Electoral Turnover and Government Efficiency: Evidence from Federal Procurement*

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Abstract

The president's dominant influence on administrative policymaking has sparked public concerns about resulting inefficiencies at federal agencies. I examine how the possibility of future electoral turnover can limit agencies' engagement in presidential favoritism, focusing on policy areas where Congress can use informal means to constrain agencies' actions under the separation of powers system. In those areas, forward-looking agencies might alter their behavior to accommodate future constraints from the opposition Congress, even given substantial presidential influence. I evaluate these incentives using federal contract data in the United States. I find that as the probability of congressional turnover increases, federal agencies under unified government are more likely to award lower-cost contracts through competitive bidding in the expectation that the future Congress might compel agencies to abandon non-competitive contracts given to firms politically connected to the president. My findings challenge the dominant perspective that electoral turnover necessarily degrades bureaucratic performance.

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1 Introduction

There are long-standing concerns that federal agencies in the United States engage in wasteful spending for firms politically connected to the president, given the president's ability to control executive agencies via political appointments. For instance, the Bush administration was accused of giving a large dollar amount of no-bid contracts to its connected firms during the Iraq War (Carlson 2004), and recently, the Biden administration was criticized for similar practices concerning contracts on housing migrant families (Shaw 2022). To counter the president's dominant influence on administrative policymaking, legislators of the opposition party often call for oversight into agencies' seemingly wasteful spending for the president's donors (Warren 2020; Shaw 2022). What these stories suggest is that divided government, with the opposition Congress in place to check executive branch policies, could improve agency performance, whereas we should be concerned about periods of unified government.

The existing literature provides differing perspectives on this issue. On the one hand, divided government may discourage cronyism and waste since the opposition Congress would have more incentives to investigate the administration (Parker and Dull 2009; Kriner and Schickler 2016). On the other hand, it may undermine agency performance by constraining bureaucracies with less flexibility to respond to changing circumstances (Epstein and O'Halloran 1996). Agency performance could also be hampered by agencies responding to the threat of divided government in the future due to electoral turnover. Related studies examine rulemaking and claim that agencies under unified government hastily finalize their president's preferred rules before divided government comes into power, considering that it is difficult for Congress to overturn existing rules finalized by agencies (O'Connell 2011; Macdonald and Mcgrath 2019). These diverging perspectives suggest that the implications of (future) divided government depend on what (future) political adversaries can do to constrain agencies in a given policy area.

This paper contributes to the existing scholarship by addressing conditions under which the pos-

sibility of having divided government in the future could improve agency performance. I examine a relatively unexplored policy area in which Congress may possess *informal* means to compel agencies to abandon their prior policy choices under the separation of powers system. For example, Congress frequently directs agencies on what (not) to do in appropriations committee reports. Although these instructions are not legally binding, Congress can use non-statutory means, such as hearings and oversight, to impose substantial costs on government officials who do not comply with Congress's demands (Acs 2019; Bolton 2021). Anticipating such constraints by the future opposition Congress, forward-looking government officials might alter their behavior to engage less in presidential favoritism, even while the government is still unified and presidential influence on the agency's actions is substantial.

This paper evaluates this intuition in the context of federal procurement. Federal contracting accounts for a significant portion of the federal discretionary budget in the United States. In fiscal year 2020, for example, the federal government procured about 665 billion dollars of goods and services, which accounted for 42% of agencies' discretionary spending and 3.2% of the US GDP (GAO 2021). Federal agencies procure goods and services from private contractors, but their strategies are constrained by the president's and Congress's preferences. Notably, the president, as the head of the executive branch, leads agencies to provide non-competitive, higher-cost contracts to firms politically connected to the president (Dahlström, Fazekas, and Lewis 2021; Fazekas and Kocsis 2020). These contracts are likely to be of lower quality and adversely affect citizen welfare (Schoenherr 2019). At the same time, a Congress controlled by the opposition party has incentives to conduct oversight on contracts awarded to firms politically connected to the president, and to compel agencies to terminate those contracts if they are found to be of higher cost (Feuer 2020).

Given the political context of federal contracting, I develop a model to examine agencies' decisions—which represents a group of high-ranking officials comprising both career bureaucrats and political appointees—to award contracts via competitive or non-competitive procedures in anticipation of congressional turnover. I focus on the setting of the politicized agency under unified government in the run-up to the midterm election—a time when the incumbent president's influ-

ence on agencies' actions is most substantial. With the model, I delineate conditions under which the agency, while under presidential influence, makes procurement decisions that accommodate the future opposition Congress's preferences. *Ceteris paribus*, competitive procedures yield lower costs for the government. However, competitive procedures may force an administration to forego an opportunity to reward the president's politically connected firms who are otherwise unqualified to win contracts, which is what the future opposition Congress would prefer.

The model suggests that if agencies under unified government expect that congressional turnover is more likely in the upcoming election, they are less likely to award contracts non-competitively to inefficient firms connected to the president. Instead, they compel these firms go through a competitive procedure with other firms to award lower-cost contracts. This is due to their expectation that once the opposition party controls Congress after the midterm election, it may pressure the agency to scale back existing high-cost contracts that were won by inefficient firms. The model also implies that agencies would be less concerned about Congress's opposition if the president's connected firms are efficient and can secure low-cost contracts. In this case, agencies have little incentive to change their procurement decisions in response to congressional turnover probabilities. Thus, awarding non-competitive contracts to the president's efficient firms is a benign form of particularistic spending that does not seriously degrade the quality of government services.

To test my arguments empirically, I use federal procurement contract data. Given that the data is available from the year 2003 forward, I focus on federal contracts under three periods of unified government in the run-up to the midterm election during 2005-2006, 2009-2010, and 2017-2018. I use the period of 2013-2014, when there was divided government in the run-up to the midterm election, as a placebo test of my argument since in this case, the opposition Congress was already in power to constrain agencies' actions. To estimate agencies' perceived probabilities of future congressional turnover, I use the day-to-day price data from election prediction markets. Each election cycle exhibits different trends of future congressional turnover probabilities and led to different electoral outcomes with respect to the *extent* of divided government (e.g., whether one or

two chambers are under the opposition party's control). Therefore, changes in future congressional turnover probabilities in each cycle do not coincide with one linear time trend. With these data, I examine how day-to-day changes in perceived congressional turnover probabilities affect federal agencies' procurement decisions. Last, I use firms' campaign contributions and Compustat data to test heterogeneous effects by firms' political connections and efficiency of producing goods.

My main empirical findings are as follows: First, as the probability of congressional turnover increases, agencies under unified government are more likely to provide lower-cost contracts through competitive bidding, conditional on contracts being made. Substantively, a one standard deviation increase in the probability of congressional turnover (0.22) leads to a 4.02% increase in the likelihood of competitive contracts. On the other hand, I find no significant effect of future congressional turnover probabilities for agencies under divided government. Second, an increase in the likelihood of competitive bidding due to an increase in congressional turnover probabilities subsequently yields lower-cost contracts, proxied by initial contract amounts and fixed cost structures (Krause and Zarit 2021). Third, consistent with my theory, the shift in behavior is more prominent in industries where agencies expect contracts to be overturned due to future congressional constraints: Where a high proportion of the president's connected firms compete for procurement and where these connected firms are relatively inefficient. Last, I exploit the variation in agencies' political ideologies and show that the effect of future congressional turnover probabilities is largest for agencies that are ideologically divergent from the future opposition Congress and thus expect increased congressional oversight and hearings.

