Partisan Procurement

Contracting with the United States Federal Government, 2003–2015

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Partisan Procurement. Contracting with the United States Federal Government, 2003–2015

Abstract: The U.S. federal government spends huge sums buying goods and services from outside of the public sector. Given the sums involved, strategic government purchasing can have electoral consequences. In this paper, we suggest that more politicized agencies show favoritism to businesses in key electoral constituencies and to firms connected to political parties. We evaluate these claims using new data on United States government contracts between 2003 and 2015. We find that executive departments, particularly more politicized department-wide offices, are the most likely to have contracts characterized by non-competitive procedures and outcomes, indicating favoritism. Politically responsive agencies – but only those – give out more non-competitive contracts in battleground states. We also observe greater turnover in firms receiving government contracts after party change in the White House, but only in the more politicized agencies. We conclude that agency designs that limit appointee representation in procurement decisions reduce political favoritism.

Verification Materials: The data and materials required to verify the computational reproducibility of the results, procedures and analyses in this article are available on the American Journal of Political Science Dataverse within the Harvard Dataverse Network, at https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/4NEPI7

Governments in developed countries like the United States spend over one quarter of their budget buying goods and services from suppliers outside the public sector, with contracts typically set up between agencies and private firms (OECD 2017). The United States federal government spends $350 billion per year on procurement in the Department of Defense alone. This is greater than half the entire domestic discretionary budget in a given year, and provides the president and his administration with a powerful political vehicle (Gitterman 2013). Although the Competition in Contracting Act (CICA) prescribes open competition for government contracts, this paper explains that there are ways for agencies to circumvent the spirit of the law, which opens up avenues for politically motivated favoritism in procurement. And, indeed, there are clear signs of non-competitive procedures and outcomes, with about 35 percent of federal contracts showing such features (Brunjes 2020).

Politically motivated favoritism exists in situations where the procurer deliberately sets competition aside for electoral reasons, to cultivate relationships with connected firms, or in other ways allow the incentives of the party in power to influence the procurement process. The opportunities to engage in favoritism are shaped by federal law and vary across agency contexts. Many agencies spend significant amounts on goods and services. For others, procurement rarely factors in to their work. Agency design, particularly how responsive an agency is to the president, also varies significantly (Hudak 2014; Selin 2015). Some agencies have a large appointee presence and others operate mostly insulated from electoral politics (Lewis 2008). Within agencies, the context changes as procurement choices come and go, as do teams of administration appointees. Put very simply, we suggest that the risks for politically motivated favoritism are higher in more politicized agencies.

In spite of the huge sums involved and the threat of politically motivated favoritism, the topic is understudied in the United States. There are important papers and books providing

descriptive accounts of federal procurement (e.g., Thai 2001), studying e-procurement (e.g., Moon 2005), as well as the consequences of contracting for the quality of goods and services (e.g., Brown and Potoski 2003; Brunjes 2020; Verkuil 2017), but few studies of tactical contracting (for exceptions, see Gordon 2011; Krause and Zarit 2020). There is, however, a large literature on distributive politics that connects electoral geography to the distribution of federal funds, suggesting that tactical spending occurs in the United States (e.g., Berry and Fowler 2016; Berry, Burden and Howell 2010; Bertelli and Grose 2009; Ting 2012). A comparative literature also suggests a close relationship between factors such as political competition (Klašnja 2015; Woodhouse 2019), politicians' tenure (Bertelli 2019; Coviello and Gagliarducci 2017), and political donations (Titl and Geys 2019), on the one hand, and favoritism in procurement on the other hand. But while these comparative papers imply an association between partisan tactics and procurement, they rarely factor in the design of contracting units, such as agencies.

The scarcity of studies on politics and procurement in the United States opens up promising avenues for research on tactical spending, which is of great importance for both scholars and the general public. Moreover, while the literature on distributive politics sometimes draws attention to the role played by political appointees in distribution decisions and hints at politically motivated favoritism (Berry and Gersen 2017; Hudak 2014; Kriner and Reeves 2015), to what extent, if at all, agency design can hinder tactical spending is yet to be fully understood.

This paper contributes by putting the spotlight on public procurement and by exploring how the presence of appointees influences favoritism in procurement across agencies and time in the United States. We first review the existing research on the connection between agency design and favoritism in spending. We then describe the basics of the federal contracting process and explain how agency design can facilitate or mitigate non-competitive procedures and outcomes, focusing on the micro-level incentives of appointed and career decision makers. We evaluate resulting claims

using new data on federal government contracts between 2003 and 2015. We find that agencies with the most appointee influence, such as executive departments, are the most likely to have non-competitive processes and contracts characterized by single bids. We show that the electoral cycle, in line with our predictions, affects the number of non-competitive contracts asymmetrically: there are more non-competitive contracts in battleground states around elections, but only from agencies in executive departments. We interpret these as signs of politically motivated favoritism. We also demonstrate how party change in the White House influences the mixture of firms securing government contracts. New administrations secure contracts for a new set of firms, particularly in the most politicized agencies. This is also indicative of political favoritism in procurement because it suggests connections between the parties and certain firms. We conclude by discussing the implications of the findings for the growing literature on distributive politics as well as for the theory underlying production of goods and services outside of government.

Politicization and Favoritism in Procurement

Politically motivated favoritism in procurement has been described in a variety of contexts worldwide. Studies of Latin American countries such as Brazil (Boas, Hidalgo and Richardson 2014) and Paraguay (Auriol, Straub and Flochel 2016), as well as European countries, such as the Czech Republic (Titl and Geys 2019), Italy (Coviello and Gagliarducci 2017), Romania (Klašnja 2015) and Sweden (Broms, Dahlström and Fazekas 2019), demonstrate robust associations between political incentives and biased procurement decisions (Bertelli 2019; Woodhouse 2019). Stated very simply, lower political competition and lesser political accountability open up opportunities for favoritism, often to the benefit of firms providing political support. The link between the incentives of incumbents and firms is thus implied to be rather straightforward. One complicating factor, though,

is that contracts are typically not set up directly between the executive and the firm, but between some type of subunit, often an agency, and the firm.

Agency designs in the United States vary and allow for more or less political influence, to a large extent depending on their personnel (Selin 2015). The public personnel system in the United States, as in most developed countries, is divided loosely between two classes of employees (Ingraham 1995; Lewis 2008). One class includes career civil servants selected, promoted, and retained on the basis of merit. These employees build careers in government and work across administrations. They try to advance in their careers through longevity and good performance, some on very general tracks and others in occupation specific paths. The other class of employees, usually higher in the hierarchy, is a temporary political class connected to the president or party in power. They work to advance the agenda of the official that selected them and the party. This includes policy goals articulated by the president but also statements and actions that help the electoral fortunes of the party (Hudak 2014; Moore 2018). Scholars have conducted a significant amount of work on the politicization of federal agencies but have rarely connected it to favoritism in procurement.

The robust and growing literature on the distributive consequences of policymaking describes the link between agency politicization and tactical spending. Scholars have examined the influence of Congress and the president, sometimes examining distributive choices made in the legislative process (e.g., statute, committee report) and other times through agency choices (Bertelli and Grose 2009). Kriner and Reeves (2015) demonstrate that presidents have systematically steered economic means to counties in swing states, especially during election years, and to counties in core states throughout their term. They identify political appointees as key players. Berry and Gersen (2017) describe how variation in agency insulation – and the influence of political appointees in particular – helps to explain spending decisions across federal agencies. With designs that allow

more direct political control comes partisan responsiveness in agency spending decisions. Others describe how appointees help funnel money to battleground states or to the president's core supporters (Hudak 2014) and serve the president's interests by being strategically responsive to the interests of key members of Congress (e.g., Berry and Fowler 2016). In this view, agencies with designs that facilitate political control should be more likely to engage in contracting practices such as non-competitive solicitations and single bid contracts. Yet, procurement, unlike grantmaking, is explicitly governed by laws and regulations requiring, in the language of the CICA, "full and open competition through the use of competitive procedures" unless mitigating circumstances prevent their use. With these legal guidelines in place, more work needs to be done to explain how favoritism can emerge in theoretically objective procurement decisions. This involves an understanding of both the mechanics of procurement in the United States and the incentives and opportunities for political appointees to influence purchasing decisions.

Mechanics of Federal Contracting

Across the executive establishment, both career civil servants and political appointees make decisions about *whether* to purchase a good or service and *what* procedure to use to do so. The types of persons (i.e. careerist or appointee) involved and the amount of purchasing oversight varies by agency, the value of the contract, and the process chosen. In some agencies, high ranking officials are involved early in procurement choices. Other agencies devolve most purchasing decisions to lower level career managers. High value contracts, particularly those chosen through non-competitive processes, must receive approval from increasingly high (political) levels of senior agency officials. The structure of the hierarchy and the location of appointed and career managers in an agency can be an important predictor of the degree of political influence in contract choices (Zarit 2018).

The formal procurement process begins when a federal agency decides to purchase a good or service. Program officials usually initiate the process and work with contracting officers that help them purchase what they need. These contracting officers can work inside the same agency or work outside the agency in other agencies that provide assistance purchasing goods or services (e.g. the General Services Administration (GSA), Interior Business Center (DOI)). For standard products and generic services, contracting officers can help program officials purchase what they need expeditiously from existing approved vendors. The GSA maintains the Federal Supply Schedules which are long-term government wide agreements with firms to provide goods and services at fair prices to government.[1] For example, the GSA might contract with a pencil manufacturer to provide pencils for the entire government. Agencies needing pencils can then purchase pencils from a pre-approved supplier cheaply and quickly. A large proportion of government purchasing occurs through these schedules and similar government-wide contracts. For larger and more complex products and services, contracting professionals help procure the good or service through a more involved procurement process.

Full and Open Competition

Importantly, the CICA requires that agencies secure goods and services through "full and open competition through the use of competitive procedures." An open and competitive process for non-commercial contracts over $150,000 commonly involves 1) a notice of forthcoming solicitation; 2) a public invitation for bids (IFB) (usually on the government's central purchasing website); 3) a predetermined period for accepting (usually sealed) bids; and 4) choosing the lowest bid from

[1] There are also agencies other than GSA that manage large government-wide contracts (e.g., Department of Veterans Affairs, National Aeronautics and Space Administration).

among responsible bidders.[2] Another open and competitive process requires agencies to publish a request for proposals (RFP), negotiate with potential bidders in "the competitive range," and then award the bid to the party providing the best value to the government. There are other processes that satisfy the "open and competitive requirements" in the law that make allowances for specific kinds of proposals (e.g., architectural, research), the need for multiple awards to the same firms (i.e. GSA multiple awards schedule), and set-asides for specific types of bidders (e.g., small businesses, minority owned businesses). Contracts below the simplified acquisition threshold are regularly set aside for small businesses and ideally small businesses compete with one another for these contracts.

Non-competitive Processes

Agencies may also choose a formally *non-competitive* process. The CICA allows agency officials to choose a non-competitive process when one of several extenuating circumstances is present, such as national security or an unusually urgent need.[3] Both Congress and the president have complained that agencies overuse non-competitive processes and have decried an increase in such processes (Congressional Research Service 2015; U.S. House Committee on Government on Government Reform 2006). Choosing a non-competitive process does, however, trigger additional reporting and approval requirements, depending upon the value of the contract. For example, for non-commercial contracts between $150,000 and $650,000, the contracting officer must formally justify the non-competitive procedure but no official sign off is required. For contracts above this amount but

[2] The CICA allows for the use of simplified procedures for purchases below the "simplified acquisition threshold". For non-commercial contracts the threshold is $150,000. For commercial items it is instead $6.5 million. A commercial contract is for a product or service that "is customarily used by the general public or by non-governmental entities for purposes other than government purposes" (FAR 2.101.1).

[3] A non-competitive process can be chosen when 1) there is only one provider; 2) circumstances are unusually urgent; 3) the agency must use the selection process to maintain an industrial base (e.g., keep important firms in business to maintain the market); 4) specific international agreements are involved; 5) a statute specifically provides for a specified source (e.g., purchase from Prison Industries); 6) there are national security concerns; or 7) the agency head determines a non-competitive process is in the public interest.

below $12.5 million, a higher level official designated the *competition advocate* must approve. As contract values exceed $12.5 million, even higher level agency officials must sign off on the non-competitive process. All justifications and approvals of non-competitive awards must be posted on the federal government's procurement website and be open to challenge by other bidders. The dollar thresholds and designated officials vary some over time and by agency. Presidential appointees are more likely to be designated Chief Acquisition Officer in executive departments and career professionals are more likely in independent agencies. This influences who has approval authority for non-competitive processes and who sets overall procurement policy for the agency.

