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Corporate Value Creation and the Award of Procurement Contracts

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ABSTRACT

This study explores how federal procurement contracts influence shareholder value, revealing a consistent positive correlation between the size of the initial award and investor reactions. We uncover a significant impact of the contract's Sweetheart Index on investor responses, with no-bid (sole source) contracts, defense contracts, service contracts, and contracts exempt from cost or price reporting requirements attracting stronger investor interest. Notably, we observe significant information leakage around award announcements that affects investor behavior. Through difference-in-difference analysis, our findings show that long-term defense contracts lead to a greater increase in return on equity compared to other large government contracts, as assessed against a matched sample of firms. Additionally, our study highlights that contracts in industries with high concentration and those involving unique goods and services tend to be more lucrative, providing critical insights for investors and policymakers engaged in federal procurement strategies.

1 | Introduction

In the fiscal year 2023, US government expenditure on contracts totaled $765 billion, a significant increase of nearly 10% from 2022.[1] This surge is attributed to factors such as the COVID-19 pandemic and a growing trend toward privatization.[2] Privatization debates often claim that private entities operate more efficiently than public institutions.[3] Yet, these lucrative contracts also potentially extract substantial rents from both the government and taxpayers, leading to the pertinent question: which contracts yield the most substantial profits for contractors?

In the United States, numerous contracting authorities and agencies exist, each with unique contract characteristics that can enhance value. Ferris, Houston, and Javakhadze (2019) developed an index to gauge the potential value of contracts to firms, showing that firms contributing more to political action committees (PACs) tend to secure contracts with higher values on this index. Additionally, Tas (2020) found that robust regulatory environments correlate with more competitive bidding and enhanced cost-efficiency. However, the precise value addition from securing a government contract remains unclear.

This study explores the added value that firms gain from receiving US federal government contracts, exploring factors that augment or diminish this value and how it is realized through a DuPont analysis. We assess the cumulative abnormal returns (CARs) surrounding the announcement of substantial government contracts. Our dataset comprises 1477 awards, each initially worth at least $1 million or accounting for at least 5% of the prior year's total sales of the firm, predominantly from the Department of Defense (DoD), though including over a dozen other agencies.

Aggregate analysis reveals a positive correlation between the contract's value relative to the firm's prior sales and market reception. Specifically, contracts that constitute at least 10% of a firm's sales

are particularly well-received by investors, despite notable pre-announcement leakage. Contracts in the healthcare and business equipment sectors seem to generate the highest value.

Our regression analysis underscores a positive link between the federal action obligation as a percentage of sales and the market's reaction to contract announcements. We observe a similar positive correlation with other scaled contract values, including those potentially realized if all contract options are exercised. Interestingly, while the Ferris, Houston, and Javakhadze (2019) sweetheart index correlates positively with market reactions on the announcement day, political action contributions relate negatively, suggesting that political connections might dampen the impact of contract announcements, possibly due to anticipated awards. Conversely, lobbying activity, which can influence legislative appropriations directly, correlates with higher future contract values and stronger market reactions, especially when contracts constitute a larger proportion of sales.

Analysis of contract-specific characteristics indicates that no-bid contracts for national interest receive muted investor responses, although, on average, no-bid contracts fare better than those awarded through competitive processes. Contracts exempt from cost or pricing data reporting requirements also attract positive investor sentiment, whereas contracts following commercial item procedures receive a significantly less favorable response.

Specialized analyses of DoD contracts reveal them as more lucrative compared to non-DoD contracts. Awards and definitive contracts also garner more favorable reactions than announcements of inclusion in indefinite-delivery vehicles, and service contracts are preferred over product-based ones.

In our conclusive analyses employing difference-in-differences tests with DuPont decomposition, we demonstrate that DoD contracts, especially those accounting for at least 10% of a firm's sales, lead to more substantial improvements in return on equity (ROE) compared to non-DoD contracts. This is primarily due to increases in profit margins and asset turnover. Long-term DoD contracts also show more favorable changes in these metrics compared to other contracts in our sample. Our findings are detailed sequentially across the paper, with hypotheses outlined in Section 2, methods and data in Section 3, results in Section 4, and concluding analysis in Section 5.

2 | Hypothesis Development

2.1 | The Issuance of Federal Government Contracts

Federal government contracts are critical tools for outsourcing activities that are not efficiently managed internally. Ideally, the design of these contracts, encompassing aspects such as pricing, payment modalities, duration, and environmental considerations, should maximize public value. However, federal procurement contracts in the United States are often more stringent and inflexible than their private sector counterparts (Beuve, Moszoro, and Saussier 2019). Contracting Officers play a pivotal role in this process, deciding not only the awardee but also whether the agreement will be structured as a cost-plus or fixed-price contract. Cost-plus contracts include a predetermined profit margin, beneficial in projects with unpredictable costs, whereas fixed-price contracts cap the total payment, encouraging cost control (Bajari and Tadelis 1999, 2001).

Federal agencies must consider not only costs but social benefits of the contracts they issue. The US federal government specifies target spending for underrepresented groups, such as minority- and women-owned businesses. The purpose of such targets is to support entrepreneurship. Marion (2009) finds that such allocational activities increase contracting authorities' costs by approximately 5%.

Moreover, federal agencies must balance cost-efficiency with social benefits. Targets for spending on underrepresented groups, such as minority- and women-owned businesses, are set to foster entrepreneurship, albeit at a roughly 5% increase in costs (Marion 2009). The dynamics of federal contracting are also influenced by factors such as the end of the fiscal year (Liebman and Mahoney 2017), Contracting Officer workload (Warren 2014), and overall government transparency, which has been shown to reduce collusion and increase bidding competition (Boehm and Olaya 2006).

Research highlights various predictors for securing government contracts. Connections to politics often correlate with increased contract awards; firms with politically linked boards (Goldman, Rocholl, and So 2013), or those contributing to political parties (Titl and Geys 2019), are more likely to receive contracts, including lucrative sweetheart deals (Ferris, Houston, and Javakhadze 2019). Additionally, firms actively engaged in corporate social responsibility (CSR) tend to win more complex government contracts (Flammer 2018).

Contracting authorities often have greater autonomy below certain funding thresholds. For example, FAR 2.101 indicates the simplified acquisition threshold for many US contracts is $250,000[4] Using data from the Czech Republic, Palguta and Pertold (2017) show that authorities are three times more likely to allocate contracts with values just below the threshold.

2.2 | The Factors Determining the Winning Bidder

The contracting process is nuanced and varies significantly depending on the size and technical requirements of the project. For larger contracts, especially technically involved contracts, a government agency could issue a Request for Information. Contractors can provide input to the Contracting Officer (CO) about a project's feasibility and the necessary requirements. The CO could adjust their solicitation based on that information. If enough possible competitors are available for full and open competition, the CO will issue a Request for Proposals (RFP) or Request for Quotations (RFQ).[5] Interested bidders will submit bids. After the solicitation period has ended, the CO will review the bids and select the winning firm(s).

Upon closing the solicitation period, the CO evaluates the submissions, taking multiple factors into consideration beyond just the pricing. The Lowest Price Technically Acceptable (LPTA) selection process mandates a comprehensive evaluation, where

the CO assesses not only the financial aspect but also the practical viability of the plans submitted, the bidders' historical performance, and other pertinent criteria. This ensures that the contract is awarded not merely to the lowest bidder but to the one offering the greatest overall value to the government. This methodology is particularly prevalent in complex acquisitions, where negotiated procedures are favored due to the intricate nature of the requirements (Baldi et al. 2016).

Moreover, transparency in the contracting process is crucial. COs are expected to provide feedback to unsuccessful bidders, explaining the reasons behind their decision, which helps maintain fairness in the procurement process and enhances the quality of future submissions. The LPTA process, while focused on cost-effectiveness, does not compromise on the quality and feasibility of the solutions proposed, ensuring that the government receives the best value for its expenditure.

In competitive contracting environments, new entrants may attempt to secure contracts by offering significantly lower bids compared to more established firms (Silva, Kosmopoulou, and Lamarche 2009). However, to mitigate the risk of non-completion, COs often require surety bonds from the contractors, providing a financial guarantee that the work will be completed as per the contract's terms (Calveras, Ganuza, and Hauk 2004). Additionally, the pricing strategies of contractors may fluctuate over time, reflecting market conditions, the complexity of the contract, and the contractor's current workload and capacity (Gugler, Weichselbaumer, and Zulehner 2015).

Multifaceted considerations ensure that federal contracting is not only a process of expenditure but also a strategic activity that aligns financial outlay with optimal outcomes, enhancing the effectiveness of public spending.

