

# The Peer Effects in Government Contracting

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## ABSTRACT

We examine the extent to which peer effects explain corporate government contracting. From the observational learning perspective, managers rationally mimic the behavior of peer firms to benefit shareholders. Using a sample of U.S. firms for the period 2002-2017, we provide the first direct empirical evidence of peer effects in the procurement of government contracts. Peer firms also influence the appeal for sweetheart provisions included in awarded contracts. Finally, peer-effects-induced government contracting matters for investment efficiency and long-term performance. Our results are robust to adjustments for possible endogeneity.

**Key Words:** Government suppliers; Government contracts; Peer effects

**JEL Classifications:** D22, G39, H57

## **I. Introduction**

Each year, the U.S. federal government awards approximately US \$400 billion in procurement contracts to businesses, making it the single largest buyer of goods and services in the country (e.g., Samuels 2018; Brogaard, Denes, and Duchin 2019). Recent literature has focused on understanding the determinants of corporate preferences to engage in government contracting activities (Dhaliwal, Judd, Serfling, and Shaikh 2016; Huang, Lobo, Wang, and Xie 2016; Josephson 2019; Cohen, Li, Li, and Lou 2021). Social learning patterns of peer-firm outcomes suggest that competing firms will monitor their counterparts to determine whether to pursue similar engagements (Kaustia and Knüpfer 2012; Kaustia and Rantala 2015). In this study we examine whether peer effects are prevalent in government contracting. We expect that as government contracts are awarded, competing firms will assess the success of these agreements and either follow similar strategies to procure contracts or focus on other methods to compete.

Having the U.S. government as a customer could be beneficial for the firm. Government contracts provide suppliers with a steady, predictable stream of cash flows. Previous studies find that these procurement contracts can be beneficial in regard to corporate policy and performance. For example, government monitoring activities ensure firms engage in better corporate practices (Huang, Lobo, Wang, and Xie 2016), providing more assurance to lenders, who issue loans to government suppliers that contain fewer covenants and are less likely to have performance pricing provisions (Cohen, Li, Li, and Lou 2021). While adhering to these monitoring requirements may occupy firm resources, bond issuances by government suppliers tend to have higher ratings and command lower yields (Naa 2019). In addition, greater cash flow predictability from procurement contracts helps firms attract private equity and venture capital funding (Paglia and Harjoto 2014).

Further, government contracts lower the supplier's cost of equity (e.g., Dhaliwal, Judd, Serfling, and Shaikh 2016).

However, government contracting also has its costs to the firm. Once awarded, the monitoring and fulfillment process can be demanding for the supplier, having subsequent effects on firm policy and outcomes. While the revenue from government contracts provides cash flow predictability, studies suggest that contracting increases agency problems as firms are forced to meet requirements of the agreement which do not always enhance shareholder value. Obtaining a contract amplifies idiosyncratic and systematic firm risk (Josephson 2019). Government contracts are associated with lower investment, leading to a reduction in sales growth as firms focus on fulfilling their agreements (Cohen and Malloy 2016). Although, government contractors exhibit lower valuations overall, government contracts can enhance operating performance during recessions (Esqueda, Ngo, and Susnjara 2019).

Peer firm influence is common in many corporate policies. Companies within the same industry adopt similar capital structures and financial policies (Leary and Roberts 2014). They increase investment spending following improvements in peer firm valuations (Foucault and Fresard 2014) and reduce investment when valuations drop (Dessaint, Foucault, Frésard, and Matray 2018). Peer effects appear in dividend payout policy (e.g., Hoberg, Phillips, and Prabhala 2014; Grennan, 2019), stock splitting announcements (e.g., Kaustia and Rantala 2015), and factor into executive compensation (Bizjak, Lemmon, and Naveen 2008). Also, around the passage of close-call CSR proposals, peer firms adopt similar CSR policies in response to potential threats (Cao, Liang, and Zhan 2019). This type of effect is cultivated through the level of competition among firms in similar industries or product lines.

We postulate that competitive firms monitor their peers and are influenced by their actions and outcomes. If peer firms notice the benefits of contracting, we expect them to also become government suppliers, but if the costs are too great, these firms will turn their focus to obtaining a larger market share through other customer channels.

To test this theory, we follow Grennan's (2019) approach to quantify peer influence. We create a sample of all firms in any industry where at least one firm receives a government contract in a given year. These peer reference groups are defined by their three-digit Standard Industrial Classification (SIC). We record whether the number or total dollar value of government contracts increases or decreases from the previous year within each peer reference group, and the percentage of firms within each peer reference group that gain or lose government contracts.

Our results indicate a strong correlation between firms procuring government contracts. If firms within the industry obtain more contracts, then other firms will follow suit in the next year. Likewise, if firms secure less contracts in the previous year, then contracts at peer firms will fall in the subsequent year. These results are robust to the inclusion of various firm-level controls, and firm and year fixed effects. Our findings are also economically significant. A 10 percent increase in the fraction of peer firms that are awarded more government contracts is associated with a 1.55 percentage point higher probability that a firm will also increase its contracts with the government in the following year, *ceteris paribus*. A 10 percent increase in the fraction of peer firms reducing government contracts is associated with a 2.79 percentage point higher probability that a firm will also reduce its contracts the following year.

In addition, we find evidence that the increase in corporate government contracting attributable to peer effects is associated with improvements in the efficiency of a firm's long-term investment policies. While a decrease in peer-effects-induced government contracting is associated

with a reduction in the optimality of a firm's investment policies. We further document that government contracting predicted by peer effects is positively associated with long-term performance. This effect is stronger for increases in government contracting activities than for decreases.

Peer effects studies have to cope with what Manski (1993) refers to as “the reflection problem” (Grennan 2019). It is difficult to make inferences about the influence of a group's behavior because there are other confounding factors, and potential issues with reverse causality. To address these endogeneity concerns, we instrument our peer-firm effects. First, we use a variable measuring the average distance of peer-firm headquarters from Washington D.C. (the capital) following Boubakri, El Ghouli, and Saffar (2013) and Esqueda et al. (2019). Our sample captures all awarded federal government contracts, so close proximity to the capital city will be correlated with peer-firm contract procurement, while also satisfying the exclusion restriction. Next, we construct a variable for “political alignment”, defined as the percentage of peer firms in a given industry that are headquartered in a state that voted for the political party in power during the most recent presidential election. Political alignment matters for peer firm government contracting (e.g., Ferris, Houston, Javakhadze 2019) and also satisfies the exclusion restriction. We find that our results hold for these instrumental variable regressions.

We also examine whether peer effects are present in the procurement of supplier-favorable government contracts that include one of three types of terms: (1) those where the government agrees to cover all costs and makes an additional payment for profit (Cost-plus contracts), (2) when there are no other bidders for the contract because only one firm has the capabilities to meet the government's request (No-bid contracts), and (3) contracts that are granted for more than one year at a time (Multi-year contracts). Ferris et al. (2019) refer to these as “Sweetheart Deals”. They find

that political connections are associated with more sweetheart deals. In similar vein, we document that when firms within an industry demand more favorable government contracts, peer firms respond in a similar manner, seeking more sweetheart deals in the next year. The opposite effect is found when the percentage of firms in the industry with sweetheart deals falls in the prior period.

Our research is related to two strands of literature and makes contributions to each. First, our findings contribute to the growing literature on government contracting. The federal government is the single largest customer in the U.S. economy which motivates continuing research around the outcomes of government procurement contracts. Previous studies show these contracts are highly sought after. Firms use political connections of their executives and board members and donate to political action committees (PACs) in order to obtain government contracts (Goldman, Rocholl, and So 2013; Ferris et al. 2019; Schoenherr 2019). They may also hire government officials in order to be granted contracts (Canayaz, Martinez, and Ozsoylev 2019). This suggests that while government monitoring can be overbearing and detrimental to firm value and sales growth, companies see the benefits of these stable agreements. We observe a similar pattern in our sample of matched peers. Firms identify the benefits from government contracting over the costs and tend to pursue contracts after other industry leaders do.

Second, we add to the literature on peer effects by exploring a previously unexamined factor of peer influence. When firms within an industry obtain more contracts, and those with more favorable terms, their peers are influenced by this behavior, and also pursue government customers. Therefore, we provide additional evidence of the types of peer influence between firms. While industry peers may adopt similar corporate policies (Bizjak et al. 2008; Leary and Roberts, 2014), they also react to changes in peer firm activity (Foucalt and Fresard 2014; Kaustia and Rantala 2015; Grennan, 2019). As we demonstrate, this also occurs in their pursuit of customers.

Government contracts offer a stable revenue stream with monitoring that lowers the cost of debt and equity for the firm (Dhaliwal et al. 2016; Esqueda et al. 2019; Naa 2019). There appears to be a positive influence in this regard, as firms follow peer activity in seeking these types of customers. Conversely, if firms reduce their dependence on government contracts, their industry peers will do the same.

This paper is organized as follows. **Section 2** develops our testable hypotheses based on peer effects. **Section 3** describes the government contracting data and variables used to test our hypotheses. **Section 4** presents our methodology. **Section 5** begins with our univariate results, followed by a robust empirical analysis to test the peer effects of government contracting and sweetheart contract terms, along with policy and performance implications. **Section 6** concludes the paper.

## **II. Hypothesis Development**

Prior studies have shown that peer influence is common among competing firms (e.g., Hoberg, Phillips, and Prabhala 2014; Leary and Roberts 2014; Dessaint, Foucault, Frésard, and Matray 2018; Grennan 2019). A firm that wants to stay competitive, benefits from monitoring the other firms within its industry and adopting successful strategies. This can involve observing changes in corporate policy, understanding technology developments, evaluating strengths and weaknesses, and targeting similar customers. Often, competing firms hire workers with equal skillsets away from each other, which promotes influential behavior as workers from one company bring successful strategies to the others. The longest-lasting firms will be able to adapt to changes within the industry, the economy, and their competition. The presence of peer effects allows firms

to be more successful if they can adequately study the strategies of other companies within their industry.

There is evidence on both sides of the coin about the benefits of procuring government contracts. Firms benefit from stable, predictable cash flows from a customer that should be able to provide timely payments. However, meeting the contracting requirements may occupy firm resources, promote manager entrenchment, and lead to a reduction in investment (Ngo 2010). Managers will be less inclined to innovate if they have a secure customer that is providing reoccurring business. They will pursue the “Quiet Life” (Hicks 1935) opting for safer corporate policies. This agency problem comes at a detriment to overall value as the firm fails to act in the best interests of its shareholders (Esqueda, Ngo, and Susnjara 2019).

Often, there is steep competition between firms bidding for government contracts. We hypothesize that when companies pursue government contracts, they do so because they see the benefits of such agreements. In turn, other firms within the industry will observe this behavior and attempt to reach similar arrangements with the government. They will bid on more contracts, and therefore, both the number and dollar amount of contracts awarded to these peer firms will increase as a result of the influence from others within the industry. Conversely, if the effect of government contracting is harmful to firm value and corporate policies, then we expect that as firms reduce their exposure to government customers, others within the industry will do the same. Our main hypothesis is the following: as firms increase (decrease) their pursuit of contracts, peer firms will subsequently respond by also pursuing (reducing) government contracts.

