.1.3. Lobbying

We retrieve data from the Lobbying Disclosure Act database provided by the US Senate Office of Public Records. Lobbying activities were reported semiannually from 1999 to 2009 and quarterly since 2009. For our analysis period, lobbying data are available at semiannual frequency. We match lobbying data to federal contract data using a matching algorithm (based on purging common words in a string variable—in our case, the client's name in the lobbying database and the parent company's name in the federal contracts database—and assigning similarity scores to the remaining words to detect possible matches) followed by manual screening and manual matching.

For a given fiscal year, budget requests are submitted by the fall of the previous year. It is then straightforward to assume that lobbying activity targets the budget and appropriations for the upcoming fiscal year and affects federal contracts

[8] Other federal agencies that may have been affected by the increase in defense spending are the Department of Homeland Security, the Department of Veterans Affairs, and the State Department. Our baseline results are robust to including contracts obtained from these departments in addition to the Department of Defense. These robustness checks are available from the authors on request.

[9] We aggregate and analyze the contracts at the parent company level for two reasons, one conceptual and one practical. Conceptually, this allows us to capture company-wide activities. Practically, data on lobbying expenditures and campaign contributions at the subsidiary level are often unavailable.

[10] For instance, the funds appropriated for humanitarian and reconstruction assistance to Afghanistan—over $38 billion from 2001 to 2009—are not part of the analysis, as the political economy dynamics may be markedly different.

[11] Consistent with this categorization, Secretary of Defense Donald Rumsfeld declared an end to major combat in Afghanistan on May 1, 2003.

mainly with lags, if at all. Hence, for the matched corporations in the sample, we calculate the lagged value of total lobbying amounts for each period of interest. We are interested in the link between lobbying and federal contracts following an unexpected shock that increased the amount of defense contracts awarded. In our setting, the amount awarded under defense contracts increased because of this shock, not political activism. In this regard, we look at lobbying relations before the shock and observe the implications of an increase on those that had lobbying relations before the event compared with those that did not (we do not, however, address why some firms had established lobbying relations while others had not; rather, we take this as an equilibrium outcome and examine the differences between the two groups). Accordingly, we consider total lobbying in 1999 for the pre-event period of October 2000–August 2001 since the budget for that period was requested in September–December 1999. For the postevent period, we use lobbying expenditures in 2000, which are not driven by the September 11 attacks and the onset of the war in Afghanistan in October 2001.

2.1.4. Campaign Contributions

Data on campaign contributions are from the Federal Election Commission Disclosure Database, which provides detailed information about campaign contributions for each election cycle since 1996. We consider political action committee (PAC) contributions given by corporations to winning candidates because individual contributions are more likely to be driven by ideology rather than to establish connections (Bonica 2016). We look at winning candidates since they were in power when federal contracts are awarded. Indeed, Goldman, Rocholl, and So (2013) find that federal procurement contracts increase for companies with connections with the winning party.

For each corporation that was awarded federal contracts, we match firms' names with those in the campaign contribution data set, following the same procedures as those used to match the lobbying data. We assign campaign contributions to each period of interest according to the event window by using the dates of the contributions to determine lags. For example, for the pre-event contract period (October 2000–September 2001), we compute the total campaign contributions from January 1999 to December 1999, which corresponds to the time frame during which the agencies submitted their budget requests for the 2001 fiscal year. For the postevent contract period (October 2002–September 2003), we compute the total campaign contributions from January to December 2000, when the campaign contributions were not driven by the event.[12]

[12] As an alternative approach, we considered determining lagged campaign contributions in the same manner used for lobbying. For the pre-event period (October 2000–September 2001), budget requests are submitted by December 1999, so we use total political action committee (PAC) contributions to winning candidates for the 1998 election cycle. For the contracts awarded in the postevent period (October 2002–September 2003), the campaign contributions in the 2000 elections are included because the budget for the contracts awarded over the postevent period were requested between September and December 2001 (after the 2000 elections but before the 2002 elections). The results are comparable under the two approaches.

2.1.5. Boards of Directors

For corporations that received defense contracts, we gather information about the boards' connections through the employment history of a company's board members and their service on other boards in the BoardEx database. After matching the companies' names in the BoardEx data set to those in the federal contract data as we did for lobbying and campaign contributions, we identify the companies whose boards of directors have been employed at the Pentagon or in the US armed forces (Army, Navy, Marine Corps, Air Force, or Coast Guard). We also consider indirect connections when board members of a company overlapped tenure on the board of another company with directors who have worked at the Pentagon or served in the armed forces. We summarize this information in an indicator variable that equals one if the company has a board member with employment history at the Pentagon or in the armed forces or overlapped on a board with a director who has worked in these organizations.[13]

2.1.6. Descriptive Statistics

Table 1 reports the descriptive statistics for the sample period, which runs from October 1, 2000, to August 31, 2003, excluding the confounding event period of September 2001–September 2002.[14] There are 2,746 observations (for 1,373 firms) of a firm being awarded a defense contract.[15] The average amount obtained from a contract is almost $40 million.

The vast majority of firms do not have political connections—a consideration we discuss further in the empirical analysis. We find that 11 percent of firms receiving defense contracts are involved in lobbying activities.[16] For campaign contributions, this figure is somewhat lower, at 9 percent. A similar picture emerges for dollar amounts: lobbying expenses are considerably larger than campaign contributions. Around 7 percent of firms have a board member with a connection to the Pentagon or the US armed forces or who has served with other directors with such connections. Most are connected to the armed forces rather than the Pentagon, with connections to the latter indicated for 1 percent of the firms.

[13] We consider direct and indirect connections together because of limited data to examine each separately.

[14] The sample period ends in August rather than September (the end of the fiscal year) so as to have pre-event and postevent periods of the same length, given that the event occurred in September 2001.

[15] As the estimation is based on firm fixed effects over two event windows, firms that obtain contracts in only one period drop out because of the specification. We do not reintroduce the firms that drop out by setting the contract amounts to 0 since the sample design excludes all contracts under $100,000. That said, the baseline findings are robust to including firms that receive $0 in contracts in any one period. These results are available from the authors on request.

[16] These percentages are in line with statistics reported elsewhere. See, for instance, Igan, Mishra, and Tressel (2011), who report that around 11 percent of the observations in their area-lender-year-level data set are associated with lenders that lobby.