2.3 | The Investor Response to Contract Receipt

While previous research has established that certain contract characteristics are linked to more lucrative outcomes, comprehensive evidence detailing the value added through the receipt of government contracts remains sparse. Public announcements of US government contract awards are typically expected to lead to upward revisions in firm value expectations commensurate with the added value of the contract. It stands to reason that contracts which impart greater value should elicit more favorable investor responses.

Given the continuous participation of firms in bidding for government contracts following initial awards, it is inferred that these contracts provide substantive value. We propose that the receipt of sizable federal contracts is directly correlated with positive movements in CARs around the time of the award announcement.

H 1. *Cumulative abnormal returns are positively associated with the size of the government contract.*

Building on the findings of Ferris, Houston, and Javakhadze (2019), certain contract terms have been identified as particularly lucrative. These terms are encapsulated in the "sweetheart index," which includes features such as cost-plus agreements, no-bid statuses, long-term durations, and exemptions from cost or pricing data requirements. We posit that contracts exhibiting a higher sweetheart index score are more likely to trigger positive investor reactions upon their announcement.

H 2. *The Sweetheart Index of a contract is positively related to its announcement-period cumulative abnormal returns.*

There are several potential drivers of contract value for firms. The first is lobbying activity. The primary political connections measures of Goldman, Rocholl, and So (2013) and Ferris, Houston, and Javakhadze (2019) are the political experience of the Board of Directors and PAC contributions by the firm-affiliated PAC. These studies indicate a positive relationship between political connections and the quantity and quality of government contracts.[6] However, lobbying is arguably more likely to lead to more lucrative large contracts for a firm than either of these methods. Companies hire lobbying firms to petition on specific issues on their behalf. Lobbyists often have experience as former legislators, staffers, and regulators. They, therefore, know how to approach current legislators and regulators and advise changes to appropriations spending bills and regulations. While these laws and regulations should be for the public good, they are often crafted by lobbyists.[7] A lobbying firm recommending legislation could include provisions or increase funding to the industry participants funding it.

We assume lobbyists are attempting to increase funding to agencies offering contracts to their clients, increase funding to the most lucrative line items of those agencies, and reduce costly restrictions on contractors. These activities should increase the quality of contracts received by their clients. We therefore hypothesize:

H 3. *There is a positive relationship between lobbying activity and the cumulative abnormal returns around contract announcement.*

Industry concentration and the resulting reduction of firms competing for large, complex contracts could also influence contract value. Carril and Duggan (2020) note that mergers amongst suppliers for the DoD have caused the market for DoD contracts to become less competitive over time. There might only be one or two firms with the capacity and capability to provide some products or services. We hypothesize this concentration has allowed Defense contractors to increase the rents they charge to the DoD. Therefore:

H 4. *Defense contracts are more lucrative than contracts issued by other agencies.*

Each of these hypotheses contributes to our understanding of the complex dynamics that influence the value derived from government contracts. Our research aims to quantify these effects and provide a clearer picture of how different factors interact to affect the financial outcomes of federal contracting activities.

3 | Data and Methods

We gather contract data from the Federal Procurement Data System (FPDS), which includes over 10 million records of federal

procurement contracts awarded to publicly traded firms. We limit our sample to contracts that initially have a maximum value of at least $1 million and represent at least 5% of the firm's sales from the previous year. Each entry in the FPDS documents a contract or a modification thereof. Our event study analysis examines the investor response to the initial award announcement.

Firm-level accounting and return data are sourced from Compustat and CRSP, respectively. We employ Eventus software to compute the abnormal returns surrounding each event. Observations lacking total assets or sales data are excluded. We calculate the value-weighted cumulative abnormal return as the difference between the actual return and the expected return, as predicted by the Fama and French three-factor model, including momentum.

Data on political connections are obtained from the FEC through the Center for Responsive Politics. We gather and aggregate data on PAC contributions and lobbying efforts. Our primary measure of PAC contributions (PC1) is the natural logarithm of the total value of contributions from the firm's affiliated PAC. Similarly, our primary lobbying metric is the natural logarithm of the firm's total lobbying expenditures for the year.

We correlate the FPDS data with our firm-level data by linking GVKEYs and DUNS numbers. Every government contractor must register for a DUNS number, which is listed in the FPDS for each contract recipient. However, many public firms have multiple DUNS numbers, and some recipients are subsidiaries of publicly traded firms. To address this, we utilize the BECRS database from S&P Capital, which matches DUNS numbers to GVKEYs and outlines a hierarchy of firm ownership as of December 31, 2016. This setup helps us identify all DUNS numbers linked to a firm at once and match them to GVKEYs. For changes in ownership over the sample period, we consult merger data from SDC.

In Table 1, we present our summary statistics. Panel A breaks down our sample by year, covering 1477 large government contracts, with the highest number issued in 2015. The average initial value awarded (Federal Action Obligation) is approximately $33.2 million, reflecting the direct payment to the firm. Many contracts also include options for additional products or services. The fourth column details the Base and All Options Value, which captures the potential increase in contract value from these options, averaging $3.9 billion across our sample. The Potential Total Value of the Award, which assumes the exercise of all options, tends to skew significantly higher due to a few larger contracts. This value was not consistently reported before the enactment of the Data Act of 2014.[8]

In Panel B, we report the value of our contracts by industry. We follow Fama and French when defining these industries.[9] According to our primary measure of contract value (Federal Action Obligation), the largest contracts are issued to firms in the manufacturing industry ($107.3 billion). The largest number of contracts are issued to firms in the Business Equipment industry. Relatively few large contracts are issued to firms in the chemicals or energy industries.

In Table 2, we report the descriptive statistics of our sample. In Panel A, we report the firm-level characteristics. Our sample's average firm has total assets of $11.0 billion and sales of $8.6 billion. Federal contractors donate approximately $1.1 million to federal candidates for public office each year and spend $1.8 million in lobbying expenses.

We report our sample contracts' characteristics in Panel B. Approximately 23% of our sample contracts are cost plus contracts and 17% are no bid (sole source) contracts. We define long-term contracts as those recognized as multiyear contracts or contracts which have modifications or an estimated completion time greater than 1 year (49%). Most contracts in our sample require the contractor to have a subcontracting plan in place at the time of the award. Approximately 12% of sample contracts involve the government furnishing a piece of property for use by the contractor (Government-furnished), while 27% of our contracts follow commercial item procedures. Commercial item procedures allow a contracting officer to follow a streamlined set of procedures when awarding a contract.[10] Finally, the average contract in our sample was bid on by 9.78 bidders.

We report the number of observations and mean award across various restrictions in Table 3. To be included in our sample, a contract must have a maximum value (across all contract value measures) of at least $1,000,000 and represent at least 5% of the firm's total sales in the previous year. Increasing the threshold to $100 million cuts our sample to 870 observations. Restricting our sample based on a federal action obligation greater than $1,000,000 and contract value greater than or equal to 5% decreases our sample to 602 observations.

4 | Results

4.1 | Univariate Analysis

The investor response to receiving a government contract varies according to the terms and value of the contract. In Figure 1, we illustrate the standardized CARs for all contracts in our sample. For open-bid contracts, an award follows several weeks after the bidding process concludes. It is observed that firms poised to win government contracts often experience positive CARs between the end of bidding and the award announcement. Post-announcement, CARs tend to stabilize near zero after the initial days. Figure 2 explores the relationship between no-bid (sole source) contracts and CARs, showing greater variability compared to competitively bid awards, likely due to the absence of a bidding contest.

In Figures 3 and 4, we analyze the CARs associated with service versus product contracts. Figure 3 shows a significant spike in CARs immediately around the announcement of service contracts, whereas the CARs for product contracts increase more gradually, suggesting that the market finds it more challenging to anticipate service contract awards than product ones, possibly because product contracts may require specific facilities that make potential winners more identifiable.

Figures 5 and 6 compare the CARs for defense (DoD) and non-defense (non-DoD) contracts. Non-DoD contracts exhibit a reversal in CARs, whereas DoD contracts display consistently positive CARs from about thirty days before to fifty-one days after

TABLE 1 | Summary statistics.