*Hypothesis 1: Peer effects from government contract awards exist within industries.*

Bajari and Tadelis (2001) argue that cost-plus contracts are preferred to fixed-price contracts. The government enters into both types of agreements. Fixed-price contracts require the



customer (in this case the government) to pay a pre-agreed upon fixed fee once goods have been delivered or services rendered. Cost-plus contracts reimburse the supplier for all costs up to a pre-agreed level, and then provide a fixed payment for profit earned on the contract. In this type of agreement, the supplier is protected against adverse change in its input costs, making it a more preferable contract. The government also offers multi-year contracts that assure the firm of its business for more than one, and up to five years. In another favorable case for the supplying firm, there are no other companies that can provide the goods or services requested by the government, so only one firm bids on the contract, giving it more power in the negotiation process.

It is our conjecture that cost-plus, multi-year, and no-bid government contracts are more attractive for supplying firms, especially when compared to fixed-price, one-year, contracts with multiple bidders. We test to see whether there are peer effects regarding these type of “sweetheart” deals (Ferris, Houston, and Javakhadze 2019). If one firm in an industry receives more favorable contract terms, say through a multi-year deal with the government, then we expect other firms will try to demand similar agreements. An increase in the number of sweetheart deals from one firm will lead to more firms being awarded these types of contracts. Conversely, if firms are reducing their number of sweetheart deals, then it may signal that even these favorable contract terms are not enough to keep pursuing the government as a customer. In this instance, we expect peer firms to also reduce cost-plus, no-bid, and/or multi-year contracts. We hypothesize that as firms increase (decrease) their pursuit of sweetheart deals, peer firms will subsequently respond by also pursuing (reducing) sweetheart deals.

*Hypothesis 2: Peer effects from sweetheart deal awards exist within industries.*

### **III. Data and Variable Construction**

The U.S. federal government procurement process begins when an agency identifies the goods and services it needs, determines the most appropriate method for purchasing, and announces the acquisition on the Federal Business Opportunities website. Prospective contractors begin by submitting the necessary documentation along with their offer price to the agency. Federal Acquisition Regulations (FAR 9.104) states that the agency determines whether a prospective contractor meets certain criteria which include: access to financial resources, accounting performance, adequate experience, operational controls, and technical skills to perform the contract. The agency then reviews the prospective contractor's bid price and assesses the reasonableness and fairness of the proposal. There is a wide selection of contract types that are available to meet the needs of both parties in acquiring the goods and services requested by an agency (FRA 16.101(a)). The agency is required to exercise sound judgment on whether a prospective contractor is selected and what type of contract is awarded (FAR 16.109(a)).<sup>1</sup>

Data on awarded government contracts are obtained from the Federal Procurement Data System (FPDS) website. These data include information on firms that receive a contract, the contract details, and identify the government agency providing the contract. We collect data on federal contracts awarded from 2002 to 2017 for all firms in the CRSP and COMPUSTAT databases, which provide the necessary financial and accounting variables for our empirical analysis. Prior research studies have identified peer effects through analyst coverage (Kaustia and Rantala 2015), CEO business school networks (Shue 2013), and textual analysis of similarities in company product descriptions found in firm 10-Ks (Hoberg and Phillips 2010). We follow Leary

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<sup>1</sup> For a detailed discussion of the procurement process see Halchin (2015).

and Roberts (2014), Cao, Liang, and Zhan. (2019), and Grennan (2019) in defining peer groups by firms within the same 3-digit SIC. We argue that firms will be affected by industry changes and competition which is the most accurate method for capturing peer groups for government contracts. We also confirm that our results are robust to using the the Text-based Network Industry Classification (TNIC) developed by Hoberg and Phillips (2010) in an un-tabulated analysis.

Our overall sample has more than sixty thousand firm-year observations. This includes 12.1 million government contracts amounting to US \$3.65 trillion or about US \$228 billion per year. Figure 1 plots the total amount and number of government contracts awarded each year from 2002-2017. It shows a steady increase in government spending in leading up to the financial crisis which peaks in 2009 around the enactment of the American Recovery and Reinvestment Act, a stimulus package passed in February of that year to help the U.S. recover from the Great Recession. Over the years, the number of contracts awarded has been increasing to a greater degree than overall dollar value. The number of contracts awarded per year declined following the financial crisis but then increased sharply from 2013-2017, during which time the dollar amount per year did not change remarkably. This pattern suggests more numerous, but smaller deals, perhaps because of improvements in technology that allow the government to monitor suppliers more efficiently and diversify its sourcing.

We create indicator variables that equal to one if a firm reports an increase in the dollar amount, or separately the number, of contracts awarded from the previous year. Conversely, variables are created that capture decreases in contracts. Our main peer effects measure is calculated as the percentage of firms within a given industry that experienced an increase or decrease in contracts from the prior year (Grennan 2019). On average, each year 15.03 (16.25) percent of firms within a given 3-digit SIC industry show an increase the number (dollar value) of

contract awards in a given year, while 13.07 (14.63) percent show a decrease.<sup>2</sup> We lag this variable by one period in the empirical analysis so as not to confound the effects of government contract awards.

From the raw data, we also record whether a contract has one of our sweetheart terms: cost-plus, no-bid, or multi-year. Then we create a sweetheart index by totaling both the number, and separately the dollar value, of all sweetheart deals for each firm in a given year. Our entire sample includes 1.2 million sweetheart deals amounting to US \$2.5 trillion or about US \$156 billion per year. Figure 2 plots the total amount and number of sweetheart deals awarded each year from 2002-2017. There is a notable spike in the number of sweetheart deals awarded in 2009, presumably around the American Recovery and Reinvestment Act, which then declines steadily during the recovery. The dollar amount of sweetheart deals also peaks in 2009, but the variance from year to year is not as large. In the more recent years, the number of sweetheart has declined, which is perhaps a result of increased competition on contract bids, allowing the government more negotiating power. Of the three types of sweetheart deals, multi-year contracts are by far the most common and largest by dollar value. Cost plus contracts are the least common.

We create variables capturing an increase or decrease of each type of contract term from the previous year and also the total sweetheart index measure. Peer effects are measured as the percentage of firms within the industry that receive an increase or decrease in the sweetheart deal terms or the index itself, both for number of contracts and dollar amount.

Following prior research (Ferris, Houston, and Javakhadze 2019), control variables for the multi-variate analysis are from COMPUSTAT and include  $\ln(\text{TA})$  - the natural log of total assets;

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<sup>2</sup> Our sample only includes industries in which at least one firm within the industry reported an increase or decrease in the number of government contracts. Industries with no government contracts are excluded from this analysis.

BTM –book-to-market ratio; CAPX/Sales - capital expenditures divided by sales; R&D/Sales - research and development expenditures/total sales; ROA – return on assets; and HHI – a Herfindahl-Hirschman index based on industry sales, where industries are defined using three-digit SIC code.

The summary statistics for our variables are presented in Table 1 *Panel A*. Regarding the peer-effects variables, we find that on average, within a given industry, 16.5 (17.5) percent of firms increase the number (dollar value) of government contracts each year, while 13.7 (14.9) percent report a decrease. For sweetheart deals, 14.4 (15.8) percent of firms report an increase in the number (dollar value) of deals in a given year, while 11.4 (13.5) percent report a decrease.

In *Panel B* of Table 1, we separate the firms in our sample that are government suppliers from those that are not. Firms with government contracts tend to be larger than non-contractors. Both groups report similar book-to-market ratios, but non-contractors spend significantly more on CAPEX and R&D as a percentage of sales. Competition is about equal between the two groups because all industries in the sample contain at least one firm with a government contract. Firms that are government suppliers tend to have higher returns on their assets.

#### IV. Methodology

To examine whether peer effects from government contracting are present among government suppliers within the same 3-digit SIC industry, we estimate the following regression following the peer effects methodology of Grennan (2019):

$$\Delta FirmContracts_{j,i,t} = \beta Peer Effects_{i,t-1} + \theta X_{j,i,t-1} + f_j + \delta_t + \epsilon_{j,i,t} \quad (1)$$

where the dependent variable,  $\Delta FirmContracts$ , is a binary variable that equals one if there is an increase or (separately) decrease in the number or dollar value of all government contracts

awarded, as well as in the number or dollar value of sweetheart government contracts, to firm  $j$  from the prior year. We examine awards for all types of government contracts, our sweetheart deals index, and then separately each type of sweetheart deal: cost-plus, multi-year, and no-bid.

Our primary explanatory variable is *Peer Effects* which captures the percentage of firms within the same industry  $i$  as firm  $j$  that reported either an increase or decrease in the dollar value or number of government contracts awarded from year  $t-2$  to year  $t-1$ . Consistent with Grennan (2019), in calculating *Peer Effects*, we exclude firm  $j$  to capture only peer firm activity. Increases (decreases) in peer firm government contract awards are used to predict the probability of firm  $j$  pursuing government contracts in the next year.  $X$  is a vector of lagged control variables for firm  $j$  including: log of assets, BTM, CAPEX/Sales, R&D/Sales, HHI based on industry sales, and ROA. All firm-specific controls are winsorized at 1 and 99 percent. The estimation also includes firm ( $f$ ) and year ( $\delta$ ) fixed effects and an error term  $\epsilon$  to capture unobservables. All regressions are estimated with robust standard errors clustered by firm. We estimate our regressions using OLS (linear probability models) because we deploy large number of fixed effects (firm and year) and non-linear models are not suitable (Grennan 2019).

After presenting these initial results, we address what Manski (1993) refers to as “the reflection problem”, a challenge studies like ours face when trying to prove the presence of peer effects among other confounding factors. We address this identification concern with instrumental variables. First, we use the natural logarithm of the average distance of peer firm headquarters from Washington D.C. as an instrument. A peer firm’s proximity to the nation’s capital increases the likelihood of it attracting federal government contracts (Esqueda, Ngo, and Susnjara 2019) which satisfies the relevance criterion for our explanatory variable *Peer Effects*. It also satisfies the exclusion restriction in that peer firm headquarter-locations are an exogenous decision that

does not influence a different firm's decision to pursue government contracts (Boubakri, Ghoul, and Saffar 2013). Within the same 3-digit SIC, we calculate the distance in miles of each peer-firm's headquarters from Washington D.C., using the average of all these distances to instrument for *Peer Effects*. Second, we deploy an alternative instrument, political alignment, estimated as the percentage of firms within a given industry that are headquartered in a state that voted for the presidential party that is in office. The intuition behind this instrument is based on the recent evidence of the role of political connections in government contracting (Goldman, Rocholl, and So 2013; Ferris, Houston, and Javakhadze 2019). We argue that peer firms in a given industry, headquartered in a state that voted for the party in power during the most recent presidential election, are more likely to receive government contracts. However, peer firm headquarters are an exogenous to the focal firm and does not directly affect the focal firm's government contracting activities. Consequently, the exclusion restriction is satisfied.