This paper makes three main contributions. First, the theory I advance identifies the strategies of political actors in response to the possibility of future electoral turnover, considering policy areas where informal congressional constraints exist under the separation of powers system. Second, this paper examines dynamic institutional settings that constrain government spending in the United States, complementing existing studies that focus on static institutional features (e.g., Gordon 2011; Berry, Burden, and Howell 2010; Dynes and Huber 2015; Kriner and Reeves 2015; Dahlström, Fazekas, and Lewis 2021; Napolio 2023). My findings suggest that unified government

may not necessarily be of concern since the possibility of future electoral turnover can incentivize agencies under unified government to engage less in particularistic spending for their president, yielding efficient outcomes. Last, more generally, my findings challenge the dominant perspective in the political economy literature that electoral turnover degrades bureaucratic performance. Existing studies document that electoral turnover adversely affects bureaucratic performance due to incumbent politicians undermining the bureaucratic capacity to constrain future politicians' policy choices (Acemoglu, Ticchi, and Vindign 2011; Huber and Ting 2021), lame-duck governments lacking incentives to monitor bureaucrats after their election losses (Toral 2023), or disruption in bureaucratic personnel due to electoral turnover (Doherty, Lewis, and Limbocker 2019; Colonnelli and Edoardo Teso 2020; Bolton, Figueiredo, and Lewis 2021; Akhtari, Moreira, and Trucco 2022). This paper shows that consideration for future electoral turnover can make agencies perform better.

2 Background

2.1 Related Literature

This paper focuses on executive agencies as decision makers constrained by multiple principals, notably the president and Congress. This implies that executive agencies might not always implement policies that the president prefers, despite substantial presidential influence on agencies via political appointments. Thus, this paper relates to the extant work discussing implementation and coordination problems of executive branch policies (e.g., Lowande 2018; Rudalevige 2021).

This paper also relates to the literature on how forward-looking political actors strategically make decisions in anticipation of future electoral turnover. In the context of the United States, federal agencies might speed up or delay the rulemaking process based on their expectations of future political environments (Potter 2017). Moreover, Congress, under a favorable political climate, would pass legislation that creates insulated and inefficient bureaucracies if it expects to lose power in the upcoming election (Horn and Shepsle 1989; Moe 1989). Congress and the president

may also use their currently advantaged positions to speed up the rulemaking process so that their preferred policies take effect before political transitions (Gersen and O'Connell 2008; O'Connell 2011; Macdonald and Mcgrath 2019). Such practices inevitably generate inefficiencies since policies might not be implemented when they are most needed. Other studies have analyzed historical events to demonstrate how politicians facing electoral loss may attempt to implement civil service reforms as a form of insurance (Ting et al. 2013).

Last, this paper builds on the recent literature on how Congress could use informal means to constrain agencies' decision-making under the separation of powers system. Such congressional influence over agencies is particularly visible in agencies' discretionary spending. For example, Congress can use non-statutory means, like appropriations committee reports accompanying appropriations laws, to give specific instructions on what agencies can do with their budgets (Bolton 2021; Bolton and Thrower 2022). Individual legislators also can send their requests directly to agencies (Lowande, Ritchie, and Lauterbach 2018). Although Congress's informal instructions are not legally binding, Congress can compel agencies to comply with its demands due to its ability to use hearings and oversight (Kriner and Schwartz 2008; Parker and Dull 2009; Kriner and Schickler 2016). With these measures, Congress can threaten to increase agencies' workloads or put them under public criticism, which is costly for agencies and thus incentivizes them to comply with Congress's preferences (Acs 2019; Bolton 2021).

In contrast, congressional influence on administrative policymaking via formal means is limited under the separation of powers system. For example, in the case of discretionary spending, Congress can use statutory means, such as limitation riders in appropriations bills (MacDonald 2010), but those are frequently subject to presidential vetoes to which Congress would yield (Hassell and Kernell 2016). Moreover, if Congress wants to change statutes to constrain agencies' actions, they need supermajorities to overcome the threat of a presidential veto and a filibuster in the Senate, which makes it difficult to pass legislation. In rulemaking processes, the Congressional Review Act (CRA), signed in 1996, allows Congress to overturn a regulation via a simple-majority resolution within sixty legislative days after its reported promulgation. But this narrow window

of time suggests that Congress might not have sufficient opportunities to repeal many rules implemented by the previous administration. Given the difficulty for Congresses or administrations to overturn the existing policy or law via formal procedures, the previous studies argue that political actors expecting their power to wane due to electoral turnover have incentives to lock in their preferred policies through inefficient bureaucratic procedures before political transitions (e.g., Horn and Shepsle 1989; Moe 1989; Gersen and O'Connell 2008; O'Connell 2011; Macdonald and Mcgrath 2019).

A contribution of this paper is to examine how forward-looking agencies that are currently advantaged make decisions if the future Congress could compel them to abandon their prior policy choices. Since forward-looking agencies would adjust their policymaking in anticipation of future congressional constraints, there would be few instances when Congress explicitly directs agencies' policymaking. As one legislator stated, "I do not have to use hearings as a formal threat because the executive already knows that the threat exists. This is just understood. It seldom has to be discussed explicitly" (Ogul 1976, p.161). This suggests that Congress's influence on agencies' actions could be more extensive than what is unambiguously observed.

Few papers seriously consider how political actors respond to the risk of future electoral turnover if their adversaries can overturn their policies in the future. One exception is De Figueiredo (2002), who argues that in a two-party parliamentary system where legislative durability is less probable, elected officials are less likely to insulate bureaucracies and more likely to cooperate when electoral uncertainty is greatest. My work argues that overturning policies may also be easily implemented under the separation of powers system, and examines how unelected government officials make their policymaking decisions in anticipation of electoral turnover. A second exception is Acs (2019), who shows that during divided government immediately following unified government, agencies are more likely to withdraw their rulemaking proposals, anticipating congressional reversals. That work focuses on situations where agencies cannot commit to moderating rules to cater to future Congress's demands. On the other hand, I examine how federal agencies under unified government moderate their policies based on their expectation of future

electoral turnover probabilities, leading to less policymaking disruption during political transitions.

2.2 Federal Procurement

Federal agencies, the president, and Congress each have a distinct role in the federal procurement process. Federal agencies make decisions about procuring goods and services. The president, as the head of the executive branch, controls political appointments and, thus, can induce federal agencies to internalize his preferences and reflect them in their discretionary allocation of federal funds (Larcinese, Rizzo, and Testa 2006; Berry, Burden, and Howell 2010; Dynes and Huber 2015; Kriner and Reeves 2015) and federal procurement (Gordon 2011; Dahlström, Fazekas, and Lewis 2021).[1] Last, Congress has the ability to scale back agencies' procurement decisions.

Within agencies, procurement decisions are frequently overseen by a group of high-ranking officials comprising career bureaucrats and political appointees, with varying degrees in the proportion of political appointees depending on the level of the agencies' politicization. Although lower-ranking procurement officers implement day-to-day procurement processes, senior officials set the overall procurement policy for the agency and can influence the decisions of lower-level officials. For example, the Chief Acquisition Officer, who could be a Senior Executive Service (SES) member depending on the agency, is responsible for advising and assisting agency leadership with acquisition activities and receiving reports from lower-level officials. This position is filled predominantly by political appointees, but occasionally is filled by career officials or remains vacant (GAO 2012). Moreover, according to the General Services Acquisition Manual 502.101, the administrator of the General Services Administration delegates the authority to manage overall contracting activity to the Senior Procurement Executive, who is on the SES pay scale and typically a career employee.

