

Empty Reasons?

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ABSTRACT

Norms of reason-giving lay at the foundation of our public institutions, plausibly disciplining officials where more conventional financial and electoral incentives do not apply. Yet do requirements for reason-giving induce public officials to pursue statutory objectives or behave in pro-social ways? Little observational evidence exists on this question. Here, I study a unique natural experiment in federal procurement, in which contracting officials were required to provide public reasons if they awarded certain contracts without competition, but only if the contract was valued above a statutory threshold. Using difference-in-differences and discontinuity designs, I find that the reason-giving requirement substantially increased the probability that contracting officials competed contracts and therefore complied with the principal statutory objective. Secondary results suggest the reasoning requirement reduced the volume of contracts awarded by agencies and changed the composition of firms receiving contracts. These findings speak to complex tradeoffs around public reasoning requirements and their distributional consequences.

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I. Introduction

Many of the conventional incentives that we believe discipline behavior do not apply with force in legal and bureaucratic settings. The private sector often attempts to use wages or the threat of termination to align employee with employer interests (e.g., Prendergast 1999). The public sector often attempts to use elections to align the incentives and interests of representatives with the public (Ferejohn 1986; Fearon 1999; Gersen and Berry 2009). By comparison, federal judges and many bureaucrats effectively cannot be fired. Nor are their salaries highly sensitive to performance. To a first approximation, the worst performing judge or bureaucrat by any metric is paid the same as the best performing judge or bureaucrat. Moreover, federal judges and bureaucrats do not face elections. The main devices that we use to discipline behavior elsewhere—threat of termination, wages, elections—in short do not play a central role in the lives of judges and bureaucrats.

Despite the effective absence of the conventional tools used to discipline behavior, many of the concerns about undesirable behavior that apply in other settings also apply in the legal and administrative settings. We worry about laziness, corruption, in-group favoritism, and an infinite variety of other anti-social behaviors in the legal and administrative settings (e.g., Rose-Ackerman 1986; Cross and Tiller 1997; Della Porta 2001; Gailmard and Patty 2007). This raises the question of how we manage these anti-social behaviors in the near-effective absence of incentives related to wages, termination, or elections.

This analysis examines an accountability device long-favored by legal theorists and some political theorists, but rarely subjected to empirical scrutiny: the disciplining effects of a requirement for public reason-giving. Legal scholars, for instance, argue that reason-giving is the constitutional root of administrative governance (Stack 2006), that it constrains public actions, calling it a “necessary condition for rationality” under the law (Schauer 1995), and constitutes a key form of accountability (Bernstein and Rodriguez 2021). Theorists

of deliberative democracy, similarly, prize how reason-giving may constrain actions to be relatively public regarding (Elster 1995; Cohen 1998; Sen 1999). Elster, for instance, refers to the “civilizing force of hypocrisy,” whereby we accommodate our preferences to those reasons that may be accepted by others (1995).¹ More generally, scholars point to at least three non-exclusive channels through which reason-giving may constrain action to be relatively pro-social: encouraging internal deliberation and the consideration factors other than narrow self-regard (e.g., Schauer 1995; Kahneman 2011; Lui and Li 2018); facilitating third-party review and the imposition of material sanctions (e.g., Shapiro 1992); and amplifying concerns about relational status and reputation (e.g., Tetlock 1985; Miceli and Cosgel 1992; Posner 1995).²

The bare fact that virtually all of our non-democratic institutions invest heavily in reason-giving is informative. Particularly at the higher levels, courts almost always provide opinions containing the rationale for their final decisions (Oldfather 2007; Popkin 2007), and when they do not it is often cause for controversy.³ The Administrative Procedure Act (APA) and common law doctrines that predate that act likewise place a high floor on the reason-giving expected of public officials (Mashaw 2001). Norms and requirements for reason-giving thus affect essentially all of our non-democratic institutions of any consequence. That ubiquity suggests the foundational nature of reason-giving. Yet it also makes reason-

¹Both legal scholars and political theorists, in addition, point to the effects of reason-giving and deliberation on how the public *receives* the actions in question (e.g., Rawls 2005; Short 2012; Lupia and Norton 2017), pointing to its legitimating effects. The social aspect of reason-giving further relates to its role as a device to coordinate beliefs and norms on issues of “law.” Reason-giving, that is, supports the detection of norm violation, as noted below, but also represents a device to articulate and broadcast norms. On this last point, see, for instance, Hadfield and Weingast (2012), Basu (2020).

²Particularly in this third sense, reason-giving may be seen as feeding into and informing professionalism as a device of social control in public institutions. On the role of professionalism, consider Miller and Whitford (2016). For a review of many of the seminal works in the psychology literature on accountability, which sees reputation and relational status as key to judgment and decision-making, see Lerner and Tetlock (1999).

³This is not to say that reason-giving is applied to every interstitial decision made by courts. Evidentiary rulings, for example, typically do not come with reasons; this might be a case where the costs of reason-giving exceed the benefits.

giving challenging to study observationally, as little useful variation exists in the requirements imposed on our legal institutions.