"Competitive" Processes and Non-competitive Outcomes

Agency officials can choose non-competitive or competitive *processes* that result in non-competitive *outcomes* such as single bids from preferred firms. Agency officials can design processes that satisfy the requirements of "open and competitive" under the CICA that still importantly shape the pool of participants (e.g., invocation of set-asides, limited notification or solicitation period). They can also proceed under technically neutral procedures that favor preferred firms. For example, program officials can ask procurement specialists to write specifications into solicitations that effectively favor some potential bidders. In the same way that academic job advertisements can be more or less specific (and with predictable outcomes), so can the construction of an IFB or RFP shape the pool of bidders in predictable ways. Knowledge of and connection to specific firms and their capabilities can also shape the specifications included in solicitations. While the CICA admonishes contract officers to "develop specifications in such a manner as is necessary to obtain full and open competition," it can be difficult to make the tradeoff between the goal of getting exactly what the program official wants and the goal of open competition (Congressional Research

Service 2015). In addition, familiarity with specific firms can help contracting officers see better how the firm meets objective requirements in the solicitation.

Appointees and Favoritism in Contracting

Political appointees have incentives to use their influence over purchasing for the benefit of themselves and their party. When firms connected to the appointee's party or businesses in key electoral constituencies receive government contracts, this increases the chances that such firms will give credit to the current administration. This has electoral benefits for the party in power (Kriner and Reeves 2015). Employees are arguably more likely to vote for the party that helped to secure their jobs and firms can also pressure their employees to support candidates they like (see Iati and Krakow 2019; Leder 2009). Moreover, firms and their executives are more likely to give campaign donations to the party or related groups that support the party and its candidates (Titl and Geys 2019). Government contracts targeted to key states can also provide an economic boost to those areas in ways that help the incumbent party. Incumbent parties tend to do better in elections when the economy is doing well (Duch and Stevenson 2008).

The appointees themselves also benefit from their work on behalf of the party and any personal interactions they have with firms receiving government contracts. Those appointees that successfully advance the interests of the presidential administration improve their standing within the party and the constellation of groups or interests associated with the party. This includes politically connected law firms, think tanks, not-for-profits, lobbyists, consultants, and contractors. Successful appointees improve their earning potential, since their connections and expertise open doors and are valuable inside and outside of government.

Of course, *effective* work for the administration and party involves the exercise of favoritism within the limits of the law and public opinion. Appointees that clumsily flout the law can hurt both

the administration and their own career prospects by inviting legal and journalistic scrutiny (Gordon 2011). Agency officials cannot publicly promise government contracts to specific areas or vendors. Rather, they can promise that firms will finally get a "fair shake" and they can offer to help firms navigate the complex procurement process. Moreover, they decry the fact that firms doing "such terrific work" are not being recognized by current agency officials and pledge to do everything they can under the law to make sure that the fine products and services of specific firms are given adequate attention in the procurement process. These kinds of public signals, when followed by contract dollars, help firms and their employees give credit to the administration and its appointees. Enterprising agencies can arrange visits by agency appointees and public events in order to cement the connection between the firm, the agency, and the new contract dollars.

The presence of appointees in *programmatic* positions (e.g., bureau chief, division head) or *procurement* positions (e.g., Assistant Secretary for Administration, Director of Office of Small and Disadvantaged Business Utilization) can influence the form of contracts. Programmatic officials can support preferred private sector firms through the specifications included in IFBs/RFPs. Appointees in procurement positions can influence the actions of contract officers by signaling to contract officers that they prefer newer less-established firms or, conversely, that they prefer existing established firms (if the administration has been in office for a while). The procurement appointees also designate contract executives such as the competition advocate and they approve exceptions to competitive processes.

Some agencies also have appointees that head offices of small business development, minority business development, small and disadvantaged business utilization, or related offices whose job involves helping businesses secure agency contracts. This includes helping firms take the necessary steps to secure government contracts and making them aware of contracting opportunities in the agency. It also involves facilitating relationships between eligible firms and the agency officials

making contract decisions. When contracting officials know the firms seeking agency contracts, they can more easily see the value of firms' bids and have more confidence in the products or services offered by that business. As one how-to book on government contracting emphasized, a key factor in securing contracts is "the power of relationships" (Amtower 2011).

Increasing appointee penetration can also have an *indirect* influence on procurement outcomes through the choices of career employees. Career contract officers make decisions that will advance their careers inside or outside the agencies in which they work. If career officials have a natural bias, it is probably towards firms with a track record with the agency since there is less uncertainty about their work and fewer transaction costs in managing the contracts (Brown, Potoski and Van Slyke 2006). Career civil servants, however, are also sensitive to other formal and informal requirements to do their job in a way that leads to advancement and future job opportunities. Getting contracts approved that make key stakeholders happy is a pathway to advancement in both the public and private sectors. This involves following the appropriate process but also using available discretion to satisfy agency leaders. The necessity of contract approval by higher level officials and the understanding that appointed officials are attentive to the identity and work of the firms selected can bias the contracting behavior of lower level officials, particularly in more politicized agencies.

Expected Empirical Patterns

Taken together, the presence of appointees in key programmatic or procurement positions is an important aspect of political favoritism in purchasing, either because of direct effort or indirect influence over career employees. This should be manifested in three specific empirical patterns:

First, and most directly, more politicized administrative agencies should be the most likely to procure goods and services through processes that result in non-competitive outcomes.

Second, these politically responsive agencies should be the most likely to produce contracting patterns that reflect electoral concerns. For example, the distribution of contracts should potentially boost support for the incumbent party in battleground states, particularly around elections.

Finally, if politically motivated spending is funneled through companies with partisan connections, the companies receiving contracts from politicized agencies should change in a predictable way with White House turnover. When there is party change in the White House, we should observe significant turnover in firms winning contracts from politicized agencies but not in insulated agencies.

Research Strategy

To examine the relationship between agency design and favoritism we use data on all regulated federal contracts in the United States from 2003-2015.[4] We obtained the data from usaspending.gov and aggregated spending actions to the contract level using contract IDs. The data was accessed in April 2016. The federal contracting database includes information on all contracts above a mandatory reporting threshold ($25,000 for most of our period) awarded by federal agencies regulated by the Federal Acquisition Regulation (FAR).[5] In total, there are more than 2.1 million contracts (for a comprehensive discussion see Fazekas, Ferrali and Wachs 2018). We focus here on contracts above $150,000 because procurement laws are not as strict for low value contracts.[6] We include government-wide (e.g., GSA schedule contract) and single agency contracts. For the former

[4] Data from before 2003 is unreliable both in terms of the missing rate and overall number of observations (i.e., observations are likely missing as the new IT system was introduced gradually).
[5] There are a number of legally mandated exceptions, and exchanges with domain experts suggest that administrative error may bias the database to a small degree. Nevertheless, we assess that our claim to complete representation of federal purchasing is adequate. For information on the FAR see https://www.acquisition.gov/browsefar.
[6] The threshold for simple acquisitions in the FAR was $100,000 before 2010. To increase comparability over time, we have, however, used the $150,000 cut-off for the entire time-period.

we consider the originator of the contract as the agency for the purposes of analysis (e.g., the GSA for schedule contracts) and we aggregate the purchases under that contract to determine the contract value.[7] These restrictions cut our sample size to a little under 570,000 contracts.[8]

Dependent Variables

If agencies deliberately depart from open procedures in otherwise competitive markets (e.g., sole-source or restricted bidding), we interpret this as a potential sign of favoritism (Fazekas and Kocsis, 2020). We therefore look for diversions from legally defined expectations when we evaluate the relationship between procurement favoritism and agency politicization. We extract information on the type of *procedure* and the *outcome* of the procurement process from our contracting data and combine these two indicators into a composite measure. We thus record if the procurement procedure was restricted (non-competitive procedure), when only one bid was submitted in a tender (non-competitive outcome), and we combine non-competitive procedure and single bids to get a measure that captures both procedure and outcome. Although restricted procedures and non-competitive outcomes are correlated, they represent distinct ways of achieving favoritism, as described above.[9] Combining them allows us to get a conservative measure of deliberate departures from open procedures. All three indicators are, however, rather common features of public procurement processes in the U.S., with 35 percent of contracts showing signs of non-competitive procedures and outcomes (see Table 1).

[7] We have also estimated models without contracts awarded by the GSA and its agencies. The results are largely similar and are included in Appendix I, p. xxii-xxv.
[8] In the models where we include agency fixed effects (Table 3), we restrict the sample to include only agencies with at least 50 contracts per year on average because agency fixed effects, in combination with our extensive set of controls, drastically reduce the number of cases and variability in these cells.
[9] For 20% of the observations, either "restricted procedures" or "non-competitive outcomes" is present while the other is not. The reason is that even with non-competitive procedures the buyer can still invite bidders they like. Non-competitive procedures do therefore not necessarily result in a single bid. The correlation between the procedure and outcome measures is 0.64.

Finally, we use the same data source described above and construct an indicator variable recording if the firm receiving the contract in time *t* also received a contract at time *t-1* from agency *i*. In other words, is the firm a repeat winner?

Independent Variables

We use two measures of agency politicization. The first taps into which agencies are structurally insulated from political pressure. We include indicators for cabinet departments (not a separate bureau), distinct bureaus within cabinet departments, independent administrations (i.e., agencies structured like executive departments but not part of the Executive Office of the President or cabinet), and independent commissions in a rough order of most to least politicized (Selin 2015). We disaggregate the components of executive departments since there is potentially more political intervention in contracts produced by department-wide offices (e.g., Office of the Secretary) than in contracts produced by discrete bureaus within a larger department.

For the second measure we calculate the appointee ratio (#appointees/#supervisors) in each agency per year.[10] We have also estimated models including the normalized agency appointee ratio and include those estimates in Appendix C (p. vii). In both of these cases, the idea is to remove cross-agency variation and only estimate the effect of changes within agencies.

There are pros and cons with both the structural and appointee measure of politicization. While the first measure captures well established differences in design, it does not vary over time. This measure, therefore, only allows us to explore *between* agency differences. Appointee ratio, with agency fixed effects, taps into *within* agency variation over time. Taken together, these two measures

[10] Specifically, the measure of politicization includes all Schedule C, non-career SES, and persons on the EX pay scale (Singer-Vine, 2017). The denominator is the number of employees in the agency during the time period with a supervisor 2 code in the Office of Personnel Management's Central Personnel Data File.

of politicization—cross agency structural insulation and within-agency appointee ratio—allow us to tap into cross-sectional and longitudinal variation.

Table 1 about here

Moreover, to evaluate whether agencies produce non-competitive contracts for partisan reasons, we assess whether firms in battleground states during presidential elections are treated differently than other states. To identify battleground states, we use journalistic sources for each election (see Appendix D, p. ix) and code such states with a 1 in the year before, during, and after the presidential elections of 2004, 2008, and 2012. We assume that pressures applied during the election year may result in contracts let out in the first part of the year after the election. Contracts can take months between initiation and disbursement. We interact contracts in battleground states with the agency design measures to determine whether the most politicized agencies are the most sensitive to the electoral importance of firms in different states.

In our final analysis we assess whether presidential turnover leads to a different set of companies winning contracts in more politicized agencies. We evaluate the transition from President Bush to President Obama in 2009 and we analyze contracts awarded one year before Election Day (November 4, 2007 to November 4, 2008) and two years after Inauguration Day (January 20, 2009 to January 20, 2011).[11] We choose a two-year period after the new president takes office because new administrations need 6–18 months to take full control of the federal administration and then the contracting process (initiating and launching new federal tenders) adds several months before contracts are awarded, taking about one year until the results of the new administration can show up in our data. We examine if the change in the probability that a firm is a repeat winner between the

[11] We exclude the presidential transition period (November 4, 2008 to January 20, 2009).

last year of the Bush Administration and first part of the Obama Administration is more pronounced in politicized agencies than in more insulated agencies.