Table 1
Descriptive Statistics

	Mean	SD	Min	25th Percentile	Median	75th Percentile	Max
Contracts ($millions)	39.50	284.00	.10	.50	2.00	9.60	6,800.00
Contracts (log)	14.73	2.04	11.51	13.13	14.51	16.08	22.64
Lobbying ($thousands)	95.00	618.20	.00	.00	.00	.00	13,500.00
Lobbying (log)	1.37	3.94	.00	.00	.00	.00	16.42
Lobbying indicator	.11	.31	.00	.00	.00	.00	1.00
Campaign contributions ($thousands)	6.36	43.84	.00	.00	.00	.00	1,663.00
Campaign contributions (log)	.85	2.83	.00	.00	.00	.00	14.32
Campaign contribution indicator	.09	.28	.00	.00	.00	.00	1.00
Board connection indicator	.07	.25	.00	.00	.00	.00	1.00
Pentagon	.01	.10	.00	.00	.00	.00	1.00
US armed forces	.07	.25	.00	.00	.00	.00	1.00

Note. Summary statistics are for 2,746 observations of firms awarded procurement contracts by the Pentagon during October 1, 2000–September 30, 2003. The event period, September 2001–September 2002, is excluded.

2.2. Methodology

We use a panel difference-in-differences (DiD) model to compare the contracts obtained by politically connected firms with those obtained by unconnected firms after the September 11 attacks, which increased the availability of defense contracts.[17] With this setup, we expect to observe a significant relation between political connections and the amount obtained in contracts after the event. Formally, the DiD specification is

$$\begin{aligned}\text{Contract}_{it} = {} & \alpha + \beta_1 \text{Connection}_{it} + \beta_2 \text{Connection}_{it} \times \text{Postevent}_t \\ & + n_i + y_t + \varepsilon_{it},\end{aligned} \tag{1}$$

where Contract is the natural logarithm of total federal defense procurement contract amounts during time t; Connection is a political connection variable—lobbying, campaign contributions, or board connections, depending on the specification; Postevent is an indicator variable that equals one for the contracts awarded following the September 11 attacks and zero otherwise; n is firm fixed effects; and y is time fixed effects. In this specification, the time fixed effect essentially is the indicator Postevent. Robust standard errors are clustered at the firm level.

Section 3 presents the empirical findings based on visual inspection of the data. These inspections also confirm that the condition for the validity of the DiD analysis is met: namely, there are parallel trends between connected and not connected defense contractors in the earlier periods, whereas the unexpected defense spending shock has a more prominent effect on the connected defense contractors after the event. The regression results are also included.

[17] Although there may be some spillover effects of this shock to other federal agencies, the placebo exercise based on nondefense contractors indicates that the findings are particular to defense contractors.

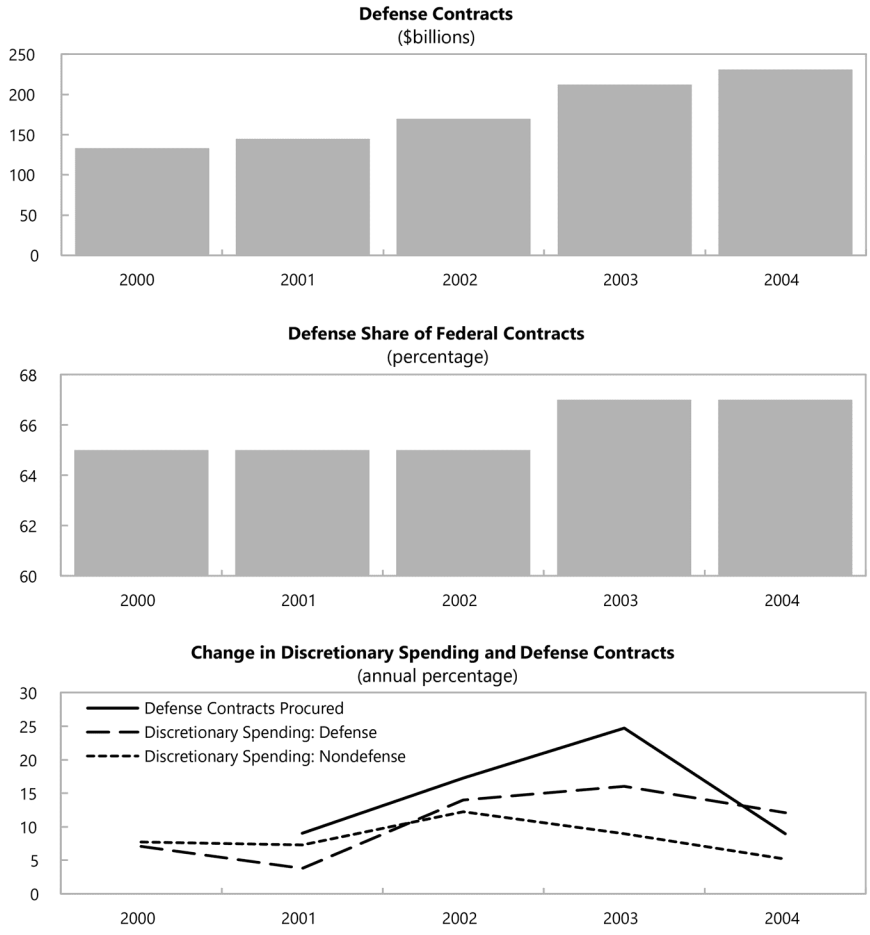


Figure 2. Defense procurement contracts over time

3. Federal Contracts and Political Connections

Figure 2 shows defense procurement contracts along the event timeline. Total dollar amounts of the contracts increased from $170 billion in fiscal year 2002 to $212 billion in fiscal year 2003. This corresponds to an increase of 25 percent in defense procurement funding in a year and a 16 percent increase in defense discretionary spending authorization—the sharpest jump observed since the Reagan-era military buildup. In addition, the portion of total procurement funding allocated to defense contracts increased from 65 percent in fiscal years 2001 and 2002 to 67 percent in fiscal year 2003. A noteworthy observation is that the defense share was stable between 2000 and 2002, which implies that defense and nondefense spending grew at similar rates. Indeed, the growth in defense and nondefense discretionary spending before the event evolved similarly until 2003.

Table 2
Mean Difference Tests

	Pre-event	Postevent	Difference
Contracts	14.66	14.79	.14*
Lobbying	1.40	1.35	−.05
Campaign	.82	.98	.16
Board Connection	.06	.07	.01

Note. The pre-event and postevent periods are October 2000–August 2001 and October 2002–August 2003, respectively.
* Significant at the 5% level.