Indeed, I am not aware of any observational study that attempts to provide credible quantitative estimates of the effect of reason-giving on compliance with statutory objectives or other pro-social behaviors.⁴ Moreover, though the majority view among legal scholars and deliberative theorists may be that reason-giving is foundational, it is also easy to find those who doubt the efficacy of reasons. At least since the rise of legal realism roughly a century ago, a common view is that the reasons follow the decision rather than the reverse (e.g., Frank 1949). Under the stronger variants of this understanding, reason-giving is sufficiently plastic and self-deception sufficiently cheap that requiring a reason of a decision-maker generates little constraint on decision-making, which tends instead to be driven by ideological, emotional, or other considerations outside of a reasoned framework. Though not square with the present context, recent experiments in moral psychology lend some support to this idea (Haidt 2012; Mercier and Sperber 2017); similarly, political scientists studying voting patterns in the Supreme Court persuasively demonstrate the dominance of political affiliation in decision-making (Epstein and Knight 1998; Segal and Spaeth 2002).

This study examines a unique natural experiment in federal contracting in which some types of contracts were exposed to reason-giving requirements and others were not.⁵ Although the APA exempts federal contracts from the notice and reason-giving requirements that might otherwise apply to this agency action (5 U.S.C. §553(a)(2)), Congress has cre-

⁴To be sure, a number of laboratory experiments study reason-giving. The virtue of the laboratory is obvious in this setting, as it allows the researcher to generate variation in reason-giving requirements without the legal and ethical that effectively preclude a field experiment. The downside of the laboratory is also plain as it is impossible to fully dispel concerns of external validity. A wide range of thoughtful qualitative studies also consider forms of reason-giving, complementing this effort (e.g., Coates 2014; Deeks 2020).

⁵It is not uncommon for agencies to experience changes in their reasoning requirements, as imposed by statute, regulation, or court. For instance, the Department of Justice issued “streamlining” regulations in 2002 that allowed the Board of Immigration Appeals to issue summary affirmances, without providing substantial reasons for their decision. 67 Fed. Reg. 54,878 (Aug. 26, 2002). What distinguishes the natural experiment in the present analysis is that it allows for clean separation of treated and untreated agency actions, along with outcomes that may be readily compared over the cells of interest.

ated a reason-giving requirement in one important area: the awarding of “sole source” contracts. Since Congress passed the Competition in Contracting Act of 1984, for most types of contracts, if agencies wish to award contracts without full and open competition they must *publicly justify* that choice. Through this structure, Congress sought to save money and promote integrity in federal procurement (Manuel 2011). As the Senate report put it, “[c]ompetition maintains the integrity in the expenditure of public funds by ensuring that government contracts are awarded on the basis of merit rather than favoritism” (S. Rep. 98-50).

Until recently, though, this general reasoning requirement did not apply to contracts awarded under the Small Business Administration’s (SBA) 8(a) program, which is designed to foster small businesses owned by socially and economically disadvantaged individuals and groups. This program constitutes roughly two to three percent of all federal contracting dollars, or on the order of 17 billion dollars a year. This study centers on a recent revision to this arrangement. Apparently responding to concerns related to the growth of the 8(a) program and possible corruption (Moore et al 2012), Section 811 of the National Defense Authorization Act of 2010 (NDAA) removed this exception for 8(a) contracts worth more than \$20 million, but left it intact for 8(a) contracts under that threshold. The FAR Council’s implementing regulations that set the procedure for complying with that requirement went into effect on March 16, 2011.⁶ As a result, as of that date, officials could award large 8(a) contracts without competition only if they publicly justified the lack of competition; smaller 8(a) contracts, on the other hand, continued to sit in a pocket without public reasoning requirements, and they could be awarded non-competitively without explanation.

The requirements imposed by Section 811 thus provide an appealing natural experiment to study the role of reason-giving in a consequential area of public sector activity. The operative question is whether reason-giving affects the likelihood of awarding a contract

⁶76 Fed. Reg. 14,559 (Mar. 16, 2011).

without competition under the program.⁷ The way the requirement unfolded suggests two complementary research strategies for addressing this question. First, among 8(a) contracts, the reason-giving requirement only affected “large” contracts, and “small” contracts might therefore be used as a plausible control group in a difference-in-differences design. Second, similarly, among 8(a) contracts awarded after the reform, only those above the \$20 million threshold were required to justify a non-competitive process. This suggests a regression discontinuity design with the amount of the contract as the running variable. If the relevant assumptions hold, the contracts just below the threshold may effectively be compared to those just above the threshold to produce an estimate of the local effect of reason-giving on non-competitive contracting.