## **V. Empirical Results**

### *5.1 Univariate Analysis*

Table 2 presents a univariate analysis of the correlation between firm, and lagged peer firm government contract awards. We find support for both *H1* and *H2* in this univariate setting. As shown in *Panel A*, within our sample period there is a 15.03 percent probability that a firm is awarded a greater number of contracts from the previous year; but when that firm is in an industry where peer effects are greater than the mean, there is a 19.73 percent probability of an increase in the number of government contracts. 16.25 percent of firms report an increase in the dollar value of contracts awarded, but the likelihood rises to 20.66 percent when in the upper tier of peer influence. We observe similar trends for our variables that capture the number and dollar value of

sweetheart deals awarded. When a firm is in an industry with heavy peer influence from sweetheart deals, it increases its number of sweetheart deals from the government 17.35 percent of the time, compared with 13.07 percent at the mean level of peer influence. When sweetheart deals are measured by dollar value, this effect increases from 14.61 percent to 18.76 percent as peer influence grows above the mean. We suspect that firms recognize when their industry peers receive favorable contract terms from the government and negotiate similar arrangements.

The likelihood of a firm reporting a decline in the number or value of government contracts is also larger in industries with more peer firm activity. For the entire sample, a firm is 13.59 (14.63) percent likely to report a decline in the number (dollar value) of contracts; however, when considering industries in which a greater percentage of firms reduce their contracts, the likelihood of a decline rise to 18.81 (19.02) percent. For sweetheart deals, the difference between the likelihood of decline in all industries and those above the mean of peer influence, is 11.15 (13.04) compared with 15.00 (16.84) for number (value). There is a noticeable difference in the pursuit of government contract depending on the industry.

In *Panel B*, we separate industries by quintiles of peer influence, with quintile 1 reporting the lowest percentage of peer firms that increased or decreased their government contracts in the prior period. We report the likelihood of a firm increasing or decreasing its total government contracts as well as sweetheart-deal contracts (by number and value) depending on the level of peer influence within its industry. For each test, the difference in means between the lowest and highest quintile groupings is greater than ten percentage points and significant at the one percent level. The likelihood of a firm increasing its number (dollar value) of government contracts is 13.97 (13.43) percentage points higher in an industry with high compared to low peer influence. The difference in the number (dollar value) of sweetheart deals is 13.69 (12.67) percent points



from the lowest to highest peer influence groups. The results are similar for firms that report a decrease in government contracts. The more peer influence in the prior period, the greater probability of a reduction in contracts and sweetheart deals in the subsequent year. Firms follow their industry-peers in the pursuit of, or retreat from, government contracting.

## 5.2 Multivariate Analysis

Results from our full empirical models, estimating the likelihood of an increase in firm government contracts, are presented in Table 3. The results in *Panel A* indicate significant peer effects in government contracting in four of the five models. In Models 1-3 and 5, an increase in the number of contracts reported by peer firms in the prior period, increases the likelihood of a firm pursuing contracts as it is influenced by the activity of its industry peers. The *Peer Effect* coefficient in Model 1 indicates that a 10% increase in the peer influence factor, increases the likelihood that a firm will pursue more contracts by 1.55 percentage points (pp). An increase in the number of peer-firm cost-plus deals by 10% raises the likelihood of a firm being awarded a cost-plus contract by 1.84 pp. The same effect for non-competitive contracts is about 1.46 pp. *Panel B* captures the peer influence effect on increases in the total dollar value of government contracts. Only cost-plus contracts exhibit any statistically significant peer effects, with a 10% increase in peer influence raising the likelihood of a firm being awarded a cost-plus contract by 1.83 pp.

In Table 4, we capture peer effects when the number or dollar value of government contracts declines. When measuring the number of contracts (*Panel A*), the peer influence variable is significant for all five groups of contracts. When the number of peer firms that lost government contracts rises by 10%, there is a 2.79 pp greater likelihood of a firm decreasing its number of contracts the following year. This same effect is 1.52 pp for the sweetheart index, 1.47 pp for cost-

plus, 0.7 pp for multi-year, and 2.22 pp for no-bid contracts. We find similar results when considering any decline in the dollar amount of contracts awarded in *Panel B*. Only the group of multi-year contracts does not exhibit any peer effects. Again, a decrease in the dollar value of contracts awarded to peers in the prior period, increases the likelihood that a firm will then take on less valuable contracts overall.

While we do find a significant amount of evidence in support of *H1* and *H2* pointing to peer effects in government contracting, we strive for stronger identification in our regressions. To perform this analysis, we instrument the *Peer Effects* measure with a variable that captures the average distance of peer firm headquarters from Washington D.C. Table 5 presents the results of increases in firm government contracts and Table 6 presents the decreases. In *Panel A* of Table 5, we find peer effects in all five contract groupings. When industry peers experience an increase in the number government contracts, firms pursue these contracts in the following year. The coefficients in our second-stage regressions are all significant at the one percent level including the sweetheart provisions. All of our first stage F-statistics are significant. In *Panel B*, we analyze increases in the dollar amount of government contracts. We find peer effects for all contract groupings with the exception of multi-year contracts. In *Panels C* and *D*, we examine increases in the number and dollar amount of government contracts as well as sweetheart provisions, using the political alignment instrument measuring the percentage of firms within a given industry that are headquartered states that voted for the presidential party that is in office. For this analysis, our results are qualitatively similar to those with the distance instrument variable.<sup>3</sup>

Table 6 *Panel A* examines decreases in the number of government contracts awarded. Peer influence is instrumented with the average peer-firm distance from Washington D.C. The peer

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<sup>3</sup> We use political alignment with the Senate as an alternative instrument and our results are qualitatively similar. We present the results of this analysis in Appendix A.

effects coefficient is significant in Model 1 for all contracts, 2 for the sweetheart index, and 5 for non-competitive contracts. In all these models, an increase in influence from a peer-firm reduction in contracting, increases the likelihood that a focal firm will also decrease its number of contracts with the government. In *Panel B*, for the total dollar amount of contracts, we only observe a significant peer effects influence in the reduction of cost-plus contracts. Next, we use the political alignment instrument to study decreases in contracting. These results, in *Panels C* and *D*, indicate a robust effect from peer influence in all models except for the cost-plus grouping (3). Peer-firm reductions in the number and dollar amount of government contracts as well as sweetheart provisions, induce focal firms to reduce their contracting as well.

### *5.3 Peer Effects, Government Contracting, and Investment Policies*

Our results thus far indicate that peer effects have implications for the government contracting activities of a firm. This raises the question whether such implications have spillover effects on corporate investment policies. We follow Biddle, Hilary, and Verdi (2009) to estimate firm deviations from optimal investment activity. Specifically, we model a firm's investment policy as a function of growth opportunities and use the absolute value of the residuals from the following regression as a measure of investment efficiency:

$$Investments_{j,t} = \beta_0 + \beta_1 Sales\ Growth_{j,t-1} + \epsilon_{j,t} \quad (2)$$

where *Investments* is estimated as the sum of research and development expenditures, capital expenditures, and acquisitions expenditures, minus cash receipts from sale of property, plant, and equipment, all scaled by lagged total assets. *Sales Growth* is the annual growth rate in sales. We estimated equation (2) for each industry. The residuals from these regressions are the measures of investment inefficiency for each firm in our sample.

Next, we predict our government contracting variables, including the number and dollar value of all contracts and the sweetheart index, from the regression of each variable on its respective *Peer Effects* measure. Finally, we regress the government contracting induced by peer effects, on the investment inefficiency measures.

The results of this analysis are shown in in Table 7. In Model 1 and 3 (Model 2 and 4) *Peer Effects* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number (dollar value) of all government contracts and sweetheart deals awarded from year t-2 to year t-1. In Models 5 and 7 (Models 6 and 8) *Peer Effects* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number (dollar value) of all government contracts, as well as sweetheart deals, awarded from year t-2 to year t-1. In *Panel A (Panel B)*, the dependent variable is an investment inefficiency measure estimated from the investment model in equation 2 following Biddle, Hilary, and Verdi (2009) as an average over the period t+1, t+3 (t+1, t+5).

We follow Biddle, Hilary, and Verdi (2009) for control variables which include: Ln(asset) - the log of total assets; BTM - the ratio of the market value of total assets to book value of total assets; s(CFO) – standard deviation of the cash flow from operations deflated by average total assets from years t-5 to t-1; s(Sales) - standard deviation of the sales deflated by average total assets from years t-5 to t-1; s(I) - standard deviation of investment from years t-5 to t-1; Z-Score; Tangibility - the ratio of PPE to total assets; K-structure - the ratio of long-term debt to the sum of long-term debt to the market value of equity; Industry K-structure - mean K-structure for firms in the same SIC3-digit industry; CFO/sale - the ratio of CFO to sales; Slack - the ratio of cash to PPE; Dividend - an indicator variable that takes the value of one if the firm paid a dividend, and zero

otherwise; Firm Age - the difference between the first year when the firm appears in CRSP and the current year; Operating Cycle – the log of receivables to sales plus inventory to COGS, multiplied by 360; Loss – an indicator variable that takes the value of one if net income before extraordinary items is negative, and zero otherwise; and Cash - the ratio of cash to total assets.

We find that government contracting, induced by peer effects, reduces investment inefficiency when firms increase government contracting activities. However, the results are the opposite when firms reduce government contracting activities as a result of peer effects. One potential explanation of this outcome could be that peer-effects-induced increases in government contracting are value-creating for the firm. However, when firms reduce government contracting activities, as a result of peer influence, they might fail to efficiently redeploy liberated resources into other investment projects.

#### *5.4 Peer Effects, Government Contracting and Long-Term Performance*

While we have demonstrated that peer effects are present in government contracting, we have yet to explore how this peer-induced influence impacts firm performance. In the previous section, we found that changes in government contracting attributable to peer effects reduces investment inefficiency for contract increases but increases the inefficiency for decreases. Our proposed explanation for this phenomenon is that firms increase government contracting as a result of peer influence because it is performance-enhancing, but might fail to quickly redeploy liberated resources when they reduce contracting activities as a response to peer-firm actions. If this conjecture is plausible, we expect that the effect of government contracting induced by peer effects on performance should be stronger for increases in contracting activities. We test this hypothesis in Tables 8 and 9.

In *Panel A (Panel B)* of Table 8, the performance variable used is *Asset Turnover*, estimated as an average value of sales scaled by total assets over the period  $t+1, t+3$  ( $t+1, t+5$ ). In Models 1 and 3 (Models 2 and 4), *Peer Effects* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number (dollar value) of all government contracts and sweetheart deals awarded from year  $t-2$  to year  $t-1$ . In Models 5 and 7 (Models 6 and 8), *Peer Effects* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number (dollar value) of all government contracts and sweetheart deals awarded from year  $t-2$  to year  $t-1$ . Control variables are from Chen, Goldstein, and Jiang (2007) and include KZ4 - the four variable version of Kaplan and Zingales (1997) index of capital constraints; Sales – log of the total sales revenue in billions; and Tobin’s Q - estimated as the market value of equity minus the book value of equity plus the book value of total assets, all scaled by the book value of total assets.

We find that peer-effects-induced government contracting is positively (negatively) associated with asset turnover when firms increase (decrease) government contracting activities as a result of peer influence, implying that these firms use their assets more (less) efficiently to generate revenues. These results are consistent with our proposed explanation.

We also test the impact of government contracting, attributable to peer effects, on firm performance using ROA (return-on-assets) as the dependent variable. We present the results of this analysis in Table 9. In *Panel A (Panel B)*, ROA is estimated as the average ratio of EBITDA (earnings before interest, taxes, depreciation, and amortization) to the market value of total assets plus total debt, over the period  $t+1, t+3$  ( $t+1, t+5$ ). Consistent with previous results, we document that peer-effects-induced increases in government contracting is positively associated with ROA.