Both career bureaucrats and political appointees within the agency can initiate the process of

1. While recent studies put more emphasis on the president's dominant influence on discretionary spending, there also exist studies documenting that individual legislators or congressional committees, to some degree, can influence federal procurement (Goldman, Rocholl, and So 2013; Tahoun 2013; Brown and Huang 2020; Brogaard, Denes, and Duchin 2020) or federal outlays (Berry and Fowler 2016).

procuring a good, and who has more control over the procurement process depends on the agency's structure (Krause and Zarit 2021). If agencies decide to procure a good, they choose whether to extend existing contracts or initiate new procurement processes. The agency can extend existing contracts on a fiscal-year basis. The contractor cannot overturn the agency's decision to end the contract.[2] Existing contracts can be broadly categorized into either indefinite delivery orders or definitive contracts. Indefinite delivery orders specify only a minimum or maximum quantity of supplies that should be purchased within a fixed period. On the other hand, definitive contracts are one-time agreements for the purchase of goods or services under specified terms and fixed quantities. Although definitive contracts specify fixed quantities, federal regulations allow the agency significant discretion to make contract modifications on amounts and deadlines (Brogaard, Denes, and Duchin 2020).

The Federal Acquisition Regulation (FAR) specifies that if agencies initiate a new procurement process, they decide whether to procure goods via a competitive or non-competitive process.[3] If agencies choose a non-competitive process, they choose a specific contractor and submit documents justifying why the contract should be given to that contractor. The documents are approved by higher-level officials within the agency and can be justified as "only one responsible source and no other supplies or services will satisfy agency requirements" based on the FAR. If agencies choose a competitive procedure, they announce a public invitation for bids on the government website (`http://sam.gov`) and interested firms submit their bids during the solicitation period. Procurement officers then choose the winner among bidders. These new contracts typically last for one year and can be extended afterward on a fiscal-year basis.

While senior officials' procurement decisions are constrained by the president, they are also affected by a Congress that has the ability to incentivize agencies to abandon existing contracts via informal means. One example of Congress's informal means is appropriations committee reports, which are legally non-binding policy directives accompanying appropriations laws. In these

2. See, *Aspen Helicopters, Inc. v. Department of Commerce*, GSBCA No. 13258, 99-2 BCA ¶30, 581 (1999).
3. See the FAR Part 6, `https://www.acquisition.gov/far/part-6`.

reports, Congress provides agencies with detailed instructions to implement some procurement plans but not others. For instance, the FY2021 report for energy and water-related agencies states that the agency spends no less than $10,000,000 to support new or previously awarded hydrogen demonstration projects and $15,000,000 for Advanced Reactor Concepts Industry Awards.[4] Another FY2021 report for the Department of Homeland Security states that Congress prohibits the obligation of funds until the agency submits detailed expenditure plans for funds made available for "US Customs and Border Protection–Procurement, Construction, and Improvements."[5]

Another example of Congress's informal means is congressional hearings and oversight, which can be used to punish agencies for their procurement decisions. A recent example occurred in 2020 when the Democratic-led House committee held an oversight on ventilator contracts that the Trump administration previously negotiated during the COVID-19 outbreak with Philips, a company that disproportionately made political donations to the Republican Party. The investigation discovered that the Trump administration did not negotiate a lower price with Philips, wasting more than $500 million (Feuer 2020). After the publicized investigation, the department of Health and Human Services terminated the contract. This story illustrates how congressional oversight and hearings can impose substantial costs on government officials by increasing agency workloads and putting individual officials under public criticism. The cost of congressional sanctions can be much higher since agencies under public criticism might find it more difficult to obtain cooperation from other agencies or outside groups to perform their jobs.

If senior officials in agencies anticipate these costs to be substantially high, they might have incentives to adjust their procurement decisions in anticipation of what Congress will want and thereby avoid hearings and the costs of starting a new contract process. Career bureaucrats might worry that a new congressional majority in the future would increase their workloads and hurt their reputations and prospective career advancement within agencies. Likewise, political appointees might be concerned about increased workloads and future career opportunities outside the gov-

4. See, Energy and Water Development and Related Agencies Appropriations Bill, 2022, Pub. L. No. 117-98, p.134 (2021).

5. See, Department of Homeland Security Appropriations Bill, 2022, Pub. L. No. 117-87 (2021).

ernment. Political appointees would additionally care about being unable to give benefits to the president's connected firms due to a change in congressional majority.

The above account, although anecdotal, suggests that Congress controlled by the opposition party has particular interests in monitoring contracts awarded to firms politically connected to the president due to their suspicion that those contracts will be of lower quality. If oversight reveals that these contracts are actually of lower quality, this creates pressure for senior officials within the agency. Such congressional constraints would exist in any industry where there are a substantial number of firms politically connected to the president that compete for government procurement contracts. However, the extent of congressional constraints could vary depending on the willingness of Congress to monitor and constrain agencies' actions. For example, agency officials might not take congressional constraints seriously if Congress is ideologically aligned with them, thus less willing to conduct oversight (McGrath 2013).

3 Model

To fix ideas, I present a model of how federal agencies make procurement decisions in response to the possibility of future electoral turnover. The model has two periods $t = 1, 2$. I will suppress the time subscript if it is redundant. Players are a firm connected to the president (F), an agency (B) and a Congress (C). Substantively, the agency represents a group of high-ranking government officials comprising career bureaucrats and political appointees who have a considerable influence on procurement processes. Congress can be of two types: one connected to the president ("aligned Congress") or one connected to the opposition party ("opposition Congress"). If it is an aligned Congress, this is equivalent to having unified government. Likewise, an opposition Congress implies divided government. Since this paper focuses on how federal agencies under unified government make procurement decisions in the expectation of future congressional turnover, Congress is aligned in period 1. At the beginning of period 2, an election takes place and the opposition wins Congress with probability ϕ.

There is a single good to be purchased by the agency in each period. The extent to which the agency/aligned Congress and opposition Congress value the good is denoted respectively by v_B and v_O. For instance, v_B represents how much the president and his party value procuring a military weapon for national security. At the beginning of each period, there is a status quo contract that the agency can choose to buy the good; the status quo contract has either market price $\theta_M > 0$ or the connected firm's price $\theta_F > 0$. The market price represents the price of the good that is determined by the competitive market excluding the firm F. θ_F represents how inefficient the connected firm is at producing the good and is common knowledge. Hence, the difference between θ_F and θ_M represents the relative inefficiency of the connected firm.[6]

Each period begins with the agency choosing whether to procure the good or not. If the good is not procured, everyone receives a payoff of 0 in that period. If the agency chooses to procure the good, it then decides whether to choose the status quo, propose a new non-competitive contract to the connected firm F, or begin a new competitive procedure. Choosing a new contract incurs the administrative cost $\kappa \in (0, 1]$ on the agency.[7]

To focus on the political incentives created by the threat of congressional turnover, my model abstracts away from the agency problem between the president and the agency, and assumes that the president constrains the agency's procurement options. Since the president cares mostly about his connected firm receiving the procurement contract, the agency cannot choose to provide a new non-competitive contract to other non-connected firms that can offer the market price θ_M.[8] However, the agency has an option to maintain the status quo contract with the market price since

6. By making the prices common knowledge and fixed, I assume that firms' capacity to produce goods is stable in the short term and does not change much due to temporal circumstances. This assumption is supported by the fact that most federal procurement concerns buying manufactured goods that can also be sold in private markets. For example, government officials might have favorable expectations about the prices of printers sold by HP. The main results are similar even if I incorporate uncertainties in firms' production costs in the model. Suppose that θ_M is drawn from a distribution with a specified mean and variance. In this case, the agency considers $E[\theta_M]$ instead of θ_M when choosing whether to go through a new competitive contracting process or not. Such a change does not alter the comparative statics of my model.

7. For simplicity, I do not differentiate the cost of starting a new non-competitive or competitive contract. My model predictions do not change even if I assume that costs are different.