Panel A: Observations by year				
Year	**Num. of obs.**	**Federal action obligation**	**Base and all options value**	**Potential total value of award**
2001	17	$6,331,382.29	$4,022,563,572.10	$2,535,577,960.90
2002	23	$26,747,672.04	$807,680,125.47	$3,701,091,300.57
2003	37	$110,487,412.94	$790,865,128.04	$1,243,860,916.89
2004	34	$37,143,863.15	$525,744,190.99	$125,772,153,135.01
2005	12	$38,966,958.33	$1,801,645,489.50	$2,883,801,622.30
2006	32	$12,872,442.09	$4,145,742,467.88	$1,192,103,396.11
2007	95	$34,279,120.53	$873,267,309.88	$776,804,291.04
2008	105	$63,707,809.03	$2,455,280,718.74	$3,849,118,952.40
2009	116	$33,608,489.86	$1,681,721,380.88	$3,249,824,068.12
2010	129	$40,050,188.83	$9,143,631,467.01	$25,517,896,836.07
2011	134	$26,707,490.24	$1,394,033,674.55	$988,968,092.31
2012	139	$51,615,035.83	$2,313,554,135.39	$3,789,988,728.06
2013	125	$21,083,107.59	$1,308,731,724.41	$1,322,514,527.19
2014	86	$14,434,689.15	$1,355,184,344.65	$1,469,922,209.69
2015	145	$9,696,692.01	$2,964,442,084.25	$5,282,417,368.64
2016	113	$18,032,873.57	$2,194,196,737.44	$1,115,221,466.04
2017	135	$37,312,451.59	$16,474,077,632.24	$20,668,176,497.29
Average	86.88	$33,226,238.47	$3,855,155,531.70	$9,006,928,402.21

Panel B: Mean contract value by industry					
Industry	**FF 12 Industries**	***N***	**Federal action obligation**	**Base and all options value**	**Potential total value of award**
Consumer nondurables	1	16	$11,445,006.15	$57,531,525.18	$50,605,582.47
Consumer durables	2	28	$89,512,956.89	$5,422,996,822.71	$6,850,360,649.57
Manufacturing	3	310	$107,383,151.53	$5,909,795,506.89	$17,887,555,219.15
Energy	4	9	$13,166,338.19	$197,302,998.29	$357,719,908.50
Chemicals	5	1	$0.00	$95,000,000.00	—
Business equipment	6	463	$7,312,191.69	$1,993,362,912.59	$3,188,508,881.82
Telecommunications	7	58	$5,104,639.83	$3,232,895,713.68	$62,696,962,966.12
Utilities	8	31	$4,378,196.13	$9,614,332,555.19	$16,198,763,911.50
Shops	9	26	$3,406,267.49	$4,105,260,342.25	$5,600,973,223.54
Healthcare	10	110	$36,407,667.99	$2,217,368,520.64	$2,995,676,578.66
Finance	11	18	$25,643,344.52	$84,557,736,146.62	$280,061,929,969.89
Other	12	407	$11,317,132.03	$1,047,241,092.92	$10,067,820,876.17
Total		123.08	$33,226,238.47	$3,855,155,531.70	$14,197,504,464.26

Note: In this table, we report the summary statistics of our contracting sample. In Panel A, we report the mean contract value by year. We report the average number of observations and contract values in the final row. In Panel B, we report the mean contract value by industry. We use the Fama and French 12 industries to decompose our sample.

the announcement, indicating a higher expected value addition from DoD contracts.

In Panel A of Table 4, we present univariate tests of our CARs across different periods, segmented by the new contract's proportion to the firm's sales in the prior year. Contracts constituting less than 10% of previous year's sales show no significant positive CARs. However, contracts accounting for at least 10% of prior year's sales show significantly positive CARs across most tests, with a 1.32% CAR over the thirty days before the announcement and a 1.80% CAR within a fifteen-day window around the announcement, significant at the 1% level.

TABLE 2 | Descriptive statistics.

Panel A: Firm-level descriptive statistics (by contract)					
Variable	***N***	**Min.**	**Max.**	**Mean**	**St. dev.**
Total assets (millions)	1477	4.45	$1,842,465.00	$11,024.37	$57,208.54
Sales (millions)	1477	0.97	$210,943.00	$8575.56	$20,063.61
Rolling st. dev.	1475	0.00	0.71	0.03	0.05
CAPEX	1477	0.00	0.34	0.03	0.03
Z-score	1477	−252.14	457.40	3.66	20.28
Return on assets	1477	−298.0%	49.0%	1.0%	18.0%
Market/book	1477	0.00	759.62	4.37	31.20
Debt/total assets	1476	0.00	1.43	0.19	0.16
R&D/total sales	1477	−0.02	7.02	0.09	0.36
HHI	1477	0.01	0.90	0.06	0.05
PAC cont. to all pols.	1477	$0.00	$254,747,247.00	$1,128,957.22	$13,914,337.44
PAC cont. to presidential cand.	1477	$0.00	$1,595,676.00	$3753.86	$71,935.82
PAC cont. to senate cand.	1477	$0.00	$50,631,867.00	$314,753.49	$3,428,116.08
PAC cont. to reps.	1477	$0.00	$204,101,676.00	$810,449.88	$10,851,662.11
Lobbying	1477	$0.00	$50,039,482.00	$1,835,589.03	$5,389,687.07
% Sales from federal contracts	1477	0.0%	100.0%	35.0%	31.0%
Sales/total assets	1477	0.01	5.74	1.16	0.73
Panel B: Contract-level variables					
Variable	***N***	**Min.**	**Max.**	**Mean**	**St. Dev.**
Cost plus contract	1477	0.00	1.00	0.23	0.42
No bid (sole source) contract	1477	0.00	1.00	0.17	0.38
Multiyear contract	1444	0.00	1.00	0.09	0.29
No cost or pricing data required	1477	0.00	1.00	0.84	0.37
Sweetheart index	1477	0.00	3.00	1.23	0.53
Long-term contract	1477	0.00	1.00	0.49	0.50
Subcontract required	1286	0.00	1.00	0.64	0.48
Government furnished	1477	0.00	1.00	0.12	0.32
Recovered materials	1430	0.00	1.00	0.08	0.27
Environmentally friendly	1430	0.00	1.00	0.04	0.20
Commercial item procedures	1476	0.00	1.00	0.27	0.44
Unique source	1477	0.00	1.00	0.02	0.15
Follow-on contract	1477	0.00	1.00	0.01	0.11
Data rights	1477	0.00	0.00	0.00	0.00
Utilities	1477	0.00	1.00	0.00	0.03
One source	1477	0.00	1.00	0.11	0.32

(Continues)

TABLE 2 | (Continued)

Panel B: Contract-level variables					
Variable	***N***	**Min.**	**Max.**	**Mean**	**St. Dev.**
Urgency	1477	0.00	1.00	0.01	0.10
Mobilization	1477	0.00	1.00	0.01	0.11
International agreement	1477	0.00	1.00	0.01	0.09
National security	1477	0.00	1.00	0.00	0.03
Public interest	1477	0.00	0.00	0.00	0.00
Sole source	1477	0.00	1.00	0.01	0.09
Num. of offers received	1477	0.00	500.00	9.78	21.66

Note: In this table, we report the descriptive statistics of our sample. In Panel A, we report the firm-level variables. In Panel B, we report the contract-level variables.

Panel B reports CARs by industry. Only the business equipment and healthcare industries show consistently positive CARs. The business equipment sector experiences an average CAR of 2.09% around the award announcement, while finance and utilities sectors see marginally negative CARs, suggesting that contracts in these industries may detract value.

Panel C details CARs for contracts significant to the firm's revenue. Contracts representing at least 5% of last year's sales consistently yield a positive investor response, with a mean CAR of 3.43% around the contract receipt. Contracts with base and options values also significant to sales show a positive, albeit less robust, response. The average contract in this subset increases the firm's market capitalization by approximately 1.43%. Further analysis confirms that contracts contributing at least 10% to last year's sales continue to add value. Notably, contracts where the federal action obligation represents at least 5% of the prior year's sales add the most value, likely because these funds are directly allocated to the contractor, representing actual rather than potential earnings.

4.2 | Multivariate Analysis

We begin our multivariate regression analysis in Table 5. In these tests, we regress the cumulative abnormal return on the announcement date (−1, 0) on our contract size variable, other contract-level variables, firm-level variables, and year and industry (2-digit SIC codes) fixed effects. We cluster observations at the firm level in all regressions.[11] In Panel A, we include our entire sample. In Model (1), our contract size measure is the federal action obligation as a percentage of the prior year's sales.[12] We find a positive relationship between contract size and CAR. We also find a positive relationship between our sweetheart index and the CAR. Contractors who contribute more to federal politicians' PACs experience lower CARs than other contractors around the award announcement. Lobbying activity is positively related to the investor response. This is consistent with the expectation that firms spending more on lobbying are more likely to successfully influence the text of appropriations bills whose line items determine funding for federal procurement contracts. If the contract is a sole source (no-bid) contract because of national interest, it adds less value to the firm than other government contracts. We also find a positive relationship between the percentage of the firm's sales derived from government contracts and CARs. This could indicate firms more heavily tied to the federal government can identify more lucrative contracts on which to bid. Finally, we find marginal evidence of a positive relationship between the Herfindahl index in a firm's industry and its value. The more concentrated the firm's industry, the more value a contract adds to the firm. This suggests that when there are fewer potential competitors, they can extract more value from their customers.

