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AGENCY DESIGN, FAVORITISM AND PROCUREMENT IN THE UNITED STATES

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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 entrepreneurs 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.

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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).¹ 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.

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 (O'Connell 2014; Selin 2015). Some agencies have a large appointee presence and others operate largely 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.

There is a large literature on distributive politics in the United States that connects electoral geography to the distribution of federal funds (see, e.g., Berry and Fowler 2016; Berry, Burden and Howell 2010; Bertelli and Grose 2009; Ting 2012). This literature 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). By and large, however, this work frames the distributive decision as representative activity carried out by way of program spending, rather than favoritism in procurement. After all, elected representatives are constitutionally empowered, even obligated, to represent the interests of their districts or states in national politics. This includes doing their best to shape government spending in the interests of constituents. However, when politically motivated spending is undertaken by favoring certain companies it violates established norms for several reasons. First, the very reason for having

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open tenders and private providers is to invite competition so as to decrease price and increase the quality of goods and services. When the connections or locality of the firm become important factors for making procurement decisions, this breaks with the spirit of the law. Second, as these personal or partisan concerns cannot be written into the tender, contract choices must involve collusion with the firm that violates both transparency and the formal criteria for awarding contracts. Third, such collusion will, in turn, invite an unhealthy relationship between certain parties and certain firms.

In this paper we explore how the presence of appointees influences favoritism in procurement across agencies and time in the United States. We describe the federal contracting process and how agency design can facilitate or mitigate non-competitive procedures and outcomes. We evaluate resulting claims using new data on all United States 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 but only in the most politicized agencies. This is also indicative of political favoritism in procurement because it suggests connections between certain parties and certain firms. We conclude by discussing the implication 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

Most public personnel systems are 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 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 (Moore 2018; Tolchin and Tolchin 2015).

When scholars examine favoritism at the federal level, there is little consensus about whether the risks are greater for civil servants or appointees. A case in point is the large literature in economics and political science on “regulatory capture” (Dal Bó 2006, 203) that has followed Stigler’s (1971) influential paper. In simple terms, this literature suggests that powerful firms use their position to bias regulations to their advantage at the expense of the public interest (e.g., McKay and Yackee 2007; Yackee and Yackee 2006;

see, however, Carpenter and Moss 2014). In principle, the regulated firm can use different means to achieve their desired outcome, which might include bribes to individual regulators, jobs in the firm and threats of ruining the regulator's professional reputation. Scholars have also pointed out that regulators often have a background in the regulated industry, and the fact that regulators move back and forth between firms and agencies is often referred to as the "revolving door" phenomenon (Dal Bó 2006, 214). A possible implication of this literature could be that civil servants connected with specific firms would bias procurement procedures to that firm's advantage. However, while both appointed and career regulators may have similar career-related incentives in a revolving door context, the partisan and electoral incentives arguably operate more powerfully on political appointees.

Turning to the appointees, scholars have conducted a significant amount of work on the politicization of federal agencies but have rarely connected it to favoritism in procurement. Researchers have examined how elected officials alter the number, depth, and penetration of political appointees (e.g. Light 1995; Lewis 2008). They have described how executives select appointees for loyalty, involve civil servants in political fights, and thrust political considerations into previously rule-driven agency decisions (e.g., Hollibaugh and Rothenberg 2018; Krause and O'Connell 2016; Moe 1985; Weko 1995). They have also exerted significant effort to measure the impact of increasing politicization on government performance (e.g. Gallo and Lewis 2012; Krause, Lewis, and Douglas 2006).

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. 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 (Berry and Fowler 2016; Cox and McCubbins 1993; Crespino and Finocchiaro 2008; Fenno 1966; Kiewiet and McCubbins 1991; Levitt and Snyder 1995). 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.

Most directly related to this paper, presidential appointees can advance the interests of the president, party, and themselves by influencing their agency to direct contracts to firms in an electorally advantageous way. In his study of the distribution of federal grants Hudak (2014, p 166) explains why: "Essentially, it would

be a waste of work hours for the staffer to produce allocations that are inconsistent with appointee's preferences because those proposals are unlikely to be chosen." There are direct and indirect benefits to distributing contract dollars in particular ways. 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 and financial benefits for the party in power (Kriner and Reeves 2015). The firm and its employees are more likely to vote for the party that gave them the contracts and they are more likely to give campaign donations to the party or related groups that support the party and its candidates. 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 the 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. Effective 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.

Mechanics of Favoritism in 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 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 in an agency can be an important predictor of the degree of political influence in contract choices.

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. If a new² contract is required, the agency will proceed governed by rules detailed in the Competition in Contracting Act (CICA), the Federal Acquisition Regulation (FAR), and any other agency-specific regulations that govern purchasing.³ Contract officers do the technical work of selecting a process, writing up requirements, posting a notice and solicitation, and so forth. They often lack the expertise to independently evaluate the programmatic needs that motivated the purchase, particularly for large or non-commercial contracts. This can limit the influence of career contract officers in key parts of the procurement process.

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 parties seeking agency contracts, they can more easily see the value of the firm and have more confidence in the products or services offered by that firm. As one how-to book on government contracting emphasized, a key factor in securing contracts is “the power of relationships.” (Amtower 2011). Appointees in business development roles guide firms to government contracts.

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 among responsible bidders.⁴ Another open and competitive process requires agencies to publish a request for proposals (RFP), negotiate with

² Sometimes, agencies can get what they need without a new contract. They can use an agency purchase card (usually for purchases less than \$2,500) or task order under an existing contract (e.g., agency has contracted with a firm to provide a type of service when asked).

³ Not all purchases are considered contracts and not all contracts are secured through CICA. A few agencies (e.g., Defense, Health and Human Services, Energy, and Homeland Security) have other transaction authority (OTA) which is used for purchasing for prototypes or research and development. These kinds of interactions are difficult to contract because the outcome of the exchange is uncertain, pricing is difficult, or firms may not be able or willing to comply with procurement regulations. There are also statutes that explicitly authorize procurement procedures distinct from CICA (Manual 2010, 6).