After the event, nondefense spending continued to grow but at a smaller rate than defense spending. Thus, there was no obvious reallocation of resources from nondefense to defense. Overall, Figure 2 shows that federal funding allocated to defense contracts increased sharply, consistent with the unexpected shock, and such an effect is not observed for nondefense spending.

Table 2 shows mean difference tests for the natural logarithm of the amount of defense contracts obtained by corporations between the postevent (fiscal year 2003) and pre-event (fiscal year 2001) periods. The average amount of defense contracts obtained by a firm is significantly larger after the event. Notably, political connections do not change much between the pre-event and postevent periods. These results again indicate that defense contracts experienced a shock but political connections did not—a crucial assumption in our empirical strategy.

3.1. Lobbying, Campaign Contributions, and Board Connections

We examine the relation between political connections and federal contracts by separately examining lobbying activities, campaign contributions, and board connections and by considering all political connections together. The results are in Table 3.

3.1.1. Lobbying

Figure 3 shows the relation between lobbying and federal contracts. Average lobbying spending has similar patterns pre-event and postevent for firms obtaining defense contracts. The trends on contract amounts for defense firms that lobby and those that do not lobby are similar before the event, but after the event there is a clear increase in the average contract amount for firms that lobby.[18] There is only a muted version of such a relation for firms that do not lobby.

Next we carry out DiD estimations in a panel data setting, as represented by equation (1). Table 3 shows that the results for lobbying, which are consistent with the takeaways from the mean tests and visual inspections. Firms that lobby

[18] Lobbying data are available beginning in 1999. We assume that firms that lobbied in 1999 also lobbied in 1997 and 1998. We maintain this assumption for campaign contributions and board connections.

Table 3

Political Connections and Federal Defense Contracts

	(1)	(2)	(3)	(4)
Lobbying:				
Lobbying	.869**	.114	.742**	.022
	(5.911)	(.570)	(4.580)	(.106)
Postevent × Lobbying			.285*	.274*
			(2.353)	(2.261)
Fixed effects	No	Yes	No	Yes
R^2	.039	.001	.040	.014
Campaign contributions:				
Campaign	1.261**	.069	1.084**	−.159
	(7.044)	(.356)	(8.895)	(−.783)
Postevent × Campaign			.285+	.228+
			(2.362)	(1.855)
Fixed effects	No	Yes	No	Yes
R^2	.071	.001	.072	.013
Board connections:				
Board Connection	1.266**	.115	1.278**	.085
	(5.978)	(.527)	(5.450)	(.341)
Postevent × Board Connection			−.021	.043
			(−.149)	(.306)
Fixed effects	No	Yes	No	Yes
R^2	.061	.010	.061	.011
Board connections to the Pentagon:				
Board Connection to Pentagon	1.385**	.289+	1.117*	.080
	(3.840)	(1.692)	(2.534)	(.388)
Postevent × Board Connection to Pentagon			.480+	.304+
			(1.917)	(1.648)
Fixed effects	No	Yes	No	Yes
R^2	.024	.011	.025	.011
All political connections:				
Political Connection	1.084**	.145	.969**	.008
	(8.277)	(.845)	(6.745)	(.044)
Postevent × Political Connection			.195*	.207*
			(2.075)	(2.210)
Fixed effects	No	Yes	No	Yes
R^2	.081	.001	.082	.014

Note. Results are from difference-in-differences estimations, with standard errors clustered at the firm level and *t*-statistics in parentheses. Contracts are amounts in logs. $N = 2{,}746$ observations for 1,373 firms.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

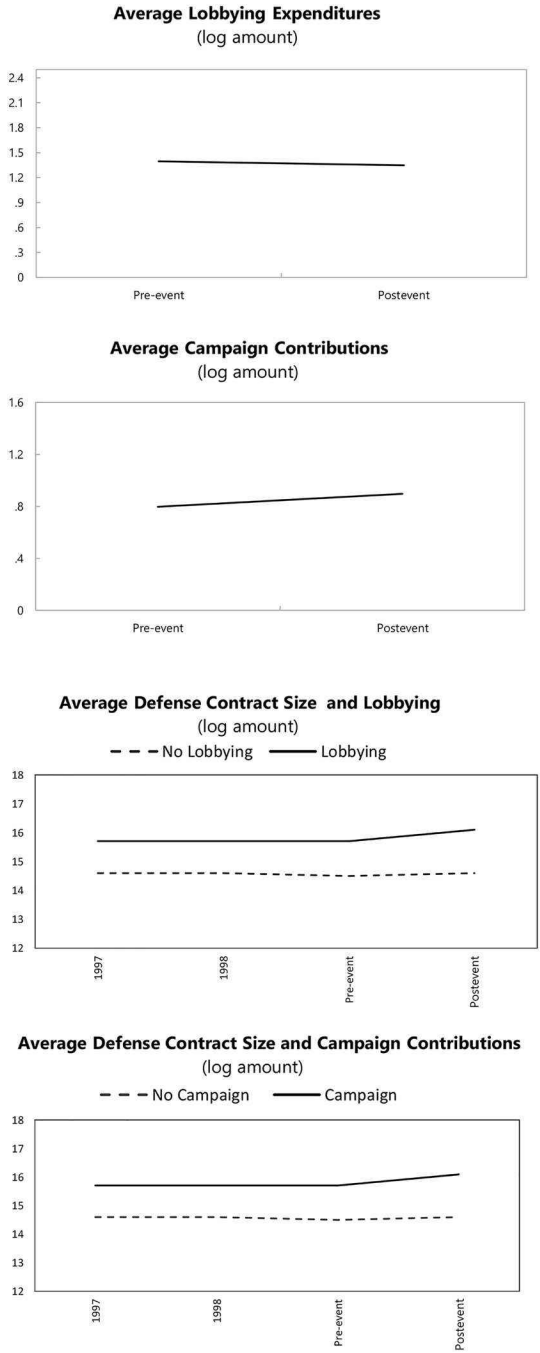


Figure 3. Lobbying, campaign contributions, and federal contracts

receive significantly larger defense contracts following the shock that increased defense funding. This finding holds with and without fixed effects.[19]

The relationship between lobbying and defense contracts received after the event is economically significant. The coefficients in Table 3, column 4, indicate that lobbying brings in 47 percent more in defense contracts after the event compared with the 11 percent increase for defense firms that do not lobby. For the typical defense firm that obtains the median value of $1.9 million in contracts before the event, this translates into $215,000 more if the firm did not lobby and almost $880,000 more in revenues if the firm lobbied. The difference is a sizeable return: even at the maximum level of lobbying expenditure observed in the sample ($13.5 million), it implies a return of around 5 percent.[20] As defense contracts constitute around 45 percent of federal discretionary spending, corresponding to around 3.5 percent of GDP, these results are useful in putting a dollar amount on the value of lobbying for a sizeable segment of the economy.