Meanwhile, there is a strong, negative effect on ROA from decreases in government contracting activities as a result of peer influence.<sup>4</sup>

In summary, we document that the changes in corporate government contracting activities attributable to peer effects has positive implications for performance when firms increase government contracting in response to peer-firm activity.

## **VI. Conclusion**

This study examines the extent to which peer effects explain corporate government contracting. From the social learning perspective, managers could directly observe and mimic the behavior of peer firms if it potentially maximizes shareholder wealth. We propose that if government contracting is beneficial for shareholders of peer firms, the focal firm is more likely to attempt to procure the government as a customer. If the effect of government contracting is detrimental, then we expect that a focal firm will reduce its exposure to government contracts.

We test this proposition on a sample of US firms for the period 2002-2017 and provide strong evidence of peer effects in government contracting. Our empirical analysis further uncovers that as peer firms increase their exposure to government contracts with specific, sweetheart attributes, such as cost-plus, multi-year, and no-bid provisions, the focal firm is more likely to do the same. These results are robust of potential endogeneity concerns, which we address using an instrumental variable approach. We instrument peer effects with the distance of peer-firm headquarters from Washington D.C. and political alignment, defined as the percentage of peer

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<sup>4</sup> In Appendix B we examine another channel, operating efficiency, through which peer-effects-induced increase in government contracting could affect firm performance. We find that increases in government contracting attributable to peer effects is negatively associated with accounts receivables as well as operating cycle. However, the association is much weaker or even positive for decreases in government contracting activities as a result of peer effects.

firms in a given industry that are headquartered in a state that voted for the party in power during the most recent presidential election. The findings from our instrumental variable regressions are consistent with our main hypotheses.

We then examine the impact of peer-firm-driven contracting behavior on focal firm investment efficiency, demonstrating that increases in government contracting from peer-firm influence reduce inefficiencies in investment behavior. Whilst the opposite is true of peer-firm-induced decreases in contracting. Increases in government contracting driven by peer influence also improves firm performance as captured by asset turnover and return on assets.

Our findings have important implications for the literature as they suggest that a previously unaccounted for attribute, peer-firm behavior, could shape the supply of goods and services to the government. Consequently, any proposed reforms in federal acquisition regulations should take peer effects into consideration.



## Appendix A: Contract Increases – 2SLS Results Using Alternative Instrument (Senate Alignment)

Panel A (Panel C) of this table reports results of 2-SLS IV regressions of *Peer Effect* on indicator variables representing increases (decreases) in the number of all government contracts (Model 1), and sweetheart deals (Model 2) and its components (Model 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number of all government contracts, sweetheart deals and its components, awarded from year t-2 to year t-1. Panel B (Panel D) of this table reports results of 2-SLS IV regressions of *Peer Effect* on indicator variables representing the increases (decreases) in the dollar value of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Models 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in dollar value of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. *Peer Effect* variables are estimated following Grennan (2019).  $\widehat{Peer Effect}$  is the instrumented *Peer Effect* variable. It is the percentage of peer firms in a given industry that are headquartered in a state that voted for the party in control of the Senate during the most recent election. Control variables include  $Ln(TA)$  - the natural log of total assets, *BTM* is book-to-market ratio, *CAPX/Sales* - capital expenditures divided by sales, *R&D/Sales* - Research and development expenditures/total sales, and *HHI index* - Herfindahl index based on industry sales. Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A - Increase in the number of contracts</i>             |                      |                     |                     |                      |                           |
|--|----------------------|---------------------|---------------------|----------------------|---------------------------|
|  | (1)                  | (2)                 | (3)                 | (4)                  | (5)                       |
| VARIABLES  | All Contracts        | Sweetheart Deals    | Cost-plus Contracts | Multi-year Contracts | Non-competitive Contracts |
| $\widehat{Peer Effect}$  | 2.027***<br>(11.205) | 3.488***<br>(5.179) | 1.571***<br>(9.242) | 19.251<br>(0.503)    | 2.175***<br>(10.644)      |
| Observations   | 60,069               | 59,777              | 49,926              | 57,302               | 59,157                    |
| Firm-specific controls   | YES                  | YES                 | YES                 | YES                  | YES                       |
| Year FE  | YES                  | YES                 | YES                 | YES                  | YES                       |
| Firm FE  | YES                  | YES                 | YES                 | YES                  | YES                       |
| <i>Panel B - Increase in the total dollar value of contracts</i> |                      |                     |                     |                      |                           |
|  | (1)                  | (2)                 | (3)                 | (4)                  | (5)                       |
| VARIABLES  | All Contracts        | Sweetheart Deals    | Cost-plus Contracts | Multi-year Contracts | Non-competitive Contracts |
| $\widehat{Peer Effect}$  | 6.322***<br>(2.956)  | 42.538<br>(0.355)   | 1.955***<br>(8.392) | -0.810<br>(-1.132)   | 8.839***<br>(2.704)       |
| Observations   | 60,069               | 59,777              | 49,926              | 57,302               | 59,157                    |
| Firm-specific controls   | YES                  | YES                 | YES                 | YES                  | YES                       |
| Year FE  | YES                  | YES                 | YES                 | YES                  | YES                       |
| Firm FE  | YES                  | YES                 | YES                 | YES                  | YES                       |

| <i>Panel C – Decrease in the number of contracts</i>             |                      |                     |                        |                         |                              |
|--|----------------------|---------------------|------------------------|-------------------------|------------------------------|
|  | (1)                  | (2)                 | (3)                    | (4)                     | (5)                          |
| VARIABLES  | All<br>Contracts     | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>   | 1.043***<br>(13.492) | 0.869***<br>(7.431) | 0.199***<br>(2.644)    | 0.555***<br>(3.138)     | 0.982***<br>(11.628)         |
| Observations   | 60,069               | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls   | YES                  | YES                 | YES                    | YES                     | YES                          |
| Year FE  | YES                  | YES                 | YES                    | YES                     | YES                          |
| Firm FE  | YES                  | YES                 | YES                    | YES                     | YES                          |
| <i>Panel D - Decrease in the total dollar value of contracts</i> |                      |                     |                        |                         |                              |
|  | (1)                  | (2)                 | (3)                    | (4)                     | (5)                          |
| VARIABLES  | All<br>Contracts     | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>   | 0.865***<br>(7.487)  | 0.475***<br>(3.697) | 0.185**<br>(2.141)     | 1.246***<br>(4.737)     | 0.244<br>(1.241)             |
| Observations   | 60,069               | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls   | YES                  | YES                 | YES                    | YES                     | YES                          |
| Year FE  | YES                  | YES                 | YES                    | YES                     | YES                          |
| Firm FE  | YES                  | YES                 | YES                    | YES                     | YES                          |



Panel B: 3-year average operating cycle

|                        | (1)   | (2)   | (3)  | (4)  | (5)                                      | (6)  | (7)  | (8)   |
|------------------------|---|---|--|--|--|--|--|---|
|                        | Increase<br>in All<br>Contracts<br>(Number) | Increase<br>in<br>All<br>Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar<br>Value) | Decrease in<br>All Contracts<br>(Number) | Decrease in<br>All<br>Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar Value) |
| <i>Gov Contracting</i> | -0.134***<br>(-2.639)                       | -0.0749<br>(-1.623)                                     | -0.133***<br>(-2.910)                          | -0.0749*<br>(-1.754)                                 | 0.118**<br>(2.411)                       | 0.0759<br>(1.447)                                    | 0.125**<br>(2.159)                             | 0.0548<br>(1.073)                                 |
| Observations           | 24,670                                      | 24,670  | 24,640   | 24,640   | 24,670                                   | 24,670   | 24,640   | 24,640  |
| Adjusted R-squared     | 0.901                                       | 0.901   | 0.901  | 0.901  | 0.901                                    | 0.901  | 0.901  | 0.901   |
| Firm controls          | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |
| Firm FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |
| Year FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |

Panel C: 5-year accounts receivables

|                        | (1)   | (2)  | (3)  | (4)   | (5)   | (6)  | (7)  | (8)   |
|------------------------|---|--|--|---|---|--|--|---|
|                        | Increase<br>in All<br>Contracts<br>(Number) | Increase in<br>All<br>Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar Value) | Decrease<br>in All<br>Contracts<br>(Number) | Decrease in<br>All<br>Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar Value) |
| <i>Gov Contracting</i> | -0.0152*<br>(-1.891)                        | -0.0122<br>(-1.578)                                  | -0.0218***<br>(-3.071)                         | -0.0136<br>(-1.635)                               | 0.00518<br>(0.551)                          | -0.00184<br>(-0.147)                                 | 0.0107<br>(0.800)                              | -0.00206<br>(-0.184)                              |
| Observations           | 20,892                                      | 20,892   | 20,870   | 20,870  | 20,892                                      | 20,892   | 20,870   | 20,870  |
| Adjusted R-squared     | 0.861                                       | 0.861  | 0.861  | 0.861   | 0.861                                       | 0.861  | 0.861  | 0.861   |
| Firm controls          | Yes   | Yes  | Yes  | Yes   | Yes   | Yes  | Yes  | Yes   |
| Firm FE                | Yes   | Yes  | Yes  | Yes   | Yes   | Yes  | Yes  | Yes   |
| Year FE                | Yes   | Yes  | Yes  | Yes   | Yes   | Yes  | Yes  | Yes   |

Panel D: 5-year average operating cycle

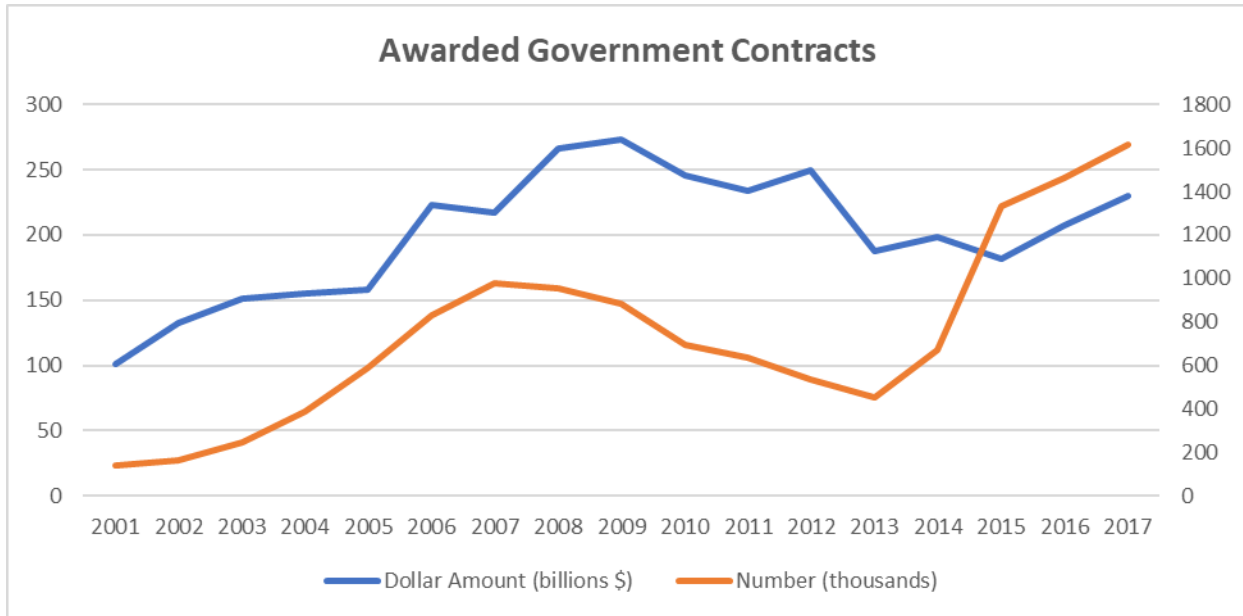
|                        | (1)   | (2)   | (3)  | (4)  | (5)                                      | (6)  | (7)  | (8)   |
|------------------------|---|---|--|--|--|--|--|---|
|                        | Increase<br>in All<br>Contracts<br>(Number) | Increase<br>in<br>All<br>Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar<br>Value) | Decrease in<br>All Contracts<br>(Number) | Decrease in<br>All<br>Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar Value) |
| <i>Gov Contracting</i> | -0.109***<br>(-2.932)                       | -0.0250<br>(-0.728)                                     | -0.0623*<br>(-1.914)                           | 0.00384<br>(0.108)                                   | 0.165***<br>(3.630)                      | 0.119**<br>(2.490)                                   | 0.175***<br>(3.160)                            | 0.0989**<br>(2.083)                               |
| Observations           | 17,711                                      | 17,711  | 17,695   | 17,695   | 17,711                                   | 17,711   | 17,695   | 17,695  |
| Adjusted R-squared     | 0.950                                       | 0.950   | 0.950  | 0.950  | 0.950                                    | 0.950  | 0.950  | 0.950   |
| Firm controls          | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |
| Firm FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |
| Year FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes  | Yes  | Yes   |