Regression Analysis

Our baseline model follows the same basic structure while varying the exact measures of underlying concepts. We fit variants of the following two models via binary logistic regression with standard errors clustered by agency:

$$\left.\begin{array}{l}\text{Non-competitive process}_i \\ \text{Single-bid}_i \\ \text{NC process \& Single-bid}_i\end{array}\right\} = \beta_0 + \beta_1 \text{Politicization}_i + \beta_{2n} \text{ContractControls}_{ni} + \beta_{3m} \text{OrganizationControls}_{mi} + \varepsilon_i \quad (1)$$

$$\text{NC process \& Single-bid}_i = \beta_0 + \beta_1 \text{Politicization}_i + \beta_2 \text{BattlegroundState}_i + \beta_3 \text{Politicization}_i * \text{BattlegroundState}_i + \beta_{4n} \text{ContractControls}_{ni} + \beta_{5m} \text{OrganizationControls}_{mi} + \varepsilon_i \quad (2)$$

where we use different proxies capturing the risk of favoritism in the *i*th contract: non-competitive process used in the tender (Table 2: Model 1), single bidding as a non-competitive outcome (Table 2: Model 2) and the joint incidence of both (Table 2: Model 3, Table 3 and Table 4). Politicization_i denotes the *i*th contract's different measures of agency politicization. Politicization_i can take on the 4 categories of structural insulation (Table 2 and Table 4) or the appointee ratio (Table 3). $\text{BattlegroundState}_i$ expresses the dummy variable on whether the contracts are linked to spending in a Battleground State around an election year (Table 4: Model 1, 2 and 3). We denote the full interactions between these two as Politicization_i *$\text{BattlegroundState}_i$. $\text{ContractControls}_{ni}$ is the array of *n* control variables associated with the *i*th contract. These are contract award year fixed effects (included to account for common time shocks such as economic crises); contract sector fixed effects for 34 broad economic sectors (e.g., research and development or construction of facilities); log contract value; a dummy for commercial items; and fixed effects for the procuring office's state (to

account for time-invariant location characteristics such as the maturity of local supplier markets).[12] $OrganizationControls_{mi}$ is the array of *m* control variables associated with the organization awarding *i*th contract. First, we account for executive department characteristics, both by including executive department fixed effects and the number of contracting officers (proxying the importance and professionalization of contracting within the department overseeing the agency). Second, we account for agency characteristics (size) by including the log number of contracts awarded by the agency in the whole period and the log number of full time employees. Third, we take into consideration the professionalization of the agency itself by including the log number of contracting officers, the log number of contracting officers in the Senior Executive Service (SES), and a dummy capturing if there are any contracting officers in the agency in the SES. All specifications include a constant term (β_0) and error term (ε_i). We have also estimated models on matched samples of contracts to account for the fact that agencies may be engaged in different kinds of purchasing (for full details see Appendix A, p. iv).

In one set of specifications (reported in Table 3) we include agency fixed effects instead of department fixed effects to account for unobserved agency differences. This detailed fixed effects set-up necessitates the exclusion of all time-invariant controls and also agency-level covariates, which are highly correlated with the agency fixed effects and hence become practically zero. These specifications therefore only include two time-varying agency-level controls: log number of full-time employees, accounting for changes in agency size and log number of SES contracting officers, accounting for changes in agency procurement professionalization. However, in the alternative set-up, which uses a normalized appointee ratio indicator, we include the usual set of controls too (see Appendix C, p. vii).

[12] We have also estimated models with fixed effects for congressional district and include those in Appendix G, p. xiii-xv.

In addition to the binary logistic regression models, we estimate difference-in-differences (DiD) regressions on the contract level, exploiting the differences between more or less politicized agencies as treatment and control groups respectively, and use the discrete timing of the presidential change in 2009 to set up model (2). This set-up tests the expectation that there is an association between politicization and non-competitive processes and outcomes driven by electoral concerns. If firms receive more contracts because of partisan connections then the set of firms winning contracts should change in a predictable way after presidential turnover. We would expect the percentage of repeated winners to drop markedly for more politicized agencies after presidential turnover, while staying the same in less politicized agencies. We estimate the following model:

$$\text{Repeat winner}_i = \beta_0 + \beta_1 \text{Politicization}_i + \beta_2 \text{Period}_i + \beta_3 \text{Politicization}_i * \text{Period}_i + \beta_{4n} \text{ContractControls}_{ni} + \beta_{5m} \text{OrganizationControls}_{mi} + \varepsilon_i \quad (3)$$

where the dependent variable is Repeat winner_i, which is a dummy variable denoting whether the firm awarded the contract was awarded a contract in the previous year. For Politicization_i, we include a simplified version of our structural independence measure with only two categories: executive departments are considered as treatment organizations and independent administrations and commissions as control organizations. This simplification is made to better fit the regression set-up with a standard DiD specification. Period_i denotes the period of contract award with respect to the change of presidency. We include the same set of controls as discussed above, with the exception of the year fixed effects, since the agencies are only "treated" at one point in time; and executive department characteristics since these are not defined for independent administrations and commissions. In addition, we also include a constant (β_0) and an error terms (ε_i).

In order to justify inference from a DiD estimation, an assumption of parallel trends in the two groups (politicized and less politicized agencies) is required. In our case the supplier pool and contract types in the two groups differ markedly, so the parallel trends assumption may be violated.

To counter this problem, we carry out contract level matching using the same control variables as in our other analyses, both before elections and after inauguration periods (goodness of matching statistics is in Appendix B, p. v). The combination of matching and DiD estimation for this purpose has been used broadly, for example in development (Cattaneo et al 2009) and management (Rowley, Shipilov and Greve 2017) studies. Among other things, such matching removes defense-related contracts from the control group, making remaining contracts more similar.

Results

Table 2 includes estimates from models with three different indicators of political favoritism: 1) the use of a non-competitive procedure, 2) a non-competitive—i.e., single-bid—outcome, and 3) non-competitive procedure and single bid outcome combined. Importantly, the estimates confirm that contracts issued by the most politicized agencies have the highest probability of being awarded in a non-competitive process and result in a process with only one bidder. Compared to the most insulated agencies, the coefficient estimates are large and positive for executive departments, particularly for department-wide offices, indicating that the probability that the procurement process is non-competitive is higher when the structure allows for more direct political influence.

Table 2 about here

Figure 1 reports the predicted probability for non-competitive processes and outcomes by agency type based on model 3 (non-competitive procedures and outcomes combined). It is lowest for independent commissions (16%) and slightly higher for independent administrations (18%). The risk increases considerably in less insulated federal agencies such as bureaus within executive departments (35%) and components of executive departments that are not bureaus (48%). This is

important initial evidence that agency design matters for political favoritism. Agencies that are designed to allow appointees more influence use non-competitive procurement processes more, and their procurement more often results in single bid outcomes even when accounting for comparability of contracts and contexts.

Figure 1 about here

To further explore the effects of agency design, Table 3 includes each agency's appointee ratio together with agency fixed effects. This allows us to study within-agency variation over time. The effect is large, positive and significant. Increased appointee ratios are correlated with non-competitive procurement, even when including both agency and time fixed effects and controlling for a host of agency and contract-specific factors. Based on the estimates in Model 3, the predicted probability of non-competitive processes and outcomes changes from 51 to 63 percent when the appointee ratio changes with one standard deviation above the mean with all other values held at their means (for a visual representation see Figure C1, p. viii). The results in Tables 2 and 3, taken together, provide consistent evidence that politicization increases the probability of non-competitive procurement in both a set-up exploiting cross-agency structural differences and also within-agency differences over time.

Table 3 about here

Politicization and Favoritism in Battleground States

While contracts produced by the more politicized department-wide offices had the highest estimated probabilities of being non-competitive and single-bid, our suggestion was that this, in part,

is a consequence of electoral factors. In Table 4 we include models that account for whether firms were located in battleground states, and the estimates are revealing. First, the estimates suggest that contracts in battleground states (compared to less politically salient states) are more likely to have non-competitive processes and outcomes (Model 1) throughout the 2003–2015 period, which had seen multiple presidential elections with the list of battleground states shifting over time. The average effect, however, is small and statistically insignificant.

Table 4 about here

The reason for the small average effect is partly that the impact of spending in battleground states is mitigated by agency insulation (Table 4, Model 3; Figure 2). In the most politicized federal agencies, executive departments (not bureaus), we find a notable increase in risks of non-competitive procurement when spending in battleground states (from 43 to 48 percent). The least politicized agencies are actually estimated to produce more non-competitive contracts in *non*-battleground states, albeit the difference is insignificant (12 compared to 15 percent). While electoral and partisan factors influence the contracting process, this is primarily the case in the agencies where political officials penetrate most deeply. When oversight and management positions are held by appointees, this can facilitate the production of non-competitive procedures and outcomes.[13]

Figure 2 about here

[13] An alternative would be to use the place of contract performance instead of firm location. Unfortunately, this increases the number of missing cases dramatically and therefore we prefer the analyses reported in Table 4. We have, however, performed analyses using place of performance. The results are substantively similar (see Appendix E, p. x).

Agency Politicization, Presidential Turnover and Supplier Persistence

Another implication of our argument is that a new presidential administration should have a different set of companies winning contracts, particularly in more politicized agencies. If, after a transition of power in the White House, we observe a systematic difference in the percentage of repeat winners in executive departments versus independent administrations and commissions, this is evidence of a relationship between the parties and certain firms.

As mentioned above, we estimate a DiD regression model on a *matched* sample of contracts. Our DiD models take the transition from President Bush to President Obama in 2009 as the cut-point, comparing contracts awarded one year before Election Day and two years after Inauguration Day. The dependent variable for these models is a dummy variable indicating whether the supplier is a repeat winner or not (0,1). Table 5 includes the estimates, first, looking at agency politicization discretely; second, time period, also discretely, and then looking at the difference in differences across time periods and agency types. First, we find consistently higher supplier persistence in independent administrations and commissions throughout the whole period (Model 1). The coefficient on the executive department indicator is large, negative, and estimated precisely, suggesting that more new firms are coming into the process via the executive departments.

Second, we identify a marked drop in repeat winners after the president changes, especially in the first year into the Obama administration (Model 2). The coefficients indicating year 1 of Obama and year 2 of Obama are both negative, indicating that firms in the data in 2009 or 2010 were significantly less likely to have had a contract in the previous year than firms in 2007 and 2008. This either means that new firms were being given contracts or older firms were losing contracts, or both. Given the increase in federal spending in 2008-2009 during the financial crisis, however, it was likely that many new firms received contracts as part of the fiscal stimulus.

Third, and most importantly for our hypothesis, the observed drop in repeat winners is more notable for executive agencies. In 2010, after Obama's team is in place, there is a growing gap between politicized and non-politicized agencies. Politicized agencies are bringing in more new firms than insular agencies. In absolute terms, in Model 3, the gap between politically responsive executive departments and less politically responsive independent administrations and commissions increases to 9 percentage points (34 versus 25 percent) in the second year after president change, compared to the 7 percentage point difference in the year before the elections (34 versus 27 percent). The increasing gap in the second year is most informative of our theoretical expectations because awarded contracts have a substantial lag and setting up new appointees in the bureaucracy also takes time; hence the first year after the change of presidency represents a transitory period with the clear impacts showing only in the second year.

Table 5 about here

One could, of course, suspect that the observed differences in repeat winners are driven by policy changes such as less spending on the military or spending in different states, but this can be ruled out since we matched cases in politicized and insular agencies using the major covariates we have used so far. This includes the economic sector of the contract, removing all those control contracts that have no matching pair in the treatment group (e.g., there is very little defense spending in independent administrations and commissions; for details see Appendix B, p. v).

Discussion

In our analysis of all higher value United States government contracts between 2003 and 2015, a few findings stand out. First, non-competitiveness is a consequence of political pressure and

is most palpable in agencies with appointees in programmatic or procurement positions. Therefore, it is important to note that our second key finding is that executive departments, particularly more politicized department-wide offices, are the most likely to engage in non-competitive contracting behavior. This is true even when accounting for differences in contract content (via traditional controls or matching). Another indication of the political dynamic that we observe is that politically responsive agencies – but only those – give out more non-competitive contracts in battleground states. Finally, we see greater turnover in firms receiving government contracts after party change in the White House but only in the more politicized agencies, again suggesting partisan and electoral forces driving contracting choices.