3.1.2. Campaign Contributions

Contributions to election campaigns constitute an alternative channel for establishing political connections. Contributions by PACs to winning candidates, in particular, can help companies obtain favorable treatment following elections.

As with lobbying, we first look at whether campaign contributions differ in the postevent period compared with the pre-event period. Figure 3 shows a slight increase in the amount of campaign contributions after the event, which is not statistically significant as presented in the mean difference tests in Table 2 . Figure 3 also shows that, before the event, contracts awarded to defense firms that contribute to election campaigns have trends similar to those that do not, whereas after the event the contract amounts increased primarily for defense firms that make contributions.

The DiD results in Table 3 indicate that defense firms that contribute to campaigns obtain relatively larger defense contracts after the event. The economic value of additional contracts is comparable in magnitude to that secured by a firm that lobbies. The results in column 4 suggest that contributing firms bring in 41 percent more in defense contracts after the event compared with the 13 percent increase observed for other defense firms. This difference corresponds to roughly half a million dollars between the two types of firms.[21]

[19] The political connection indicator is not statistically significant when fixed effects are included. This is consistent with the notion that fixed effects capture firms' time-invariant characteristics that could at least in part determine political connections.

[20] This seemingly high rate of return is well below those reported in the literature in other contexts (Alexander, Mazza, and Scholz 2009). High estimated rates of return open the question of why firms do not spend even more on political activities—one raised early on by, for example, Tullock (1997). Our setup does not lend itself to examining this question but rather describes an equilibrium in which firms sort into those that establish political connections and those that do not.

[21] These findings suggest that, given the much smaller amounts spent on campaign contributions relative to lobbying expenditures, the return on campaign contributions is even greater than that from lobbying activities. A firm that contributes the maximum of $1.6 million benefits from a return of 33 percent on its investment. At that time, however, there were caps on how much donors could contribute to PACs, as our sample period ends before the landmark January 21, 2010, Supreme

3.1.3. Board Connections

We now explore the board connections of defense contractors to the Pentagon or the Armed Forces. Figure 4 shows that there is a slight increase in board members with connections to the armed forces after the event, but those to the Pentagon are relatively stable. Amounts of defense contracts are mostly comparable before the event period between connected and unconnected firms. There is a substantial increase in defense contracts following the shock for the firms with board members' with connections to the Pentagon, while there is no increase for those connected to the armed forces or those without board connections to defense institutions.

The DiD results in Table 3 also show that firms with board connections to the Pentagon benefit from increased defense funding after the shock. Board members in the sample include several undersecretaries of defense for acquisition, technology, and logistics and assistant secretaries of defense for research and engineering and those with positions on the Defense Science Board, where they work with the undersecretaries and other high-ranking officials in the Pentagon. These connections may be helpful in providing the connected firms with access to major decision makers regarding defense procurement contracts.[22]

On the basis of the coefficients in Table 3, column 4, firms with board connections to the Pentagon receive 55 percent more in contracts after the event, while unconnected firms see a 14 percent increase. In terms of the pre-event median contract, this means that the typical connected firm obtains $767,000 more than the typical firm without such connections.

3.1.4. Overall Political Connections

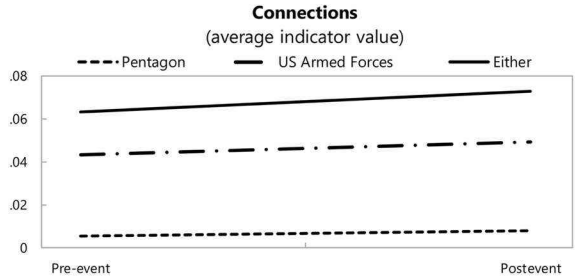
Finally, we consider all political connections together. In this specification, we construct an indicator variable that equals one if a firm has any political connection—lobbying activities, campaign contributions, or board connections. The results in Table 3 are in line with those obtained by considering the relations separately. Politically connected defense firms experience a significant increase in the amount of contracts after the event compared with unconnected firms.

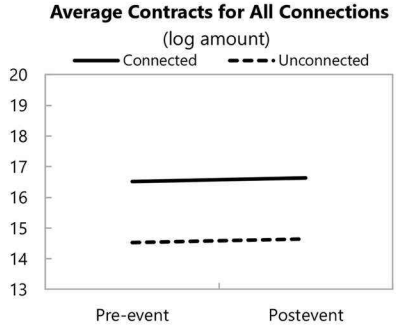
3.1.5. Amount of Political Spending

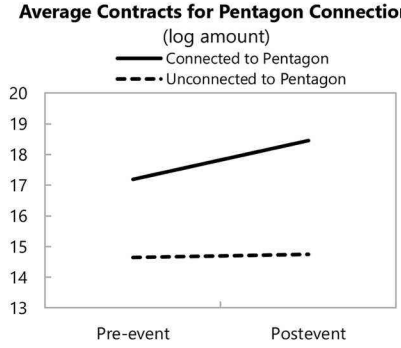
Our analysis primarily focuses on political connections as reflected in indicator variables that distinguish between firms that are politically connected and those that are not. A natural follow-up question is whether the amount spent on political activities such as lobbying and campaign contributions matters.

Court decision in *Citizens United v. Federal Election Commission* (558 U.S. 310 [2010]), which removed restrictions on independent expenditures for political campaigns by corporations and led to the creation of super PACs and expansion of contributions from undisclosed donors.

[22] We also consider separately the effects for connections to US armed forces and do not find a significant effect, possibly because this type of connection is more common and does not provide a direct line to the decision makers. These statistically insignificant results are not included for the sake of brevity but are available from the authors on request.