## References

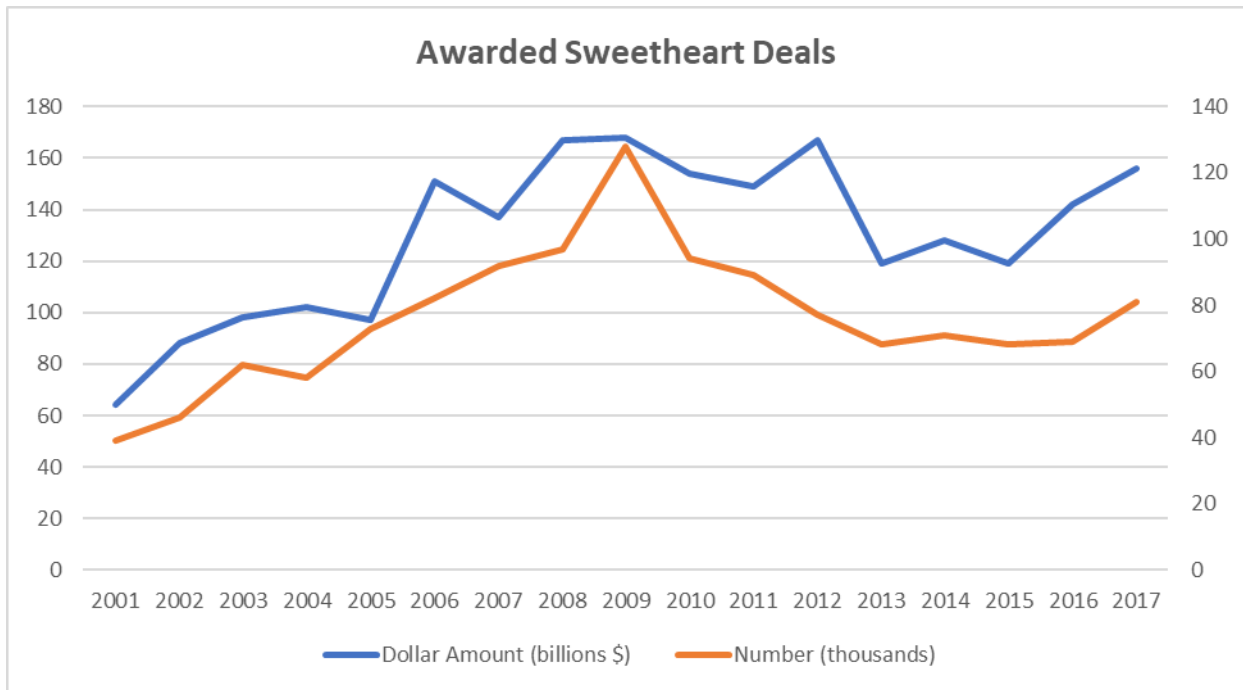
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**Figure 1:** This figure depicts the total amount and number of government contracts awarded each year from 2002-2017.



**Figure 2:** This figure depicts the total amount and number of sweetheart deals awarded each year from 2002-2017.





**Table 1: Summary Statistics**

Panel A of this table presents descriptive statistics of the main variables for all sample firms. Panel B reports descriptive statistics of subsamples of government supplier and non-government supplier firms.  $Ln(TA)$  is the natural log of total assets.  $BTM$  is book-to-market ratio.  $CAPX/Sales$  is capital expenditures divided by sales.  $R\&D/Sales$  is research and development expenditures/total sales.  $HHI\ index$  is Herfindahl index based on industry sales. T-statistics tests the difference in means between respective means. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A: All firms</i>            |         |        |                |         |          |
|--------------------------------------|---------|--------|----------------|---------|----------|
|                                      | Mean    | Median | Std. Deviation | Min     | Max      |
| <b>Firm Contracting Variables</b>    |         |        |                |         |          |
| Increase Number                      | 0.150   | 0      | 0.357          | 0       | 1        |
| Increase Total                       | 0.162   | 0      | 0.369          | 0       | 1        |
| Decrease Number                      | 0.136   | 0      | 0.343          | 0       | 1        |
| Decrease Total                       | 0.146   | 0      | 0.353          | 0       | 1        |
| Increase Sweetheart Number           | 0.131   | 0      | 0.337          | 0       | 1        |
| Increase Sweetheart Total            | 0.146   | 0      | 0.353          | 0       | 1        |
| Decrease Sweetheart Number           | 0.111   | 0      | 0.315          | 0       | 1        |
| Decrease Sweetheart Total            | 0.130   | 0      | 0.337          | 0       | 1        |
| <b>Peer Effects Variables</b>        |         |        |                |         |          |
|                                      | Mean    | Median | Std. Deviation | Min     | Max      |
| Lag(Peer Increase Number)            | 0.136   | 0.125  | 0.106          | 0       | 1        |
| Lag(Peer Increase Total)             | 0.144   | 0.132  | 0.106          | 0       | 1        |
| Lag(Peer Decrease Number)            | 0.112   | 0.090  | 0.101          | 0       | 1        |
| Lag(Peer Decrease Total)             | 0.123   | 0.105  | 0.099          | 0       | 1        |
| Lag(Peer Increase Sweetheart Number) | 0.117   | 0.103  | 0.096          | 0       | 1        |
| Lag(Peer Increase Sweetheart Total)  | 0.129   | 0.115  | 0.101          | 0       | 1        |
| Lag(Peer Decrease Sweetheart Number) | 0.093   | 0.077  | 0.086          | 0       | 1        |
| Lag(Peer Decrease Sweetheart Total)  | 0.111   | 0.098  | 0.092          | 0       | 1        |
| <b>Firm Variables</b>                |         |        |                |         |          |
|                                      | Mean    | Median | Std. Deviation | Min     | Max      |
| Ln(assets)                           | 5.644   | 5.776  | 2.750          | -5.809  | 11.274   |
| BTM                                  | 0.289   | 0.403  | 1.987          | -17.234 | 4.664    |
| CAPEX/Sales                          | 0.153   | 0.032  | 0.535          | 0       | 4.992    |
| R&D/Sales                            | 0.606   | 0.005  | 3.524          | 0       | 33.286   |
| HHI                                  | 145.807 | 78.488 | 294.219        | 26.002  | 3588.171 |
| ROA                                  | 0.012   | 0.073  | 0.266          | -2.036  | 0.44     |
| Number of Observations               | 60,690  |        |                |         |          |
| Number of Unique Firms               | 7,743   |        |                |         |          |

*Panel B: Government Suppliers and Non-government suppliers*

| Firm Variable          | Government Suppliers |        |         |         |          | Non-government suppliers |        |         |         |         | Diff.<br>(Means) | T-stat     |
|------------------------|----------------------|--------|---------|---------|----------|--------------------------|--------|---------|---------|---------|------------------|------------|
|                        | Mean                 | Median | Std.    | Min     | Max      | Mean                     | Median | Std.    | Min     | Max     |                  |            |
| Ln(assets)             | 6.526                | 6.603  | 2.434   | -3.324  | 11.274   | 5.296                    | 5.415  | 2.789   | -5.809  | 11.274  | 1.230            | 53.726***  |
| BTM                    | 0.359                | 0.418  | 1.558   | -17.234 | 4.664    | 0.261                    | 0.396  | 2.132   | -17.234 | 4.664   | 0.098            | 6.243***   |
| CAPEX/Sales            | 0.061                | 0.029  | 0.203   | 0       | 4.992    | 0.189                    | 0.034  | 0.615   | 0       | 4.992   | -0.128           | -38.377*** |
| R&D/Sales              | 0.150                | 0.018  | 1.066   | 0       | 33.286   | 0.786                    | 0.001  | 4.092   | 0       | 33.286  | -0.636           | -29.964*** |
| HHI                    | 147.047              | 81.027 | 254.598 | 26.002  | 3588.171 | 145.318                  | 66.673 | 308.424 | 26.002  | 3588.17 | 1.729            | 0.708      |
| ROA                    | 0.056                | 0.084  | 0.175   | -2.036  | 0.44     | -0.005                   | 0.066  | 0.292   | -2.036  | 0.44    | 0.061            | 31.579***  |
| Number of Observations | 17,143               |        |         |         |          | 43,547                   |        |         |         |         |                  |            |
| Number of Unique Firms | 2,054                |        |         |         |          | 5,689                    |        |         |         |         |                  |            |