The results, in brief, from this study indicate that the reason-giving requirement substantially reduced the probability that a contract was awarded without competition. In preferred specifications, the reason-giving requirement decreased the probability of a sole source contract by between 35 and 50 percentage points, with the larger estimates deriving from the discontinuity strategy. Secondary results, however, suggest a complex set of tradeoffs around reason-giving. Consistent with concerns over agency ossification that focus on how procedures and reason-giving impede agency action (e.g., McGarity 1992; Coglianese 2002; O’Connell 2008; Yackee and Yackee 2012), I find that the reason-giving reform substantially reduced the number of large awards under the 8(a) program. Moreover, the reason-giving reform appears to have altered the composition of firms receiving awards. After the reform, firms with tribal connections were less likely to receive an award, and firms located in the DC-area were more likely to receive an award. One plausible interpretation of this pattern is that reason-giving requirements favor those with access to sophisticated “reasoning and procedure” professionals, such as lawyers working in the DC-area. This is consistent with

⁷Although the statute writ broadly has other objectives, such as encouraging minority small business development, the principal objective of the Section 811 reform was to increase competition in contracting. I comment further on this point of multiple objectives and the connection to reason-giving in the conclusion.

the notion that transparency-inducing reforms may unintentionally privilege insiders with access to specialized professional services (e.g., Wagner 2010).

The remainder of this article proceeds as follows. The next section discusses the role of reason-giving in our public institutions. I then discuss in detail the institutional setting for this empirical study, followed by a discussion of the data. Next, I present the empirical strategies of the paper and the results from those exercises. My conclusions follow.

II. Concepts, Institutional Domain, and Data

A. Reason-Giving in Public Institutions

Many tools exist to regulate the behavior of our agents. In the private sector, the most commonly employed tools are financial rewards and penalties. Our employers thus pay us more when we perform well and pay us less when we perform poorly. In the public sector, those financial incentives play little role. Most public actors receive relatively uniform salaries regardless of how well they perform. Instead, in the American setting at least, the most prominent way we discipline the behavior of public actors is through elections. For example, we elect some 500,000 local government officials (Berry and Gersen 2009), along with 535 Members of Congress, and a President and Vice-President. To the extent those officials adhere to the interests of their constituents, they largely do so because they face the possibility of losing their jobs through electoral defeat (e.g., Mayhew 1974).⁸

Yet officials in many parts of the public sector do not face the prospect of elections. The judiciary is the most obvious part of the public sector hived off from elections. Federal judges not only receive the same salary regardless of performance, they also effectively cannot be fired. The same is largely true of officials in the administrative state. Most officials working in

⁸Naturally, electoral incentives could well produce degenerate behavior as well. A large literature analyzes the conditions under which elections can induce politicians to take actions against the public interest (e.g., Maskin and Tirole 2004).

the bureaucracy receive relatively uniform salaries only loosely connected to performance and enjoy civil service protections that prevent them from being fired easily. Without elections and limited financial incentives, the question is—how do we condition the behavior of these public officials?

One distinctive feature of the both courts and the administrative state is that they are infused with norms and practices of reason-giving. Although courts do not provide reasons for every interstitial decision that they render, they tend to provide reasons for their final decisions (Oldfather 2007; Popkin 2007). When courts deviate from this practice observers take note. Considerable controversy, for instance, surrounds the Federal Circuit’s practice of affirming agency actions with summary affirmances, wherein the panel writes an opinion consisting of a single word, “affirm.”⁹ That practice, indeed, is attracting challenges before the Supreme Court.¹⁰ Much the same may be said of rulings on the Supreme Court’s so-called shadow docket, for which the Court offers abbreviated opinions or none at all.¹¹ Administrative bodies, likewise, almost always provide reasons for their actions (Mashaw 2001). Some actions and contexts require more extensive reasons, others less, but rarely is an agency permitted to render an important decision without providing reasons for the action.

A large body of scholarship theorizes why reason-giving holds importance on legal (e.g., Schauer 1995), philosophical (e.g., Gutmann and Thompson 2009), or social scientific grounds. Most relevant to this article, a body of research demonstrates that reason-giving induces people to behave in more other-regarding ways and to pay more attention to fiduciary-like responsibilities (e.g., Xiao 2017, Liu and Li 2019, Stiglitz 2020). For instance, Stiglitz (2020) finds that compelling people to explain their actions in a dictator-like game induces

⁹<https://www.ipwatchdog.com/2018/10/22/federal-circuit-rule-36-affirmances-ptab-appeals/id=102364/>

¹⁰See, for example, *Chestnut Hill Sound Inc. v. Apple, Inc.*, 744 Fed. Appx. 676 (Jul. 31, 2019), cert. denied.

¹¹<https://www.scotusblog.com/2020/10/symposium-shining-a-light-on-the-shadow-docket/>

them to give more money to their partner. These effects seem particularly strong if people expect someone to review the reasons they provide.