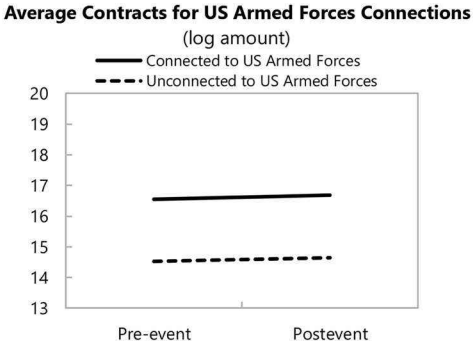


Figure 4. Board connections and federal contracts

Table 4 presents the results when (the natural logarithm of) dollar amounts spent on lobbying and campaign contributions are used as the variables of interest rather than an indicator. In estimations with all firms, including those with no spending on political activities, there is a positive and statistically significant coefficient on the interaction term with the postevent indicator (columns 2 and 6). When the results are conditional on positive spending on political activities, the coefficients on political connections are positive (columns 4 and 8). However, given that most firms in the sample do not lobby or contribute to campaigns, these conditional estimations have a much smaller sample than the unconditional estimations, and the reduced power from the smaller sample makes the crucial coefficients indistinguishable from 0. It is important to note that these coefficients cannot be distinguished statistically from their counterparts in columns 2 and 6.[23] Overall, these analyses establish a relation between political connections and federal contracts, but they do not allow precise estimation or interpretation of the marginal effect of lobbying or amounts of campaign contributions on the size of federal contracts obtained.

3.2. Connections or Merits? Evidence Using Characteristics of Firms and Contracts

Certain characteristics of firms that shape the decision to build political connections may also relate to their ability to meet the Pentagon's war-related needs. For instance, larger firms, firms that are able to execute larger contracts, or firms with more flexible operating capacity may find it easier to expand production quickly in response to an increase in defense efforts. The same firms may be better connected, as they have the resources to hire better or more lobbyists or attract influential former Pentagon employees as board members. In other words, during a rapid expansion of defense spending, firms obtaining larger defense contracts may be those that can scale up their operations. If those firms are also the ones that are politically connected, it is possible that they receive larger contracts not necessarily because of political connections but their ability to expand faster. Thus, the relation we document may be driven by a latent variable that is in some way not captured by firm fixed effects.

To address this issue, we explore characteristics of firms and contracts in relation to political connections. We divide our sample at the median across several characteristics and compare the results obtained in below- and above-median subsamples. The results are presented in Table 5.

We carry out the following exercises: differentiate on the basis of contract size by utilizing contracts obtained at the beginning of the sample period, so as to take into account the ability to execute large contracts to support defense efforts;[24] consider potential scrutiny of contracts on the basis of the number of bids

[23] Wald χ^2-tests fail to reject the equality of the coefficients in columns 2 and 6.

[24] Karpoff, Lee, and Vendrzyk (1999) provide evidence that contract size affects how firms are treated in relation to fraud and penalties.

Table 4

Political Spending and Federal Defense Contracts

	All Firms		Firms with Political Spending		All Firms		Firms with Political Spending	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lobbying	.011	.003	.148	.026				
	(.658)	(.144)	(.939)	(.154)				
Postevent × Lobbying		.021*		.006				
		(2.121)		(.061)				
Campaign					.009	−.140	.221	.105
					(.498)	(−.720)	(1.118)	(.457)
Postevent × Campaign						.021+		.022
						(1.887)		(.263)
N	2,746	2,746	258	258	2,746	2,746	204	204
Firms	1,373	1,373	129	129	1,373	1,373	102	102
R^2	.001	.014	.006	.068	.002	.013	.015	.079

Note. Results are from difference-in-differences estimations with firm and year fixed effects. Standard errors are clustered at the firm level, and *t*-statistics are in parentheses.

+ Significant at the 10% level.

* Significant at the 5% level.

received for a given contract;[25] and look at geographic proximity to the Pentagon using geodesic distance to Washington, DC.[26] We further match our data set with the Compustat database to differentiate by firms' size to consider larger firms' ability to respond to the Pentagon's war-related needs and by firms' operating performance to examine the ability to more effectively respond to the Pentagon's war efforts. Operating performance is based on return on assets (ROA) and industry-adjusted ROA. Industry-adjusted operating performance variables differentiate firm-driven performance from overall sector performance.[27]

There is a considerable difference between below- and above-median subsamples of firms' and contracts' characteristics when examining the relation of contracts to lobbying in Table 5. Firms that obtain smaller contracts before the event; those under less scrutiny on the basis of the bids received for a given federal contract; firms closer to Washington, DC; smaller firms; and firms with inferior operating performance have a strong relation between lobbying and federal contracts obtained after the shock. These results are not significant in the above-median subsample, except for the marginally significant case of contract amount, which has a coefficient three times larger in the below-median subsample.[28]

These findings suggest that contracts awarded to firms that lobby are unlikely to be a reflection of their superior ability to support the war effort. On the contrary, firms with less capacity as captured by their smaller size or inferior operating performance obtain larger federal contracts following the surge in defense spending if they lobby. In a similar vein, firms under less scrutiny in contract awards and those closer to the Pentagon obtain more contracts if they engage in lobbying activities. The evidence does not provide much support to a merit-based awarding mechanism in the sense that firms less suited to support the war effort benefit more from lobbying when obtaining federal contracts.

The findings for campaign contributions reported in Table 5 show a similar pattern. In the below-median subsamples, there is a strong relation between campaign contributions and contracts obtained after the shock for all characteristics of firms and contracts considered except distance to Washington, DC. For the above-median samples, such patterns exist only for initial contract amounts and the marginal case of distance to Washington, DC. While weaker than the results

[25] The intuition is that competitive contracts receiving a larger number of bids are more likely to be scrutinized.

[26] Median contract size (in natural logarithms) at the beginning of the sample period is 14.45. Median number of bids received for a contract is three, varying between one and 51 in the first and 99th percentiles. Median geodesic distance to Washington, DC, is 608. Observations are split into two subsamples on the basis of these median values.

[27] Firm size is measured as the natural logarithm of total assets. Return on assets (ROA) is net income scaled by the beginning-of-period total assets. Industry-adjusted ROA is calculated by subtracting industry ROA measured at the two-digit Standard Industrial Classification code level from firm ROA. Median firm size is 7.8. Median ROA and industry-adjusted ROA are .04 and .3, respectively.

[28] We also examine subsamples in which both contract amounts and bids received are above or below the sample median. The results are consistent with those reported in Table 5: there is a strong relation between contracts and political connections primarily in the below-median subsample. Note also that no-bid contracts are not included in column 2, but doing so gives comparable results.