**Table 2: Univariate Analysis**

Panel A of this table reports proportion (likelihood) of firms that meet listed government contracting conditions. In Panel B firms are sorted into quintiles based on the peer influence variable which equals the percentage of firms within the same industry, excluding the firm in question, that report either an increase or decrease in the dollar value or number of all government contracts and sweetheart deals awarded. Quintile 1 captures the lowest percentage of peer firms, while Quintile 5 captures the highest. T-statistics test the difference in means between the lowest and highest quintile grouping. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A: Government contract changes</i>  |   | Condition        | Likelihood of firm meeting condition (%) |
|--|---|------------------|--|
|  |   | <u>Increases</u> |  |
|  | Likelihood of increased contracts (number)        |                  | 15.03                                    |
| Likelihood of increased contracts (number) - peer effects greater than the mean        |   |                  | 19.73                                    |
|  | Likelihood of increased contracts (value)         |                  | 16.25                                    |
| Likelihood of increased contracts (value) - peer effects greater than the mean         |   |                  | 20.66                                    |
|  | Likelihood of increased sweetheart deals (number) |                  | 13.07                                    |
| Likelihood of increased sweetheart deals (number) - peer effects greater than the mean |   |                  | 17.35                                    |
|  | Likelihood of increased sweetheart deals (value)  |                  | 14.61                                    |
| Likelihood of increased sweetheart deals (value) - peer effects greater than the mean  |   |                  | 18.76                                    |
|  |   | <u>Decreases</u> |  |
|  | Likelihood of decreased contracts (number)        |                  | 13.59                                    |
| Likelihood of decreased contracts (number) - peer effects greater than the mean        |   |                  | 18.81                                    |
|  | Likelihood of decreased contracts (value)         |                  | 14.63                                    |
| Likelihood of decreased contracts (value) - peer effects greater than the mean         |   |                  | 19.02                                    |
|  | Likelihood of decreased sweetheart deals (number) |                  | 11.15                                    |
| Likelihood of decreased sweetheart deals (number) - peer effects greater than the mean |   |                  | 15.00                                    |
|  | Likelihood of decreased sweetheart deals (value)  |                  | 13.04                                    |
| Likelihood of decreased sweetheart deals (value) - peer effects greater than the mean  |   |                  | 16.84                                    |
| Number of Observations   |   |                  | 60,690                                   |

| <i>Panel B: Univariate analysis across quintiles</i> |                                     |          |                                     |          |
|--|-------------------------------------|----------|-------------------------------------|----------|
| Peer influence quintile                              | Likelihood of increase in contracts |          | Likelihood of decrease in contracts |          |
|  | Number                              | Value    | Number                              | Value    |
| <u>All Govt. Contracts</u>                           |                                     |          |                                     |          |
| 1 (low peer influence)                               | 9.29                                | 10.71    | 7.82                                | 9.51     |
| 2  | 11.85                               | 13.03    | 9.04                                | 11.13    |
| 3  | 14.27                               | 15.91    | 13.5                                | 13.86    |
| 4  | 16.85                               | 17.69    | 16.23                               | 16.48    |
| 5 (high peer influence)                              | 23.26                               | 24.14    | 21.51                               | 22.18    |
| High minus low                                       | 13.97                               | 13.43    | 13.69                               | 12.67    |
| t-statistic  | 30.00***                            | 28.20*** | 30.72***                            | 27.45*** |
| <u>Sweetheart Deals</u>                              |                                     |          |                                     |          |
| 1 (low peer influence)                               | 8.17                                | 9.02     | 7.47                                | 8.35     |
| 2  | 9.75                                | 10.84    | 7.64                                | 9.85     |
| 3  | 11.91                               | 14.10    | 10.62                               | 12.43    |
| 4  | 15.26                               | 17.02    | 12.76                               | 15.56    |
| 5 (high peer influence)                              | 20.36                               | 22.26    | 17.63                               | 19.56    |
| High minus low                                       | 12.19                               | 13.24    | 10.16                               | 11.21    |
| t-statistic  | 27.52***                            | 28.85*** | 24.09***                            | 25.45*** |

**Table 3: Multivariate Analysis of Contract Increases – Linear Probability Models**

Panel A of this table reports the results of regressions of *Peer Effect* on indicator variables representing increases in the number of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Model 3-5) from Ferris et al. (2019), where *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. Panel B of this table reports the results of regressions of *Peer Effect* on indicator variables representing the increases in the dollar value of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Model 3-5) from Ferris et al. (2019), where *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the dollar value of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. *Peer Effect* variables are estimated following Grennan (2019) approach. Controls include  $\ln(TA)$  - the natural log of total assets, *BTM* is book-to-market ratio, *CAPX/Sales* - capital expenditures divided by sales, *R&D/Sales* - Research and development expenditures/total sales, and *HHI index* - Herfindahl index based on industry sales. Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A: Increase in the number of contracts</i> |                       |                     |                        |                         |                              |
|---|-----------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES   | (1)                   | (2)                 | (3)                    | (4)                     | (5)                          |
|   | All<br>Contracts      | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| Peer Effects  | 0.155***<br>(7.266)   | 0.045**<br>(2.161)  | 0.184***<br>(7.979)    | -0.005<br>(-0.237)      | 0.146***<br>(7.357)          |
| Ln(assets)  | -0.012***<br>(-5.447) | -0.001<br>(-0.751)  | -0.010***<br>(-6.299)  | 0.001<br>(0.571)        | -0.008***<br>(-3.960)        |
| BTM   | -0.000<br>(-0.068)    | 0.001<br>(1.471)    | 0.001<br>(1.196)       | 0.001<br>(1.400)        | 0.000<br>(0.343)             |
| CAPEX/Sales   | -0.000<br>(-0.088)    | -0.001<br>(-0.518)  | -0.001<br>(-0.475)     | -0.001<br>(-0.852)      | -0.001<br>(-0.597)           |
| R&D/Sales   | -0.001<br>(-1.385)    | -0.001*<br>(-1.677) | 0.000<br>(0.070)       | -0.000<br>(-1.000)      | -0.001***<br>(-2.719)        |
| HHI   | 0.000<br>(0.244)      | -0.000<br>(-0.787)  | -0.000<br>(-1.572)     | -0.000<br>(-1.036)      | 0.000<br>(0.602)             |
| ROA   | 0.012**<br>(2.353)    | 0.007<br>(1.511)    | 0.015***<br>(4.177)    | 0.009**<br>(2.173)      | 0.004<br>(0.935)             |
| Observations  | 60,690                | 60,404              | 50,524                 | 57,828                  | 59,779                       |
| Adjusted R-squared                                  | 0.297                 | 0.276               | 0.220                  | 0.309                   | 0.279                        |
| Year FE   | YES                   | YES                 | YES                    | YES                     | YES                          |
| Firm FE   | YES                   | YES                 | YES                    | YES                     | YES                          |

| <i>Panel B: Increase in the total dollar value of contracts</i> |                    |                     |                        |                         |                              |
|---|--------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES   | (1)                | (2)                 | (3)                    | (4)                     | (5)                          |
|   | All<br>Contracts   | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| Peer Effects  | 0.026<br>(1.319)   | 0.031<br>(1.502)    | 0.183***<br>(8.022)    | -0.018<br>(-0.893)      | 0.029<br>(1.383)             |
| Ln(assets)  | -0.002<br>(-1.097) | 0.004**<br>(2.334)  | -0.008***<br>(-5.457)  | 0.006***<br>(3.550)     | 0.001<br>(0.306)             |
| BTM   | 0.000<br>(0.536)   | 0.001<br>(1.435)    | 0.001*<br>(1.933)      | 0.001<br>(1.036)        | 0.000<br>(0.334)             |

|                    |                      |                     |                     |                    |                       |
|--------------------|----------------------|---------------------|---------------------|--------------------|-----------------------|
| CAPEX/Sales        | -0.000<br>(-0.007)   | -0.001<br>(-0.637)  | 0.000<br>(0.011)    | -0.001<br>(-1.018) | 0.001<br>(0.435)      |
| R&D/Sales          | -0.001**<br>(-2.129) | -0.001*<br>(-1.789) | -0.000<br>(-0.496)  | -0.000<br>(-1.416) | -0.001***<br>(-3.067) |
| HHI                | -0.000<br>(-0.101)   | -0.000<br>(-0.950)  | -0.000*<br>(-1.769) | -0.000<br>(-0.454) | 0.000<br>(0.918)      |
| ROA                | 0.007<br>(1.287)     | 0.000<br>(0.048)    | 0.014***<br>(3.622) | 0.004<br>(0.972)   | 0.002<br>(0.390)      |
| Observations       | 60,690               | 60,404              | 50,524              | 57,828             | 59,779                |
| Adjusted R-squared | 0.317                | 0.313               | 0.259               | 0.333              | 0.299                 |
| Year FE            | YES                  | YES                 | YES                 | YES                | YES                   |
| Firm FE            | YES                  | YES                 | YES                 | YES                | YES                   |

**Table 4: Multivariate Analysis of Contract Decreases – Linear Probability Models**

Panel A of this table reports the results of regressions of *Peer Effect* on indicator variables representing decreases in the number of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Model 3-5) from Ferris et al. (2019), where *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. Panel B of this table reports the results of regressions of *Peer Effect* on indicator variables representing decreases in the dollar value of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Model 3-5) from Ferris et al. (2019), where *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the dollar value of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. *Peer Effect* variables are estimated following Grennan (2019) approach. Controls include  $\ln(TA)$  - the natural log of total assets, *BTM* is book-to-market ratio, *CAPX/Sales* - capital expenditures divided by sales, *R&D/Sales* - Research and development expenditures/total sales, and *HHI index* - Herfindahl index based on industry sales. Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A: Decrease in the number of contracts</i> |                       |                       |                        |                         |                              |
|---|-----------------------|-----------------------|------------------------|-------------------------|------------------------------|
| VARIABLES   | (1)                   | (2)                   | (3)                    | (4)                     | (5)                          |
|   | All<br>Contracts      | Sweetheart<br>Deals   | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| Peer Effect   | 0.279***<br>(13.091)  | 0.152***<br>(7.393)   | 0.147***<br>(5.945)    | 0.071***<br>(3.010)     | 0.222***<br>(10.392)         |
| Ln(assets)  | 0.025***<br>(12.204)  | 0.011***<br>(6.860)   | 0.008***<br>(5.168)    | 0.015***<br>(9.618)     | 0.016***<br>(9.458)          |
| BTM   | -0.000<br>(-0.490)    | -0.001<br>(-0.877)    | 0.001<br>(1.495)       | -0.002***<br>(-3.624)   | 0.001<br>(1.122)             |
| CAPEX/Sales   | -0.002<br>(-1.206)    | -0.001<br>(-0.381)    | 0.002<br>(1.054)       | -0.003**<br>(-2.119)    | -0.001<br>(-0.715)           |
| R&D/Sales   | -0.001***<br>(-2.888) | -0.001***<br>(-3.259) | -0.001***<br>(-3.400)  | -0.001***<br>(-3.143)   | -0.000<br>(-1.192)           |
| HHI   | 0.000<br>(1.159)      | 0.000**<br>(2.027)    | 0.000<br>(1.331)       | 0.000<br>(1.644)        | 0.000<br>(0.669)             |
| ROA   | -0.009*<br>(-1.684)   | 0.000<br>(0.037)      | -0.003<br>(-0.819)     | -0.004<br>(-1.109)      | 0.005<br>(1.167)             |
| Observations  | 60,671                | 60,377                | 50,273                 | 57,635                  | 59,740                       |
| Adjusted R-squared                                  | 0.256                 | 0.205                 | 0.247                  | 0.211                   | 0.250                        |
| Year FE   | YES                   | YES                   | YES                    | YES                     | YES                          |
| Firm FE   | YES                   | YES                   | YES                    | YES                     | YES                          |

| <i>Panel B: Decrease in the total dollar value of contracts</i> |                     |                     |                        |                         |                              |
|---|---------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES   | (1)                 | (2)                 | (3)                    | (4)                     | (5)                          |
|   | All<br>Contracts    | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| Peer Effects  | 0.106***<br>(5.514) | 0.074***<br>(3.595) | 0.155***<br>(6.197)    | 0.010<br>(0.415)        | 0.071***<br>(3.591)          |
| Ln(assets)  | 0.017***<br>(8.867) | 0.009***<br>(5.102) | 0.006***<br>(3.645)    | 0.013***<br>(8.476)     | 0.010***<br>(6.025)          |
| BTM   | -0.000<br>(-0.521)  | 0.000<br>(0.043)    | 0.000<br>(0.810)       | -0.002**<br>(-2.445)    | 0.001<br>(1.234)             |

|                    |                       |                       |                       |                       |                    |
|--------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------------|
| CAPEX/Sales        | -0.003*<br>(-1.656)   | -0.001<br>(-0.773)    | 0.000<br>(0.134)      | -0.003**<br>(-2.351)  | -0.002<br>(-1.298) |
| R&D/Sales          | -0.001***<br>(-3.102) | -0.001***<br>(-3.487) | -0.001***<br>(-3.223) | -0.001***<br>(-3.092) | -0.000<br>(-1.443) |
| HHI                | 0.000<br>(1.567)      | 0.000**<br>(2.134)    | 0.000<br>(1.346)      | 0.000<br>(1.225)      | -0.000<br>(-0.220) |
| ROA                | -0.002<br>(-0.396)    | 0.002<br>(0.426)      | -0.001<br>(-0.251)    | -0.001<br>(-0.316)    | 0.005<br>(1.145)   |
| Observations       | 60,671                | 60,377                | 50,273                | 57,635                | 59,740             |
| Adjusted R-squared | 0.267                 | 0.259                 | 0.257                 | 0.257                 | 0.277              |
| Year FE            | YES                   | YES                   | YES                   | YES                   | YES                |
| Firm FE            | YES                   | YES                   | YES                   | YES                   | YES                |