Models (2)–(4) of Panel A support our findings in Model (1). In Model (2), our primary measure of contract size is the base and option value as a percentage of the prior year's sales. We find a positive relationship between this variable and the one-day cumulative abnormal return around the contract's announcement. In Model (3), our contract size measure is the maximum value of the contract scaled by the prior year's sales. We find a positive, albeit marginal, relationship between contract size and the CAR. In Model (4), our measure of contract value is the scaled potential value. We find a positive relationship between this value and the one-day CAR. These results support our hypothesis that federal contracts add value to the firm.

In Panel B, we provide additional models to demonstrate the robustness of the relationship between contract value and the cumulative abnormal return. In all models, we regress the (−1, 0) CAR on the contract's maximum value divided by the prior year's sales, contract-specific variables, firm-specific variables, and fixed effects. We include control variables from Panel A in all models. We cluster observations at the firm level.

In Model (1), we restrict our observations to awards rather than indefinite delivery vehicles (IDVs).[13] IDVs often involve full and open competition to allow the firm to compete to be included in the IDV. Being included in an IDV does not require the federal government to award any contracts to the firm. For this reason, the federal action obligated is zero for all IDV announcements. To win awards under this IDV, the firms in the IDV must compete again in fair competition. Unlike IDVs, single awards which are not sole sourced require only one round of bids. Therefore, the announcements around single awards reported in Model (1) indicate the firm does not need to compete for additional solicitations related to the contract. We find a positive relationship

TABLE 3 | Observations by restriction.

Num. of obs.	Federal action obligation	Base and all options value	Pot. tot. val. of award	Test
1477	$33,226,238.47	$3,855,155,531.70	$13,316,461,965.54	Max value > 1,000,000 and % cont. val./sales > 5%
1268	$38,350,426.10	$4,489,952,925.11	$15,787,485,651.91	Max value > 10,000,000 and % cont. val./sales > 5%
870	$50,332,966.47	$6,526,368,227.76	$22,971,371,161.26	Max value > 100,000,000 and % cont. val./sales > 5%
602	$81,465,478.07	$876,651,843.34	$935,231,572.91	Federal action obligation > 1,000,000 and % cont. val./sales > 5%
315	$152,286,844.96	$1,276,756,619.43	$1,481,564,226.97	Federal action obligation > 10,000,000 and % cont. val./sales > 5%
69	$577,322,048.26	$2,024,215,655.77	$2,148,476,837.39	Federal action obligation > 100,000,000 and % cont. val./sales > 5%
1394	$31,760,681.94	$4,084,692,882.15	$8,741,569,678.90	Base and all options value > 1,000,000 and % cont. val./sales > 5%
1182	$37,082,425.87	$4,816,555,785.22	$10,866,151,159.23	Base and all options value > 10,000,000 and % cont. val./sales > 5%
806	$48,641,624.87	$7,043,398,251.20	$16,507,657,906.84	Base and all options value > 100,000,000 and % cont. val./sales > 5%
480	$30,790,803.85	$7,805,933,855.35	$14,176,483,467.48	Pot. tot. val. of award > 1,000,000 and % cont. val./sales > 5%
403	$36,268,793.62	$9,284,198,263.54	$16,884,337,362.64	Pot. tot. val. of award > 10,000,000 and % Cont. Val./Sales > 5%
283	$46,437,563.63	$13,182,117,387.92	$24,026,111,815.78	Pot. tot. val. of award > 100,000,000 and % Cont. Val./Sales > 5%

between the contract value of single awards and the one-day CAR. In Model (2), we find no significant relationship. These findings indicate investors respond significantly more favorably to the receipt of a single award than to the receipt of an IDV.

In Models (3) and (4), we examine the value added by receiving different types of awards: definitive contracts and purchase orders. Definitive contracts are legally binding obligations to provide goods or services to the federal government. Purchase orders are often issued under an IDV for commercial items. In Model (3), we restrict our sample to definitive contracts. We find a significant positive relationship between the value of these awards and the CAR. In Model (4), we find no relationship between the size of delivery orders and the CAR. The difference in these findings could be due to the expectation that definitive contracts are not expected, while firms that have already been included in an IDV are expected to receive delivery orders. Another explanation could be that because delivery orders involve commercial item procedures, the profit margin on these contracts is expected to be relatively low.

In Models (5), (6), and (7), we examine different subsets and model specifications. In Model (5), we restrict our sample to observations whose maximum value is greater than or equal to 10% of the firm's sales in the prior year. We find a positive relationship between the size and sweetheart indexes of these contracts and the CARS. In Model (6), we address the concern that the agency issuing the contract or the type of good being procured affects our findings by controlling for the agency issuing the contract and the 2-digit NAICS code of the good or service provided. We find a positive and significant relationship between contract value and the investor response to the award announcement. In Model (7), we include many additional contract variables not included in our original model. These variables are correlated with our other contract-level variables, which is why we do not include them in our primary model. We continue to find a positive relationship between contract value and CARs even when controlling for contract variables like the sweetheart index's individual variables. We find a positive relationship between our indicator variable for no-bid contracts and CARs. We also find a positive relationship between our indicator for no cost or pricing required and the CARs. We also find a negative relationship between contracts involving commercial item procedures and the CARs.

Finally, we examine the value added by service and product contracts in Models (8) and (9). In Model (8), we restrict our observations to those involving service contracts. We find a positive and significant relationship between the value of these contracts and the CAR. However, in Model (9), we find no relationship between receipt of large product contracts and the CAR. This could indicate contractors can extract more wealth from contracts involving services than they could extract from the development, production, or delivery of products. Determining whether the contractor has completed a service contract could involve fewer quantitative metrics than a product contract. As noted in Ferris and Houston (2021), firms are significantly less likely to have service contracts terminated for default.

In Table 6, we examine the value added by specific subsamples of contracts. We regress the (−1, 0) CAR on the contract-level

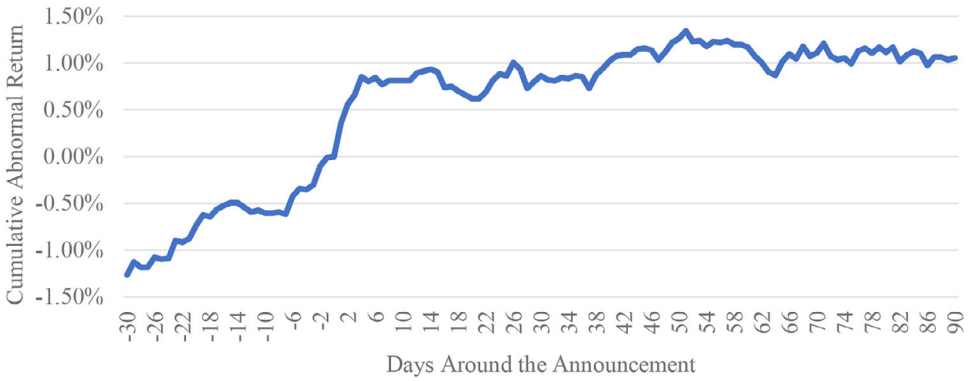

FIGURE 1 | Average standardized CAR for all contracts.

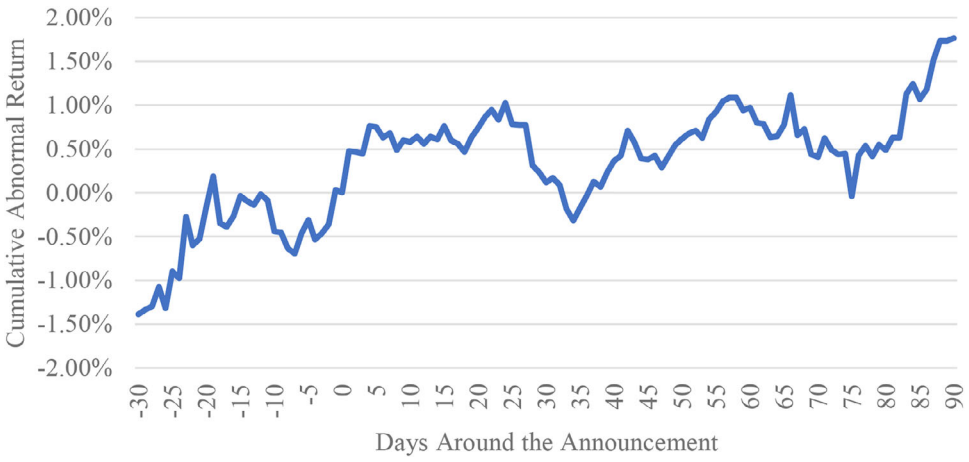

FIGURE 2 | No bid contracts.