Table 5

The Role of Characteristics of Firms and Contracts

	Contract Size (1)	Bids (2)	Distance to Washington, DC (3)	Firm Size (4)	ROA (5)	Industry-Adjusted ROA (6)
Lobbying:						
Above median:						
Lobbying	.237	−.001	.098	.062	−.253	.392
	(1.117)	(−.007)	(.426)	(.095)	(−.260)	(.488)
Postevent × Lobbying	.242+	.221	.204	.121	.108	.202
	(1.811)	(1.310)	(1.181)	(.548)	(.420)	(.707)
N	1,374	1,258	1,376	186	186	186
Firms	687	629	688	93	93	93
R^2	.041	.007	.012	.048	.067	.092
Below median:						
Lobbying	−.695+	−.222	−.067	−.106	.174	−.260
	(−1.871)	(−.821)	(−.199)	(−.205)	(.370)	(−1.211)
Postevent × Lobbying	.781**	.249+	.354*	1.394**	.768**	.705*
	(3.951)	(1.817)	(2.077)	(3.043)	(2.801)	(2.619)
N	1,374	1,414	1,370	186	186	186
Firms	687	707	685	93	93	93
R^2	.160	.011	.017	.202	.144	.114
Campaign contributions:						
Above median:						
Campaign	−.213	−.098	−.401	−.403+	−.906**	−.202
	(−1.008)	(−.424)	(−1.360)	(−1.673)	(−3.269)	(−.517)
Postevent × Campaign	.282*	.194	.298+	.313	.143	.038
	(2.480)	(1.158)	(1.840)	(1.101)	(.576)	(.148)
N	1,374	1,258	1,376	186	186	186
Firms	687	629	688	93	93	93
R^2	.038	.006	.014	.066	.109	.077
Below median:						
Campaign	−.174	−.576*	.179	.273	.097	−.485
	(−.461)	(−2.342)	(.794)	(.302)	(.254)	(−1.493)
Postevent × Campaign	.947**	.310+	.148	.499	.627*	.748**
	(3.478)	(1.938)	(.791)	(1.019)	(2.139)	(2.779)
N	1,372	1,462	1,370	186	186	186
Firms	686	731	685	93	93	93
R^2	.158	.014	.013	.118	.112	.120

Board connections:						
Above median:						
Board connection	.201	.090	.100	.203	.204	−.229
	(1.228)	(.332)	(.196)	(.934)	(1.039)	(−.612)
Postevent × Board Connection	.288+	.043	−.071	.04	−.119	.0176
	(1.739)	(.245)	(−.289)	(.155)	(−.393)	(.050)
N	1,374	1,258	1,376	186	186	186
Firms	687	629	688	93	93	93
R^2	.041	.005	.009	.048	.067	.079
Below median:						
Board connection	−.499	.094	.065	−.287	−.224	.210
	(−.787)	(1.518)	(.659)	(−.627)	(−.596)	(.732)
Postevent × Board Connection	.249	.086	.180	.002	.104	.016
	(.983)	(.362)	(1.602)	(.006)	(.368)	(.062)
N	1,372	1,462	1,370	184	184	184
Firms	686	731	685	92	92	92
R^2	.141	.011	.013	.074	.053	.041
All political connections:						
Above median:						
Political Connection	.074	−.052	−.117	−.262	−.798*	−.178
	(.330)	(−.281)	(−.545)	(−.424)	(−2.203)	(−.361)
Postevent × Political Connection	.267*	.194	.178	.548	.088	.031
	(2.505)	(1.476)	(1.287)	(1.564)	(.312)	(.112)
N	1,374	1,258	1,376	186	186	186
Firms	687	629	688	93	93	93
R^2	.042	.007	.011	.074	.105	.078
Below median:						
Political Connection	−.322	−.252	.182	−.393	.333	−.248
	(−1.192)	(−1.168)	(.625)	(−1.440)	(.683)	(−.659)
Postevent × Political Connection	.606**	.229+	.242+	.429	.771*	.706*
	(3.858)	(1.864)	(1.932)	(1.237)	(2.519)	(2.418)
N	1,372	1,414	1,370	184	184	184
Firms	686	707	685	92	92	92
R^2	.157	.012	.017	.089	.136	.106

Note. Results are for difference-in-differences estimations using indicators of political connection; firm and year fixed effects are included. Standard errors are clustered at the firm level, and *t*-statistics are in parentheses. ROA = return on assets.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

for lobbying, these results are broadly in line with firms less able to support war efforts obtaining larger federal contracts by making contributions to political campaigns.

Table 5 also reports the results for board members' connections. Firms with board connections that were receiving larger contracts in earlier periods were awarded larger contracts after the event. This result is statistically significant at marginal levels, however, and fails to provide robust support for firms receiving defense contracts because of their ability to assist in war efforts.

Finally, we examine all political connections, where, for a firm involved in political activism, the indicator variable for political connections equals one and is zero otherwise. The results reported in Table 5 support the findings for lobbying and campaign contributions. There is robust evidence that all subsamples except small firms benefit from political activism when defense spending increases.

Overall, the evidence suggests that political connections play a role in obtaining larger defense contracts after a surge in defense spending and that awards are not driven purely by considerations of merit. This could reflect various mechanisms in a framework in which the interaction of government and corporations is rather direct (procurement of federal contracts). There could be a quid pro quo arrangement that gives connected firms preferential treatment relative to competitors without connections to legislators and government agencies. Alternatively, lobbyists and board members may use their knowledge of the procurement process to help their firms to prepare bids with a higher chance of being accepted, or they may convey private information to the procurement officer that could be relevant to her decision to accept or reject a bid. The balance of evidence in our analysis mostly supports the prior rent-seeking mechanism.[29]

3.3. Alternative Specifications and Robustness

3.3.1. Alternative Specifications

We consider alternative specifications to explore whether the type of lobbyist and the identity of the target matters. Columns 2 and 4 of Table 6 show that both non-revolving-door lobbying and revolving-door lobbying are related to larger defense contracts after the surge in defense spending. Columns 5–8 show that all revolving-door lobbying types considered are positively related to contracts after

[29] As discussed in Austin-Smith (1993, 1995), Grossman and Helpman (2001), Stratmann (2005), and Leech (2010), among others, one argument in the literature posits that politically targeted activities aim to provide access to policy makers. These connections and the associated access may be useful solely in transmitting information or may further help in influencing the outcome of the legislative and/or procurement process. A second argument postulates that politically targeted activities reflect rent seeking and aim to secure economic favors granted to companies by the government (quid pro quo). The empirical literature offers support for both arguments. Bertrand, Bombardini, and Trebbi (2014), Krozsner and Stratmann (2005), and Blanes i Vidal, Draca, and Fons-Rosen (2012) provide evidence in line with the information or access argument. Fisman (2001), Khwaja and Mian (2005), de Figueiredo and Silverman (2006), Claessens, Feijen, and Laeven (2008), Cooper, Gulen, and Ovtchinnikov (2010), Fisman et. al. (2012), Acemoglu et al. (2016), Akey (2015), Borisov, Goldman, and Gupta (2016), Faccio, Masulis, and McConnell (2006), Mian, Sufi, and Trebbi (2010), Igan, Mishra, and Tressel (2011), Duchin and Sosyura (2012), Adelino and Dinc (2014), and Agarwal et al. (2018) provide evidence in line with the rent-seeking argument.