8. If such a constraint does not exist, the agency might choose between giving a non-competitive contract to the president's connected firm or non-connected firm. In this case, we would seldom observe a change in provision of competitive contracts in response to congressional turnover probabilities.

the president would allow them to do so given the cost of starting a new procurement process.

Here, I black box the competitive procedure, but retain one crucial aspect of competition: In expectation, competition drives down cost. I model this by assuming that if the agency chooses a competitive contract, the minimum of θ_M and θ_F is chosen.

After the procurement outcome is made, Congress observes the cost of the contract and decides whether to approve the outcome or not. If Congress does not approve it, everyone receives 0 in that period. If Congress approves it, the agency pays the price to the firm that receives the contract and players receive a payoff for that period.

The sequence of the model is as follows:

1. The agency decides whether to procure the good or not. If it decides to procure the good, it chooses between the status quo, a new non-competitive contract, and a new competitive contract.

2. Congress chooses whether to approve the procurement outcome or not. If Congress approves, the agency pays the firm that receives the contract.

3. At the beginning of period 2, an election takes place. Steps 1-2 are repeated in period 2.

The agency's and aligned Congress's per-period payoffs consider both the procurement efficiency and the connected firm receiving the contract. The agency and aligned Congress assign $\alpha \in [0,1)$ to their utility of making F receive the contract. α represents the extent to which the agency is politicized and is controlled by the president. In the agency with higher α, political appointees are more likely to be influential in decision-making than career bureaucrats, and, therefore, their incentives are more likely to be reflected in the agency's decision-making. The per-period payoff of the agency and aligned Congress is

$$U_B = \begin{cases} \alpha + v_B - \theta_F - \kappa \cdot \mathbb{1}_{\{new\}} & \text{if contract has } \theta_F \\ v_B - \theta_M - \kappa \cdot \mathbb{1}_{\{new\}} & \text{if contract has } \theta_M \\ 0 & \text{if Congress disapproves} \end{cases}$$

where $\mathbb{1}_{\{new\}}$ is an indicator function that is 1 if the agency chooses a new contract, otherwise 0. For simplicity, I assume $v_B > \max\{\theta_M + \kappa - \alpha, \theta_F + \kappa\}$ and $v_O \geq \theta_M$. Doing so excludes uninteresting cases where the agency does not procure the good at all, or the opposition Congress does not approve the contract from the rest of the market that could compete with the connected firm. The agency's utility of making F receive the contract captures a setting in which agencies provide particularistic benefits to specific firms or constituents hired by the firms. The opposition Congress's payoff only concerns the difference between v_O and the procurement contract price.[9]

4 Results

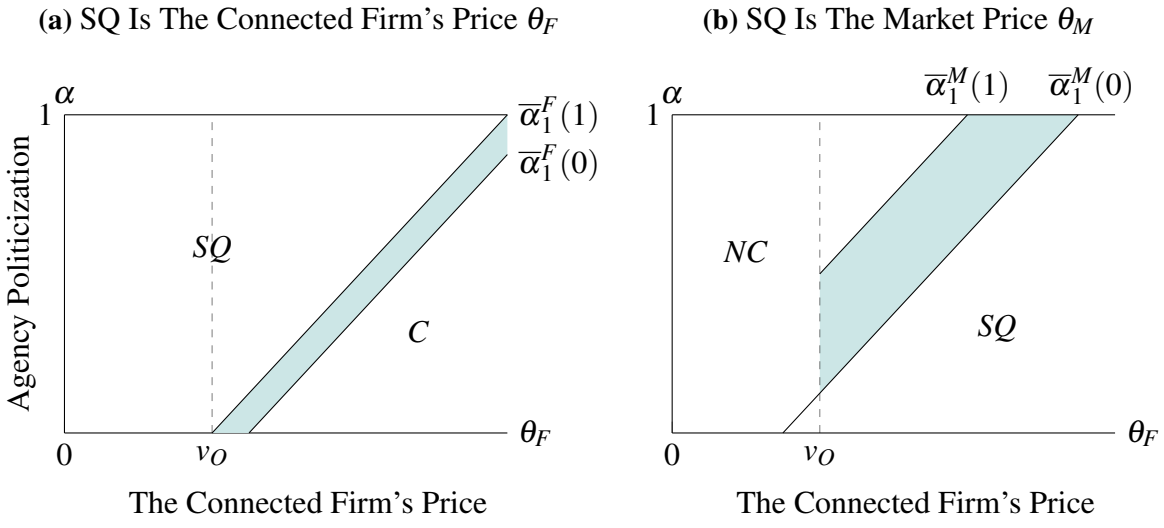
The equilibrium solution concept is a subgame perfect Nash equilibrium, which I solve via backward induction. The proofs and equilibrium of the game are fully described in Appendix A. Proposition 1 summarizes the period-1 outcome. Simply put, the agency in period 1 makes the decision based on electoral turnover probability ϕ and the continuation value of that decision, which depends on which type of Congress takes control in period 2. The results suggest that the agency in period 1 is more likely to increase competitive contracts as congressional turnover becomes more likely, but this is conditional on θ_F being greater than v_O so that the connected firm is more inefficient than other firms in the market. This is because the opposition Congress would not approve the contract won by the inefficient and connected firm. This decreases the agency's long-term payoff of providing a contract to the connected firm in period 1, leading it to provide a competitive contract instead.

9. For simplicity, the model does not assume the existence of the firm connected to the opposition Congress, but that can be easily incorporated into the model.

Proposition 1. *In period 1, let $\overline{\alpha}_1^F(\phi)$ be the value of α for which the agency is indifferent between the status quo with connected firm's price θ_F and initiating the competitive procedure, and let $\overline{\alpha}_1^M(\phi)$ be the one between a new non-competitive contract and the status quo with market price θ_M. Both $\overline{\alpha}_1^F(\phi)$ and $\overline{\alpha}_1^M(\phi)$ increase in the probability of congressional turnover ϕ if and only if $\theta_F > v_O$. Otherwise, they are independent of ϕ.*

Figure 1 displays this intuition graphically. The shaded area in Figure 1 (a) shows that as the electoral turnover probability ϕ increases from 0 to 1, the agency's likelihood of providing a new competitive contract increases if the status quo is the connected firm's price. The shaded area in Figure 1 (b) shows that the agency's likelihood of providing a new non-competitive contract decreases if the status quo is the market price.

Figure 1: The Period-1 Outcome. $\kappa = 0.25$ and $v_O = \theta_M = 0.5$. $\overline{\alpha}_1^F(\phi)$ and $\overline{\alpha}_1^M(\phi)$ denote cutoffs of α given electoral turnover probability ϕ and the status quo price. *SQ* denotes the status quo, *NC* a new non-competitive contract, and *C* a new competitive contract.



By assumption, my model excludes cases where v_B or v_O is sufficiently low that $v_B \leq \max\{\theta_M + \kappa - \alpha, \theta_F + \kappa\}$ or $v_O \leq \theta_M$. In both cases, the result of my model is that the agency does not change its procurement decisions in response to future congressional turnover probabilities ϕ. This is because, in the former case where v_B is sufficiently low, the agency does not choose any contract in each period. In the latter case of $v_O < \theta_M$, there are two cases to consider. First, if $\theta_F < v_O$, the

agency in period 1 always chooses the contract with θ_F regardless of ϕ, as depicted in Figure 1. Second, if $v_O < \theta_F$, the agency in period 1 does not change its procurement decisions in response to ϕ since the opposition Congress rejects whichever contract is chosen by the agency.