The positive effects of reason-giving likely operate through multiple channels.¹² Internally, a requirement for reason-giving seems to induce greater deliberation and reflection, such that people take account of their situational responsibilities and the interests of other parties (e.g., Schauer 1995; Kahneman 2011; Lui 2018). Externally, compelling an agent to provide reasons *enables* interactions between the agent and reviewing entities who might, in fact, attach some form of sanction (e.g., Shapiro 1992). This channel, indeed, is at the heart of the judicial hierarchy and the law that governs bureaucracies, wherein the reasons provided by agencies or lower courts represent the core of the record that appellate courts review (Stewart 1975; Williams 1975). Reason-giving thus facilitates interactions in a reasoning community that represent plausible substitutes for electoral or financial incentives. The internal and external channels likely amplify in settings with relational or reputational dimensions (e.g., Miceli and Cosgel 1992; Posner 1995, Lerner and Tetlock 1999).

In this view, reasons represent a currency of accountability in settings where financial or electoral incentives cannot apply. It is no surprise from this perspective that reason-giving is so central to our non-electoral public institutions. A requirement to provide reasons for one’s actions, in this view, is to a first approximation how we discipline the behavior of those for whom we otherwise have few disciplining tools available. Federal judges effectively cannot be fired, and they do not receive more money for good performance. But they must generally provide reasons for their decisions, those reasons become public and often undergo review, and the viability of their decisions tend to depend in substantial measure on the adequacy of the reasons they provide. Their relational statuses and professional reputations often condition on the quality of their reasoning. As one judge wrote, “[t]he heart of a judge’s

¹²Note that here I focus on the effects of reason-giving on the entity providing the reasons. Separately, reason-giving may have an effect on those on the other side of the transaction.

reputation and function rests with the use of the pen” (Lebovits 2008). Administrative agencies, another set of non-electoral public bodies, likewise trade heavily on competencies in reason-giving (Mashaw 2001).

Reason-giving is difficult to study, however, precisely because it is so common in these non-electoral institutions. Where these actors make consequential decisions, they tend to give reasons, and there is therefore little variation in reason-giving that might allow us to parse the effects of that practice. Where there is variation, it tends to be endogenous to the importance of the decisions, and the outcomes tend to be difficult to measure or compare across reason-giving conditions. Judges tend to provide reasons for final decisions, for instance, but not for interstitial decisions, such as evidentiary rulings. This makes for challenging terrain. Indeed, to my knowledge no observational study has attempted to estimate quantitatively the effect of reason-giving in the public sector on statutory compliance or pro-social behavior.

Despite the theoretical centrality of reason-giving to the constitution of our public bodies, therefore, there is little direct evidence speaking to the idea that reason-giving *should* be at the heart of our non-electoral institutions. Reason-giving, after all, is not costless. It consumes time and the resources of these institutions, and plausibly distracts officials pursuing the relevant statutory objectives. A significant strand of legal literature, for example, maintains that courts and the Congress have imposed too demanding of analytical and reasoning requirements on agencies, “ossifying” the administrative process (e.g., McGarity 1992). Moreover, realists of various stripes have long maintained that the reasons provided by public officials do not meaningfully constrain official behavior (Frank 1949). Likewise, some observers question how raising the reasoning and procedural bar may result in capture and other negative outcomes (Wagner 2010). If it is right that reason-giving imposes costs and provides few benefits, it is difficult to justify the widespread application of reason-giving requirements in our non-electoral public institutions. The main objective of this article is to provide observational evidence on the question of whether a requirement for reason-giving

induces conformity with statutory objectives.

B. Institutional Domain: Public Reasoning in Federal Contracting

Although administrative bodies must generally provide reasons for their actions, the APA carves out certain types of activities from those requirements. Of central interest, the APA sets aside contracts from the relevant requirements, 5 U.S.C. §553(a)(2). Unlike many domains of consequential public sector action, government contracting represents an area without a generically high level of reasoning requirements. This introduces the possibility of variation in reasoning that might be exploited.

Against that helpfully blank procedural canvas, Congress has imposed a variety of requirements on contracting agencies. The most important statute for the present analysis is the Competitiveness in Contracting Act of 1984 (CICA). Responding to concerns about favoritism and the integrity of government contracting, CICA encourages agencies to employ competitive bidding processes when awarding contracts. In fact, for most contracts, CICA establishes a presumptive requirement that agencies compete their contracts. The Act also permits agencies to overcome this presumption through a “justification and approval” process. The Act, that is, provides a set of criteria under which agencies need not complete contracts—a statutory standard for non-competitive contracts—and allows agencies to avoid competitive bidding if they can justify that choice on the basis of the criteria.¹³ Those justifications must be approved by a third party, with the seniority of that party increasing with the amount of the award in question.¹⁴ The justifications, moreover, must be published, currently to the website “<https://.sam.gov/>.” Figure 1 shows the first page of a recent justification published by the General Services Administration; the total length of the justification was about five pages, exclusive of any appendices.

¹³10 U.S.C. §2304(f)(3)(A)-(F). The Federal Acquisition Regulation (FAR) later expanded somewhat on these requirements. See FAR 6.303–2.