Table 6

Lobbying by Type of Lobbyist and Target

	Non-Revolving-Door Lobbyist		Revolving-Door Lobbyist		Target of Revolving-Door Lobbyist			
					National Security Council Member	Congressman	Committee Member	Committee Chair
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lobbying	.123	−.001	−.083	−.306	.063	−.236	−.262	−.368
	(.841)	(−.990)	(−.508)	(−1.591)	(.302)	(−.971)	(−1.499)	(−.944)
Postevent × Lobbying		.280+		.350**	.427+	.323+	.275*	.870*
		(1.726)		(2.629)	(1.722)	(1.850)	(2.054)	(2.205)
R^2	.011	.013	.010	.013	.011	.012	.012	.011

Note. Results are for difference-in-differences estimations with firm and year fixed effects. Standard errors are clustered at the firm level, and robust *t*-statistics are in parentheses. $N = 2{,}746$ for 1,373 firms.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Table 7
Campaign Contributions by Party Affiliation

	Republican		Democrat	
	(1)	(2)	(3)	(4)
Campaign	.255	.101	.002	−.159
	(1.059)	(.408)	(.011)	(−.783)
Postevent × Campaign		.222+		.228+
		(1.872)		(1.855)
R^2	.011	.012	.01	.012

Note. Results are for difference-in-differences estimations with firm and year fixed effects. Standard errors are clustered at the firm level, and *t*-statistics are in parentheses. $N = 2{,}746$ for 1,373 firms.
+ Significant at the 10% level.

the event. The coefficient on non-revolving-door lobbying is comparable to the baseline (.280 relative to .274 in Table 3), whereas the coefficient on revolving-door lobbying is 25 percent larger and significant at the 1 percent level. Among the types of revolving doors, the results are much more pronounced for lobbyists who have connections to the chairs of the relevant congressional committees (budget, appropriations, and armed services).

We next consider the party affiliations of the recipients of firms' campaign contributions. Cooper, Gulen, and Ovtchinnikov (2010) report higher returns for firms that contribute to the political campaigns of Democrats. By contrast, Cox (2022) finds that campaign contributions to Republicans are slightly more helpful. Christensen et al. (2021) argue that having more balanced campaign contributions to Democrats and Republicans (political hedging) moderates firms' risk. Given the differing views, we differentiate between campaign contributions to Republicans and Democrats in our setting. The results in Table 7 show that campaign contributions to both Democrats and Republicans have comparable effects on federal contracts. This finding is consistent with the notion that firms may politically hedge across party lines.

3.3.2. Robustness

To establish the robustness of our findings and further address concerns about various biases, we conduct several empirical exercises. We examine whether the results are more general or are driven by major defense contractors, conduct a matching exercise, control for firm-level factors, perform several placebo tests, and assess whether there is a direct relation between federal contracts and firms' characteristics.

First, we run our baseline specification, excluding the top 10 defense contractors during the analysis period. The results in Table 8, in line with the earlier results, show a positive and significant effect of lobbying and campaign contributions on the amount of defense contracts obtained after the event. Board connections have a positive albeit insignificant coefficient. These results suggest that our evidence is not driven solely by the top receivers of defense contracts, for which reverse-causality concerns might be more applicable.

Table 8

Robustness Tests

	Excluding Top 10 Contractors (1)	Matched Sample (2)	Firm Controls (3)	Matched Sample with Firm Controls (4)	Placebo Sample Period: Full Sample (5)	Placebo Sample Period: Top Quartile (6)	Placebo Sample Period: Bottom Quartile (7)	Nondefense Contractors (8)
Lobbying:								
Lobbying	.031	−.138	.104	−.108	−.002	.135	.146	1.124
	(.145)	(−.591)	(.231)	(−.222)	(−.005)	(.346)	(1.016)	(1.429)
Postevent × Lobbying	.274*	.407**	.394*	.447*	.082	−.109	.513	−.357
	(2.224)	(2.901)	(1.992)	(2.031)	(.440)	(−.365)	(1.162)	(−1.066)
N	2,720	952	372	270	1,274	376	364	1,266
Firms	1,360	476	186	135	637	188	182	633
R^2	.014	.022	.090	.105	.052	.001	.008	.009
Campaign contributions:								
Campaign	−.172	−.065	−.272	−.275	.222	−1.109	−.445	−.591
	(−.822)	(−.191)	(−.996)	(−.922)	(.558)	(−.926)	(−.202)	(−.969)
Postevent × Campaign	.229+	.344*	.332	.448+	.554	.288	1.966+	−.294
	(1.734)	(2.262)	(1.644)	(1.878)	(1.527)	(.196)	(1.770)	(−.767)
N	2,720	952	372	270	1,274	376	364	1,266
Firms	1,360	476	186	135	637	188	182	633
R^2	.012	.014	.080	.103	.048	.006	.025	.003
Board connections:								
Board Connection	.044	−.098	−.065	.185	.002	−.279	.857	
	(.180)	(−.326)	(−.284)	(.663)	(.224)	(−.301)	(.603)	
Postevent × Board Connection	.393	.451*	.141	.082	.088	.252	.862	
	(1.461)	(2.309)	(.523)	(.303)	(.065)	(.291)	(1.044)	
N	2,720	952	372	270	1,274	376	364	
Firms	1,360	476	186	135	637	188	182	
R^2	.011	.007	.068	.081	.05	.001	.011	

Note. Results are from robustness tests with firm and year fixed effects. Standard errors are clustered at the firm level, and *t*-statistics are in parentheses.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

Next we match firms that lobby with those that do not using the natural logarithm of the contracts they obtained during October 1999–September 2000, the fiscal year preceding our sample period. The idea here is to use the beginning-of-period contracts as a sufficient statistic of firms' characteristics that determine the contract amounts a firm receives through federal procurement in the near future. We match 155 contractors that lobby with 321 contractors without lobbying activities by employing nearest-neighbor matching with replacement, where at most three matched firms are considered for each treated observation.[30] The results in Table 8, column 2, show that the findings are stronger in the matched sample, which has larger coefficients that are significant at higher levels.