5 Empirical Hypotheses and Data

Below I present several hypotheses from Proposition 1 that can be empirically tested with the available data. Hypothesis *H1* encapsulates the central theoretical prediction. Hypothesis *H2* concerns heterogeneous effects of electoral turnover probabilities.

H1: As the probability of congressional turnover increases, federal agencies are more likely to choose a competitive procedure, conditional on contracts being made.

H2: Agencies' responsiveness to congressional turnover probabilities is higher in industries where (a) there is a high proportion of the president's connected firms competing for procurement and (b) these connected firms are more inefficient than other competing firms.

While *H2*(b) is the model's prediction in Proposition 1, *H2*(a) concerns the situation where the model setup is more likely to be applied given the data. Given that my model examines whether agencies choose to provide contracts to the president's connected firms, agencies would be less responsive to electoral turnover probabilities in industries where there are few connected firms to receive contracts in the first place.[10]

My theoretical framework suggests that as the electoral turnover probability increases, agencies

10. Alternatively, the proportion of connected firms in industries can be parameterized in the model as the probability of connected firms being chosen to compete with the status quo price if the appointee chooses a competitive procedure. However, the revised model generates a prediction that may be opposite to *H2*(a). Therefore, if the revised model better represents the procurement process, we might be less likely to observe a shift in agencies' procurement decisions in anticipation of electoral turnover.

make inefficient firms connected to the president participate as bidders for competitive contracts instead of providing them with non-competitive contracts. I cannot directly test such a claim on bid participation since the contract data does not provide the list of bidders for competitive contracts. While the contract data has information about the contract's winner, using only contracts won by the president's connected firms to examine the effect of electoral turnover probabilities would generate post-treatment bias by censoring competitive contracts that they lost. Nonetheless, with hypothesis *H2*, I can empirically test heterogeneous effects of electoral turnover probabilities on the likelihood of competitive bidding, conditional on contracts being awarded, by the level of firms' political connections and inefficiency at the industry level.

My theoretical framework also suggests that the shift in the agency's behavior in response to future congressional turnover probabilities is prominent in industries where v_B and v_O are sufficiently high, meaning that the president and Congress highly value the goods being procured. An example of such a good is ventilators during the COVID-19 outbreak. Due to the difficulty of systematically measuring v_B and v_O across industries, I cannot distinguish which contracts are from industries with high levels of v_B and v_O. Therefore, my data might include contracts in industries with low levels of v_B or v_O, which would lead my empirical results to underestimate the true effect.

Given that the federal contract data is fully available from the year 2003 onward, I use the federal procurement contract data covering the 109th Congress (2005-2006), 111th Congress (2009-2010), and 115th Congress (2017-2018) to test my hypotheses. These are periods of unified government in the run-up to the midterm election. I obtained the data from the Federal Procurement Data System (www.usaspending.gov). It is important to note that there was also divided government in the run-up to the midterm election during the 113th Congress (2013-2014). I use this instance as a placebo test of my argument. Since the president generally loses seats in the midterm, the agency under the 113th Congress was expecting divided government. In this case, my theory predicts that the agency does not change its procurement decision in response to future congressional turnover probabilities since it already has the opposition Congress in power to constrain its actions. Note that even if the agency under divided government expects a transition to unified government,

its procurement decision would still be unresponsive to future congressional turnover due to the opposition Congress obstructing the agency from giving favorable contracts to inefficient firms connected to the president before the transition occurs.

I focus on newly signed contracts during the period of study. Following the existing literature, I focus on contracts with dollar amounts above the simplified acquisition threshold since procurement laws are less strict under the threshold (FAR 13.003).[11]

5.1 Changes in Perceived Probability of Congressional Turnover

I use the Iowa Electronic Markets (IEM) data to tap into the public's perceived probability of the incumbent party winning or losing the upcoming midterm elections. These are "winner-take-all" markets where payoffs go to contracts on the winner of elections, and scholars consider the prices of these contracts to be estimates of the electoral turnover probabilities (Wolfers and Zitzewitz 2006). Similar to sophisticated investors in prediction markets, senior officials in federal agencies are likely to gather information on events that can affect future electoral turnover since the fate of their policies hinges on upcoming electoral outcomes.

While there are other election prediction markets, IEM has the most comprehensive data spanning many years with open access.[12] For each date when the IEM data are available, I estimate the probability of congressional turnover for the 2006, 2010, and 2018 midterm elections with the price of contracts that predicts the loss of the incumbent president's party at the given date. Figure 2 shows estimated daily congressional turnover probabilities for the 2006 House, 2010 House, and 2018 Senate elections until election day. I only consider either House or Senate elections for each electoral cycle, given that for each of those cycles, only one chamber was seriously contested. By doing so, I leverage uncertainty regarding the extent of divided government. For example, in the

11. The threshold for simple acquisitions in the FAR based on 'base and all options value' was $100,000 before October 1, 2010, and $150,000 after that.

12. PredictIt, which was launched in November 2014 by Victoria University of Wellington, also shares prediction market data with researchers. In Figure C1 in the Appendix, I compare IEM and PredictIt data for the 2018 midterm elections. Moreover, I show in Table C1 and C2 in the Appendix that my results remain the same even if I use PredictIt data instead of IEM to calculate congressional turnover probabilities for the year 2018.

2006 and 2018 midterm election seasons, it was already certain that one chamber was going to be under the opposition party's control. Therefore, agencies faced uncertainty over whether one or both chambers would be under opposition control in the upcoming election.

If investors make their decisions based on the available information, outbreaks of unanticipated incidents, such as wars or lower-than-expected economic recovery, may lead to drastic changes in prediction market prices. While I claim that unanticipated events affect agencies' procurement decisions through changes in electoral turnover probabilities, these events also might directly affect procurement decisions via changing industry conditions. However, even if such a direct effect exists, we would have no reason to expect that heterogeneity in that effect would match that anticipated in *H2*.

I match the congressional turnover probabilities of each date to procurement contracts data based on the date on which contracts were signed. Missing data between two dates were imputed using the average of the probabilities of the two adjacent dates.

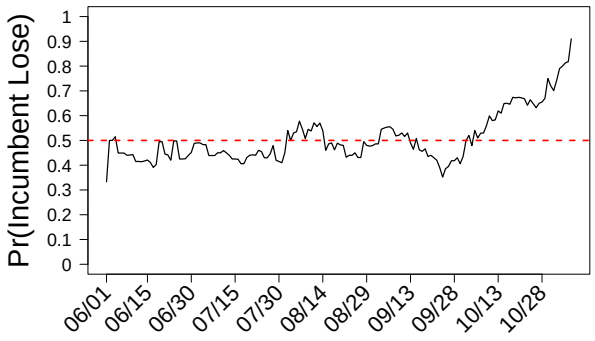
The advantage of using election prediction prices is that we can examine how short-term changes in perceived electoral turnover affect federal agencies' decisions on procurement contracts. If federal agencies' procurement decisions significantly change within a short period in response to electoral turnover probabilities, we can interpret that as agencies' deliberate deviation from or reversion to otherwise optimal procurement procedures based on industry market situations; the purpose of the deviation is to provide a political favor to the president's connected firms. A caveat is that changes in election prices might be correlated with other time-varying events. In a later section, I show that this concern is not warranted.