¹⁴48 C.F.R. §6.304.

Figure 1: Justification Example

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Justification for Other Than Full and Open Competition, Extension

U.S. General Services Administration

GSA Region 2

Public Buildings Service, Northeast and Caribbean Region

JUSTIFICATION FOR OTHER THAN FULL AND OPEN COMPETITION

PROJECT NUMBER: ONY2628

Agency Name: [REDACTED]

1. NATURE AND/OR DESCRIPTION OF ACTION BEING APPROVED.

The General Services Administration currently leases 29,717 ABOA / 34,175 rentable square feet (RSF) of office space at Bldg. 75, North Hangar Road, JFK International Airport, Jamaica, NY under lease number GS-02B-23947 which houses [REDACTED]. The current lease is a sublease under a master lease with the [REDACTED]. The sublease expires January 31, 2022. GSA is seeking approval to negotiate a lease extension for a three (3) year term, with the Government having cancellation rights after two (2) years with the current Lessor without full and open competition in order to provide sufficient time for a long term competitive procurement to be completed.

2. DESCRIPTION OF THE SUPPLIES OR SERVICES REQUIRED TO MEET THE AGENCY'S NEEDS (INCLUDING ESTIMATED VALUE).

GSA seeks to negotiate a lease extension to allow enough time to conduct a competitive procurement while simultaneously allowing [REDACTED] to continue its operations in and around JFK Airport. This requirement is for 29,717 ABOA / 34,175 RSF of space for a three (3) year term that will commence on February 1, 2022.

The current rental rate for this lease is [REDACTED] per year for an annual cost of [REDACTED] per annum which does not include electricity. A separately metered contract for electricity in the amount of [REDACTED] is paid by the Government. The proposed rent rate for this extension is [REDACTED]. The total aggregate contract value of this three year lease extension is [REDACTED].

3. IDENTIFICATION OF STATUTORY AUTHORITY PERMITTING OTHER THAN FULL AND OPEN COMPETITION.

41 U.S.C. 3304(a)(1): An agency may use procedures other than competitive procedures when the property or services needed are available from only one responsible source and no other type of property or service will satisfy the needs of the agency.

4. DEMONSTRATION THAT THE PROPOSED CONTRACTOR'S UNIQUE QUALIFICATIONS OR NATURE OF THE ACQUISITION REQUIRES THE USE OF THE AUTHORITY CITED.

CICA thus introduced generic competitive bidding requirements and substantial reasoning requirements for agencies wishing to deviate from that legal standard. Those reasoning requirements, however, did not apply to contracts awarded under the so-called 8(a) program. An amendment to Section 8 of the Small Business Act of 1958,¹⁵ the 8(a) program is designed to benefit small businesses owned and controlled by “socially and economically

¹⁵P.L. 95-507.

disadvantaged individuals” and groups.¹⁶ Under the operative regulations, agencies were required to compete 8(a) program contracts for firms owned by individuals if the value of the contract was over \$4 million (\$6.5 million for manufacturing contracts) unless there was no reasonable expectation that at least two eligible firms would submit offers at a fair market price.¹⁷ But if they opted to award a sole-source contract without competition they were not required to provide reasons for that choice under CICA. These requirements were more relaxed for firms owned by Native American Tribes or Alaskan Native Corporations.¹⁸ Agencies could award sole source contracts to such firms without qualification or justification.¹⁹

Responding to concerns about the growth of the 8(a) program and possible corruption (Moore et al 2012), Section 811 of the National Defense Authorization Act of 2010 (NDAA) altered this arrangement. Under Section 811, agencies cannot award sole source contracts valued at over \$20 million to 8(a) firms unless they justify the choice and the justification is approved by the relevant official.²⁰ The statute established elements of justification similar to those in CICA and likewise required the justification to be published. Section 811 therefore made the reasoning requirements for large 8(a) contracts substantially similar to the generic CICA requirements applied to non-8(a) firms. The Federal Acquisition Regulatory Council issued implementing regulations on March 16, 2011, which took effect immediately.²¹ Under these regulations, the elements of the justification are: (1) a description of the needs of the agency; (2) listing of the statutory exemption allowing non-competitive contracting; (3) a determination that sole-source contracting is in the best interest of the agency; (4) a determination that the cost of the contract will be fair and reasonable; (5) such other

¹⁶P.L. 85-536, §2(f)(2)(A-C), 72 Stat. 384 (July 18, 1958) (codified at 15 U.S.C. §631(f)(2)(A-C)).

¹⁷15 U.S.C. §637(a)(1)(D); 48 C.F.R. §19.805.

¹⁸Or in the case of defense contracts, Native Hawaiian Organizations.

¹⁹48 C.F.R. §19.805.

²⁰Note that the FAR Council later updated the threshold to account for inflation to \$22 million, effective October 1, 2015, 80 Fed. Reg. 38,293 (Jul. 2, 2015). For this reason, that transition date represents the end of the series examined in this analysis.