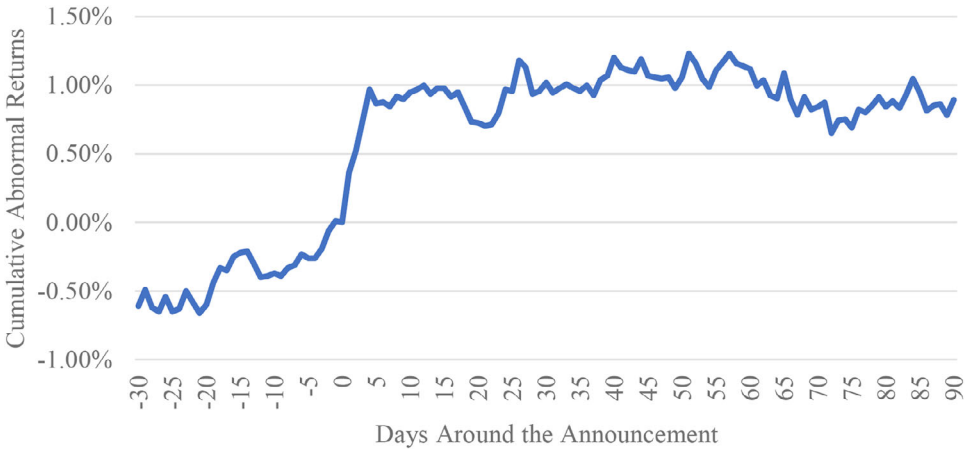

FIGURE 3 | Service contracts.

and firm-level variables in all models. We control for year and industry using fixed effects. In Model (1), we restrict our sample to contracts awarded by the DoD. We find a positive relationship between contract value and the abnormal return. We also find a negative relationship between PAC contributions and the announcement period return. In Model (2), we restrict our sample to non-DoD award announcements. We find no relationship between contract value and the announcement period return. In Model (3), we restrict our sample to no-bid (sole source) contracts. We document a positive relationship between contract value and the investor response. In Models (1)–(3), we note a negative relationship between sole-source contracts for national interest and the investor response.

Models (4) and (5) restrict our observations to awards whose federal action obligation represents at least 5% or 10% of the firm's sales in the prior year, respectively. In both models, we find a positive relationship between contract value and the investor response, significant at the 1% level. In the sample of contracts representing at least 10% of the prior year's sales, we find a positive

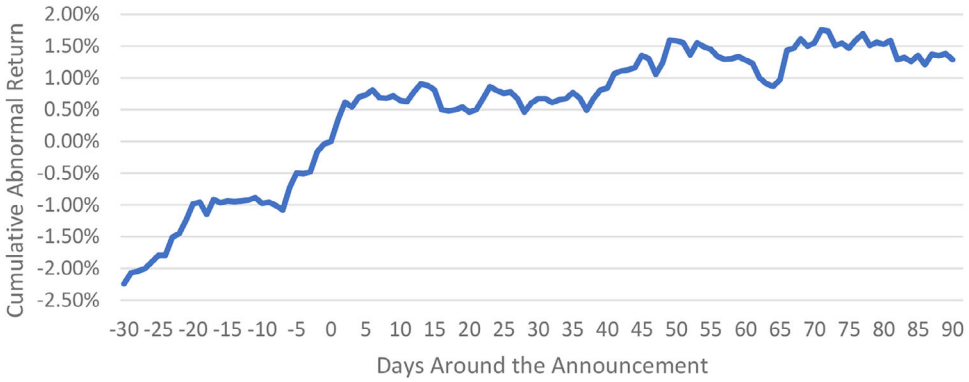

FIGURE 4 | Product contracts.

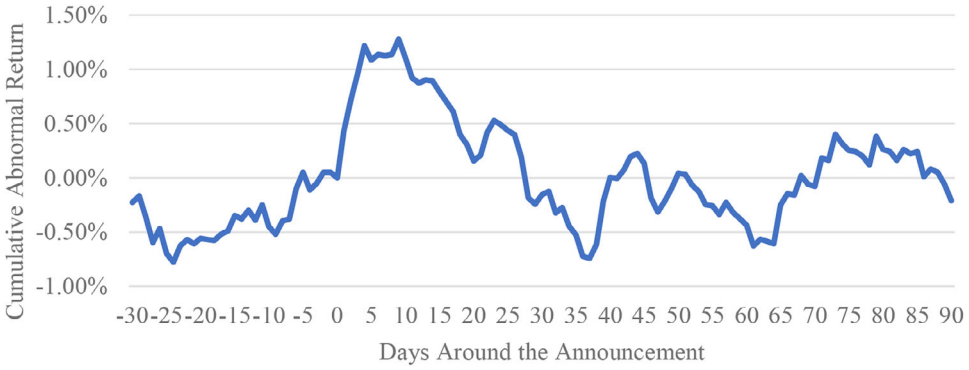

FIGURE 5 | Non-DoD contracts.

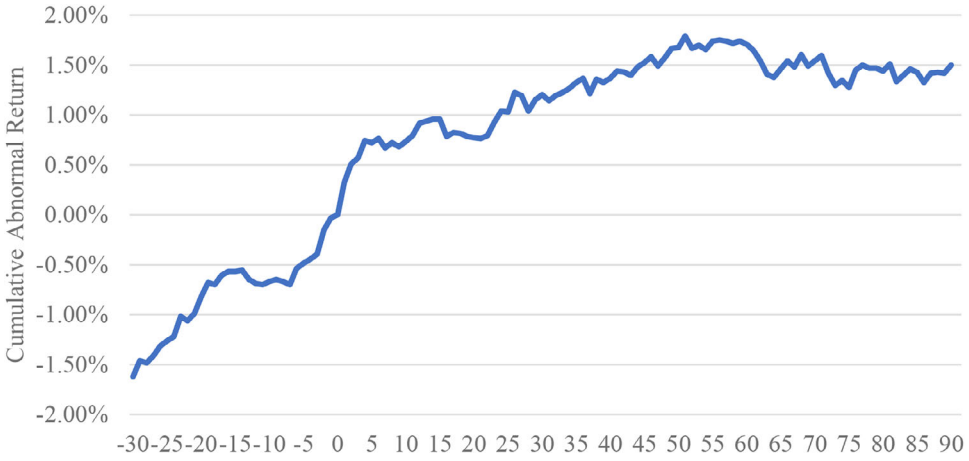

FIGURE 6 | DoD contracts.

relationship between the firm's sweetheart index and the investor response. These findings indicate large, lucrative contracts lead to large positive increases in the value of the firm.

Finally, we restrict our sample to contracts who's base and option value represents at least 5% or 10% of the prior year's sales, respectively, in Models (6) and (7). We find a positive relationship between the value of these contracts and the investor response. These findings indicate that a 1% increase in contract value increases the cumulative abnormal return by nearly two basis points.

4.3 | What Drives the Response to Defense Contract Awards?

Next, we examine whether firm performance increases around the receipt of the government contract. We specifically examine Defense contracts because these contracts are often large, have few competitors for the prime award, and lucrative, as demonstrated by the investor response. We found the receipt of non-DoD contracts to be insignificantly related to the announcement period CAR. The number of DoD and non-DoD contracts allows us to partition our sample easily across the two

TABLE 4 | Univariate tests of cumulative abnormal returns.