There is however an argument to be made against our interpretation. Plausibly, the non-competitive processes and single-bid outcomes might be a means for shrewd procurement officials to get around the rules and select the firms they know to be the best. This is difficult to disentangle empirically because we do not observe the counterfactual of the same contracts secured through truly competitive processes. If we could, we would compare costs and quality of outputs between those resulting from competitive vs. non-competitive contracts. Still, when we regress cost overruns in the contracts (ratio of final cost to the value of the awarded contract) on the non-competitive process and single bid outcomes of the contracts in the data, the estimates suggest that non-competitive contracts increase costs during implementation by 3–3.5 percentage points (Appendix F, p. xi-xii). While the percentage difference might appear small, given the enormous values involved, the savings potential from more competitive contracting is very large. A back of the envelope calculation, taking the average contract value of non-competitive contracts as a benchmark, suggests that had non-competitive contracts been contracted in a competitive procedure with more than one bidder, the federal government could have saved $25.1 billion per year, which is approximately the total annual procurement spending of the Department of Energy (using Model 3

cost overrun estimates). The non-competitive contracts appear to cost taxpayers notably more than other contracts.

Finally, in this paper we present no evidence of collusion between career civil servants and private firms, even though this is a prominent concern in the literature (Dal Bó 2006). Indeed, contracting processes in independent commissions were the least likely to have non-competitive processes and single bid outcomes. This may be because there are so many appointees in the United States that there are few cases with too little politicization. We also note, however, that there is significant diversity among independent commissions, including agencies as different as the Merit Systems Protection Board and the Securities and Exchange Commission. In the former agency, firm connections are thin and, in the latter, thick. It is reasonable to expect that when one disentangles the different kinds of commissions and related labor markets, that favoritism related to too little politicization may emerge. Indeed, a number of scholars find that an appropriate balance between appointees and careerists is best for performance (e.g., Golden 2000; Krause, Lewis and Douglas 2006).

Conclusion

This paper tackles the political practices around government procurement, one of the largest and fastest growing parts of the United States federal budget. The paper explains how rarely the goal of open competition is realized, particularly for larger contracts, and describes how political favoritism works its way into contracting decisions. Indeed, a significant proportion – 35 percent – of contracts above $150,000 is characterized by non-competitive processes and outcomes. This is a high percentage, particularly since the mechanism for improving quality and reducing costs is a competitive market. In other words, while the prime motivation for contracting out is improved efficiency, this generally relies upon the belief that procurement decisions occur through open

competition and are not subject to political interference in selection. This paper points out that these conditions are often lacking. We find many non-competitive processes and outcomes – deviations from competitive goals – due to political factors.

It might not surprise students of distributive politics that government procurement, at times, is motivated by political favoritism. Presidents and their parties are incentivized to boost support before, and to repay loyalists after elections. A rather large discussion revolves around the distributive consequences of policy choices made by the president and Congress, and is particularly concerned with how these decisions are driven by tactical, partisan, or even individual concerns (Berry and Fowler 2016; Kriner and Reeves 2015). In practice, much of the spending in, for example, battleground states is channeled through federal agencies (Berry and Gersen 2017).

Our findings are not only relevant for political scientists, economists and others interested in distributive politics, but have implications for the theory undergirding the drive to increase governments buying goods and services rather than producing them internally. Scholars have pointed out that the efficiency of outside production might be hampered by quality-shading, which is possible because of the producer's information advantage (Hart, Shleifer and Vishny 1997). Our paper suggests that political factors have similar impeding effects, because they incentivize both buyers and sellers to overlook the very reason for procurement and instead spend common resources tactically. However, the paper also implies that there is an institutional cure for the worst tendencies of tactical spending. Agency designs that limit the direct influence of the president and his party in the day-to-day operations of the agency may reduce incentives for tactical spending and thereby drive down favoritism in procurement.

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Table 1. Summary Statistics

Variable name	Mean	S.D.	Min	Max	N
Non-competitive procedure	0.373	0.484	0	1	569,706
Single bidder contract	0.543	0.498	0	1	547,309
Single bidder contract & non-competitive procedure	0.349	0.477	0	1	564,700
Repeat winner company (2007-2010)	0.474	0.499	0	1	230,522
Appointee ratio	1.373	1.485	0	3	483,117
Dept.: no. of contracting officers	3,966	2,587	48	7,628	491,062
Agency size: log no. of full time employees	7.048	3.649	-4.605	12.809	555,724
Agency: log no. of contracting officers	3.412	3.435	-4.605	8.133	555,724
Agency: log no. of SES contracting officers	-0.428	3.812	-4.605	4.220	555,724
Agency: Any SES contracting officers (Y/N)	0.575	0.494	0	1	555,724
Log contract value	13.522	1.553	10.127	23.877	569,706
Agency size: log no. of contracts awarded	9.965	1.638	0	11.706	569,706
Commercial-item (Y/N)	0.403	0.491	0	1	569,706

Note: In cases where values are 0 (e.g., a small unit has a period where there are no FTEs), ε has been added to facilitate the taking of logs.

Table 2. Agency Politicization and Non-Competitive Process and Single Bid Outcomes in Federal Procurement, 2003–2015

	(1)	(2)	(3)
	Non-competitive procedure	**Single bidder contract**	**Non-competitive procedure and outcome**
Baseline (Agency type): Indep. Com. & Reg. Com.			
Agency type: Independent Admin.	0.278	-0.092	0.161
	(0.428)	(0.407)	(0.425)
Agency type: Executive Dept. (Bureau)	1.601*	0.451	1.220
	(0.795)	(0.771)	(0.774)
Agency type: Executive Dept. (Not Bureau)	2.156**	0.980	1.830**
	(0.620)	(0.561)	(0.608)
Log contract value	-0.031*	-0.129**	-0.060**
	(0.013)	(0.017)	(0.016)
Commercial-item: Yes	-0.048	-0.129	-0.079
	(0.078)	(0.090)	(0.083)
Agency size: log no. of contracts awarded	-0.142	-0.072	-0.138
	(0.081)	(0.072)	(0.082)
Agency size: log no. of full-time employees	0.017	0.027	0.016
	(0.025)	(0.025)	(0.026)
Agency: log no. of contracting officers	0.032	0.006	0.028
	(0.042)	(0.035)	(0.043)
Agency: log no. of SES contracting officers	0.157	0.163	0.158
	(0.113)	(0.084)	(0.109)
Agency: any SES contracting officers (Yes)	-0.905	-0.949	-0.898
	(0.697)	(0.545)	(0.676)
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Dept. FE	Y	Y	Y
Constant	Y	Y	Y
Observations	541,561	520,670	537,122
Pseudo R2 or R2	0.093	0.081	0.097

Note: $^{*}p < 0.05$, $^{**}p < 0.01$. Standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Table 3. Appointee Ratio and Non-Competitive Processes and Single Bid Outcomes in Federal Procurement, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Appointee ratio	5.142**	3.913*	4.374*
	(1.726)	(1.870)	(1.748)
Log contract value		-0.067**	-0.065**
		(0.017)	(0.017)
Commercial-item: Yes		-0.170**	-0.161**
		(0.059)	(0.058)
Agency size: log no. of full-time employees			0.003
			(0.006)
Agency: log no. of SES contracting officers			-0.107**
			(0.035)
Contract Award Year	Y	Y	Y
Contract Sector	N	Y	Y
Agency Office. State	N	Y	Y
Agency: FE	Y	Y	Y
Constant	Y	Y	Y
Observations	466,005	466,003	466,003
Pseudo R^2	0.061	0.127	0.128

Note: * $p < 0.05$, ** $p < 0.01$. Standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency). We exclude agencies with fewer than 50 contracts per year on average since such agencies have too few degrees of freedom.

Table 4. Agency Politicization, Electoral Pressures and Federal Procurement, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Baseline: Battleground state = 0 (No)			
Battleground state = 1 (Yes)	0.073	0.074	-0.244
	(0.074)	(0.074)	(0.152)
Baseline Agency type: Ind. Com. & Independent Reg. Com.			
Agency type: Independent Administration		0.258	0.159
		(0.422)	(0.428)
Agency type: Executive Dept. (Bureau)		1.214	1.125
		(0.768)	(0.769)
Executive Dept. (Not Bureau)		1.828**	1.679**
		(0.592)	(0.589)
Battleground state * Independent Admin.			0.329*
			(0.157)
Battleground state * Executive Dept. (Bureau)			0.276
			(0.150)
Battleground state * Executive Dept. (Not Bureau)			0.473**
			(0.146)
Log contract value	-0.068**	-0.067**	-0.067**
	(0.014)	(0.014)	(0.014)
Commercial-item: Yes	-0.099	-0.094	-0.092
	(0.091)	(0.091)	(0.091)
Agency size: log no. of contracts awarded	-0.154	-0.167	-0.166
	(0.079)	(0.086)	(0.086)
Agency size: log no. of full-time employees	0.025	0.031	0.031
	(0.029)	(0.028)	(0.028)
Agency: log no. of contracting officers	0.022	0.027	0.027
	(0.040)	(0.041)	(0.041)
Agency: log no. of SES contracting officers	0.144	0.171	0.171
	(0.107)	(0.111)	(0.111)
Agency: any SES contracting officers (Yes)	-0.782	-0.973	-0.973
	(0.663)	(0.685)	(0.685)
Dep.: no. of contracting officers (deciles)	Y	Y	Y
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	Y
Constant	Y	Y	Y
Observations	368,891	368,891	368,891
Pseudo R^2	0.099	0.099	0.100

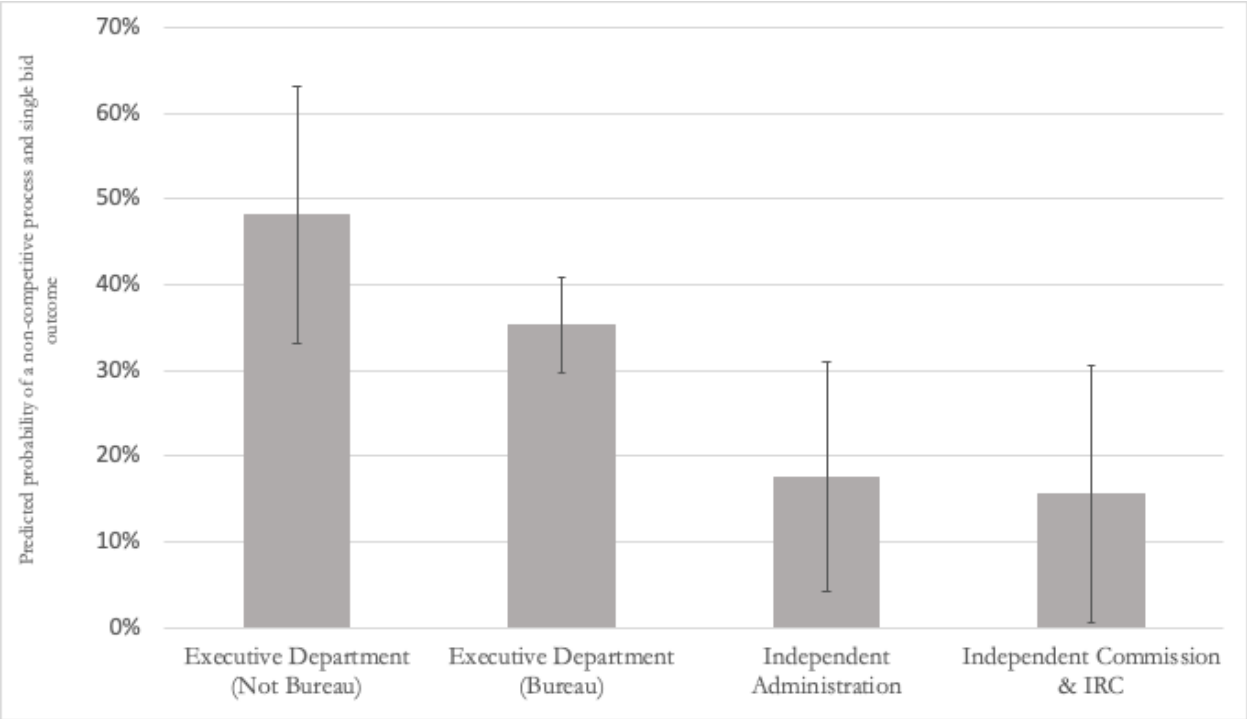
Note: * $p < 0.05$, ** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Table 5. Agency Politicization & Repeat Winners in Federal Procurement, 11/4/2007–1/20/2011