⁴ The CICA allows for the use of simplified procedures for small purchases, those below the “simplified acquisition threshold”, for non-commercial contracts. This threshold is currently \$150,000. The simplified acquisition threshold for commercial items (i.e. goods or services that are also used by the general public, such as cars) is instead \$6.5 million.

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., General Services Administration 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.⁵ 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.⁶ For example, for 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 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.⁷ This influence 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 CICA that still importantly shape the pool of participants

⁵ Specifically, 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.

⁶ Agency heads may use non-competitive processes to award contracts if they determine that doing so is in the public interest. They must notify Congress more than 30 days prior to the award of the contract (Congressional Research Service 2015, 12).

⁷ There are special rules in place for the Department of Defense, National Aeronautics and Space Administration, and Coast Guard.

(e.g., invocation of set-asides, limited notification or solicitation period). They can also proceed under technically neutral procedures that favor preferred firms. 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 the construction of an IFB or RFP can shape the pool of bidders in predictable ways. Knowledge of and connection to specific firms and their capabilities can 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).

Appointees, Non-competitive Processes, and Non-competitive Outcomes

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. New appointees in procurement positions can influence the actions of contract officers by signaling to contract officers that they prefer newer less-established firms (including those introduced by appointees in the Small and Disadvantaged Business Office) 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. Both programmatic and procurement appointees benefit from contracts awarded to firms connected to the party. Attentive contract officers seeking to advance in their careers will recognize that contract actions benefiting such firms, provided they are within the letter of the law, will be more successful within the agency.

Taken together, the presence of appointees in key programmatic or procurement positions is important for political favoritism in purchasing. When appointees propose or approve contracts, lower level officials are more likely to propose procedures, and ultimately contract outcomes, that appointees prefer. When careerists propose and approve contracts, however, lower level officials are more likely to design competitive processes. Our first hypothesis is therefore:

H1: Politicized agencies will produce more non-competitive processes and outcomes in contracting.

Moreover, we expect different dynamics in agencies with high and low levels of politicization. More specifically, politically responsive agencies should produce contracts that potentially boost support for the incumbent in battleground states, particularly around elections. Consequently, we expect that:

H2: Politicized agencies will use more non-competitive processes and secure non-competitive outcomes for work in battleground states around presidential 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.

H3: After presidential turnover, politicized agencies are more likely than insulated agencies to give out contracts to a different set of companies than those contracted before the election.

In total, U.S. federal law and executive guidance require open and competitive processes as the default. Within formally open legal processes, however, there is discretion to favor some parties over others. Formal deviations from open and competitive processes require approvals from higher up in the hierarchy. This means that the composition of the agency hierarchy is important for determining favoritism.

Research Strategy

As mentioned above, there are legal requirements on federal agencies, codified in the CICA, of open competition in public procurement. If agencies deliberately depart from open procedures in otherwise competitive markets, we interpret this as a potential sign of favoritism. We therefore look for diversions from the legally defined expectations when we evaluate the relationship between politicization and procurement favoritism. Our primary dependent variables for hypotheses 1 and 2 are indicators of the type of *procedure* and the *outcome* in the procurement process. We 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.

We use data on all regulated federal contracts in the United States from 2003-2015. We obtained the data from [usaspending.gov](https://www.usaspending.gov) and aggregate spending items to the contract level. 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).⁸ In total there are more than 2.1 million contracts (for a comprehensive discussion see Fazekas et al. 2018). We focus here on contracts above \$150,000 because procurement laws are not as strict for low value contracts. This restriction cuts our sample size to a little under 550,000 contracts.

Even after restricting our sample to high-value contracts and including a demanding set of controls in all our analyses (see below for a discussion about the controls), there is a remaining risk of bias from the different composition of spending across agencies. In addition to our main regression analyses, we therefore divide our sample by agency design into treated (politicized, i.e. executive departments incl. bureaus) and control (less politicized, i.e. independent agencies and independent commissions) categories and implement a

⁸ 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 Federal Acquisition Regulation see <https://www.acquisition.gov/browsefar>.

propensity score matching estimator (for more on our independent variables, see below). The matching estimator uses the same set of controls as the regression models⁹ but imposing common support reduces the sample size to little over 100,000 contracts. After this matching procedure the imbalance between the treatment and the control groups is very small on observable confounding characteristics (median bias decreases from 68% to 8%). This provides a means for comparing politicized (treated) and less politicized (control) agencies on similar contracts in similar situations, where the most important difference is agency structure. Full details of matching quality can be found in Appendix A and B.

Finally, to assess our third hypothesis – whether presidential turnover leads to a different set of companies winning contracts in more politicized agencies – we identify companies winning bids using the same source as above. Specifically, we want to determine whether firms that received contracts after a presidential transition had received contracts prior to the transition. As in all markets, there is considerable supplier persistence in public procurement. A large proportion of contracts are awarded to companies that repeatedly win. For example, in the middle of the second term of President Bush, 2006-2008, 48 percent of firms receiving new contracts had received contracts in the prior year. If there is partisan favoritism, we would expect this percentage to drop markedly for more politicized agencies after presidential turnover, while staying the same in less politicized agencies. We study the transition from President Bush to President Obama in 2009 and analyze contracts awarded one year before Election Day (November 4, 2007 to November 4, 2008) and two years after the Inauguration Day (January 20, 2009 to January 20, 2011). We exclude the presidential transition period (November 4, 2008 to January 20, 2009). We choose a two-year period after the new president takes office because new administrations need several 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. In this analysis we consider those companies as repeat winners that have already won a contract in the year before winning the contract in question.

The distinction between politicized and less politicized agencies as treatment and control groups respectively, and the distinct timing of the presidential change allows us to construct the analysis as a difference-in-differences (DiD) estimation on the contract level. Our expectation is that more contracts with new firms are given out from politicized agencies after presidential turnover, while contracts from less politicized agencies remain the same. 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 (for more on the controls see below), both before elections and after inauguration periods. The

⁹ With the exception of department-level covariates, which are not defined for independent administrations and commissions.

combination of matching and DiD estimation for this purpose has been used broadly, for example in development (Cattaneo et al 2009) and management (Rowley et al 2017) studies. Among other things, such matching removes defense-related contracts from the control group, making remaining contracts more similar.