5.2 Identifying Firms' Political Connections Across Industries

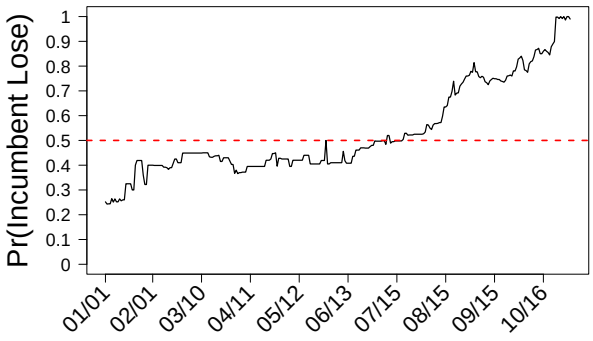
To identify how many politically active firms compete for federal procurement in which industries and period, I first define the scope of industries. Based on the description of goods and services provided by the contract, I define "product or service code (PSC)" as industries. For example, in

Figure 2: Election Price Markets for the 2006, 2010, and 2018 Elections

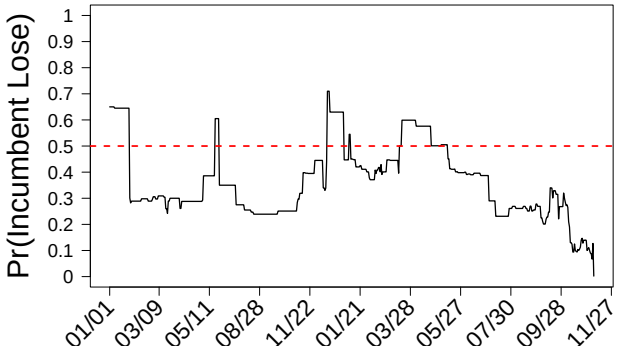
(a) 2006 House Election



(b) 2010 House Election



(c) 2018 Senate Election



2018, there were 2226 unique numbers of PSC codes, such as "Fruits and Vegetables" and "Drugs and Biologicals."[13]

Next, I collect the data on campaign donations for the 2004, 2008, and 2016 presidential and congressional elections, which were held prior to unified government. By using firms' donation patterns as a measure of firms' connectedness, my work relates to the existing literature that suggests that firms donate to buy favors from politicians (e.g., Grossman and Helpman 1994). According to this view, receiving a procurement contract from federal agencies might not be correlated with the extent to which firms can be good at providing goods and services, and this might be detrimental to government efficiency. While I acknowledge that firms can make donations for reasons

13. PSC codes are used by federal agencies, whereas NAICs are self-reported industry classifications used in private-sector markets. PSC codes are more granular than NAICS codes. Many procurement contracts have missing information regarding NAICs, whereas very few have missing information regarding PSC codes.

other than buying favors, such as signaling policy-relevant information, if my measure effectively captures exchange-based giving by firms, empirical results would support my hypothesis *H2* on heterogeneous effects.

Firms and trade associations are labeled as politically active firms at the beginning of unified government if they made campaign donations in that election. If politically active firms contributed more than 60% of their total campaign money to the president's party in a given election, I label them as the president's connected firms.[14] Identifying political connections based on campaign contributions is consistent with empirical findings that the president engages more with interest groups that contributed to his party (Miller, forthcoming).

Last, for each industry in a given unified government, I count how many politically active firms compete for procurement contracts at the beginning of unified government. Firms are assumed to be competing for procurement in a given industry$\times$unified government if these firms won at least one procurement contract in that industry during the five years prior to the beginning of unified government. For instance, if a firm received at least one contract in a given industry during the period 2000-2004, the firm is assumed to have competed for procurement at the beginning of the 109th Congress (2005-2006). I chose five years as the threshold given that it is long enough to identify firms interested in competing for federal procurement.

I construct a variable "proportion of connected firms," which calculates the proportion of the president's connected firms among all politically active firms in a given industry at the beginning of unified government.

14. If instead I use 50% as the threshold, I yield similar results. Table E4 in the Appendix shows the results. As additional robustness checks, I use thresholds 70%, 80%, and 90% and report the results in Tables E5, E6, and E7 in the Appendix. What constitutes the correct threshold to measure firms' connectedness is an empirical question, and these additional robustness checks should shed light on why certain thresholds can be better measures than others. The results show that heterogeneous effects disappear or become weaker if I use thresholds 70%, 80%, and 90%. This might be due to measurement errors of having smaller numbers of firms labeled as president-connected as the threshold goes up. It might also be due to the firms' attributes that each threshold captures. While it is beyond the scope of this paper to fully examine this issue, one plausible explanation is that thresholds above 70% might mostly capture firms whose ideologies strongly align with that of the president's party. Since these ideology-driven firms are more likely to donate to the party regardless of the benefits they receive, having these firms would generate errors in my measure of firms' connectedness and thus make interaction effects closer to zero. On the other hand, the 50% and 60% thresholds might be capturing firms that want to hedge the quid pro quo relationship with the president's party and opposition party by giving just slightly more to the incumbent president's party.

5.3 Estimating the Relative Efficiency of the President's Connected Firms

To estimate the level of firms' efficiency in producing goods and services, I use data from Compustat to estimate firm×year total factor productivity ('efficiency score') using the approach of Ackerberg, Caves, and Frazer (2015).[15] If the firm's efficiency score is high in a given year, this means that the firm can produce more outputs with the same amount of labor and capital inputs.[16]

Based on the firm×year-level efficiency data, I calculate the three-year average efficiency scores of politically active firms at the beginning of unified government. For instance, a firm's three-year average efficiency score for the 109th Congress is the average of the firm's efficiency score in the years 2002, 2003, and 2004. Using firms' three-year average efficiency scores, I calculate the average efficiency scores of the president's connected firms for each industry at the beginning of unified government. I also calculate the average efficiency scores of politically active firms that are not connected to the president's party. I use the latter group of firms as a reference group to determine whether the president's connected firms are relatively more inefficient than other competing firms in a given industry. I do not use firms that are not politically active as a reference group since there are systemic differences between politically active and inactive firms: Politically active firms are usually larger and, therefore, have higher efficiency scores.

I construct a variable "connected firms' efficiency" at the industry×unified government level by subtracting the average efficiency scores of politically active firms not connected to the president from the average efficiency scores of the president's connected firms. In Table E14 in the Ap-

15. According to this approach, firms produce a good using a Cobb-Douglas technology, $y_{jt} = \beta_0 + \sum_k \beta_k x_{jt}^k + \omega_{jt} + \eta_{jt}$, where y_{jt} denotes the observed log of output (value added or gross revenue) and x_{jt}^k denotes the observed log k input for firm j at period t. Unobservables are firms' total factor productivity ω_{jt} and a residual η_{jt}. The objective is to estimate unobservables ω_{jt} based on observable inputs and outputs, and this requires the estimation of coefficients β_k. While there are several approaches to estimate total factor productivity, the most recent estimation procedure proposed by Ackerberg, Caves, and Frazer (2015) yields more consistent estimates of β_k in terms of labor inputs under various assumptions on when firms make input decisions or when shocks to inputs occur.

16. Compustat data does not have information for all firms, and there is no available information for trade associations. Information on only about 75% of firms in my sample is available on Compustat. Since Compustat is limited to publicly traded firms, firms without efficiency scores are more likely to be smaller in size and less productive. Therefore, missing data in efficiency scores would underestimate the variation in the relative efficiency of the president's connected firms, and thus underestimate heterogeneous effects of future congressional turnover probabilities.

pendix, I show that results are similar if I construct the variable *connected firms' efficiency* using the median efficiency scores of the two groups of firms.