	Repeated winner across 2009 presidency change		
	(1)	(2)	(3)
Baseline: (Agency type) Indep. Admin. & Indep. Com.			
Agency type: Executive Dept.(Incl. Bureau) = 1	-0.159**		-0.107*
	(0.031)		(0.045)
Baseline: Period 1: 11/4/2007–11/4/2008			
Period 2: 1/20/2009–1/20/2010		-0.130**	-0.119**
		(0.033)	(0.037)
Period 3: 1/20/2010–1/20/2011		-0.039	0.011
		(0.032)	(0.035)
Agency type: Executive Dept. (Incl. Bureau). * Period 2: 1/20/2009 - 1/20/2010			-0.030
			(0.046)
Agency type: Executive Dept.(Incl. Bureau) * Period 3: 1/20/2010 - 1/20/2011			-0.130*
			(0.05)
Log contract value	-0.050**	-0.052**	-0.050**
	(0.008)	(0.008)	(0.008)
Commercial-item: Yes	-0.214**	-0.229**	-0.206**
	(0.032)	(0.031)	(0.032)
Agency size: log no. of contracts awarded	0.305**	0.330**	0.306**
	(0.010)	(0.010)	(0.011)
Agency size: log no. of full-time employees	-0.042**	-0.047**	-0.041**
	(0.005)	(0.005)	(0.005)
Agency: log no. of contracting officers	-0.002	-0.003	-0.002
	(0.005)	(0.004)	(0.005)
Agency: log no. of SES contracting officers	-1.189**	-1.068**	-1.258**
	(0.177)	(0. 168)	(0.182)
Agency: any SES contracting officers (Yes)	5.810**	5.259**	6.167**
	(0.834)	(0.793)	(0.856)
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Constant	Y	Y	Y
Observations	32,260	32,260	32,260
Pseudo R2	0.079	0.079	0.080

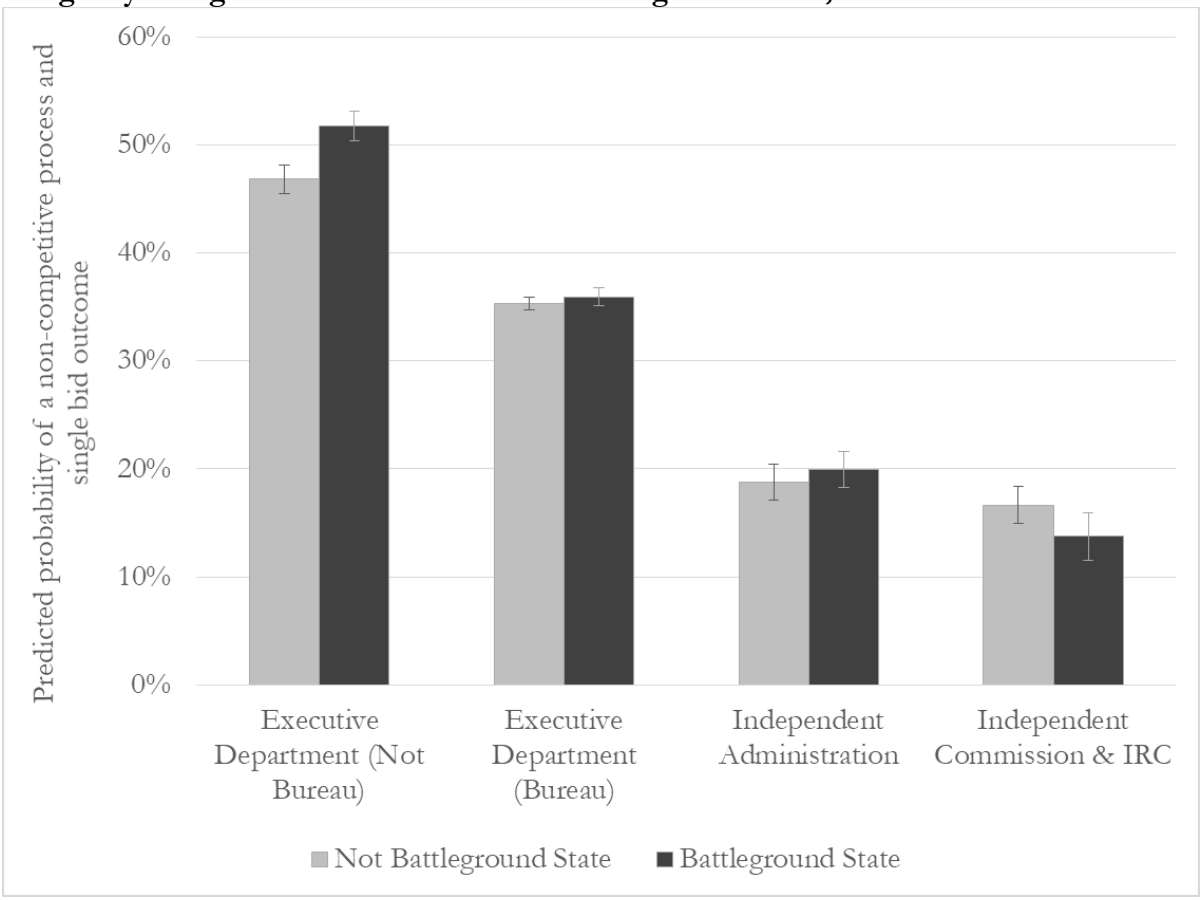
Note: Table 5 reports binary logistic regression results on the contract level (standard errors obtained using bootstrapping, 1000 replications). * $p < 0.05$, ** $p < 0.01$ standard errors are in parentheses.

Figure 1. Estimated Probability of a Non-competitive Process and Single Bid Outcome by Agency Design, United States 2003–2015



Note: Based on Model 3 in Table 2.

Figure 2. Estimated Probability of a Non-competitive Process and Single Bid Outcome by Agency Design and Firm Location in a Battleground State, United States 2003–2015



Note: Based on Model 3, Table 4. Confidence intervals obtained using bootstrap estimation.

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Online Appendix

Appendix A

Even after restricting our sample to high-value contracts and including a demanding set of controls, there is a remaining risk of bias from the different composition of spending across agencies. In addition to our main analyses, just discussed, we therefore divide our sample by agency design into treated (more politicized, i.e., executive departments including bureaus) and control (less politicized, i.e., independent agencies and independent commissions) categories and implement a propensity score matching estimator. The matching estimator uses the same set of controls as in model (1) but imposing common support reduces the sample size to little over 100,000 contracts.[14] After this matching procedure, the imbalance between the treatment and the control groups is very small on observable confounding characteristics (median bias decreases from 53.3% to 9.8%). This provides a means for comparing more politicized (treated) and less politicized (control) agencies on similar contracts in similar situations, where the most important difference is agency structure. The results here confirm the results in Model 3 from Table 2.

[14] With the exception of department-level covariates, which are not defined for independent administrations and commissions.

Table A1. Matching Results for Main Effect on Non-competitive Procedure and Outcome (following Model 3 in Table 2)

	Raw comparison	Matching	Matching: no defense
Control (Indep. Admin. and Indep. Com.)	32.8%	33.1%	33.1%
Treatment (Executive Dept., incl. Bureau)	35.1%	41.9%	42.2%
Diff. (treatment - control)	*2.3%*	*8.8%*	*9.1%*
95% C.I. - lower bound	1.9%	8.2%	8.6%
95% C.I. - upper bound	2.7%	9.3%	9.7%
N control	64,050	60,701	60,701
N treatment	481,665	60,701	60,701
Matching variables			
Contract award year	N	Y	Y
Contract sector	N	Y	Y
Log contract value	N	Y	Y
Commercial-item: Yes/No	N	Y	Y
Agency Office: State	N	Y	Y
Agency size: log no. of contracts awarded	N	Y	Y
Agency size: log no. of full time employees	N	Y	Y
Agency: log no. of contracting officers	N	Y	Y
Agency: log no. of SES contracting officers	N	Y	Y
Agency: Any SES contracting officers (Y/N)	N	Y	Y

Table A2. Goodness of matching statistics

Sample	Ps R2	LR chi2	p > chi2	Mean Bias	Med. Bias	B	R	%Var
Unmatched	0.22	83614.92	0	61	53.3	141.0*	16.41*	80
Matched	0.107	17961.81	0	12.9	9.8	83.7*	1.29	100

Appendix B

In Table 5 in the main text we include models of whether a firm receiving a contract is a repeat winner. In order to get reliable estimates, we needed to make sure that treated (i.e., executive) and control (i.e., independent) agencies were giving out the same kinds of contracts. We conducted matching in all three periods in order to ensure comparability (Table B1-B3). The separate matching exercises for the 3 periods considerably decrease the imbalance across the control and treatment groups on observables. In each case the median bias is cut into $1/5^{th}$–$1/10^{th}$ after matching is performed, even though some limited bias remains even after matching.

Table B1. Goodness of Matching Statistics: Last Year of the Bush Presidency

Sample	Ps R2	LR chi2	p > chi2	Mean Bias	Med. Bias	B	R	%Var
Unmatched	0.472	16060.53	0	12.9	3.3	230.9*	2.48*	100
Matched	0.167	2373.96	0	4.4	1.8	105.3*	0.86	100

Table B2. Goodness of Matching Statistics: First Year of the Obama Presidency

Sample	Ps R2	LR chi2	p > chi2	Mean Bias	Med. Bias	B	R	%Var
Unmatched	0.507	19029.25	0	12.5	3.3	227.2*	2.18*	100
Matched	0.158	2562.42	0	5.8	2.1	98.2*	0.25*	83

Table B3. Goodness of Matching Statistics: Second Year of the Obama Presidency

Sample	Ps R2	LR chi2	p > chi2	Mean Bias	Med. Bias	B	R	%Var
Unmatched	0.213	7185.57	0	58.5	46.7	140.5*	14.93*	100
Matched	0.2	2782.97	0	17.1	14.1	122.0*	1.22	80

Appendix C

An alternative way to measure variation in politicization within agencies is to estimate models with agency normalized appointee percentages. In Table C1 below we include such models, also including specifications that interact the normalized appointee percentage with time-invariant structure features. The models show that higher appointee percentages increase the probability of non-competitive outcomes, particularly in the most politicized agencies.

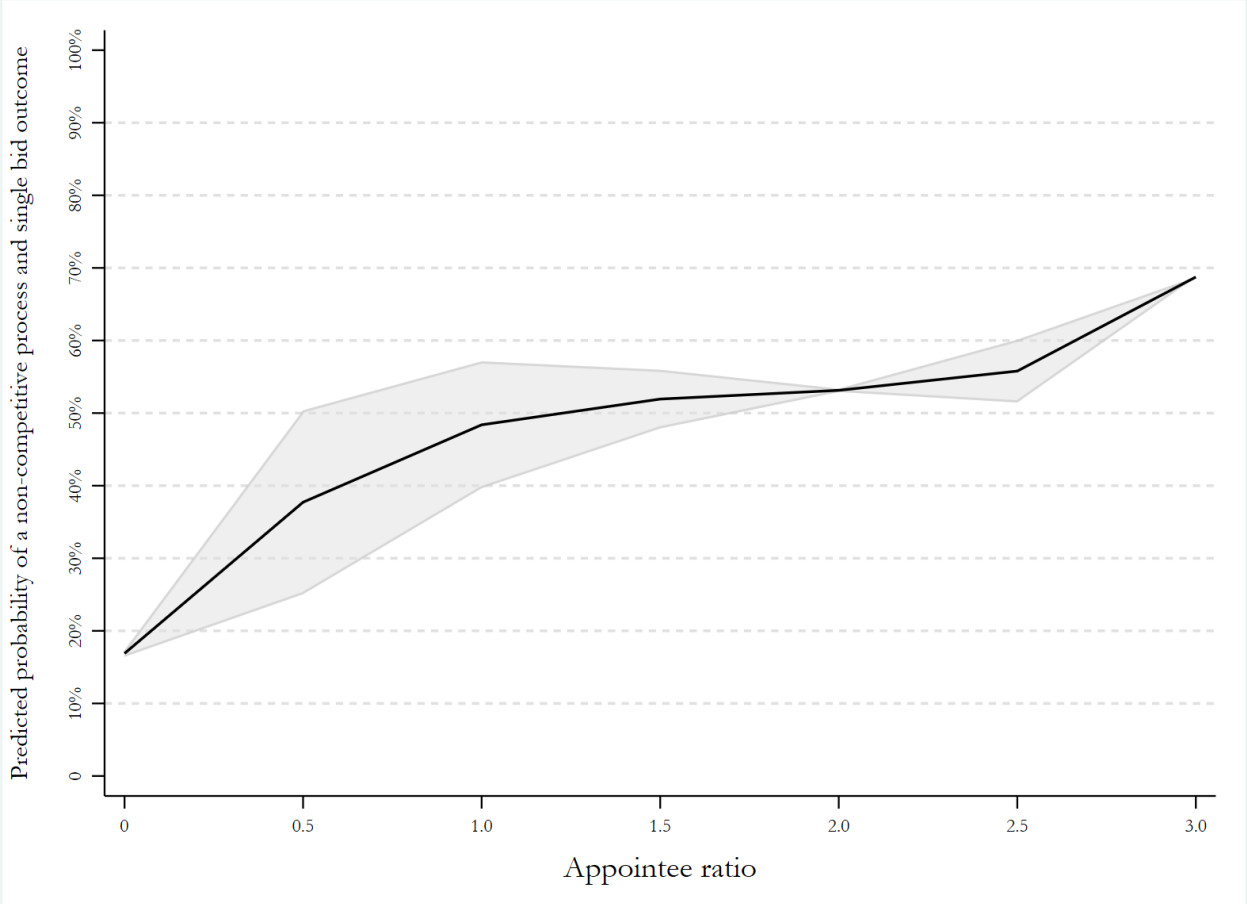
To complement the main analysis in Table 3, we also visually depict the predicted probabilities of non-competitive processes and single bid outcomes as a function of appointee ratio (Figure C1). As a reminder, the appointee ratio is #appointees/#supervisors.