²¹76 Fed. Reg. 14559 (Mar. 16, 2011). That interim regulation was finalized a year later without revision, 77 Fed. Reg. 23369 (Apr. 18, 2012).

matters as the head of agency will specify.²² Table 1 summarizes the legal standards and reasoning requirements that applied to 8(a) firms before and after Congress passed Section 811 of the NDAA.

Table 1: Summary of Legal and Reasoning Requirements

		Legal Standard	Reasoning Requirement
Pre-§811	8(a) individuals	Compete.*	None.
	8(a) tribes	No restriction.	None.
Post-§811	8(a) individuals	Compete.*	Justify if over \$20 million.
	8(a) tribes	No restriction.	Justify if over \$20 million.

*If value of contract is over \$4 million (\$6.5 million for manufacturing); unless no reasonable expectation that two or more eligible firms will submit offers.

As shown in table 1, a crucial feature of the Section 811 reform is that it did not affect the underlying legal standards that applied to 8(a) contracting. It only affected the reasoning or justification requirements. Thus, for both 8(a) individuals and 8(a) tribal entities, the applicable substantive standard for when a sole-source contract is permissible did not change. For contracts over the statutory threshold (generally \$4 million), the legal standard called on agencies to compete contracts for 8(a) individuals unless there was no reasonable expectation that two or more eligible firms would submit bids. This indicates that any changes in contracting behavior around this reform owe to the effect of reasoning requirements rather than to changes in legal standards.

This analysis depends on whether a contract crosses a dollar threshold. Under the 8(a) program, after identifying a possible contracting acquisition,²³ the contracting agency prepares an offering letter for the Small Business Administration (SBA). This offering letter outlines the critical features of the proposed contract, including the anticipated dollar amount of the contract, and whether the agency is requesting a sole-source contract, along with the nomination of a relevant 8(a) program firm.²⁴ The SBA then reviews the offering letter and

²²See 76 Fed. Reg. 14560 (2011).

²³FAR 19.803.

²⁴FAR 19.804-2.

approves it.²⁵ If the contract is competitive, the price is then set either through sealed bidding or competitive negotiation,²⁶ with only eligible 8(a) firms participating. If the contract is sole-source, the contracting agency must produce a justification — discussed above — before negotiating with the source if the contract is expected to be valued at over \$20 million. The requirement for justification prior to negotiation is based on the estimated contract value, as in the offering letter. This makes the content of the offering letter a critical juncture in this analysis, representing the point at which the contracting officer effectively jointly determines whether to compete the contract and whether a justification is necessary.²⁷

C. Data and Summary Statistics

The data for this analysis come from the Federal Procurement Data System – Next Generation (FPDS).²⁸ This data source represents “the most comprehensive data system available for federal contract awards” (Dilger 2019) and is commonly used for government audits and self-studies of contracting activity (e.g., Kutz 2010). The reform of interest occurred in 2011, and I obtain information on all federal contracts awarded between January 1, 2007 and September 30, 2015.²⁹ The study thus includes roughly four years of contracting activity

²⁵Though functionally the contract is one between the firm and the contracting agency, technically an 8(a) contract is between the contracting agency and the SBA, with the SBA sub-contracting to the 8(a) firm participant.

²⁶A competitive negotiation is a negotiation in which the government communicates with a number of firms over price and service parameters and makes a selection on that basis. In the main dataset analyzed below, the vast majority of the competitive contracts were entered into through competitive negotiation rather than sealed bidding.

²⁷It is possible that an award value could cross the threshold from above or below during the course of negotiation. The FAR Council proposed revising the FAR in 2016 to clarify what happens in these cases, 81 Fed. Reg. 80,012 (Nov. 15, 2016), but the proposal was not finalized. Despite this ambiguity about the timing of justification and negotiation, no contract under the regulations could be awarded if sole-source and over the threshold without justification. FAR 6.303-1. The main effect of this ambiguity, therefore, is to introduce the possibility of a sole-source contract award valued at less than the statutory threshold but accompanied by a justification. Applied to this analysis, it suggests that it is possible that some small contracts may be “treated” by the reasoning reform. This would tend to attenuate estimates of the reasoning reform.

²⁸The FPDS may be accessed online: <https://www.fpds.gov/fpdsng/cms/index.php/en/>.

²⁹The series ends before the shift in the reason-giving threshold on October 1, 2015 from \$20 to \$22 million.

on either side of the Section 811 reform.

Each year, the federal government awards millions of contracts worth on the order of half of a trillion dollars (e.g., Woods 2017).³⁰ The reasoning reform of interest affected only contracts in the 8(a) program.³¹ The government aims to award five percent of federal contract dollars to small disadvantaged firms and it appears that federal agencies approximate that goal in the years of interest (Dilger 2019); roughly half of that figure comes from the 8(a) program. Figure 2 shows the amount and number of awards under the 8(a) program in the calendar years of 2007-2015.³² The left panel of the figure shows the amount of awards in the year, broken out by the level of competition; the right panel shows the number of awards in the year, broken out by the level of competition.