Independent Variables

We use two measures of agency politicization. The first taps in to 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, and independent commissions in a rough order of least to most insulated (Epstein and O’Halloran 1999; 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 an independent bureau within a larger department.

TABLE 1, SUMMARY STATISTICS

Variable name	Mean	S.D.	N
Agency size: no. of contracts awarded (Log)	9.97	1.64	569706
Agency size: no. of full time employees (Log)	7.05	3.65	555724
Agency: any SES contracting officers (Y/N)	0.78	1.39	569706
Agency: no. of contracting officers (Log)	3.41	3.44	555724
Agency: no. of SES contracting officers (Log)	-0.43	3.81	555724
Contract value (Log)	13.52	1.55	569706
Non-competitive procedure	0.37	0.48	569706
Single bidder contract	0.54	0.50	547309
Single bidder contract & non-competitive procedure	0.35	0.48	564700

The second measure is a more direct result of politicization. We calculate the percentage of appointees in each agency as the deviation from the agency average for the studied time period (i.e., normalized [#appointees/# supervisors] per agency-year).¹⁰ Taking the deviations from agency average is better than taking the simple percentage of appointees as it allows us to capture the within-agency variation. The measure of deviation is, in many ways, preferable to a raw percentage since small commissions tend to have large percentages of appointees (e.g., each commissioner and one staff member per commissioner), making them incorrectly appear politicized. A measure of raw percentages is also rather stable and therefore

¹⁰ In order to check the robustness of the results we have also used the relative deviation from the period average as well as a dichotomy capturing if the percentage of appointees is above (1) or below (0) the agency average, with essentially the same results. See appendix C. The source for the data is the Office of Personnel Management’s EHRI database. Specifically, the measure of politicization includes all Schedule C, non-career SES, and persons on the EX pay scale. The denominator is the number of supervisors during the time period with a supervisor 2 code.

largely captures cross-agency differences.¹¹

There are pros and cons with both measures, but taken together they provide a fuller picture. While the first measure captures well established differences in design it does not vary over time, and therefore only allows us to explore between agency differences, while the deviation of appointees from the agency average taps into within agency variation. Taken together, within-agency politicization and cross agency structural insulation allow us to decompose the two different components of agency structure. Moreover, using these two measures allows us to further explore how an increased number of appointees have different effects depending on the broader agency design by interacting them with each other.

To evaluate whether agencies produce non-competitive contracts for partisan reasons, we evaluate whether firms in competitive states during presidential elections are treated differently than other states. Specifically, we evaluate whether contracts with firms in battleground states are more likely to have non-competitive features. To identify battleground states, we use journalistic sources for each election (see Appendix D) and code such states with a 1 in the year before, during, and after the presidential elections of 2004, 2008, and 2012.¹² 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. Our expectation is that contracts in battleground states should be more likely to have non-competitive features.

Control Variables

In each of the models, we include a robust set of control variables to account for time, sector, location, market, contract, department- and agency-level confounders. First, we include year fixed effects to account for common time shocks such as economic crises. Second, we include sector fixed effects accounting for general effects of 34 broad economic sectors such as research and development or construction of facilities.¹³ Third, we consider log contract value in order to control for differences due to contract size, both in terms of oversight and company bidding behavior. Fourth, the models contain state fixed effects to account for time-invariant location characteristics such as development of local supplier markets. Fifth, we account for Executive Department characteristics both by including the number of contracting officers (proxying the importance and professionalization of contracting within the department overseeing the agency) and by

¹¹ This is a general problem in using appointee percentages as a measure of politicization—namely, small changes in the number of employees or managers (i.e., the denominator) often swamp changes in the number of appointees. So, big changes in politicization reflect changes in employment rather than politicization.

¹² We include one year after the election since spending can be promised during the election campaign but not be materialized until the next fiscal year (i.e., contract processes are not instantaneous).

¹³ The sectoral categorization comes from the official federal nomenclature, to be found at https://www.acquisition.gov/sites/default/files/page_file_uploads/PSC%20Manual%20-%20Final%20-%2009%20August%202015_0.pdf

adding Executive Department fixed effects accounting for unobserved department characteristics that reflect the oversight of agencies of varying levels of insulation.¹⁴ Finally, we account for agency characteristics (size) by including the log number of contracts awarded by the agency in the whole period.

Results

In Table 2 we report estimates of binary logistic regression models of non-competitive processes and outcomes with fixed effects for year, sector, state and department, and controls for contract value, total amount of agency contracts as well as the number and type of contracting officers by both department and agency. Since the observations are not independent across cases, we use clustered standard errors by agency. We include three models with different indicators of political favoritism: 1) the use of 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 in Table 2 confirm the basic relationship we expected, namely 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, independent commissions and independent regulatory commissions, which is our baseline category, 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. Moreover, we have employed a propensity score matching technique as outlined in the methods section, with results consistent with our main findings reported in Appendix A.

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%). These findings are consistent even for different subsets of the data. 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.