Table C1. Alternative Politicization Measure. Normalized Appointee Ratio and Non-Competitive Processes and Single Bid Outcomes in Federal Procurement, 2003–2015

	(1)	(2)	(3)
Norm. appoint. (appoint. ratio dev. from period avg.)	3.512**	3.683**	
	(1.783)	(1.814)	
Baseline (Agency type): Independent Com. & Independent Reg. Com.			
Agency type: Independent Admin.		0.283	0.283
		(0.455)	(0.455)
Agency type: Executive Dept. (Bureau)		0.0960	0.0955
		(0.498)	(0.498)
Agency type: Executive Dept. (Not Bureau)		0.706	0.708
		(0.715)	(0.716)
Norm. appoint. * Independent Com. & Independent Reg. Com			0.568
			(2.746)
Norm. appoint. * Independent Admin.			-0.737
			(4.500)
Norm. appoint. * Executive Dep. (Bureau)			-4.902
			(7.939)
Norm. appoint. * Executive Dep. (Not Bureau)			4.564***
			(1.647)
Log contract value	-0.0524***	-0.0515***	-0.0515***
	(0.0152)	(0.0151)	(0.0151)
Commercial-item: Yes/No	-0.0210	-0.0148	-0.0149
	(0.0772)	(0.0762)	(0.0762)
Agency size: log no. of contracts awarded	-0.0605	-0.0730	-0.0734
	(0.0858)	(0.0850)	(0.0852)
Agency size: log no. of full-time employees	0.0345	0.0408	0.0410
	(0.0259)	(0.0256)	(0.0256)
Agency: log no. of contracting officers	-0.0701	-0.0695	-0.0690
	(0.0771)	(0.0833)	(0.0835)
Agency: log no. of SES contracting officers	0.0606	0.0844	0.0859
	(0.107)	(0.109)	(0.109)
Agency: any SES contracting officers (Yes)	-0.414	-0.585	-0.594
	(0.604)	(0.614)	(0.615)
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	466181	466181	466181
Pseudo R^2	0.098	0.098	0.098

Note: Binary logistic regression results (standard errors clustered by agency). Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The main effect in Model 3 is in the row "Norm. appoint. * Exe. Dep. (Not Bureau)".

Figure C1. Estimated Effects of Appointee Ratio on Non-Competitive Processes and Single Bid Outcomes, 2003–2015



Appendix D

Battleground States by Presidential Election, 2000–2016

2000[15]

AR, FL, IA, MI, MN, MO, NV, NH, NM, OH, OR, PA, TN, WA, WV, WI

2004[16]

AR, CO, FL, HI, IA, ME, MN, MO, NV, NH, NJ, NM, OH, OR, PA, WV, WI

2008[17]

CO, FL, IN, MO, NV, NH, NM, NC, OH, PA, VA

2012[18]

CO, FL, IA, NV, NH, NC, OH, VA, WI

2016[19]

CO, FL, IA, MI, NV, NH, NC, OH, PA, VA, WI

[15] http://online.wsj.com/public/resources/documents/info-battleground04-0621print.html
[16] https://www.realclearpolitics.com/bush_vs_kerry_sbys.html
[17] http://www.politico.com/convention/swingstate.html
[18] http://www.politico.com/2012-election/swing-state/
[19] (http://www.politico.com/story/2016/06/donald-trump-hillary-clinton-battleground-states-224025)

Appendix E

Since contract performance location may be a more precise measure of the political importance of a contract, we repeat the analysis in Table 4 using this measure for assigning contracts to battleground states. The results confirm that which is included in Table 4.

Table E1. Agency Politicization, Electoral Pressures and Federal Procurement, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Baseline: Battleground state = 0			
Battleground state = 1	0.126***	0.128***	-0.159
	(0.042)	(0.042)	(0.174)
Baseline Agency type: Ind. Com. & Independent Reg. Com.			
Agency type: Independent Administration		0.0252	-0.0313
		(0.455)	(0.435)
Agency type: Executive Dept. (Bureau)		0.938	0.853
		(0.863)	(0.853)
Executive Dept. (Not Bureau)		1.312**	1.192**
		(0.595)	(0.579)
Battleground state * Independent Admin.			0.194
			(0.171)
Battleground state * Executive Dept. (Bureau)			0.266
			(0.173)
Battleground state * Executive Dept. (Not Bureau)			0.401**
			(0.174)
Log contract value	-0.0638***	-0.0628***	-0.0628***
	(0.0236)	(0.024)	(0.024)
Commercial-item: Yes	-0.222***	-0.217***	-0.216***
	(0.074)	(0.076)	(0.075)
Agency size: log no. of contracts awarded	0.00139	0.000169	-0.000214
	(0.055)	(0.060)	(0.060)
Agency size: log no. of full-time employees	-0.00329	0.000658	0.000844
	(0.020)	(0.020)	(0.020)
Agency: log no. of contracting officers	0.0525	0.0550	0.0550
	(0.037)	(0.038)	(0.038)
Agency: log no. of SES contracting officers	0.159**	0.172**	0.172**
	(0.079)	(0.083)	(0.083)
Agency: any SES contracting officers (Yes)	-0.750	-0.852*	-0.852*
	(0.481)	(0.499)	(0.498)
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	220,015	220,015	220,015
Pseudo R^2	0.135	0.135	0.135

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Binary logistic regression results (standard errors clustered by agency).

Appendix F

Table F1 presents OLS estimates from models that regress cost overruns (ratio of final cost to the value of the awarded contract) against the non-competitive process and single bid outcomes of the contracts in the data. The same controls as in earlier models are included.

Table F1. Non-Competitive Processes, Single Bid Outcomes and Cost of Federal Procurement, 2003–2015

	Cost increase ratio		
	(1)	(2)	(3)
BASELINE: Single bidder contract=0			
Single bidder contract = 1	0.0316***		
	(0.0078)		
BASELINE: Non-competitive procedure=0			
Non-competitive procedure = 1		0.0299***	
		(0.0085)	
BASELINE: Single bidder c. & non-competitive proc.=0			
Single bidder contract & non-competitive procedure = 1			0.0326***
			(0.0093)
Log contract value	0.0118***	0.0131***	0.0128***
	(0.003)	(0.003)	(0.003)
Commercial-item: Yes	0.00567	0.00682	0.00703
	(0.008)	(0.008)	(0.008)
Agency size: log no. of contracts awarded	0.00483	0.00148	0.00213
	(0.005)	(0.006)	(0.006)
Agency size: log no. of full-time employees	-0.000118	0.000102	-0.00000608
	(0.002)	(0.002)	(0.002)
Agency: log no. of contracting officers	-0.00469*	-0.00435	-0.00427
	(0.003)	(0.003)	(0.003)
Agency: log no. of SES contracting officers	-0.0111**	-0.00969*	-0.0100**
	(0.005)	(0.005)	(0.005)
Agency: any SES contracting officers (Yes)	0.0531*	0.0491	0.0502*
	(0.028)	(0.030)	(0.030)
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Department FE	Y	Y	Y
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	417,808	432,439	429,767
Pseudo R2	0.187	0.253	0.238

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Ordinary least squares regression results (standard errors clustered by agency).

One could argue that defense agencies and spending are fundamentally different from the rest of the federal government as they are underpinned by a handful of agencies giving out a very large proportion of all contacts (48%), and this might bias the average effects we aim to identify. To counter such potential biases, we reestimate the models in Table F1 excluding defense agencies. Results are in Table F2.

Table F2. Non-Competitive Processes, Single Bid Outcomes and Cost of Federal Procurement, 2003–2015, Defense Contracts Excluded

	Cost increase ratio		
	(1)	(2)	(3)
BASELINE: Single bidder contract=0			
Single bidder contract = 1	0.0624***		
	(0.0078)		
BASELINE: Non-competitive procedure=0			
Non-competitive procedure = 1		0.0601***	
		(0.0093)	
BASELINE: Single bidder c. & non-competitive proc.=0			
Single bidder contract & non-competitive procedure = 1			0.0664***
			(0.0099)
Log contract value	0.0198***	0.0229***	0.0226***
	(0.0052)	(0.0047)	(0.0048)
Commercial-item: Yes	0.00632	0.0120	0.0131
	(0.0113)	(0.0106)	(0.0107)
Agency size: log no. of contracts awarded	-0.00480	-0.00901	-0.00826
	(0.0051)	(0.0061)	(0.0059)
Agency size: log no. of full-time employees	0.0000337	-0.0000404	-0.000103
	(0.0008)	(0.0009)	(0.0009)
Agency: log no. of contracting officers	-0.00696***	-0.00622*	-0.00629**
	(0.0024)	(0.0033)	(0.0031)
Agency: log no. of SES contracting officers	0.00629	0.00731	0.00544
	(0.0308)	(0.0317)	(0.0312)
Agency: any SES contracting officers (Yes)	-0.0355	-0.0369	-0.0288
	(0.142)	(0.146)	(0.144)
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Department FE	Y	Y	Y
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	180866	190629	188087
Pseudo R2	0.230	0.323	0.305

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Ordinary least squares regression results (standard errors clustered by agency).

Appendix G

In this appendix we report results from models estimated with congressional district fixed effects, using the location of agency office, since spending decisions are influenced importantly by congressional decisions and pressure.

Table G1. Agency Politicization and Non-Competitive Process and Single Bid Outcomes in Federal Procurement, with Agency Office Congressional District Controls, 2003–2015

	(1)	(2)	(3)
	Non-competitive procedure	**Single bidder contract**	**Non-competitive procedure and outcome**
Baseline (Agency type): Indep. Com. & Reg. Com.			
Agency type: Independent Admin.	0.312	-0.113	0.191
	(0.418)	(0.417)	(0.416)
Agency type: Executive Dept. (Bureau)	1.507*	0.407	1.113
	(0.788)	(0.780)	(0.768)
Agency type: Executive Dept. (Not Bureau)	2.065***	0.915	1.727***
	(0.618)	(0.565)	(0.606)
Log contract value	-0.0377***	-0.129***	-0.0666***
	(0.0126)	(0.0159)	(0.0146)
Commercial-item: Yes/No	-0.0589	-0.123	-0.0900
	(0.0754)	(0.0853)	(0.0802)
Agency size: log no. of contracts awarded	-0.133	-0.0644	-0.129
	(0.0810)	(0.0716)	(0.0814)
Agency size: log no. of full-time employees	0.0153	0.0276	0.0157
	(0.0239)	(0.0239)	(0.0250)
Agency: log no. of contracting officers	0.0251	0.000914	0.0211
	(0.0419)	(0.0361)	(0.0423)
Agency: log no. of SES contracting officers	0.150	0.153*	0.151
	(0.112)	(0.0806)	(0.108)
Agency: any SES contracting officers (Y/N)	-0.886	-0.904*	-0.879
	(0.692)	(0.525)	(0.670)
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Agency office: congressional district	Y	Y	Y
Dept. FE	Y	Y	Y
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	541,562	520,672	537,124
Pseudo R2 or R2	0.097	0.084	0.101

Note: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Table G2. Appointee Ratio and Non-Competitive Processes and Single Bid Outcomes in Federal Procurement, with Agency Office Congressional District Controls, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Appointee rato	5.14***	4.68**	5.18***
	(1.73)	(2.04)	(1.93)
Log contract value		-0.0735***	-0.0709***
		(0.0160)	(0.0162)
Commercial-item: Yes/No		-0.173***	-0.164***
		(0.0559)	(0.0549)
Agency size: log no. of full-time employees			0.00210
			(0.00543)
Agency: log no. of SES contracting officers			-0.113***
			(0.0340)
Contract Award Year	Y	Y	Y
Contract Sector	N	Y	Y
Agency office: congressional district	N	Y	Y
Agency: FE	Y	Y	Y
Constant	Y	Y	Y
Observations	466,005	466,005	466,005
Pseudo R^2	0.061	0.131	0.132

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency). The dependent variable is whether the contract was selected by a non-competitive process and resulted in a non-competitive outcome. It excludes agencies with fewer than 50 contracts per year on average since such agencies have too few degrees of freedom.