Panel A: Cumulative abnormal returns by initial contract value/total sales										
% of sales ($t-1$)		**Num. of obs.**	**(−30, 0)**	**(−5, 0)**	**(−1, 0)**	**(−1, 1)**	**(−2, 2)**	**(−3, 3)**	**(−5, 5)**	**(−7, 7)**
5%–6%	Mean	166	1.63%	0.61%	−0.29%	−0.13%	0.26%	0.55%	1.29%	1.81%
	t-stat		1.502	1.262	−0.889	−0.349	0.549	0.944	1.827	2.244
	p value		0.129	0.179	0.268	0.375	0.342	0.255	0.076	0.033
6%–7%	Mean	132	−1.11%	−0.40%	0.10%	−0.04%	0.10%	−0.27%	−0.02%	−0.19%
	t-stat		−0.877	−0.675	0.205	−0.090	0.168	−0.390	−0.017	−0.179
	p value		0.271	0.317	0.390	0.397	0.393	0.369	0.398	0.392
7%–8%	Mean	119	1.10%	0.78%	0.44%	0.44%	0.76%	0.76%	0.63%	1.08%
	t-stat		0.739	1.462	1.188	1.125	1.619	1.318	0.918	1.314
	p value		0.303	0.137	0.196	0.211	0.108	0.167	0.261	0.168
8%–9%	Mean	91	4.12%	1.00%	0.02%	0.42%	1.12%	0.84%	0.99%	0.23%
	t-stat		1.699	1.367	0.034	0.688	1.483	0.908	1.008	0.200
	p value		0.095	0.156	0.398	0.313	0.133	0.263	0.239	0.390
9%–10%	Mean	77	0.46%	0.35%	−0.09%	−0.19%	−0.15%	0.50%	0.22%	0.04%
	t-stat		0.384	0.843	−0.356	−0.636	−0.313	0.835	0.370	0.051
	p value		0.369	0.278	0.373	0.324	0.378	0.280	0.371	0.397
10%+	Mean	892	1.32%	0.43%	0.16%	0.70%	1.16%	1.39%	1.60%	1.80%
	t-stat		2.446	1.979	1.274	3.638	4.883	5.086	5.003	4.541
	p value		0.020	0.056	0.177	0.001	0.000	0.000	0.000	0.000
Panel B: Cumulative abnormal returns by industry										
Fama-French industry groupings		**Num. of obs.**	**(−30, 0)**	**(−5, 0)**	**(−1, 0)**	**(−1, 1)**	**(−2, 2)**	**(−3, 3)**	**(−5, 5)**	**(−7, 7)**
Consumer nondurables	Mean	16	0.04%	−0.67%	−0.22%	2.16%	3.18%	2.53%	1.65%	2.05%
	p value		0.392	0.340	0.375	0.047	0.105	0.165	0.297	0.226
Consumer durables	Mean	28	−1.61%	−1.73%	−0.49%	−0.86%	1.55%	1.22%	−0.24%	−0.86%
	p value		0.306	0.106	0.314	0.196	0.277	0.340	0.394	0.381
Manufacturing	Mean	310	0.47%	0.21%	0.01%	0.51%	0.84%	0.89%	0.40%	0.51%
	p value		0.340	0.330	0.398	0.152	0.028	0.042	0.281	0.266
Energy	Mean	9	−1.70%	−0.76%	0.72%	0.94%	0.35%	0.65%	0.75%	0.93%
	p value		0.343	0.346	0.191	0.159	0.370	0.336	0.364	0.367
Chemicals	Mean	1	−8.25%	−2.53%	−4.04%	−2.19%	−2.24%	−2.02%	−0.42%	−1.23%
	p value		—	—	—	—	—	—	—	—
Business equipment	Mean	463	2.11%	0.84%	0.19%	0.60%	1.03%	1.08%	1.77%	2.09%
	p value		0.004	0.008	0.239	0.018	0.003	0.005	0.000	0.000
Telecommunications	Mean	58	0.47%	1.10%	0.33%	0.79%	1.99%	2.25%	3.14%	4.02%
	p value		0.388	0.181	0.339	0.226	0.049	0.057	0.027	0.029
Utilities	Mean	31	−0.59%	0.02%	−0.98%	−1.20%	−0.37%	−0.95%	0.74%	0.78%
	p value		0.346	0.396	0.007	0.017	0.303	0.082	0.306	0.284
Shops	Mean	26	2.95%	1.41%	0.50%	0.18%	0.27%	0.52%	0.77%	1.10%
	p value		0.128	0.128	0.217	0.380	0.376	0.342	0.329	0.303
Healthcare	Mean	110	7.04%	1.22%	0.25%	0.88%	2.00%	2.17%	2.03%	2.32%

(Continues)

TABLE 4 | (Continued)

Panel B: Cumulative abnormal returns by industry										
Fama-French industry groupings		**Num. of obs.**	**(−30, 0)**	**(−5, 0)**	**(−1, 0)**	**(−1, 1)**	**(−2, 2)**	**(−3, 3)**	**(−5, 5)**	**(−7, 7)**
	p value		0.010	0.097	0.306	0.122	0.020	0.030	0.046	0.027
Finance	Mean	18	−1.68%	−0.75%	−0.52%	−0.57%	−1.15%	−1.38%	−1.22%	−1.55%
	p value		0.282	0.053	0.075	0.148	0.025	0.047	0.093	0.249
Other	Mean	407	−0.11%	0.09%	0.15%	0.30%	0.31%	0.78%	1.03%	0.93%
	p value		0.395	0.384	0.308	0.192	0.229	0.054	0.037	0.111
Panel C: Cumulative abnormal returns by subset										
		Num. of obs.	**(−30, 0)**	**(−5, 0)**	**(−1, 0)**	**(−1, 1)**	**(−2, 2)**	**(−3, 3)**	**(−5, 5)**	**(−7, 7)**
Fed. action obl./sales ($t-1$) > 5%	Mean	305	4.28%	0.82%	0.54%	1.39%	1.75%	2.24%	2.77%	3.43%
	t-stat		3.03	1.57	1.49	2.80	3.17	3.28	3.75	3.58
	p value		0.00	0.12	0.13	0.01	0.00	0.00	0.00	0.00
Base and option value/sales ($t-1$) > 5%	Mean	1344	1.27%	0.42%	0.10%	0.48%	0.98%	1.11%	1.25%	1.43%
	t-stat		2.91	2.44	0.93	3.21	5.27	5.06	4.88	4.62
	p value		0.01	0.02	0.26	0.00	0.00	0.00	0.00	0.00
Perc_gov > 10%	Mean	1030	1.40%	0.51%	0.16%	0.66%	1.10%	1.31%	1.54%	1.71%
	t-stat		2.59	2.41	1.14	3.51	4.81	4.92	5.03	4.54
	p value		0.01	0.02	0.21	0.00	0.00	0.00	0.00	0.00
Potential value/sales ($t-1$)> 5%	Mean	470	0.37%	0.65%	0.33%	0.57%	1.14%	1.49%	1.40%	0.94%
	t-stat		0.57	2.11	1.61	2.02	3.63	4.15	3.26	2.02
	p value		0.34	0.04	0.11	0.05	0.00	0.00	0.00	0.05

Note: In this table, we report the cumulative abnormal return around the contract announcement date. In Panel A, we segment our sample by the initial contract value/total sales in the prior year. In Panel B, we segment our sample by the firm's industry. In Panel C, we segment our sample by other measures of value.

groups. In Table 7, we perform difference-in-difference tests for contractors that receive DoD contracts and contractors that receive non-DoD contracts.

In Panel A, we separate our sample of contracts into two samples and use propensity score matching to assign a non-DoD contract to a DoD contract.[14] We compare the difference in the two samples changes from the year before contract receipt until one, two, or three years after contract receipt. In our initial tests, we examine the difference-in-difference in the ROE. We then perform DuPont decomposition to determine what causes the difference in the ROE changes. Our sample's average defense contractor has an ROE of 5.75% in the year of contract receipt versus an ROE of 5.02% for other contractors. The ROE of defense contractors increases to 6.76% in the next year, while the ROE of non-DoD contractors falls to 1.21%.

In the 2 years around contract receipt (−1, 1), we find a positive and significant increase in the return of equity of firms that receive DoD contracts relative to the increase in ROE of other large contract recipients. However, this relationship does not persist. When we decompose the ROE into the profit margin, total asset turnover, and equity multiplier, we find the profit margin of DoD contractors increases at a faster rate across all our difference-in-difference windows. We find only a marginally positive difference-in-difference in total asset turnover over a four-year period. We also find an inconclusive relationship between DoD contract receipt and the equity multiplier.

In Panel B, we examine the effects of receiving a contract whose initial value is equal to or greater than 10% of the firm's sales in the prior year. We match large DoD contracts' observations to other contracts using our propensity scoring model and perform our Dupont decomposition. We find no difference in the ROE of large defense contractors and other award winners. However, we do find a significantly positive difference between firms that receive large defense contracts and firms that receive other contracts in the two years around contract receipt (−1, 1). The increase in large DoD contractors' profit margin is 2.1% larger than the increase in the profit margin of other sample contractors. The total asset turnover of winners of large DoD contracts also significantly increases over two- and three-year periods. We find recipients

TABLE 5 | Multivariate regressions of cumulative abnormal returns.