6 Results

6.1 Congressional Turnover Induces Competition

The regression model (1) tests hypothesis *H1* on whether an increase in the probability of electoral turnover impacts federal agencies' likelihood of providing competitive procurement contracts:

$$Competition_{jibd} = \alpha_i + \delta_b + \gamma_t + \beta * Pr\widehat{(ElectoralTurnover)}_d + X_{jibd} \tag{1}$$

where j is contract, i is industry, b is sub-agencies that procure the good, c is Congress, t is year-month, and d is date. For agencies, I focus on sub-agencies that award procurement contracts based on the information on "awarding sub-agency code" in the contract data. I include industry, agencies, and year-month fixed effects to control for time-invariant industry and agency characteristics and temporal shocks.[17] $Competition_{jibd}$ is a binary indicator that is 1 if the contract j that was signed on date d underwent the competitive procedure; otherwise, 0.[18] I expect β to be positive. While I focus on the linear relationship between the electoral turnover and agencies' engagement in competitive contracting, I explore a non-linear relationship in Appendix I.

I focus on whether contracts have gone through the competitive procedure, but not on whether contracts actually had more than one bidder. About 31% of competitive contracts in my data have only one bidder. Although these contracts do not seem competitive outcome-wise, competition for lower costs did occur for these contracts. Firms that want to participate in competition for contracts

17. I do not include procurement ID fixed effects in the main regression model because one firm can own multiple procurement IDs. Thus, including ID fixed effects increases the robustness of my results but at the expense of adding too many fixed effects and making estimates much smaller.

18. Based on the information from "extent competed" in the contract data, this includes full and open competition, full and open competition after exclusion of sources, follow on to competed action, and competitive delivery order.

estimate their production costs, and if they discover that their production cost is too high that their expected payoff from participating in competition does not outweigh the cost of preparing the bid proposal, they may decide not to submit their bids (Samuelson 1985). In this case, a bidder who participated in competitive contracts has relatively lower production costs compared to its competitors and decided to submit its bid.[19]

I examine how the election turnover probability on date d affects the types of contracts signed on date d. A caveat for this approach is that the date when federal agencies sign a contract with a contractor ("signature date") does not coincide with the date when federal agencies propose whether to undergo a competitive or non-competitive procedure to choose a contractor ("solicitation date"). In fact, the solicitation date precedes the signature date. If federal agencies quickly award most contracts after proposing the procurement procedure, the solicitation date and signature date do not differ much and thus there is no need to lag the independent variable. In Appendix D, I discuss this issue in detail.

As controls, I add the variable of the fiscal year cycle, which is 0 at the beginning of the fiscal year (October 1st) and 364 at the end of the fiscal year (September 30th). Many agencies rush to spend their expiring budget at the end of the fiscal year (Liebman and Mahoney 2017), and this may lead to an increase in non-competitive procurement contracts. The list of other control variables is in Appendix B.

Column (1) and (2) in Table 1 show the results for hypothesis *H1*. Full results including control variables are reported in Appendix J. Column (2) indicates that if the electoral turnover probability increases by one standard deviation (0.22), the likelihood of federal agencies' provision of competitive procurement contracts increases by $15 * 0.22 = 2.9$ percentage points. This implies a $3.1/0.72 = 4.02\%$ increase from the baseline level of the likelihood of competitive contracts (0.73) where the electoral turnover probability is 0.[20] It is important to note that the effect is not driven by

19. As the probability of future congressional turnover increases, there could be an increase in the number of contracts awarded competitively with a single bidder since some politically connected firms, anticipating constraints by the future opposition Congress, might decide not to participate in competitive bidding. Table E1 shows that this might be the case, although the effect is insignificant.

20. The baseline level is estimated from the pooled regression model of the competition indicator on electoral

agencies' actions taken after election day, since I focus only on contract data signed before election day. Last, column (4) shows the result of the placebo test by running the regression model (1) on the 113th Congress, using the contested prediction market for the 2014 Senate election to estimate future congressional turnover probabilities. The result suggests that the effect of congressional turnover probabilities under the 113th Congress is close to zero. I show in Table E2 that the result is similar if I run another placebo test on the data, including all four Congress sessions using an alternative model specification.

Table 1: Congressional Turnover Probability and the Provision of Competitive Procurement Contracts

	Main Sample: 109th, 111th, 115th Congress		Placebo Test: 113th Congress
	(1)	(2)	(3)
Electoral Turnover Probability	0.11***	0.13***	-0.01
	(0.03)	(0.03)	(0.02)
Control	N	Y	Y
Observations	490,063	403,915	114,525
Baseline Mean Outcome	0.74	0.72	0.72
Clusters	1,141	1,135	666
Adj R^2	0.20	0.22	0.33

Notes: Standard errors clustered by date. * p<0.10, ** p<0.05, *** p<0.01.

One concern is that there could be other time-varying events that correlate with changes in electoral turnover probabilities and affect agencies' procurement decisions. First, by including the fiscal year trend in the model, I rule out the possibility that electoral turnover probabilities have the same time trend as the fiscal year cycle. Second, changes in electoral turnover probabilities may coincide with lame-duck periods. The incumbent president during this period may put less effort into monitoring agencies' behavior or rush to make his connected firms receive more procurement contracts. Either way, lame-duck incentives are more likely to make agencies provide non-competitive contracts at the end of unified government. Such lame-duck effects do not coincide with the trend of electoral turnover probabilities in the 2006 and 2010 House elections (Figure

turnover probability.

2a and 2b): Given that the president's party was expected to lose in these elections, this would have led agencies to increase competitive procurement contracts near the end of years 2006 and 2010. In Figure F1, I show that after the midterm election, there is no drastic increase in (1) the total number of non-competitive contracts and (2) the number of non-competitive contracts given to the president's connected firms at the end of the election years, although the number of contracts increases as the end of the fiscal year approaches.

As an additional robustness check, I demonstrate in Table E3 and Figure E1 that the effect of congressional turnover probabilities becomes stronger as election day approaches. This result is intuitive since officials would become more certain about the level of electoral turnover probabilities closer to the election. Last, I examine whether the effect of congressional turnover probabilities differs across administrations in Appendix F.

6.2 Heterogeneous Effects by Industry Condition and Efficiency

To test hypothesis *H2* on heterogeneous effects, I interact congressional turnover probabilities with variables *proportion of connected firms* and *connected firms' efficiency*. Table J3 in the Appendix shows the full results of the triple interaction model. Table 2 uses the results of the interaction model to calculate the effect of congressional turnover probabilities in four types of industries, categorized based on the 10th and 90th percentile of *proportion of connected firms* and *connected firms' efficiency*, respectively. Results support my theoretical expectation: In industries where the proportion of the president's connected firms is high and where these firms are relatively inefficient, the likelihood of providing competitive contracts increases by about $25 * 0.22 = 5.5$ percentage points if the electoral turnover probability increases by one standard deviation. This indicates a $5.5/0.69 = 7.97\%$ increase from the baseline level of the likelihood of competitive contracts (0.69) where the electoral turnover probability is 0, *proportion of connected firms* is 0.85, and *connected firms' efficiency* is -0.17.[21]

21. The baseline level is estimated from the pooled regression model of the competition indicator on electoral turnover probability, *proportion of connected firms*, and *connected firms' efficiency*.

Table 2: Heterogeneous Effects of Congressional Turnover Probabilities

	Proportion of Connected Firms	
	10th Percentile (=0.15)	90th Percentile (=0.85)
Connected Firms' Efficiency at 10th Percentile (=−0.17)	0.00 (0.05)	0.25*** (0.05)
Connected Firms' Efficiency at 90th Percentile (= 0.19)	0.01 (0.05)	0.15*** (0.04)

Notes: Standard errors clustered by date. * p<0.10, ** p<0.05, *** p<0.01.

6.3 Robustness Checks and Alternative Explanations

While my findings support hypothesis *H1* that an increase in congressional turnover probabilities leads to an increase in competitive contracts, it does not establish greater efficiency by itself. In Appendix K, I explain two variables that can be used as a proxy for lower-cost contracts, which are the initial contract amounts and competitive contracts with fixed cost structures. According to Krause and Zarit (2021), federal procurement regulations prioritize fixed cost structures over variable cost structures since the former incurs little ex-post additional costs to the agency (FAR 16.202). Table K1 shows the results using these two alternative dependent variables and that competitive bidding yields lower-cost contracts and, therefore, an improvement in procurement efficiency.