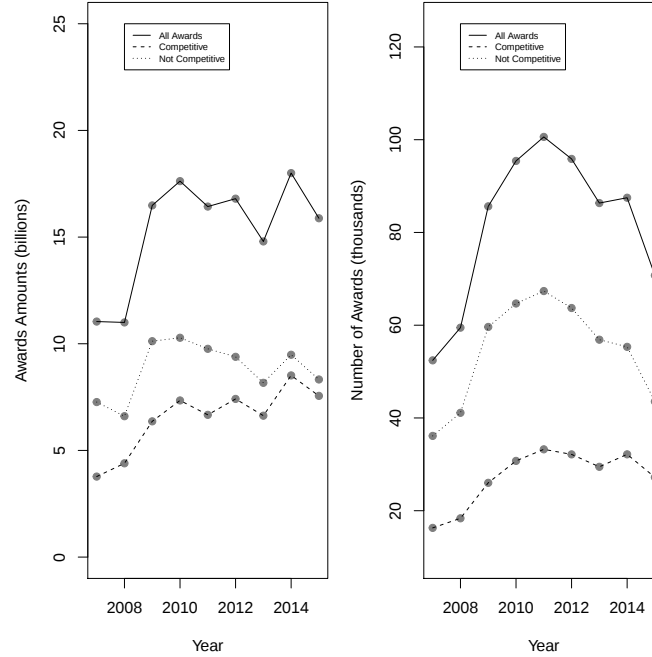
As shown in the figure, the total amount of awards for 8(a) contracts ranges between 11 and 17 billion a year. In the earlier portions of the series, the value of the contracts not subjected to competition exceeded the value of the contract subjected to competition. The

³⁰The value of a contract might be conceived in a variety of ways. Some government reports use “obligations” created by the contract; others use a broader definition that includes the value of options. The Section 811 is not clear as to how to calculate the contract value, but the relevant reasoning regulation specifies that the relevant dollar amount is the “anticipated dollar value of the action, including the dollar value of all options,” 76 Fed. Reg. 14560.

³¹To identify the population of contracts, I attempt to follow the FPDS Report on Small Business Goaling, which indicates that “8(a) Procedure Actions” are those coded, in part, as having a set aside for 8(a) sole source or 8(a) competed. The sample departs from the FPDS Report sample in three identifiable ways. First, they include contracts coded as having a combination 8(a) and HUB Zone set aside. The Hub Zone set aside is a geographic-based preferential contracting scheme. However, other FPDS publications indicate that that combination set aside was deprecated as of 2008, implying that it does not exist for most of the series of interest. I thus focus only on 8(a) competed and 8(a) sole source contracts. Second, the FPDS Report limits attention to contracts in which the contracting officer designates the business as a “small business.” That appears to be a generic restriction applied to all queries in the FPDS Small Business Goaling Report. In this context, the restriction should be redundant, as only small businesses can participate in the 8(a) program. This turns out to be approximately true. A little under one percent of the observations in the dataset do not meet the criteria; these might represent coding errors, or they might reflect the fact that contracting officers and the SBA operate under different definitions of what constitutes a “small business.” I include entries coded as small business and otherwise, but the decision does not affect the main results in any notable way. Third, I exclude the 20 contracts in the dataset valued at over \$500 million as probable data entry errors. Many of these contracts were described in the dataset as “minor contracting,” suggesting errors in data entry. This decision, too, does not affect the main results in a notable way, but these entries do implausibly skew the summary statistics in some years.

³²Throughout this analysis, “2015” should be understood to stop at September 30, 2015, the last date of the \$20 million threshold.

Figure 2: 8(a) Awards: 2007-2015



gap between the two series—competed and not-competed—shrinks over time, however, and is essentially erased by the end of the series. The total number of contracts awarded each year ranges between about 50,000 and 100,000. The number of contracts increases markedly following the Great Recession, peaking in 2011, after which we see a decline in the number of contracts. That basic pattern repeats for both the competed and not-competed series. However, the number of contracts not-competed always exceeds the number of competed contracts in this series.

The data examined in the main analysis below does not include all 8(a) contracts. To begin with, not all contracts in this database operate under the same competing requirements under the statute. Contracts worth less than \$4 million (\$6.5 million for manufacturing) need not be competed under the statute. I exclude those smaller contracts from the analysis so as

to isolate a set of contracts for which we have uniform legal standards over the series, at least within individual and tribal group contracts.³³ This removes the vast majority of contracts from the dataset. Of the roughly 600,000 entries in the original dataset, less than 4,500 value at over the relevant threshold. A second challenge is that the parties not infrequently modify contracts. Typically these modifications add services or goods to the contract and therefore increase its value, but at times they also decrease the value of the contract.³⁴ The amount entered for a modification in the data reflects the amount of the amount of the adjustment rather than the new total value (FPDS Manual 2019). This means that we might observe two entries, the first for \$15 million and the second for \$10 million. The total value of this contract is now \$25 million and the second entry for that contract should therefore be competed or explained.³⁵ But neither entry is itself valued at more than \$20 million. This presents a problem for classifying entries as “treated” or not by the reform. The main strategy I adopt for this problem is to exclude modifications and focus on new contracts.³⁶