Table G3. Agency Politicization, Electoral Pressures and Federal Procurement, with Agency Office Congressional District Controls, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Baseline: Battleground state = 0 (No)			
Battleground state = 1 (Yes)	0.133**	0.134**	-0.168
	(0.0648)	(0.0648)	(0.147)
Baseline Agency type: Ind. Com. & Independent Reg. Com.			
Agency type: Independent Administration		0.289	0.198
		(0.412)	(0.423)
Agency type: Executive Dept. (Bureau)		1.123	1.041
		(0.758)	(0.759)
Executive Dept. (Not Bureau)		1.742***	1.597***
		(0.590)	(0.586)
Battleground state * Independent Admin.			0.305*
			(0.172)
Battleground state * Executive Dept. (Bureau)			0.259*
			(0.146)
Battleground state * Executive Dept. (Not Bureau)			0.462***
			(0.143)
Log contract value	-0.0718***	-0.0711***	-0.0711***
	(0.0136)	(0.0135)	(0.0135)
Commercial-item: Yes	-0.108	-0.103	-0.102
	(0.0888)	(0.0882)	(0.0878)
Agency size: log no. of contracts awarded	-0.144*	-0.159*	-0.159*
	(0.0782)	(0.0852)	(0.0852)
Agency size: log no. of full-time employees	0.0242	0.0302	0.0304
	(0.0284)	(0.0274)	(0.0274)
Agency: log no. of contracting officers	0.0165	0.0218	0.0217
	(0.0395)	(0.0402)	(0.0403)
Agency: log no. of SES contracting officers	0.136	0.164	0.164
	(0.107)	(0.111)	(0.111)
Agency: any SES contracting officers (Yes)	-0.755	-0.952	-0.952
	(0.666)	(0.687)	(0.687)
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Agency Office: congressional district	Y	Y	Y
Dept. FE	Y	Y	N
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	368,893	368,893	368,893
Pseudo R^2	0.106	0.106	0.107

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Appendix H

This regression table replicates Table 2 in the main appendix while including all coefficients estimated.

Table H1. Agency Politicization and Non-Competitive Process and Single Bid Outcomes in Federal Procurement, 2003-2015, full list of coefficients

	(1) Non-competitive procedure	(2) Single bidder contract	(3) Non-competitive procedure and outcome
Baseline (Agency type): Indep. Com. & Reg. Com.			
Agency type: Independent Admin.	0.278	-0.0916	0.161
	(0.428)	(0.407)	(0.425)
Agency type: Executive Dept. (Bureau)	1.601**	0.451	1.220
	(0.795)	(0.771)	(0.774)
Agency type: Executive Dept. (Not Bureau)	2.156***	0.980*	1.830***
	(0.620)	(0.561)	(0.608)
Contract award year			
Baseline: year=2003			
year=2004	0.0920	0.638***	0.324***
	(0.0678)	(0.154)	(0.0706)
year=2005	0.263***	0.650***	0.516***
	(0.0839)	(0.0979)	(0.0911)
year=2006	0.191***	0.618***	0.477***
	(0.0726)	(0.0974)	(0.0819)
year=2007	0.215***	0.662***	0.504***
	(0.0741)	(0.0899)	(0.0725)
year=2008	0.199***	0.703***	0.505***
	(0.0562)	(0.109)	(0.0524)
year=2009	0.140*	0.618***	0.442***
	(0.0778)	(0.114)	(0.0744)
year=2010	-0.214	0.491***	0.199
	(0.189)	(0.147)	(0.162)
year=2011	0.0152	0.519***	0.439**
	(0.220)	(0.162)	(0.192)
year=2012	0.107	0.521***	0.539***
	(0.164)	(0.130)	(0.122)
year=2013	0.110	0.477***	0.544***
	(0.195)	(0.146)	(0.148)
year=2014	0.171	0.539***	0.593***
	(0.164)	(0.129)	(0.113)
year=2015	0.350	0.646***	0.782***
	(0.218)	(0.151)	(0.167)
Contract sector			
Baseline: 1			
2	-0.382***	-0.235	-0.367***
	(0.0731)	(0.158)	(0.0734)
3	-0.732***	-0.729***	-0.758***
	(0.118)	(0.140)	(0.120)
4	-0.282**	-0.275**	-0.298**
	(0.128)	(0.135)	(0.132)

5	-0.148**	-0.213***	-0.164**
	(0.0743)	(0.0616)	(0.0802)
6	-0.219**	-0.113	-0.231**
	(0.0972)	(0.135)	(0.0945)
7	-0.136	-0.252*	-0.166
	(0.126)	(0.145)	(0.128)
8	-0.704	-1.060**	-0.630
	(0.530)	(0.478)	(0.553)
9	-1.650***	-0.231	-1.718***
	(0.303)	(0.471)	(0.293)
MISSING	0.391	0.00171	-1.054**
	(0.341)	(0.355)	(0.433)
A	-1.587***	-0.950***	-1.639***
	(0.288)	(0.255)	(0.293)
B	-0.129	-0.196	-0.153
	(0.130)	(0.140)	(0.130)
C	-0.960***	-0.997***	-1.047***
	(0.287)	(0.245)	(0.295)
D	0.211	0.0930	0.195
	(0.137)	(0.153)	(0.136)
E	0.0693	0.0293	0.117
	(0.212)	(0.245)	(0.206)
F	0.174	-0.118	0.0292
	(0.177)	(0.192)	(0.188)
G	-0.958***	-0.348*	-1.012***
	(0.276)	(0.185)	(0.297)
H	0.143	0.0855	0.180
	(0.414)	(0.344)	(0.428)
J	-0.209	-0.262	-0.200
	(0.247)	(0.236)	(0.247)
K	0.671***	0.352**	0.532***
	(0.248)	(0.154)	(0.179)
L	0.654***	0.674***	0.656***
	(0.176)	(0.197)	(0.170)
M	-0.426***	-0.480**	-0.352**
	(0.156)	(0.223)	(0.140)
N	0.0118	-0.225	0.0122
	(0.130)	(0.146)	(0.130)
P	-0.221	-0.511***	-0.197
	(0.315)	(0.192)	(0.294)
Q	-0.0167	0.123	-0.0221
	(0.307)	(0.306)	(0.316)
R	0.0647	-0.124	0.0567
	(0.165)	(0.180)	(0.166)
S	0.191	-0.0494	0.263
	(0.172)	(0.177)	(0.196)
T	-0.0906	-0.538***	-0.314**
	(0.148)	(0.180)	(0.144)
U	-0.124	-0.171	-0.201*
	(0.0939)	(0.122)	(0.105)
V	-0.895***	-0.924***	-0.917***
	(0.256)	(0.238)	(0.263)
W	-0.552	-0.579**	-0.543
	(0.409)	(0.284)	(0.428)
X	-0.855*	-1.087*	-1.293**
	(0.457)	(0.569)	(0.648)
Y	-0.573***	-0.924***	-0.535***

	(0.163)	(0.130)	(0.177)
Z	0.0599	-0.530***	0.0696
	(0.155)	(0.125)	(0.154)
Log contract value	-0.0312**	-0.129***	-0.0596***
	(0.0134)	(0.0166)	(0.0155)
Commercial-item			
Baseline: Commercial-item: No			
Commercial-item: Yes	-0.0479	-0.129	-0.0787
	(0.0778)	(0.0903)	(0.0827)
Agency office: state			
AK			
AL	-0.668***	-0.632***	-0.706***
	(0.137)	(0.123)	(0.129)
AP	0	0	0
	(.)	(.)	(.)
AR	-1.195***	-0.978***	-1.209***
	(0.254)	(0.247)	(0.251)
AS	-0.808	-0.868**	-0.702
	(0.494)	(0.345)	(0.454)
AZ	-0.481***	-0.347***	-0.530***
	(0.111)	(0.0990)	(0.105)
CA	-0.685***	-0.605***	-0.741***
	(0.116)	(0.0814)	(0.104)
CO	-0.703***	-0.615***	-0.754***
	(0.149)	(0.111)	(0.136)
CT	-0.748***	-0.629***	-0.793***
	(0.129)	(0.105)	(0.118)
DC	-0.751***	-0.509***	-0.831***
	(0.266)	(0.165)	(0.259)
DE	-0.909***	-0.663***	-0.983***
	(0.154)	(0.148)	(0.158)
FL	-0.678***	-0.678***	-0.739***
	(0.131)	(0.0897)	(0.116)
FM	-0.582	0	0
	(1.573)	(.)	(.)
GA	-0.574***	-0.531***	-0.615***
	(0.145)	(0.145)	(0.141)
GU	-0.908***	-0.648***	-0.994***
	(0.258)	(0.149)	(0.241)
HI	-0.385**	-0.355**	-0.425**
	(0.186)	(0.163)	(0.186)
IA	-0.567**	-0.490**	-0.640**
	(0.274)	(0.220)	(0.261)
ID	-0.978***	-0.977***	-1.034***
	(0.114)	(0.139)	(0.116)
IL	-1.069***	-0.980***	-1.131***
	(0.147)	(0.110)	(0.133)
IN	-0.819***	-0.787***	-0.879***
	(0.150)	(0.108)	(0.148)
KS	-1.031***	-0.928***	-1.089***
	(0.182)	(0.153)	(0.169)
KY	-0.558***	-0.553***	-0.599***
	(0.131)	(0.121)	(0.126)
LA	-0.512***	-0.534***	-0.520***
	(0.165)	(0.146)	(0.171)
MA	-0.695***	-0.539***	-0.740***
	(0.118)	(0.0901)	(0.107)

MD	-0.635***	-0.468***	-0.702***
	(0.138)	(0.0965)	(0.129)
ME	-0.978***	-0.692***	-1.021***
	(0.200)	(0.180)	(0.208)
MI	-0.871***	-0.886***	-0.921***
	(0.0944)	(0.0876)	(0.0919)
MN	-0.758***	-0.888***	-0.935***
	(0.221)	(0.159)	(0.179)
MO	-1.018***	-0.950***	-1.090***
	(0.185)	(0.140)	(0.166)
MP	-0.953**	-0.745	-0.959**
	(0.373)	(0.475)	(0.409)
MS	-0.592**	-0.586***	-0.642***
	(0.230)	(0.213)	(0.227)
MT	-0.822***	-0.693***	-0.888***
	(0.153)	(0.150)	(0.140)
NA	-1.631***	-1.383***	-1.762***
	(0.263)	(0.171)	(0.238)
NC	-0.865***	-0.787***	-0.929***
	(0.140)	(0.110)	(0.134)
ND	-1.154***	-0.984***	-1.169***
	(0.260)	(0.198)	(0.230)
NE	-0.747***	-0.780***	-0.773***
	(0.186)	(0.149)	(0.173)
NH	-0.880***	-0.767***	-0.943***
	(0.104)	(0.0963)	(0.105)
NJ	-0.743***	-0.667***	-0.812***
	(0.102)	(0.0807)	(0.0934)
NM	-0.220	-0.113	-0.252
	(0.156)	(0.144)	(0.161)
NV	-0.711***	-0.592***	-0.754***
	(0.146)	(0.102)	(0.138)
NY	-0.873***	-0.761***	-0.944***
	(0.126)	(0.104)	(0.109)
OH	-0.940***	-0.822***	-1.004***
	(0.146)	(0.112)	(0.133)
OK	-0.665***	-0.603***	-0.684***
	(0.0986)	(0.0863)	(0.0941)
OR	-0.785***	-0.748***	-0.892***
	(0.221)	(0.194)	(0.211)
PA	-0.910***	-0.826***	-0.953***
	(0.136)	(0.0977)	(0.126)
PR	-0.403	-0.433	-0.397
	(0.278)	(0.304)	(0.285)
RI	-1.023***	-0.957***	-1.092***
	(0.207)	(0.130)	(0.199)
SC	-0.660***	-0.597***	-0.748***
	(0.128)	(0.103)	(0.118)
SD	-1.199***	-1.028***	-1.236***
	(0.211)	(0.244)	(0.212)
TN	-0.869***	-0.848***	-1.043***
	(0.169)	(0.0902)	(0.0939)
TX	-0.595***	-0.617***	-0.645***
	(0.115)	(0.108)	(0.117)
UT	-0.640***	-0.529***	-0.676***
	(0.107)	(0.0908)	(0.103)
VA	-1.081***	-0.508***	-1.132***