A crucial assumption underlying my theoretical argument is that Congress can compel agencies to abandon their prior policy choices. However, in practice, there may be variations in Congress's willingness to monitor and constrain agencies' actions. The effect of congressional turnover probabilities would be stronger when agencies expect that the future opposition Congress has a greater willingness to force agencies to abandon existing contracts. In Appendix L, I explain how I use the data on agencies' ideological scores from Clinton and Lewis (2008) to measure the ideological divergence between the agency and the future opposition Congress. Table L1 shows the results that the effect of future congressional turnover probabilities is indeed stronger for agencies that are

ideologically opposite to the future opposition Congress.

One alternative explanation for my findings is that agencies strategically adjust the amount of these non-competitive contracts so that they are just below the simplified acquisition threshold. Agencies might do so to avoid monitoring by the future Congress since federal regulations give broader discretion to procurement officers for contracts below the threshold to reduce administrative costs. To see whether this explanation on contract bunching is driving my results, I include contracts with amounts $20,000 less than the simplified acquisition threshold to my sample, and run the same regression models.[22] Table E8 and E9 in the Appendix show that the effect of congressional turnover probabilities do not change, which suggests that there is no contract bunching below the threshold in response to electoral turnover probabilities. Another possibility is that agencies split non-competitive contracts awarded to the president's connected firms so that the amount of each of these split contracts are below the simplified acquisition threshold. Such a practice is implausible since it is strictly prohibited by federal regulations (FAR 13.003(c)(2)) and suspicion about split purchases frequently results in audit processes.[23] In Tables E10 and E11 in the Appendix, I run analyses on contracts with amounts below the simplified acquisition threshold, excluding set-aside contracts for small businesses. Results show that changes in congressional turnover probabilities do not lead to an increase in agencies' provision of non-competitive contracts below the threshold.

The next alternative explanation is that in response to an increased probability of congressional turnover, agencies provide more competitive contracts but ensure that the president's connected firms always win these contracts. Agencies can do so by creating administrative hurdles (e.g., solicitation periods, bid preparation costs) and allowing only connected firms to submit bids. Such a strategy would benefit the president and his connected firms without improving procurement efficiency. To show that my findings are explained by an increase in procurement efficiency but not by

22. $20,000 is an arbitrary threshold to capture contract bundling just below the threshold. I exclude set-aside contracts for small businesses below the threshold since federal regulations encourage set-aside contracts for small businesses with dollar amounts below the simplified acquisition threshold.

23. See, e.g., audits by the Department of Veterans Affair (https://www.va.gov/oig/pubs/VAOIG-15-05519-377.pdf).

this alternative explanation, I replicate Table 2 using two alternative measures of lower-cost contracts, which are the initial contract amount and contracts with the competitive procedure and fixed cost structures. I show in Table E12 and E13 in the Appendix that the results are similar to Table 2, which suggests that an increase in electoral turnover probabilities leads to higher procurement efficiency.

Next, there is an implicit assumption underlying my argument that the timing of procuring goods is not flexible. If the agency has discretion to change the timing when certain goods can be purchased, they might defer providing non-competitive contracts to the president's donors in response to an increase in congressional turnover probabilities to see what happens later. This account considers the extensive margin of procurement contracts and is observationally equivalent to my argument on the intensive margin ("What is the likelihood that agencies choose competitive procedures conditional on contracts being made?"). To the extent that there is no significant efficiency loss from agencies delaying the procurement of goods within a short time frame, this alternative account does not undermine the implications of my argument that the threat of electoral turnover enhances government efficiency: Agencies are not signing inefficient contracts that would degrade procurement efficiency and such inaction, from the perspective of citizens, could be better than procuring the good. In Appendix G, I show that the alternative account on the extensive margin is not driving my results.

My findings might also be explained by agencies pulling back from providing non-competitive contracts to firms not connected to the president until the political climate becomes more favorable after the congressional turnover. However, such an explanation is implausible since even after congressional turnover, the president still controls agencies who have the authority to initiate procurement contracts. As described in the model, agencies under presidential influence would have difficulties providing a new non-competitive contract to firms not connected to the president even after the congressional turnover. Moreover, if this explanation were to hold, the effect of electoral turnover probabilities should be larger in industries where there is a high proportion of firms not connected to the president.

My findings might also be driven by the president losing control over his political appointees as the probability of congressional turnover increases. Political appointees might think that the president would lack the capacity to punish them later under divided government, leading them to shirk their duties. However, the president still controls political appointments after congressional turnover and could replace appointees easily, bypassing the Senate confirmation process (Kinane 2021). I additionally check in Appendix H whether the ratio of political appointees within the sub-agencies changes in accordance with electoral turnover probabilities or decreases as the end of unified government approaches, and show that these are not the case.

Changes in future congressional turnover probabilities might also be correlated with vacancies of political appointees in top Senate-confirmed positions (PAS), which could affect agency performance (Piper and Lewis, forthcoming). In the context of federal contracting, these appointee vacancies could lead to less favoritism toward the president's connected firms. However, if this is the case, unified government would be more incentivized to fill PAS vacancies in response to an increase in future congressional turnover probabilities to avoid confrontation with the future Congress during the confirmation process. This suggests that if top appointee vacancies were a confounding variable, it is likely to generate a downward bias, which is counter to an increase in competitive contracting.

Last, in response to future congressional turnover, agencies might shift from engaging in regular procurement orders (e.g., buying pencils or cleaning services) to procuring other types of services and goods. However, my results rule out this explanation since I include agency and industry fixed effects in my model specification, exploiting the variation within goods and services that agencies procure.

7 Conclusion

Under what conditions does the possibility of divided government affect agencies' engagement in presidential favoritism and improve their performance? To address this question, I focus on policy

areas where Congress can use informal means to compel agencies to abandon their prior policy choices. In these policy areas, in response to an increase in future congressional turnover probabilities, agencies might alter their behavior to reflect the future opposition Congress's preferences, which might improve their performance.

I evaluate this intuition in the context of federal procurement, where politicized agencies under unified government may provide non-competitive, higher-cost contracts to firms politically connected to the president in the absence of any threat to their political dominance. Using data on over ten million federal contracts and exploiting daily price changes in election prediction markets, I find that as the probability of congressional turnover increases, agencies under unified government provide more lower-cost contracts through competitive bidding. Consistent with my theory, this shift in behavior is more prominent in industries where agencies expect that the future Congress would compel agencies to abandon contracts previously chosen by agencies: Where a high proportion of the president's connected firms compete for procurement and where these connected firms are relatively inefficient.

The case I examine in this paper concerns federal agencies' decision-making in response to future congressional turnover. However, agencies can also respond to future presidential turnover along with congressional turnover. Future presidential turnover would have a different effect on agency behavior in that it would affect the composition of high-ranking agency officials. This might make agency officials less forward-looking and less likely to make decisions in anticipation of future electoral outcomes. In addition, agencies anticipating presidential turnover must consider the efficiency of firms connected to the future administration, since the future administration will have incentives to award contracts non-competitively to their connected firms. If firms connected to the future administration are sufficiently inefficient, agencies before presidential turnover might engage more in competitive contracting to make the status quo a more attractive option for the future administration. This suggests that a model incorporating both presidential and congressional turnover would generate results more complicated than my model. Conducting a full analysis of such a model is beyond the scope of this paper, but should be addressed in future research.

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