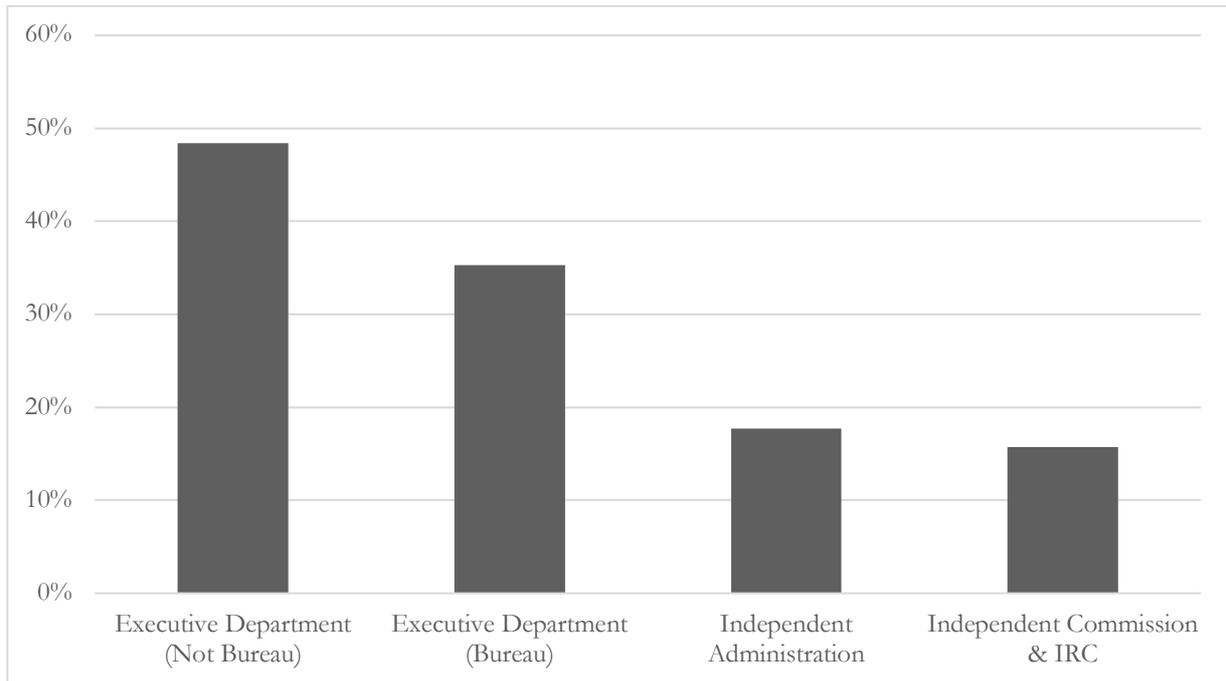
¹⁴ Note that independent agencies and commissions have no department overseeing them (35 % of the sample), and that units within executive departments may (59%) or may not (5%) be a distinct bureau (i.e., department-wide office). Including executive department fixed effects does therefore not interfere with our measurement of insulation from politics as the two refer to different levels. In other words, agency insulation varies within each department.

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.	0.275	-0.102	0.154
Agency type: Executive Dept. (Bureau)	1.588**	0.423	1.200
Agency type: Executive Dept. (Not Bureau)	2.154***	0.979*	1.827***
Controls			
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Contract value	Y	Y	Y
Agency office: state	Y	Y	Y
Dept. FE	Y	Y	Y
Dept.: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full-time employees	Y	Y	Y
Agency: no. of contracting officers	Y	Y	Y
Agency: no. of SES contracting officers	Y	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y	Y
Constant	Y	Y	Y
Observations	541,561	520,67	537,122
Pseudo R2 or R2	0.093	0.080	0.097

*Note: *p < 0.1, ** p < 0.05, *** p < 0.01. Binary l regression results (standard errors clustered by agencogisticity).*

FIGURE 1, ESTIMATED PROBABILITY OF A NON-COMPARATIVE PROCESS AND SINGLE BID OUTCOME BY AGENCY DESIGN, UNITED STATES 2003-2015



Note: Based on Model 3 in Table 2.

To further explore the effects of agency design Table 3 includes each agency’s normalized appointee percentage (relative to supervisors) to measure within-agency variation in politicization. Model 1 includes this measure alone, Model 2 controls for types of agency design, and Model 3 interacts them. Since the measure only captures within-agency differences, it is demanding. The average effect, however, is large, positive and significant, as expected. This suggests that increased appointee percentages are correlated with non-competitive procurement, even when controlling for a host of agency and contract-specific factors.

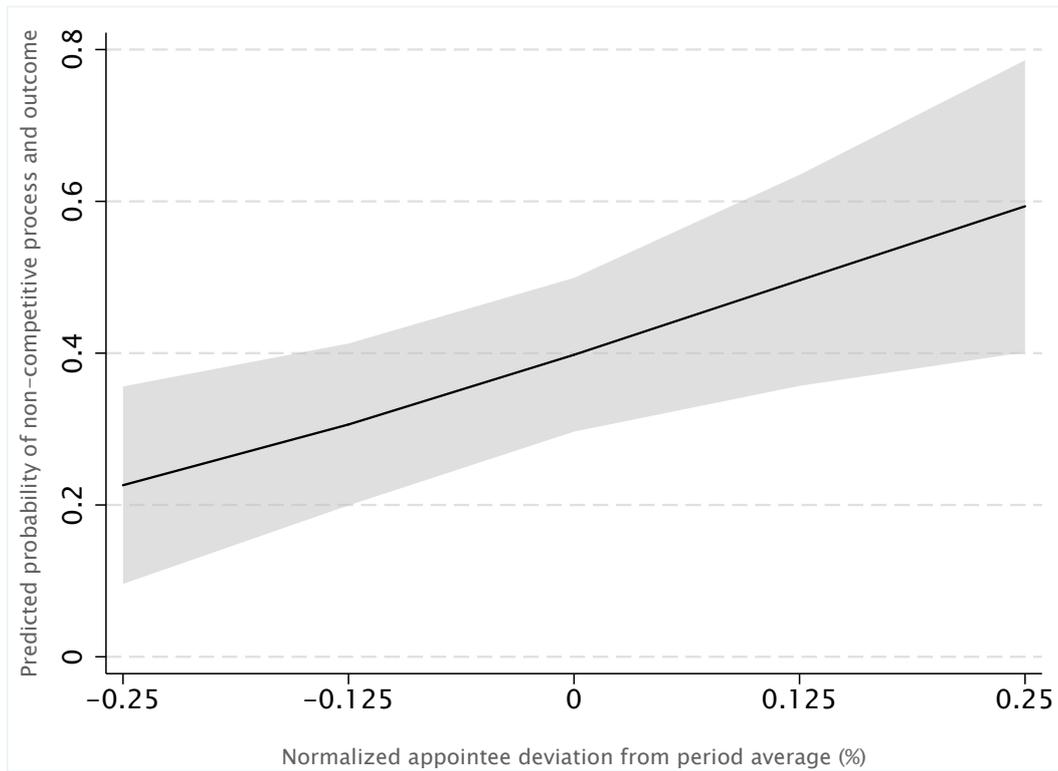
The interaction with executive departments is large, positive and statistically significant. It indicates that an increase in the number of appointees strikes hardest exactly where it should, namely within directly politically responsive executive departments. When agency design is such that it allows for an involvement of appointees in the contracting process, an increased number of appointees is associated with more non-competitive procurement. Figure 2 reports the marginal effect of the interaction model together with the confidence interval (to increase readability we have only plotted the predictive margins for executive departments, not bureau).