**Table 5: Contract Increases – 2SLS Results**

Panel A of this table reports results of the 2-SLS IV regressions of *Peer Effect* on the indicator variables representing increases in the number of all government contracts (Model 1), and sweetheart deals (Model 2) and its components (Models 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. Panel B of this table reports results of the 2-SLS IV regressions of *Peer Effect* on the indicator variables representing increases in the dollar value of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Models 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in dollar value of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. *Peer Effect* variables are estimated following Grennan (2019).  $\widehat{Peer\ Effect}$  is the instrumented *Peer Effect* variable. In Panels A and B the average distance of peer-firm headquarters from Washington D.C. is used as an instrumental variable, following Boubakri et al. (2013) and Esqueda et al. (2019). In Panels C and D the percentage of firms within the industry that are headquartered in states that voted for the presidential party that is in office is used as an alternative instrumental variable. Control variables include  $\ln(TA)$  - the natural log of total assets, *BTM* is book-to-market ratio, *CAPX/Sales* - capital expenditures divided by sales, *R&D/Sales* - Research and development expenditures/total sales, and *HHI index* - Herfindahl index based on industry sales. Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

*Panel A - Increase in the number of contracts: IV - The average distance of peer firm headquarters from Washington D.C.*

|                           | (1)                 | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|---------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts    | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| $\widehat{Peer\ Effect}$  | 1.328***<br>(8.224) | 1.247***<br>(4.964) | 1.605***<br>(5.451)    | 1.069***<br>(2.748)     | 1.319***<br>(7.045)          |
| First-stage F-statistic   | 179.48              | 101.41              | 107.11                 | 39.49                   | 133.18                       |
| t-statistic on instrument | (13.40)***          | (10.07)***          | (10.35)***             | (6.28)***               | (11.54)***                   |
| Observations              | 60,069              | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                 | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |

*Panel B - Increase in the total dollar value of contracts: IV - The average distance of peer firm headquarters from Washington D.C.*

|                           | (1)                 | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|---------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts    | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| $\widehat{Peer\ Effect}$  | 0.967***<br>(3.052) | 0.941**<br>(2.497)  | 1.400***<br>(3.885)    | 0.664<br>(1.145)        | 1.303***<br>(3.250)          |
| First-stage F-statistic   | 44.65               | 34.27               | 55.01                  | 11.95                   | 38.28                        |
| t-statistic on instrument | (6.68)***           | (5.85)***           | (7.42)***              | (3.46)***               | (6.19)***                    |
| Observations              | 60,069              | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                 | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |



*Panel C - Increase in the number of contracts: IV - the percentage of firms within the industry that are headquartered in the states that voted for the presidential party that is in office*

|                           | (1)                  | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|----------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts     | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>        | 1.933***<br>(11.326) | 3.503***<br>(7.972) | 4.734***<br>(8.841)    | -8.313***<br>(-2.723)   | 1.516***<br>(11.196)         |
| First-stage F-statistic   | 376.09               | 115.2               | 102.9                  | 8.9                     | 446.12                       |
| t-statistic on instrument | (19.39)***           | (10.73)***          | (10.14)***             | (2.98)***               | (21.12s)***                  |
| Observations              | 60,069               | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                  | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                  | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                  | YES                 | YES                    | YES                     | YES                          |

*Panel D - Increase in the total dollar value of contracts: IV - the percentage of firms within the industry that are headquartered in the states that voted for the presidential party that is in office*

|                           | (1)                 | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|---------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts    | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>        | 4.361***<br>(5.592) | 11.732*<br>(1.811)  | 3.440***<br>(8.746)    | -0.974**<br>(-2.328)    | 3.640***<br>(6.261)          |
| First-stage F-statistic   | 41.56               | 3.41                | 122.82                 | 59.67                   | 64.17                        |
| t-statistic on instrument | (6.45)***           | (1.85)**            | (11.08)***             | (7.72)***               | (8.01)***                    |
| Observations              | 60,069              | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                 | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |

**Table 6: Contract Decreases - 2SLS Results**

Panel A of this table reports results of the 2-SLS IV regressions of *Peer Effect* on the indicator variables representing decreases in the number of all government contracts (Model 1), and sweetheart deals (Model 2) and its components (Models 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. Panel B of this table reports results of the 2-SLS IV regressions of *Peer Effect* on the indicator variables representing decreases in the dollar value of all government contracts (Model 1), sweetheart deals (Model 2) and its components (Models 3-5) from Ferris et al. (2019). *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in dollar value of all government contracts, sweetheart deals and its components awarded from year t-2 to year t-1. *Peer Effect* variables are estimated following Grennan (2019).  $\widehat{Peer Effect}$  is the instrumented *Peer Effect* variable. In Panels A and B the average distance of peer firm headquarters from Washington D.C. is used as an instrumental variable, following Boubakri et al. (2013) and Esqueda et al. (2019). In Panels C and D the percentage of firms within the industry that are headquartered in states that voted for the presidential party that is in office is used as an alternative instrumental variable. Control variables include  $Ln(TA)$  - the natural log of total assets, *BTM* is book-to-market ratio, *CAPX/Sales* - capital expenditures divided by sales, *R&D/Sales* - Research and development expenditures/total sales, and *HHI index* - Herfindahl index based on industry sales. Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A – Decrease in the number of contracts: IV - The average distance of peer firm headquarters from Washington D.C.</i>             |                     |                    |                     |                      |                           |
|--|---------------------|--------------------|---------------------|----------------------|---------------------------|
| VARIABLES  | (1)                 | (2)                | (3)                 | (4)                  | (5)                       |
|  | All Contracts       | Sweetheart Deals   | Cost-plus Contracts | Multi-year Contracts | Non-competitive Contracts |
| $\widehat{Peer Effect}$  | 1.863***<br>(6.464) | 2.475**<br>(2.362) | -3.906<br>(-0.129)  | 1.985<br>(1.520)     | 1.380***<br>(4.159)       |
| First-stage F-statistic  | 72.79               | 9.09               | 0.02                | 5.21                 | 51.33                     |
| t-statistic on instrument  | (8.53)***           | (3.01)***          | (0.15)              | (2.28)**             | (7.16)***                 |
| Observations   | 60,069              | 59,777             | 49,926              | 57,302               | 59,157                    |
| Firm-specific controls   | YES                 | YES                | YES                 | YES                  | YES                       |
| Year FE  | YES                 | YES                | YES                 | YES                  | YES                       |
| Firm FE  | YES                 | YES                | YES                 | YES                  | YES                       |
| <i>Panel B - Decrease in the total dollar value of contracts: IV - The average distance of peer firm headquarters from Washington D.C.</i> |                     |                    |                     |                      |                           |
| VARIABLES  | (1)                 | (2)                | (3)                 | (4)                  | (5)                       |
|  | All Contracts       | Sweetheart Deals   | Cost-plus Contracts | Multi-year Contracts | Non-competitive Contracts |
| $\widehat{Peer Effect}$  | 6.082<br>(0.556)    | -3.105<br>(-0.123) | 1.952*<br>(1.663)   | 2.242<br>(0.462)     | 3.156<br>(0.267)          |
| First-stage F-statistic  | 0.33                | 0.02               | 6.02                | 0.42                 | 0.10                      |
| t-statistic on instrument  | (0.57)              | (0.15)             | (2.45)**            | (0.65)               | (0.31)                    |
| Observations   | 60,069              | 59,777             | 49,926              | 57,302               | 59,157                    |
| Firm-specific controls   | YES                 | YES                | YES                 | YES                  | YES                       |
| Year FE  | YES                 | YES                | YES                 | YES                  | YES                       |
| Firm FE  | YES                 | YES                | YES                 | YES                  | YES                       |

*Panel C – Decrease in the number of contracts: IV - the percentage of firms within the industry that are headquartered in the states that voted for the presidential party that is in office*

|                           | (1)                  | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|----------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts     | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>        | 1.037***<br>(11.195) | 1.025***<br>(7.214) | -0.590<br>(-0.721)     | 1.796***<br>(7.665)     | 0.635***<br>(7.630)          |
| First-stage F-statistic   | 740.87               | 448.66              | 12.31                  | 240.61                  | 977.14                       |
| t-statistic on instrument | (27.22)***           | (21.18)***          | (3.51)***              | (15.51)**               | (31.26)***                   |
| Observations              | 60,069               | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                  | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                  | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                  | YES                 | YES                    | YES                     | YES                          |

*Panel D - Decrease in the total dollar value of contracts: IV - the percentage of firms within the industry that are headquartered in the states that voted for the presidential party that is in office*

|                           | (1)                 | (2)                 | (3)                    | (4)                     | (5)                          |
|---------------------------|---------------------|---------------------|------------------------|-------------------------|------------------------------|
| VARIABLES                 | All<br>Contracts    | Sweetheart<br>Deals | Cost-plus<br>Contracts | Multi-year<br>Contracts | Non-competitive<br>Contracts |
| <i>Peer Effect</i>        | 1.279***<br>(7.725) | 0.779***<br>(3.539) | 2.356<br>(1.158)       | 1.246***<br>(4.737)     | 0.792***<br>(4.874)          |
| First-stage F-statistic   | 330.89              | 185.71              | 3.46                   | 169.12                  | 397.32                       |
| t-statistic on instrument | (18.19)***          | (13.63)***          | (1.86)**               | (13.00)***              | (19.93)***                   |
| Observations              | 60,069              | 59,777              | 49,926                 | 57,302                  | 59,157                       |
| Firm-specific controls    | YES                 | YES                 | YES                    | YES                     | YES                          |
| Year FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |
| Firm FE                   | YES                 | YES                 | YES                    | YES                     | YES                          |