	(0.224)	(0.122)	(0.210)
VI	-0.791*	-0.635	-0.852*
	(0.461)	(0.439)	(0.466)
VT	-0.577***	-0.423***	-0.667***
	(0.154)	(0.155)	(0.158)
WA	-0.831***	-0.752***	-0.896***
	(0.166)	(0.121)	(0.148)
WI	-0.930***	-0.603***	-0.981***
	(0.151)	(0.192)	(0.147)
WV	-0.609***	-0.438***	-0.615***
	(0.189)	(0.162)	(0.183)
WY	-0.904***	-0.625***	-0.938***
	(0.216)	(0.188)	(0.203)
Dept. FE			
AGRICULTURE, DEPARTMENT OF	-2.085***	-1.487**	-2.136***
	(0.743)	(0.748)	(0.765)
COMMERCE, DEPARTMENT OF	-1.690**	-0.508	-1.324*
	(0.743)	(0.755)	(0.730)
DEPT OF DEFENSE	0.201	0.440	0.448
	(0.689)	(0.689)	(0.686)
EDUCATION, DEPARTMENT OF	-1.838***	-1.152***	-1.679***
	(0.494)	(0.392)	(0.487)
ENERGY, DEPARTMENT OF	-1.271**	-0.531	-1.061*
	(0.565)	(0.548)	(0.563)
HEALTH AND HUMAN SERVICES, DPT.OF	-0.831	0.135	-0.649
	(0.695)	(0.745)	(0.685)
HOMELAND SECURITY, DEPARTMENT OF	-0.633	-0.117	-0.537
	(0.635)	(0.672)	(0.625)
HOUSING&URBAN DEVELOPMENT, DPT.OF	-0.605	-0.279	-0.281
	(0.724)	(0.657)	(0.711)
INTERIOR, DEPARTMENT OF THE	-1.167*	-0.277	-1.004
	(0.665)	(0.680)	(0.657)
JUSTICE, DEPARTMENT OF	-0.894	-0.153	-0.727
	(0.652)	(0.662)	(0.648)
LABOR, DEPARTMENT OF	-1.889**	-0.285	-1.404*
	(0.749)	(0.724)	(0.729)
STATE, DEPARTMENT OF	-1.941***	-1.243**	-1.680***
	(0.519)	(0.549)	(0.530)
TRANSPORTATION, DEPARTMENT OF	-1.883***	-1.185	-1.606**
	(0.699)	(0.744)	(0.687)
TREASURY, DEPARTMENT OF THE	-1.524*	-0.833	-1.189
	(0.847)	(0.842)	(0.834)
Baseline: VETERANS AFFAIRS, DPT. OF			
independent	0	0	0
	(.)	(.)	(.)
Dept.: no. of contracting officers			
Baseline: Decile=1			
Decile =2	-0.479***	-0.118	-0.298*
	(0.177)	(0.133)	(0.176)
Decile =3	-0.521**	-0.284*	-0.338
	(0.210)	(0.162)	(0.213)
Decile =4	-0.877**	-0.335	-0.585
	(0.364)	(0.264)	(0.366)
Decile =5	-1.777***	-0.856***	-1.456***
	(0.446)	(0.286)	(0.430)
Decile =6	-1.616***	-0.832**	-1.389**
	(0.586)	(0.326)	(0.542)

Decile =7	-1.922***	-1.050***	-1.681***
	(0.560)	(0.338)	(0.517)
Decile =8	-1.990***	-0.942***	-1.749***
	(0.490)	(0.363)	(0.473)
Decile =9	-1.905***	-0.922**	-1.715***
	(0.589)	(0.378)	(0.546)
Decile =10	-1.822***	-0.820**	-1.663***
	(0.593)	(0.395)	(0.559)
Decile =MISSING	0	0	0
	(.)	(.)	(.)
Agency size: log no. of contracts awarded	-0.142*	-0.0715	-0.138*
	(0.0814)	(0.0716)	(0.0817)
Agency size: log no. of full-time employees	0.0165	0.0267	0.0164
	(0.0250)	(0.0246)	(0.0260)
Agency: log no. of contracting officers	0.0320	0.00583	0.0275
	(0.0418)	(0.0352)	(0.0425)
Agency: log no. of SES contracting officers	0.157	0.163*	0.158
	(0.113)	(0.0836)	(0.109)
Agency: any SES contracting officers			
Baseline: any SES contracting officers =No			
any SES contracting officers =Yes	-0.905	-0.949*	-0.898
	(0.697)	(0.545)	(0.676)
Constant	2.635***	3.639***	2.607***
	(0.837)	(0.739)	(0.828)
Observations	541,561	520,670	537,122
Pseudo R2 or R2	0.093	0.081	0.097

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Appendix I

This appendix replicates all main regression tables from the manuscript while excluding all contracts awarded by the General Services Administration and its subcomponents (e.g., Federal Acquisition Service).

Table I1. Agency Politicization and Non-Competitive Process and Single Bid Outcomes in Federal Procurement, without GSA, 2003–2015

	(1)	(2)	(3)
	Non-competitive procedure	**Single bidder contract**	**Non-competitive procedure and outcome**
Baseline (Agency type): Indep. Com. & Reg. Com.			
Agency type: Independent Admin.	-0.0339	-0.335	-0.139
	(0.367)	(0.356)	(0.369)
Agency type: Executive Dept. (Bureau)	1.728**	0.499	1.292*
	(0.692)	(0.705)	(0.681)
Agency type: Executive Dept. (Not Bureau)	2.015***	0.819	1.643***
	(0.558)	(0.524)	(0.551)
Log contract value	-0.0325**	-0.125***	-0.0626***
	(0.0127)	(0.0151)	(0.0154)
Commercial-item: Yes/No	-0.0734	-0.154*	-0.105
	(0.0718)	(0.0878)	(0.0772)
Agency size: log no. of contracts awarded	-0.207***	-0.119*	-0.197***
	(0.0742)	(0.0700)	(0.0747)
Agency size: log no. of full-time employees	0.0340	0.0393	0.0337
	(0.0239)	(0.0246)	(0.0251)
Agency: log no. of contracting officers	-0.0325	-0.0412	-0.0332
	(0.0334)	(0.0323)	(0.0323)
Agency: log no. of SES contracting officers	0.130	0.144*	0.134
	(0.106)	(0.0820)	(0.103)
Agency: any SES contracting officers (Y/N)	-0.559	-0.689	-0.572
	(0.675)	(0.540)	(0.651)
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Dept. FE	Y	Y	Y
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	514,798	499,503	511,868
Pseudo R2 or R2	0.096	0.082	0.096

Note: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency).

Table I2. Appointee Ratio and Non-Competitive Processes and Single Bid Outcomes in Federal Procurement, without GSA, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Appointee ratio	4.17**	3.91**	4.44**
	(1.65)	(1.85)	(1.73)
Log contract value		-0.0642***	-0.0613***
		(0.0154)	(0.0157)
Commercial-item: Yes/No		-0.179***	-0.170***
		(0.0584)	(0.0575)
Agency size: log no. of full-time employees			0.0025
			(0.0058)
Agency: log no. of SES contracting officers			-0.102***
			(0.0356)
Contract Award Year	Y	Y	Y
Contract Sector	N	Y	Y
Agency Office. State	N	Y	Y
Agency: FE	Y	Y	Y
Constant	Y	Y	Y
Observations	439,080	439,078	439,078
Pseudo R^2	0.063	0.124	0.125

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency). The dependent variable is whether the contract was selected by a non-competitive process and resulted in a non-competitive outcome. It excludes agencies with fewer than 50 contracts per year on average since such agencies have too few degrees of freedom.

Table I3. Agency Politicization, Electoral Pressures and Federal Procurement, without GSA, 2003–2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Baseline: Battleground state = 0 (No)			
Battleground state = 1 (Yes)	0.0645	0.0650	-0.246*
	(0.0646)	(0.0639)	(0.149)
Baseline Agency type: Ind. Com. & Independent Reg. Com.			
Agency type: Independent Administration		0.00605	-0.132
		(0.375)	(0.412)
Agency type: Executive Dept. (Bureau)		1.354**	1.268*
		(0.685)	(0.687)
Executive Dept. (Not Bureau)		1.695***	1.544***
		(0.547)	(0.549)
Battleground state * Independent Admin.			0.451*
			(0.259)
Battleground state * Executive Dept. (Bureau)			0.259*
			(0.152)
Battleground state * Executive Dept. (Not Bureau)			0.464***
			(0.149)
Log contract value	-0.0716***	-0.0708***	-0.0707***
	(0.0144)	(0.0143)	(0.0142)
Commercial-item: Yes	-0.118	-0.114	-0.113
	(0.0861)	(0.0859)	(0.0853)
Agency size: log no. of contracts awarded	-0.234***	-0.231***	-0.232***
	(0.0717)	(0.0788)	(0.0788)
Agency size: log no. of full-time employees	0.0456	0.0491*	0.0499*
	(0.0289)	(0.0286)	(0.0288)
Agency: log no. of contracting officers	-0.0345	-0.0305	-0.0317
	(0.0309)	(0.0322)	(0.0331)
Agency: log no. of SES contracting officers	0.141	0.153	0.153
	(0.0998)	(0.106)	(0.106)
Agency: any SES contracting officers (Yes)	-0.582	-0.681	-0.676
	(0.632)	(0.670)	(0.670)
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dept.: no. of contracting officers (deciles)	Y	Y	Y
Constant	Y	Y	Y
Observations	349,336	349,336	349,336
Pseudo R^2	0.098	0.098	0.098

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses. Binary logistic regression results (standard errors clustered by agency). The main effect of battleground state in Model 3 is Battleground state * Executive Dept. (Not Bureau).

Table I4. Agency Politicization and Repeat Winners in Federal Procurement, without GSA, 11/4/2007–1/20/2011

	Repeated winner across 2009 presidency change		
	(1)	(2)	(3)
Baseline: (Agency type) Indep. Admin. & Indep. Com.			
Agency type: Executive Dept.(Incl. Bureau) = 1	-0.576***		-0.539***
	(0.0387)		(0.0594)
Baseline: Period 1: 11/04/2007–11/04/2008			
Period 2: 01/20/2009–01/20/2010		-0.101***	0.0426
		(0.0294)	(0.0490)
Period 3: 01/20/2010–01/20/2011		-0.00672	0.0599
		(0.0402)	(0.0669)
Agency type: Executive Dept. (Incl. Bureau). * Period 2: 01/20/2009 - 01/20/2010			-0.0561
			(0.0704)
Agency type: Executive Dept.(Incl. Bureau) * Period 3: 01/20/2010 - 01/20/2011			-0.0506
			(0.0743)
Log contract value	-0.0718***	-0.0675***	-0.0718***
	(0.00882)	(0.00711)	(0.00893)
Commercial-item: Yes	-0.278***	-0.223***	-0.283***
	(0.0375)	(0.0299)	(0.0397)
Agency size: log no. of contracts awarded	0.423***	0.329***	0.424***
	(0.0162)	(0.0127)	(0.0168)
Agency size: log no. of full-time employees	-0.0694***	-0.0519***	-0.0697***
	(0.00620)	(0.00666)	(0.00626)
Agency: log no. of contracting officers	0.0557***	-0.00325	0.0559***
	(0.00569)	(0.00386)	(0.00607)
Agency: log no. of SES contracting officers	-1.389***	-0.986***	-1.374***
	(0.179)	(0.223)	(0.182)
Agency: any SES contracting officers (Yes)	6.463***	4.872***	6.387***
	(0.849)	(1.062)	(0.864)
Contract sector	Y	Y	Y
Agency office: state	Y	Y	Y
Constant	Y	Y	Y
Observations	24,335	32,260	24,335
Pseudo R2	0.096	0.077	0.096

Note: Table 5 reports binary logistic regression results on the contract level (standard errors obtained using bootstrapping, 150 replications). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. standard errors are in parentheses.