TABLE 3, NORMALIZED APPOINTEE PERCENTAGE AND NON-COMPETITIVE PROCESSES AND SINGLE BID OUTCOMES IN FEDERAL PROCUREMENT, 2003-2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Norm. appoint. (appoint. perc. dev. from period avg.)	3.534**	3.699**	
Baseline (Agency type): Independent Com. & Independent Reg. Com.			
Agency type: Independent Admin.		0.282	0.282
Agency type: Executive Dept. (Bureau)		0.097	0.097
Agency type: Executive Dept. (Not Bureau)		0.710	0.712
Norm. appoint. * Independent Com. & Independent Reg. Com			0.574
Norm. appoint. * Independent Admin.			-0.698
Norm. appoint. * Executive Dep. (Bureau)			-4.879
Norm. appoint. * Executive Dep. (Not Bureau)			4.58***
Controls			
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Contract value	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dept.: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full-time employees	Y	Y	Y
Agency: no. of contracting officers	Y	Y	Y
Agency: no. of SES contracting officers	Y	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y	Y
Constant	Y	Y	Y
Observations	466,181	466,181	466,181
Pseudo R ²	0.098	0.098	0.098

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

FIGURE 2. ESTIMATED EFFECTS OF NORMALIZED APPOINTEE PERCENTAGE IN EXECUTIVE DEPARTMENT ON NON-COMPETITIVE PROCESS AND SINGLE BID OUTCOMES, 2003-2015



Note: Figure 2 shows predictive margins with 95% cIs., based on Model 3, Table 3, for Executive Departments (not bureaus).

All in all, this is important evidence that differences in agency design influence the content of contracts. Contracts from the most politicized parts of the executive branch are more likely to have features we associate with favoritism. We would, however, like to highlight two additional observations. First, it is interesting that the effect of agency design seems to tail away (i.e., compare independent administrations vs. independent commissions in Figure 1). This might be suggestive that there are different dynamics creating favoritism and that while the political risks are washed out by increased insulation, other risks remain. Second, a more politicized staff seems to be more harmful for contracting exactly when the agency structure allows appointees to have a more direct influence over contracting decisions, and where the president’s political priorities should be most prevalent.

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.

The reason for the small average effect is partly that the impact of spending in battleground states is mitigated by agency insulation (Model 3, Figure 3). 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 44 to 49 percent). The least politicized agencies are actually estimated to produce more non-competitive contracts in *non*-battleground states (12 compared to 15 percent). While electoral and partisan factors influence the contracting procedure and its contents, this is primarily the case in the agencies where political officials penetrate most deeply. This evidence suggests that when agency design is such that both oversight and management positions are held by appointees, it can facilitate the production of non-competitive procedures and single-bid contracts.¹⁵

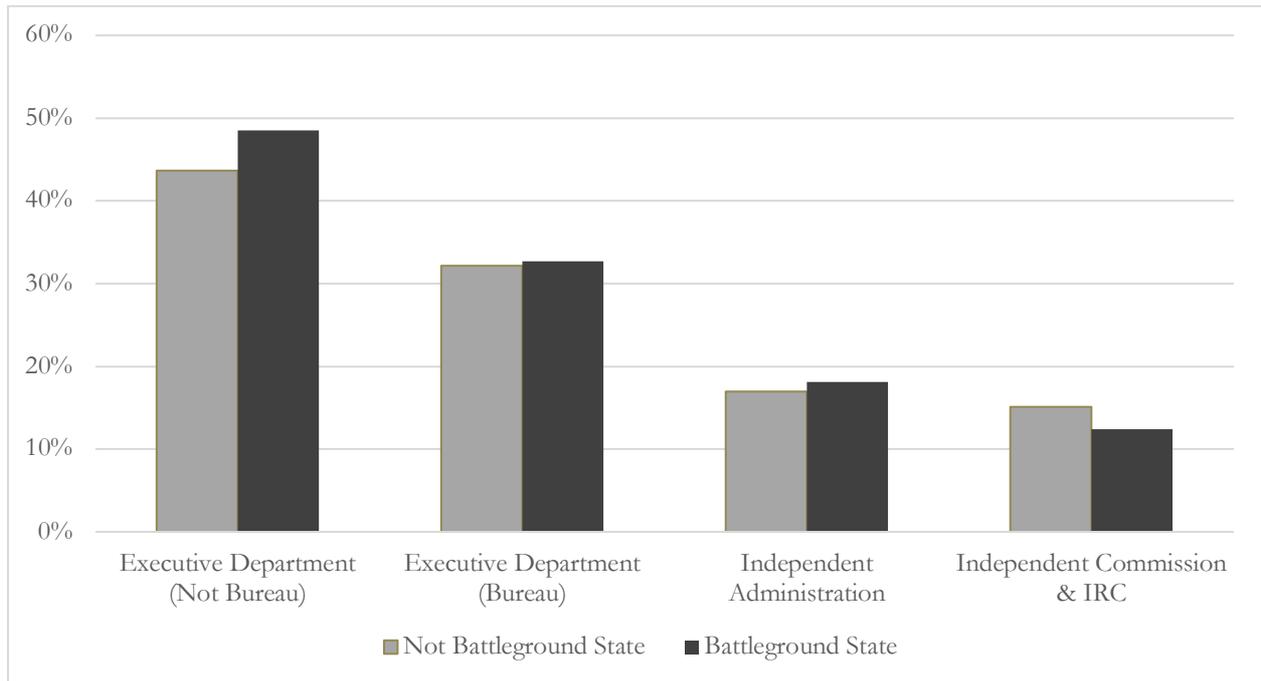
¹⁵ An alternative way to connect a contract to a specific state would be to use the place of performance instead of firm location. Unfortunately, this increases the number of missing cases dramatically and therefore we prefer the analyses reported in Table 4. We have, however, performed analyses using place of performance. The results are substantively the same, see Appendix E.