Panel A: Initial tests				
	(1)	(2)	(3)	(4)
	CAR (−1, 0)			
Fed. action obl./sales (*t*−1)	0.0406***			
	(0.000)			
Base and option value/sales (*t*−1)		0.0191***		
		(0.000)		
Maximum value of contract/sales revenue (*t*−1)			0.00168*	
			(0.070)	
Potential value/sales (*t*−1)				0.00156**
				(0.010)
Sweetheart index	0.202*	0.213*	0.204*	−0.0124
	(0.090)	(0.074)	(0.087)	(0.961)
Natural log of PAC contributions (*t*−1)	−0.0662***	−0.0658***	−0.0678***	−0.0797
	(0.001)	(0.001)	(0.001)	(0.229)
Natural log of lobbying expenditure (*t*−1)	0.0396**	0.0395**	0.0407**	0.0778
	(0.018)	(0.019)	(0.015)	(0.172)
Sole source for national interest	−1.528**	−1.504**	−1.483**	−1.454
	(0.025)	(0.028)	(0.032)	(0.166)
Percent of sales from federal government contracts (*t*−1)	0.774*	0.758*	0.749*	1.170
	(0.062)	(0.069)	(0.073)	(0.118)
Natural log of total assets (*t*−1)	0.0389	0.0399	0.0368	0.0559
	(0.515)	(0.506)	(0.540)	(0.645)
3 year standard deviation of ROA	−0.0690	−0.0533	−0.248	1.613
	(0.970)	(0.977)	(0.894)	(0.725)
Capital expenditure/total assets (*t*−1)	4.594	4.359	3.557	14.78**
	(0.141)	(0.167)	(0.292)	(0.015)
Altman Z-score (*t*−1)	0.0106	0.0104	0.0111	−0.238*
	(0.757)	(0.762)	(0.751)	(0.061)
Return on assets (*t*−1)	−0.0417	−0.0478	−0.134	−1.280
	(0.970)	(0.965)	(0.902)	(0.617)
Market/book ratio (*t*−1)	−0.00706	−0.00695	−0.00734	0.139*
	(0.730)	(0.735)	(0.725)	(0.070)
Debt/total assets (*t*−1)	−0.879	−0.865	−0.809	−1.630
	(0.225)	(0.234)	(0.270)	(0.322)
R&D expenditure/total sales (*t*−1)	−0.0134	−0.0130	0.00223	0.246**
	(0.502)	(0.551)	(0.942)	(0.015)
Herfindahl index (*t*−1)	4.268**	4.252*	4.241*	2.611
	(0.049)	(0.050)	(0.052)	(0.280)
Constant	0.315	0.296	0.352	−0.365
	(0.858)	(0.866)	(0.842)	(0.904)
R^2	0.0276	0.0268	0.0239	0.0856
Num. of obs.	1477	1477	1477	511
Year and industry F.E.	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes

Panel B: Multivariate robustness tests									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	CAR (−1, 0)								
Maximum value of contract/sales revenue (*t*−1)	0.0230***	0.000567	0.0250***	0.0161	0.00179**	0.00163*	0.00161*	0.00174**	0.00821
	(0.005)	(0.402)	(0.006)	(0.808)	(0.031)	(0.062)	(0.086)	(0.045)	(0.839)
Sweetheart index	0.541**	−0.0176	1.212**	−0.0535	0.330**	0.213*		0.112	0.466**
	(0.037)	(0.940)	(0.010)	(0.876)	(0.049)	(0.085)		(0.487)	(0.043)

(Continues)

TABLE 5 | (Continued)

Panel B: Multivariate robustness tests									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sole source for national interest	−1.494	−0.387	−0.736	−1.764*	−1.435	−1.456**	−1.586**	−1.711**	0.379
	(0.157)	(0.632)	(0.420)	(0.055)	(0.137)	(0.048)	(0.047)	(0.017)	(0.779)
ln of PAC contributions (t−1)	−0.0754**	−0.0682**	−0.0903	−0.0727	−0.0770***	−0.0523***	−0.0584***	−0.102***	−0.0245
	(0.020)	(0.015)	(0.179)	(0.135)	(0.001)	(0.010)	(0.008)	(0.001)	(0.489)
ln of lobbying expenditure (t−1)	0.0560**	0.0207	0.0508	0.0723	0.0415*	0.0293*	0.0332*	0.0718***	−0.0131
	(0.047)	(0.356)	(0.280)	(0.127)	(0.061)	(0.054)	(0.071)	(0.007)	(0.622)
% of sales from federal government contracts (t−1)	1.258**	0.0176	3.001*	0.106	0.930*	0.892*	0.880**	1.045*	0.425
	(0.041)	(0.964)	(0.084)	(0.889)	(0.087)	(0.050)	(0.039)	(0.086)	(0.490)
Cost plus contract							−0.338		
							(0.183)		
No bid (sole source) contract							0.691*		
							(0.088)		
Long-term contract (>1 year)							0.129		
							(0.571)		
No cost or pricing data required							0.989***		
							(0.006)		
Government furnished							−0.473		
							(0.162)		
Recovered materials							−0.227		
							(0.669)		
Commercial item procedures							−0.662**		
							(0.030)		
Environmentally friendly							0.0105		
							(0.987)		
Constant	0.352	−1.473	−6.664***	10.00**	−1.128	−8.531***	−0.741	−4.051	−1.322
	(0.901)	(0.265)	(0.007)	(0.013)	(0.545)	(0.000)	(0.691)	(0.164)	(0.615)
R^2	0.0588	0.0644	0.115	0.114	0.0446	0.0311	0.0343	0.0474	0.0616
Num. of obs.	726	751	347	379	893	1467	1429	858	619
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry F.E.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
2-digit NAICS and agency code	No	No	No	No	No	Yes	No	No	No
Firm clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Awards	IDV	Definitive contract	Delivery order	Perc_cont >10%	Full	Full	Service	Product

Note: In this table, we regress the cumulative abnormal return around the announcement of contract receipt on contract-level and firm-level variables. We include year and industry (2-digit SIC code) fixed effects in the regressions and cluster standard errors at the firm level. In both panels, our dependent variable is the cumulative abnormal return around the day of the announcement. In Panel B, we examine the relationship between contract-level and firm-level variables on subsets of our sample. We scale the cumulative abnormal returns by multiplying each by 100. We winsorize at the 5% and 95% levels. We report p-values in parentheses below the coefficients. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

of large defense contracts experience a 4.6% greater change in total asset turnover relative to the matched sample. These results indicate large defense contractors become more profitable and efficient in the years around award receipt. We find no evidence of a change in the debt levels of these firms.

Finally, in Panel C, we examine the effects on the ROE of defense contractors that receive a long-term contract. Large, long-term contracts are potentially the most lucrative contracts because they do not need to bid on the follow-on contract for several years. These contracts are typically large and have many options that the contracting officer can exercise. We match defense contractors who receive long-term contracts to other contractors in our sample and report the difference-in-difference of the ROEs. We find that defense contractors who receive long-term contracts experience significantly more positive ROE changes than the matched sample across all periods. We also find these contractors experience significantly more positive changes in their profit margins across all difference-in-difference windows. Finally, we find recipients of long-term defense contracts become more efficient over the next several years, as evidenced by the positive coefficient in the difference-in-difference tests for periods (−1, 1) and (−1, 2).

TABLE 6 | Subsample tests.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				(−1, 0)			
Maximum value of contract/sales revenue (t−1)	0.00128*	0.00178	0.00156*				
	(0.056)	(0.679)	(0.066)				
Fed. action obl./sales (t−1)				0.0310***	0.0302***		
				(0.008)	(0.004)		
Base and option value/sales (t−1)						0.0189***	0.0195***
						(0.000)	(0.000)
Sweetheart index	0.194	0.153	0.194	1.061	2.685***	0.237*	0.454**
	(0.188)	(0.431)	(0.210)	(0.122)	(0.004)	(0.068)	(0.013)
Natural log of PAC contributions (t−1)	−0.0591***	−0.0789**	−0.0588***	−0.112	−0.262**	−0.0703***	−0.0859***
	(0.009)	(0.037)	(0.007)	(0.347)	(0.039)	(0.000)	(0.001)
Natural log of lobbying expenditure (t−1)	0.0328	0.0583**	0.0425**	0.0955	−0.00288	0.0462***	0.0490**
	(0.119)	(0.039)	(0.023)	(0.152)	(0.966)	(0.004)	(0.044)
Sole source for national interest	−1.536*	−2.444***	−1.698***	−1.768	−2.463	−1.136	−1.361
	(0.060)	(0.000)	(0.005)	(0.544)	(0.191)	(0.182)	(0.166)
Percent of sales from federal government contracts (t−1)	1.145*	−0.0929	0.492	0.755	0.610	0.861**	0.987*
	(0.057)	(0.877)	(0.160)	(0.503)	(0.662)	(0.050)	(0.080)
Constant	−0.0860	7.969***	0.470	2.663	−6.656	−1.531	−2.324
	(0.963)	(0.000)	(0.832)	(0.528)	(0.390)	(0.155)	(0.160)
R^2	0.0344	0.186	0.0261	0.147	0.242	0.0265	0.0539
Num. of obs.	1136	341	1226	305	158	1344	816
Firm-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year and industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subsample	DoD	non-DoD	No-bid Cont.	% FAO > 5%	% FAO > 10%	% BAOV > 5%	% BAOV > 10%

Note: In this table, we restrict our sample into subsamples and examine the relationship between contract characteristics and the investor response. We regress the cumulative abnormal return on the announcement day on contract-level variables, firm-level variables, and year and industry fixed effects. We scale the cumulative abnormal returns by multiplying each by 100. We winsorize at the 5% and 95% levels. We report p values in parentheses below the coefficients. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

TABLE 7 | Diff-in-diff tests of DoD contractor performance.