**Table 7: Peer Effects, Government Contracting and Investment Policies**

This table reports regression results of government contracting variables induced by peer effects on investment efficiency measure. Predicted government contracting variables ( $\widehat{Gov\ Contracting}$ ) are the number and dollar value of all government contracts and sweetheart deals predicted from the regression of each variable on its respective *Peer Effect* measures. In Models 1 and 3 (Models 2 and 4) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number (dollar value) of all government contracts and sweetheart awarded from year t-2 to year t-1. In Models 5 and 7 (Models 6 and 8) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number (dollar value) of government contracts ad sweetheart deals awarded from year t-2 to year t-1. In Panel A (Panel B), the dependent variable is investment efficiency measure estimated from simple investment model of Biddle et al. (2009) as an average over the period t+1, t+3 (t+1, t+5). Control variables are from Biddle et al. (2009). Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| <i>Panel A: 3-year average investment efficiency</i> |                                    |  |                                       |   |                                    |  |                                       |   |
|--|------------------------------------|--|---------------------------------------|---|------------------------------------|--|---------------------------------------|---|
|  | (1)                                | (2)                                      | (3)                                   | (4)   | (5)                                | (6)                                      | (7)                                   | (8)   |
|  | Increase in All Contracts (Number) | Increase in All Contracts (Dollar Value) | Increase in Sweetheart Deals (Number) | Increase in Sweetheart Deals (Dollar Value) | Decrease in All Contracts (Number) | Decrease in All Contracts (Dollar Value) | Decrease in Sweetheart Deals (Number) | Decrease in Sweetheart Deals (Dollar Value) |
| $\widehat{Gov\ Contracting}$                         | -6.885***<br>(-3.700)              | -5.007***<br>(-2.801)                    | -6.213***<br>(-3.287)                 | -4.363***<br>(-2.583)                       | 3.990**<br>(2.552)                 | 2.979*<br>(1.657)                        | 4.146**<br>(2.329)                    | 1.839<br>(0.959)                            |
| Observations   | 30,861                             | 30,861                                   | 22,372                                | 30,803                                      | 30,851                             | 30,851                                   | 30,803                                | 30,784                                      |
| Adjusted R-squared                                   | 0.657                              | 0.657                                    | 0.657                                 | 0.657                                       | 0.657                              | 0.657                                    | 0.657                                 | 0.657                                       |
| Firm controls  | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Firm FE  | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Year FE  | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |

| <i>Panel B: 5-year average investment efficiency</i> |   |   |  |   |  |   |  |   |
|--|---|---|--|---|--|---|--|---|
|  | (1)   | (2)   | (3)  | (4)   | (5)                                      | (6)   | (7)  | (8)   |
|  | Increase<br>in All<br>Contracts<br>(Number) | Increase in<br>All Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar Value) | Decrease in<br>All Contracts<br>(Number) | Decrease in<br>All Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar Value) |
| <i>Gov Contracting</i>                               | -1.860<br>(-1.229)                          | -2.505*<br>(-1.751)                               | -1.016<br>(-0.636)                             | -2.646*<br>(-1.713)                               | 3.280**<br>(2.282)                       | 4.926***<br>(3.255)                               | 3.723**<br>(2.338)                             | 5.127***<br>(3.140)                               |
| Observations   | 22,395                                      | 22,395  | 22,372   | 22,372  | 22,390                                   | 22,390  | 22,367   | 22,367  |
| Adjusted R-squared                                   | 0.779                                       | 0.779   | 0.779  | 0.779   | 0.779                                    | 0.779   | 0.779  | 0.779   |
| Firm controls  | Yes   | Yes   | Yes  | Yes   | Yes                                      | Yes   | Yes  | Yes   |
| Firm FE  | Yes   | Yes   | Yes  | Yes   | Yes                                      | Yes   | Yes  | Yes   |
| Year FE  | Yes   | Yes   | Yes  | Yes   | Yes                                      | Yes   | Yes  | Yes   |

**Table 8: Peer Effects, Government Contracting and Asset Turnover**

This table reports regression results of government contracting variables induced by peer effects on investment efficiency measure. Predicted government contracting variables ( $\widehat{Gov\ Contracting}$ ) are the number and dollar value of all government contracts and sweetheart deals predicted from the regression of each variable on its respective *Peer Effect* measures. In Models 1 and 3 (Models 2 and 4) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number (dollar value) of government contracts and sweetheart deals awarded from year t-2 to year t-1. In Models 5 and 7 (Models 6 and 8) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number (dollar value) of government contracts and sweetheart deals awarded from year t-2 to year t-1. In Panel A (Panel B), the dependent variable is Asset Turnover, estimated as an average value of sales scaled by total assets over the period t+1, t+3 (t+1, t+5). Control variables are from Chen et al. (2007). Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| Panel A: 3-year average Asset Turnover |                                    |  |                                       |   |                                    |  |                                       |   |
|--|------------------------------------|--|---------------------------------------|---|------------------------------------|--|---------------------------------------|---|
|  | (1)                                | (2)                                      | (3)                                   | (4)   | (5)                                | (6)                                      | (7)                                   | (8)   |
|  | Increase in All Contracts (Number) | Increase in All Contracts (Dollar Value) | Increase in Sweetheart Deals (Number) | Increase in Sweetheart Deals (Dollar Value) | Decrease in All Contracts (Number) | Decrease in All Contracts (Dollar Value) | Decrease in Sweetheart Deals (Number) | Decrease in Sweetheart Deals (Dollar Value) |
| $\widehat{Gov\ Contracting}$           | 0.232***<br>(3.769)                | 0.205***<br>(3.567)                      | 0.151***<br>(2.666)                   | 0.0696<br>(1.239)                           | -0.167***<br>(-3.302)              | -0.156***<br>(-2.688)                    | -0.140**<br>(-2.234)                  | -0.0717<br>(-1.217)                         |
| Observations                           | 32,034                             | 32,034                                   | 31,932                                | 31,932                                      | 32,034                             | 32,034                                   | 31,932                                | 31,932                                      |
| Adjusted R-squared                     | 0.892                              | 0.892                                    | 0.891                                 | 0.891                                       | 0.892                              | 0.892                                    | 0.891                                 | 0.891                                       |
| Firm controls                          | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Firm FE                                | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Year FE                                | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |

Panel B: 5-year average Asset Turnover

|                        | (1)   | (2)   | (3)  | (4)  | (5)                                      | (6)   | (7)  | (8)  |
|------------------------|---|---|--|--|--|---|--|--|
|                        | Increase<br>in All<br>Contracts<br>(Number) | Increase<br>in<br>All<br>Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar<br>Value) | Decrease in<br>All Contracts<br>(Number) | Decrease in<br>All Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar<br>Value) |
| <i>Gov Contracting</i> | 0.202***<br>(3.994)                         | 0.0529<br>(1.131)                                       | 0.0900**<br>(2.020)                            | -0.0331<br>(-0.689)                                  | -0.287***<br>(-5.766)                    | -0.242***<br>(-4.524)                             | -0.293***<br>(-4.873)                          | -0.199***<br>(-3.621)                                |
| Observations           | 24,428                                      | 24,428  | 24,366   | 24,366   | 24,428                                   | 24,428  | 24,366   | 24,366   |
| Adjusted R-squared     | 0.935                                       | 0.934   | 0.934  | 0.934  | 0.935                                    | 0.935   | 0.934  | 0.934  |
| Firm controls          | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |
| Firm FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |
| Year FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |

**Table 9: Peer Effects, Government Contracting and ROA**

This table reports regression results of government contracting variables induced by peer effects on investment efficiency measure. Predicted government contracting variables (*Gov Contracting*) are the number of contracts and dollar value of all government contracts and sweetheart deals predicted from the regression of each variable on its respective *Peer Effect* measures. In Models 1 and 3 (Models 2 and 4) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report an increase in the number (dollar value) of all government contracts and sweetheart deals awarded from year t-2 to year t-1. In Models 5 and 7 (Models 6 and 8) *Peer Effect* equals the percentage of firms within the same 3-digit SIC industry as a focal firm, excluding the firm in question, that report a decrease in the number (dollar value) of all government contracts and sweetheart deals awarded from year t-2 to year t-1. In Panel A (Panel B), the dependent variable is ROA - return on assets, estimated as an average over the period t+1, t+3 (t+1, t+5). Control variables are from Chen et al. (2007). Robust t-statistics are reported in parentheses. All models include year and firm fixed effects. \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% level, respectively.

| Panel A: 3-year average ROA |                                    |  |                                       |   |                                    |  |                                       |   |
|-----------------------------|------------------------------------|--|---------------------------------------|---|------------------------------------|--|---------------------------------------|---|
|                             | (1)                                | (2)                                      | (3)                                   | (4)   | (5)                                | (6)                                      | (7)                                   | (8)   |
|                             | Increase in All Contracts (Number) | Increase in All Contracts (Dollar Value) | Increase in Sweetheart Deals (Number) | Increase in Sweetheart Deals (Dollar Value) | Decrease in All Contracts (Number) | Decrease in All Contracts (Dollar Value) | Decrease in Sweetheart Deals (Number) | Decrease in Sweetheart Deals (Dollar Value) |
| <i>Gov Contracting</i>      | 0.0548***<br>(2.863)               | 0.0470**<br>(2.374)                      | 0.0382**<br>(2.009)                   | 0.0156<br>(0.840)                           | -0.0459***<br>(-3.030)             | -0.0538***<br>(-3.176)                   | -0.0623***<br>(-3.121)                | -0.0375**<br>(-2.112)                       |
| Observations                | 31,805                             | 31,805                                   | 31,704                                | 31,704                                      | 31,805                             | 31,805                                   | 31,704                                | 31,704                                      |
| Adjusted R-squared          | 0.779                              | 0.779                                    | 0.779                                 | 0.779                                       | 0.779                              | 0.779                                    | 0.779                                 | 0.779                                       |
| Firm controls               | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Firm FE                     | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |
| Year FE                     | Yes                                | Yes                                      | Yes                                   | Yes   | Yes                                | Yes                                      | Yes                                   | Yes   |



Panel B: 5-year average ROA

|                        | (1)   | (2)   | (3)  | (4)  | (5)                                      | (6)   | (7)  | (8)  |
|------------------------|---|---|--|--|--|---|--|--|
|                        | Increase<br>in All<br>Contracts<br>(Number) | Increase<br>in<br>All<br>Contracts<br>(Dollar<br>Value) | Increase in<br>Sweetheart<br>Deals<br>(Number) | Increase<br>Sweetheart<br>Deals<br>(Dollar<br>Value) | Decrease in<br>All Contracts<br>(Number) | Decrease in<br>All Contracts<br>(Dollar<br>Value) | Decrease in<br>Sweetheart<br>Deals<br>(Number) | Decrease<br>Sweetheart<br>Deals<br>(Dollar<br>Value) |
| <i>Gov Contracting</i> | 0.0643***<br>(3.914)                        | 0.0387**<br>(2.504)                                     | 0.0477***<br>(3.150)                           | 0.0132<br>(0.896)                                    | -0.0530***<br>(-3.158)                   | -0.0431**<br>(-2.522)                             | -0.0588***<br>(-2.999)                         | -0.0239<br>(-1.413)                                  |
| Observations           | 24,176                                      | 24,176  | 24,115   | 24,115   | 24,176                                   | 24,176  | 24,115   | 24,115   |
| Adjusted R-squared     | 0.822                                       | 0.822   | 0.822  | 0.822  | 0.822                                    | 0.822   | 0.822  | 0.822  |
| Firm controls          | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |
| Firm FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |
| Year FE                | Yes   | Yes   | Yes  | Yes  | Yes                                      | Yes   | Yes  | Yes  |