TABLE 4. 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	0.0725	0.0731	
Baseline (Agency type): Independent Com. & Independent Reg. Com.			
Agency type: Independent Administration		0.248	0.147
Agency type: Executive Dept. (Bureau)		1.185	1.096
Agency type: Executive Dept. (Not Bureau)		1.819**	1.668**
Battleground state * Independent Com. & Independent. Reg. Com.			-0.249
Battleground state * Independent Admin.			0.088
Battleground state * Executive Dept. (Bureau)			0.0303
Battleground state * Executive Dept. (Not Bureau)			0.230***
Controls			
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Contract value	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dep.: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full-time employees	Y	Y	Y
Agency: no. of contracting officers	Y	Y	Y
Agency: no. of SES contracting officers	Y	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y	Y
Constant	Y	Y	Y
Observations	368,891	368,891	368,891
Pseudo R ²	0.099	0.099	0.099

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001. 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).*

FIGURE 3. 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.

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 difference-in-differences (DiD) regression model on a matched sample of contracts in order to filter out those contracts which have different time horizons by nature across politicized and less politicized organizations (e.g. long-term defense contracts are removed, considerably balancing the contract samples across agencies and time). 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 the Inauguration Day. As the dependent variable for these models, we use the dummy variable whether the supplier is a repeat winner or not. A repeat winner company is defined as one which won at least one contract during the previous year compared to the year of the contract award. Table 5 reports these regression results, first, looking at agency politicization on its own; second, time period on its own, and then looking at the difference in differences across time periods and agency types.

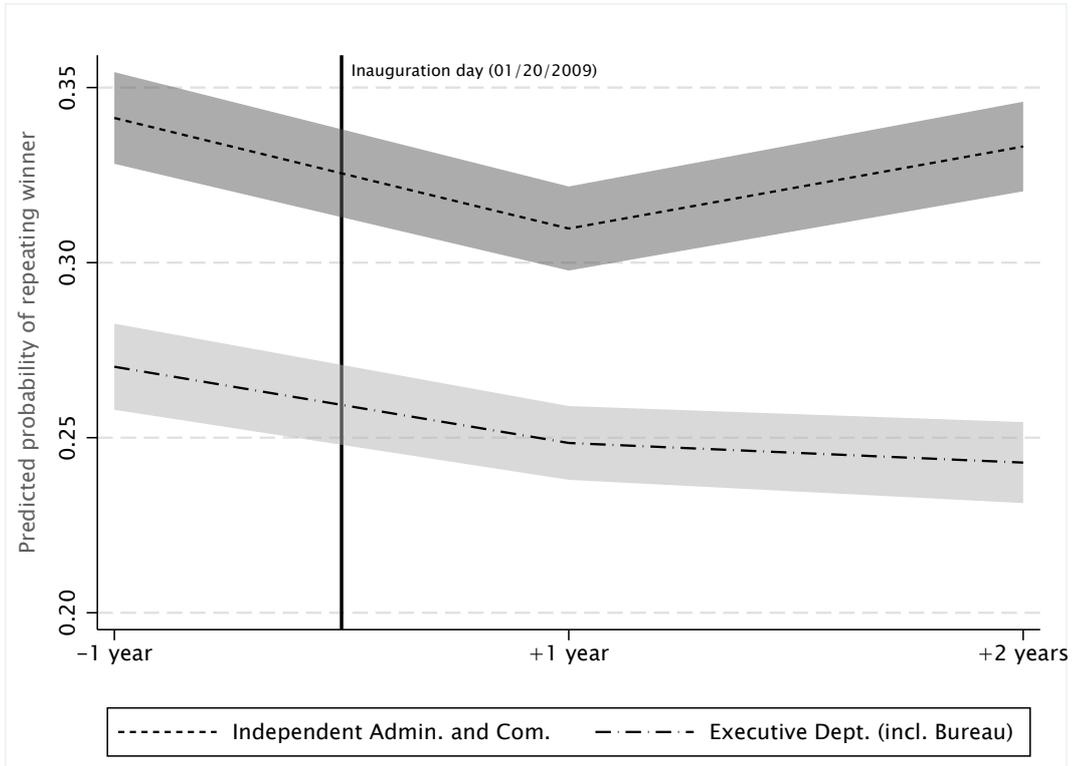
TABLE 5. AGENCY POLITICIZATION AND SUPPLIER PERSISTENCE IN FEDERAL PROCUREMENT, 11/4/2007-1/20/2011

	Repeated winner across 2009 presidency change		
	(1)	(2)	(3)
Baseline: (Agency type) Indep. Admin. & Indep. Com.			
Agency type: Executive Dept. (Incl. Bureau) = 1	-0.386***		-0.364***
Baseline: Period 1: 11/04/2007 - 11/04/2008			
Period 2: 01/20/2009 - 01/20/2010		-0.143***	-0.156***
Period 3: 01/20/2010 - 01/20/2011		-0.0778**	-0.0397
Executive Dept. (Incl. Bureau) * Period 2: 01/20/2009 - 01/20/2010			0.0342
Executive Dept. (Incl. Bureau) * Period 3: 01/20/2010 - 01/20/2011			-0.115*
Controls			
Contract sector	Y	Y	Y
Contract value	Y	Y	Y
Agency office: state	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full-time employees	Y	Y	Y
Agency: no. of contracting officers	Y	Y	Y
Agency: no. of SES contracting officers	Y	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y	Y
Constant	Y	Y	Y
Observations	32,260	32,260	32,260
Pseudo R2	0.064	0.060	0.064