As an alternative robustness test, we match our sample with information from the Compustat database to control for firms' time-varying characteristics that have been shown to drive political activism (Kerr, Lincoln, and Mishra 2014). For this subset of 186 publicly traded firms, we control for size (measured as the natural logarithm of sales), industry concentration (measured as the Herfindahl-Hirschman index based on sales in an industry determined at the level of the three-digit Standard Industrial Classification code), research and development expenditures scaled by total assets, and growth opportunities (calculated as the book value of assets plus the market value of equity minus the book value of equity scaled by the book value of assets). Controlling for these firm-level time-varying factors alleviates the concern that lobbying is capturing omitted variables driving the amount of contracts obtained from the government. The results in Table 8, column 3, show that firms that lobby obtain larger contracts from the Pentagon after the shock.[31] The coefficients for firms that contribute to campaigns and those with a board connection to the Pentagon are positive but not statistically significant at conventional levels.

To further mitigate the possibility of a latent factor affecting our findings, for the subset of firms with firm-level time-varying controls, we match politically active firms with those that are not politically active on the basis of firm size, industry (by two-digit Standard Industrial Classification code), and the amount of contracts obtained in the pre-event period. The 62 firms that lobby are matched with 73 firms that do not. For this subset of firms, we also control for the aforementioned firm-level time-varying variables that are known to be correlated with lobbying. Table 8, column 4, shows that these results are again stronger than those in the unmatched sample and indicates that firms that lobby and those that contribute to campaigns obtain significantly larger defense contracts after the shock.

Another possibility is that patterns similar to those we document are regularly observed in the data. To rule this out, we run several placebo tests. First, we consider a placebo sample period from October 2004 to September 2007. This period is conveniently sandwiched between the war in Iraq, which started in March 2003, and the resurgence in Afghanistan and the Obama administration's recom-

[30] We drop one company for which the beginning-of-period amount of federal contracts is at the top of the distribution, and therefore the firm does not have a close enough matching candidate.

[31] For the sake of brevity, coefficients on firm-level controls are not reported but are available from the authors on request.

mitment to the military effort in February 2009 (with major escalation of the US mission in December 2009). It had no major, unexpected event that affected defense funding. The results reported in Table 8, column 5, do not support a statistically significant and robust relationship between political connections and defense contracts during this period.

We then run these estimations for the top and bottom quartile of the sample based on contracts obtained in the fiscal year preceding the sample period (October 1999–September 2000). This exercise allows us to consider potential nonlinearities between contracts and political connections during the placebo period. The results in Table 8, columns 6 and 7, do not indicate a strong significant relation in either quartile, notwithstanding a weakly statistically significant coefficient for campaign contributions for the bottom quartile. Thus, neither firms that obtained small contracts nor those that had large contracts show a robust effect of political connections on federal contracts in the placebo shock period.

Finally, we estimate the relation between contracts and political connection variables for nondefense contracts in Table 8, column 8.[32] As nondefense contracts are not affected by the increase in spending, there should not be a change in contract amounts in relation to political connections. The results support this notion.[33]

To further alleviate concerns that the relations between political connections and defense contracts are driven by latent factors correlated with political connections, we explore the relation between the variables that proxy firms' capabilities to expand defense spending and federal contracts. We consider the relation between defense contracts and the beginning-of-sample-period contract amounts, firm size, and operating performance measured by ROA and industry-adjusted ROA. The results in Table 9 do not show a significant relation between these characteristics and defense contracts. This gives us additional confidence that the positive relation between political connections and defense contracts observed after the surge in defense spending is not driven by the potential capability of such firms to expand operations to support war efforts.

4. Conclusion

There is an ongoing debate about the value of political connections. We explore this question in the context of an unexpected shock to federal procurement contracts—an important source of revenue for a diverse set of firms in the economy.

We find that, following the September 11 attacks and the subsequent war in Afghanistan that unexpectedly increased defense spending, firms that lobbied,

[32] For nondefense contracts, we use the contracts awarded by the Departments of Agriculture, Commerce, Education, Health and Human Services, Interior, Justice, and Labor and the Environmental Protection Agency, the Agency for International Development, the General Services Administration, and the National Aeronautics and Space Administration. We do not have data on board connections for this set of firms, as board connections in our setting are determined for the defense sector, mainly board directors who have been employed at the Pentagon or in the US armed forces.

[33] The coefficients for the nondefense sample, although not significant, are close in magnitude to those in the baseline with the opposite sign. This is unlikely to reflect a shift of budget priorities and reallocation of resources, as nondefense spending continued to increase in the postevent period (see Figure 2).

Table 9
Federal Defense Contracts and Firms' Characteristics around the Event

	Contract Size (1)	Firm Size (2)	ROA (3)	Industry-Adjusted ROA (4)
Variable		−.155	−.211	−.004
		(−.660)	(−.614)	(−.030)
Variable × Postevent	.024	.031	−.734	.001
	(1.285)	(.715)	(−.730)	(.010)
N	2,746	496	496	496
Firms	1,373	248	248	248
R^2	.012	.034	.041	.047

Note. Results are for beginning-of-sample-period contract amounts, firm size, and operating performance measured by return on assets (ROA) and industry-adjusted ROA. The term Variable corresponds to the characteristic in the column. Firm and year fixed effects are included. Standard errors are clustered at the firm level, and *t*-statistics are in parentheses.

those that contribute to election campaigns, and those with board connections to the government received substantially more in federal procurement contracts awarded by the Pentagon. These findings add to the growing literature by showing that political connections are valuable for corporations with direct ties to the government as federal contractors: these firms are awarded more in contracts when available funds increase.

We further show that the increase in the amount of defense contracts obtained is not driven by merit-based factors that indicate an ability to expand operations quickly to support defense efforts. The findings are more in line with a rent-seeking argument, although the role of information sharing through political connections cannot be ruled out entirely.

Overall, the evidence shows an equilibrium in which firms that chose to be politically connected generated higher revenues through federal contracts during an unexpected surge in federal spending. The data, however, do not allow us to establish a causal link for the marginal effect of political connections on federal contract amounts.

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