Panel A: Propensity score matching for DoD					
		Coef.	**Std. error**	***Z***	***p* value**
Return on equity	DiD (−1, 1)	0.056	0.023	2.45	0.014**
	DiD (−1, 2)	0.000	0.017	0.01	0.995
	DiD (−1, 3)	0.016	0.027	0.61	0.541
Profit margin	DiD (−1, 1)	0.041	0.009	4.53	0.000***
	DiD (−1, 2)	0.038	0.018	2.18	0.029**
	DiD (−1, 3)	0.072	0.023	3.08	0.002***
Total asset turnover	DiD (−1, 1)	0.020	0.015	1.34	0.180
	DiD (−1, 2)	0.015	0.022	0.67	0.500
	DiD (−1, 3)	0.042	0.024	1.75	0.080*
Equity multiplier	DiD (−1, 1)	−0.483	0.507	−0.95	0.341
	DiD (−1, 2)	−0.134	0.108	−1.24	0.215
	DiD (−1, 3)	0.146	0.142	1.03	0.304
Panel B: Propensity score matching for DoD and perc_cont > 10%					
		Coef.	**Std. error**	***Z***	***p* value**
Return on equity	DiD (−1, 1)	0.001	0.020	0.07	0.946
	DiD (−1, 2)	−0.032	0.024	−1.34	0.180
	DiD (−1, 3)	0.028	0.023	1.20	0.231
Profit margin	DiD (−1, 1)	0.021	0.008	2.73	0.006***
	DiD (−1, 2)	0.016	0.008	1.92	0.055*
	DiD (−1, 3)	0.013	0.010	1.28	0.201
Total asset turnover	DiD (−1, 1)	0.030	0.016	1.87	0.062*
	DiD (−1, 2)	0.048	0.020	2.35	0.019**
	DiD (−1, 3)	0.028	0.023	1.25	0.212
Equity multiplier	DiD (−1, 1)	−0.077	0.379	−0.20	0.840
	DiD (−1, 2)	0.050	0.103	0.48	0.628
	DiD (−1, 3)	−0.230	0.182	−1.26	0.206
Panel C: Propensity score matching for DoD long-term contracts					
		Coef.	**Std. error**	***Z***	***p* value**
Return on equity	DiD (−1, 1)	0.083	0.026	3.18	0.001***
	DiD (−1, 2)	0.070	0.031	2.27	0.023**
	DiD (−1, 3)	0.093	0.035	2.64	0.008***
Profit margin	DiD (−1, 1)	0.032	0.013	2.49	0.013**
	DiD (−1, 2)	0.042	0.021	1.96	0.050**
	DiD (−1, 3)	0.063	0.020	3.17	0.002***
Total asset turnover	DiD (−1, 1)	0.046	0.020	2.27	0.023**
	DiD (−1, 2)	0.044	0.022	2.03	0.042**
	DiD (−1, 3)	0.015	0.030	0.48	0.633
Equity multiplier	DiD (−1, 1)	−0.256	0.268	−0.95	0.340
	DiD (−1, 2)	−0.191	0.112	−1.70	0.089*
	DiD (−1, 3)	−0.120	0.241	−0.50	0.617

Note: In this table, we report the results of difference-in-difference tests involving Department of Defense contractors versus other contractors. We use propensity score matching to match each defense contractor to a non-defense contractor. We then compare the change in the return on equity or components of return on equity between defense contractors and matched sample firms over the next 1, 2, or 3 years. In Panel A, we match all defense contractors in our sample. In Panel B, we match defense contractors whose contract represents at least 10% of the previous year's sales. In Panel C, we match defense contractors that receive long-term contracts to other contractors. We report the difference in differences from the start of the prior year (t-1). *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Abbreviation: DoD = Department of Defense.

Taken together, our results indicate that one of the drivers of the positive investor response to the receipt of a defense contract is the expectation of increased firm profitability. Defense contractors that receive larger awards experience more positive changes in profitability and efficiency than other contractors. The most lucrative awards in our sample appear to be long-term defense contracts. A firm receiving these contracts significantly greater ROE changes, profit margin, and total asset turnover. These findings support the public perception that large defense contracts are highly lucrative to the firms which receive them.

5 | Conclusions

In this study, we explore the key factors that enhance contract value for firms, utilizing the exogenous shock of announcement-period CARs as a measure of contract value. Our analysis reveals a clear positive correlation between the initial size of a contract and its CARs.

Specific characteristics of contracts significantly influence their value. We observe that no-bid (sole source) contracts generally generate more value for firms than openly solicited contracts. Additionally, contracts exempt from cost or pricing data requirements are found to be more valuable than those requiring such data. Among sole-source contracts, those designated for the national interest are less lucrative compared to other sole-source agreements. Furthermore, contracts adhering to commercial item procedures under the FAR or DFARS are less beneficial for shareholders than those that follow non-commercial item procedures.

Our findings also demonstrate a positive link between lobbying efforts and contract value, supporting the hypothesis that strategic investments in lobbying can enhance both the quality and value of ensuing contracts. In contrast, PAC contributions appear to negatively impact contract value when controlling for other variables.

A particularly robust positive relationship emerges between the receipt of DoD contracts and firm value, with DoD contracts generating significantly greater value than those awarded by non-DoD agencies. This enhanced value is predominantly found in large, long-term defense contracts, which not only boost the profitability of DoD contractors but also their operational efficiency when compared to similar non-DoD contractors.

Overall, our results suggest that investors consider the value added by the receipt of large government contracts and take into account specific contract characteristics when adjusting their valuation of a firm. These insights affirm several public perceptions regarding the dynamics between firms and the federal government, highlighting the critical role of contract attributes in shaping economic outcomes within the federal contracting arena.

Data Availability Statement

The data used in this study comes from publicly available sources. Processed data used in this study is archived at https://urldefense.com/v3/__https://www.caperesearch.org__;!!N1leV2iwtfs!sGS1DrUeMTeDvg0KjxVrKU4NdV3aIMDAlzCRPY4C37SM1wRgiPSB6hyWi8MY57w3yDNaLF7yDkkX2j9yAnZREdSv0xKl$

Endnotes

[1] https://about.bgov.com/news/federal-contract-spending-five-trends-in-five-charts-2/#:%7E;:text=Federal%20contract%20spending%20in%20fiscal,the%20highest%20amount%20on%20record and https://federalnewsnetwork.com/reporters-notebook-jason-miller/2020/06/federal-procurement-spending-up-120b-since-2015/

[2] https://federalnewsnetwork.com/management/2018/06/trump-administration-seeks-to-restructure-then-privatize-postal-service/

[3] O'Shea, Palcic, and Reeves (2019) examine the performance of public-private infrastructure partnerships (PPPs) and find no evidence of faster development or increases in value.

[4] https://www.acquisition.gov/far/part-2#FAR_2_101

[5] An RFP indicates the proposal is a final proposal. Bids made under an RFQ can be modified based on new information.

[6] Ferris, Houston, and Javakhadze (2019) include lobbying as a control variable, but it is not their paper's focus.

[7] For example, the Dodd-Frank Act: https://www.npr.org/sections/itsallpolitics/2013/11/11/243973620/when-lobbyists-literally-write-the-bill

[8] https://www.congress.gov/bill/113th-congress/senate-bill/994

[9] https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_12_ind_port.html

[10] https://www.acquisition.gov/far/part-12

[11] We scale up our regression CARs by 100 to make interpretation easier provide more space for additional regressions.

[12] Although we find positive and marginally significant relationships between the natural log of contract value and abnormal returns, the natural log does not account for firm size. Another concern with this variable is the relationship between contract size and several variables. For example, the simplified acquisition threshold for contracts being performed outside the United States is $1,500,000.

[13] Indefinite delivery vehicles can also be referred to as indefinite delivery, indefinite quantity (IDIQ) contracts.

[14] Our PSM model is $DoD = \beta_0 + \beta_1 * sweetheart\ \ index + \beta_2 * lnat_{lastyr} + \beta_3 * rolling\ std\ dev. + \beta_4 * \frac{CAPEX}{Total\ assets} + \beta_5 * ROA + \beta_6 * \frac{Market}{book} + \beta_7 * \frac{debt}{Total\ assets} + \beta_8 * HHI + \epsilon$. We lag all accounting variables by one year (t-1).

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