*Note: Table 5 reports binary logistic regression results on the contract level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*

First, we find consistently higher supplier persistence in independent administrations and commissions throughout the whole period (Model 1). Second, we identify a marked drop in supplier persistence after the president changes, especially in the first year into the Obama administration (Model 2). Third and most importantly for our hypothesis, the observed overall drop in supplier persistence after the change of president is almost entirely due to more politicized agencies, with hardly any change for independent administrations and commissions (Model 3 and Figure 4). 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 (33.3 versus 24.3 percentages) in the second year after president change, compared to the 7 percentage point difference in the year before the elections (34 versus 27 percentages).

FIGURE 4. PREDICTED PROBABILITY OF A REPEATING WINNER BEFORE AND AFTER INAUGURATION DAY (MODEL 3, TABLE 5), 2007-2011



Note: Figure 4 shows predictive margins with 95% cIs., based on Model 3, Table 5. It starts one year before the presidential election 2008 (-1 year), and continues until two years (+2 years) after President Obama's 2009 inauguration.

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 carefully matched controls on all of 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 and security spending going on in independent administrations and commissions). (Details of the goodness of matching are reported in Appendix B).

Discussion

In our analysis of all higher value United States government contracts between 2003 and 2015, a few findings stand out. First, the non-competitive process and single bid outcomes we study are common features of agency procurement. Our theory suggests that non-competitiveness, in part, is a consequence of political pressure, more 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 (e.g., Office of the Secretary), are the most likely to engage in non-competitive contracting behavior. 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 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 could compare costs and quality of outputs between those resulting from competitive vs. non-competitive contracts. Still, in Table F1 in Appendix F we present estimates from models where we 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. We include the controls as in earlier models in order to plausibly compare similar contracts to one another. The estimates suggest that non-competitive contracts are estimated to increase costs during implementation by 3-3.5 percentage points. 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 USD per annum on contract implementation costs, 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 process 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 diverse 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 et al. 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 little 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). However, this paper explains why partisan distribution through *procurement*, rather than program spending, is different and probably a graver problem because it, first, goes against the very reason for having open tenders, second, involves collusion with private firms, and third, that repeated favoritism fosters an unhealthy relationship between certain parties and certain firms. The results from our empirical analyses suggest that these concerns are not taken out of thin air. Favoritism in procurement is a worrying fact.

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 et al. 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. For example, political appointees in managerial positions such as a bureau chief and division head or in positions directly involved in the procurement process (e.g., Assistant Secretary for Administration) should probably be avoided.

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AGENCY DESIGN, FAVORITISM AND PROCUREMENT IN THE UNITED STATES

ONLINE APPENDIX

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Appendix A

In addition to our main regression analyses, we also carry out propensity score matching analysis, taking politicized agencies as treated and less politicized agencies as a control group (Table A1). Matching removes most of the imbalance between the treatment and the control groups on key observable characteristics as evidenced by the median bias decreasing from 68 in the unmatched sample to only 8.1 in the matched sample (Table A2), making our comparison of group averages a good approximation of the causal effect of agency politicization.

TABLE A1, MATSCHING RESULTS FOR MAIN EFFECT ON NON-COMPARATIVE PROCEDURE AND OUTCOME (FOLLOWING MODEL 3 IN TABLE 2)

	Raw comparison	Matching	Matching: no defence
Control (Indep. Admin. And Indep. Com..)	32.8%	33.1%	33.1%
Treatment (Executive Dept., incl. Bureau)	35.1%	41.4%	41.9%
Diff. (treatment - control)	2.3%	8.3%	8.8%
95% C.I. - lower bound	1.9%	7.8%	8.2%
95% C.I. - upper bound	2.7%	8.9%	9.3%
N control	64,05	60,701	60,701
N treatment	481,665	60,701	60,701
Matching variables			
Contract Sector	N	Y	Y
Contract value	N	Y	Y
Agency Office: State	N	Y	Y
Agency size: no. of contracts awarded	N	Y	Y
Agency size: no. of full time employees	N	Y	Y
Agency: no. of contracting officers	N	Y	Y
Agency: 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	0.207	78591.75	0.000	65.5	68.0	138.0*	24.12*	80
Matched	0.102	17089.47	0.000	12.8	8.1	81.3*	1.32	100

Appendix B

The separate matching exercises for the 3 periods considerably decrease the imbalance across the control and treatment groups on observables. In each case the media bias is cut into 1/5th-1/10th after matching is performed (Table B1-B3), 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	0.319	10864.68	0.000	98.9	109.6	194.5*	6.37*	100
Matched	0.126	1794.50	0.000	12.9	9.1	89.1*	0.70	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	0.310	11627.06	0.000	90.5	99.1	179.1*	6.96*	100
Matched	0.094	1527.27	0.000	20.2	22.7	75.7*	0.49*	83

TABLE B3, GOODNESS OF MATCHING STATISTICS: LAST YEAR OF THE OBAMA PRESIDENCY

Sample	Ps R2	LR chi2	p > chi2	Mean Bias	Med. Bias	B	R	%Var
Unmatched	0.201	6918.46	0.000	65.8	70.1	137.7*	21.18*	100
Matched	0.204	2901.36	0.000	16.7	9.9	123.4*	1.24	80

Appendix C

As the number of appointees' fluctuation over time can be measured in a number of ways, none of which is conceptually much better than the others, we rerun our main analysis using a few alternative measures such as appointee percentage's relative deviation from period average, and whether the appointee percentage is above agency average or not.

TABLE C1, ALTERNATIVE POLITICIZATION MEASURES. APPOINTEE PERCENTAGE AND NON-COMPETITIVE PROCESSES AND SINGLE BID OUTCOMES IN FEDERAL PROCUREMENT, 2003-2015

	Single bidder contract & non-competitive procedure = 1	
	(1)	(2)
Baseline (Agency type): Indep. Com. & Independent Reg. Com.		
Agency type: Independent Administration	-0.185	0.347
Agency type: Executive Department (Bureau)	-0.286	0.0495
Agency type: Executive Dept. (Not Bureau)	-0.140	0.482
Appointee% rel. deviation from agency avg.* Indep. Com. & Independent Reg. Com.	-0.016	
Appointee% relative deviation from agency avg.*Independent Administration	-0.113	
Appointee% relative deviation from agency avg.*Exec. department (Bureau)	0.011	
Appointee% relative deviation from agency avg.*Exec. Department (Not Bureau)	0.621***	
Appointee% above agency average =1* Indep. Com. & Independent Reg. Com.		-0.059
Appointee% above agency average =1*Independent Administration		-0.199
Appointee% above agency average =1*Exec. department (Bureau)		0.049
Appointee% above agency average =1*Exec. Department (Not Bureau)		0.432***
Controls		
Contract award year	Y	Y
Contract sector	Y	Y
Contract value	Y	Y
Agency office: state	Y	Y
Department FE	Y	Y
Department: no. of contracting officers	Y	Y
Agency size: no. of contracts awarded	Y	Y
Agency size: no. of full time employees	Y	Y
Agency: no. of contracting officers	Y	Y
Agency: no. of SES contracting officers	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y
Constant	Y	Y
Observations	412,407	466,181
Pseudo R ²	0.113	0.098

Appendix D

Battleground States by Presidential Election, 2000-2016

2000¹⁶

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

2004¹⁷

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

2008¹⁸

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

2012¹⁹

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

2016²⁰

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

¹⁶ <http://online.wsj.com/public/resources/documents/info-battleground04-0621print.html>

¹⁷ https://www.realclearpolitics.com/bush_vs_kerry_sbys.html

¹⁸ <http://www.politico.com/convention/swingstate.html>

¹⁹ <http://www.politico.com/2012-election/swing-state/>

²⁰ (<http://www.politico.com/story/2016/06/donald-trump-hillary-clinton-battleground-states-224025>)

Appendix E

Given that contract performance may act as a more precise proxy to political importance of a contract, we also repeat the analysis using contract performance location for assigning contracts to battleground states, rather than agency location.

TABLE E1. AGENCY POLITICIZATION, ELECTORAL PRESSURES (BATTLEGROUND STATES DEFINED BASED ON CONTRACT PERFORMANCE LOCATION), AND FEDERAL PROCUREMENT, 2003-2015

	Single bidder contract & non-competitive procedure		
	(1)	(2)	(3)
Baseline: Battleground state = 0			
Battleground state = 1	0.122**	0.124**	
Baseline: Independent Com. & Independent Regional Com.			
Independent Administration		-0.012	-0.071
Executive Dept. (Bureau)		0.856	0.770
Executive Dept. (Not Bureau)		1.292*	1.168*
Battleground state * Independent Com. & Independent. Reg. Com.			-0.169
Battleground state * Independent Admin.			0.034
Battleground state * Executive Dept. (Bureau)			0.100*
Battleground state * Executive Dept. (Not Bureau)			0.246***
Controls			
Contract Award Year	Y	Y	Y
Contract Sector	Y	Y	Y
Contract value	Y	Y	Y
Agency Office: State	Y	Y	Y
Dept. FE	Y	Y	N
Dep.: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full-time employees	Y	Y	Y
Agency: no. of contracting officers	Y	Y	Y
Agency: no. of SES contracting officers	Y	Y	Y
Agency: any SES contracting officers (Y/N)	Y	Y	Y
Constant	Y	Y	Y
Observations	220,015	220,015	220,015
Pseudo R ²	0.134	0.134	0.134

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. 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).

Appendix F

Table F1 presents 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 F, 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	0.0314***		
BASELINE: Non-competitive procedure=0			
Non-competitive procedure = 1		0.0298***	
BASELINE: Single bidder c. & non-competitive proc.=0			
Single bidder contract & non-competitive procedure = 1			0.0325***
	Controls		
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Contract value	Y	Y	Y
Agency office: state	Y	Y	Y
Department FE	Y	Y	Y
Department: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full time employees	N	Y	Y
Agency: no. of contracting officers	N	Y	Y
Agency: no. of SES contracting officers	N	Y	Y
Agency: any SES contracting officers (Y/N)	N	Y	Y
Constant	Y	Y	Y
Observations	417,808	432,439	429,767
Pseudo R2	0.186	0.253	0.238

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

Appendix G

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 contracts (48%), and this might bias the average effects we aim to identify. To counter such potential biases, we rerun the models in appendix F excluding defense agencies.

TABLE G1, NON-COMPETITIVE PROCESSES, SINGLE BID OUTCOMES AND COST OF FEDERAL PROCUREMENT, 2003-2015, DEFENCE CONTRACTS EXCLUDED

	Cost increase ratio		
	(1)	(2)	(3)
BASELINE: Single bidder contract=0			
Single bidder contract = 1	0.0624***		
BASELINE: Non-competitive procedure=0			
Non-competitive procedure = 1		0.0598***	
BASELINE: Single bidder c. & non-competitive proc.=0			
Single bidder contract & non-competitive procedure = 1			0.066***
Controls			
Contract award year	Y	Y	Y
Contract sector	Y	Y	Y
Contract value	Y	Y	Y
Agency office: state	Y	Y	Y
Department FE	Y	Y	Y
Department: no. of contracting officers	Y	Y	Y
Agency size: no. of contracts awarded	Y	Y	Y
Agency size: no. of full time employees	N	Y	Y
Agency: no. of contracting officers	N	Y	Y
Agency: no. of SES contracting officers	N	Y	Y
Agency: any SES contracting officers (Y/N)	N	Y	Y
Constant	Y	Y	Y
Observations	180,866	190,629	188,087
Pseudo R2	0.230	0.323	0.304

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