Table 2 reports summary statistics for several of the main variables in the analysis. Notice that these statistics refer to the dataset consisting of “new” contracts worth more than \$4 million (\$6.5 million for manufacturing). The average contract value was almost \$11 million, though the median was considerably lower, at a little under \$8 million. Agencies competed about sixty percent of the the contracts in the dataset. About ninety percent of the contracts went to firms owned by minorities; and about fifteen percent went to firms

³³There is in fact a large increase in competed awards around this threshold of \$4 million. Agencies compete about 32 percent of 8(a) contracts valued between \$3.5 and \$4 million, and about 50 percent of contracts valued between \$4 and \$4.5 million, suggesting substantial compliance with the statutory requirements. I make these calculations on non-manufacturing contracts awarded to individuals.

³⁴They may also not change the value of the contract, as through no-cost extensions.

³⁵That said—and furthering the motivation for the steps below—genuine ambiguity surrounds whether a modification is out of scope of the original contract and how to process such modifications. This topic was the subject of future guidance, 81 Fed. Reg. 80,012 (Nov. 15, 2016).

³⁶Each entry contains a contract identifier that is unique to the contract. To identify the new contracts, I search for the first instance a contract ID appears in the dataset. As a secondary set of exercises, I also attempt to examine behavior around modifications that push a contract value into the class of treated contracts. Results from these analyses resemble those reported but are attenuated, suggesting weaker compliance. These results are available on request.

owned by veterans. Nearly four-in-ten contracts went to tribal entities. Almost all of the contracts were for services or non-manufactured goods. And about forty percent of contracts had a DC-area place of performance; roughly the same proportion had vendors with DC-area locations.

Table 2: Summary Statistics

	Mean	Std. Dev.
Amount of Contract (millions)	11.19	8.81
Contract Completed	0.58	0.49
Firm Minority Owned	0.90	0.31
Firm Veteran Owned	0.14	0.35
Firm Tribal Entity Owned	0.36	0.48
Manufacturing Contract	0.02	0.13
DC-area Place of Performance	0.36	0.48
DC-area Vendor	0.41	0.49
DC-area defined as Washington, DC, Virginia, or Maryland.		

III. Empirical Strategy

The structure of these data and the reasoning reform suggests two complementary identification strategies. The fact that the reasoning reform only affected contracts valued at more than \$20 million suggests a difference-in-differences design, in which “smaller” contracts serve as a control group. Similarly, the fact that only contracts valued at more than \$20 million were exposed to the new requirement suggests that we may be able to identify the effect of reasoning by examining behavior around that threshold in a discontinuity design.

A. Difference-in-Differences

The main challenge to identifying the effect of reason-giving on behavior is that reason-giving exists almost everywhere that it might matter. An appealing feature of these data is that

we can examine a relatively homogeneous category of actions and cleanly classify them as exposed or not to requirements of reason-giving. Only contracts valued at over \$20 million and signed after the implementing regulations went into effect were treated by the reform. Large contracts signed before the effective date and smaller contracts signed before or after the effective date of the implementing regulations were not treated. The smaller contracts, therefore, may heuristically be thought of as a control group in a difference-in-differences design.

In particular, we can estimate,

$$c_{it} = \alpha + \tau_t + \Gamma Z_{it} + \beta_1 Reg_{it} + \beta_2 Large_{it} + \rho Reg_{it} X Large_{it} + \epsilon_{it} \quad (1)$$

where c_{it} is an indicator for whether agency competed the contract, τ_t is a year fixed effect, Z_{it} is an optional vector of covariates for the contract, most notably the identity of the agency signing the contract, Reg_{it} is an indicator for whether the contract was signed after the effective date of the implementing regulations, and $Large_{it}$ is an indicator for whether the contract is valued at over \$20 million. The coefficient ρ informs us of the effect of reasoning requirements on the probability of a sole-source award. The estimand produced by this exercise is the average treatment effect for the treated (ATT), or $E[Y_1(1) - Y_0(1)|D = 1]$, where $Y_1(1)$ is the outcome for treated contracts in the reform period, and $Y_0(1)$ is the counterfactual for those contracts if untreated, and D takes a 1 if the contract is treated.³⁷

The main assumption in this application is that but for the reform the large and small contracts would have followed parallel trends. I probe the plausibility of this assumption below visually and by estimating coefficients on placebo leads of the reform. If the assumption holds, the lead should take small and non-significant values. Another concern in this setup involves sorting around the statutory threshold. Contract values can be negotiated

³⁷Here and below I suppress individual subscripts for simplicity when discussing estimands.

or strategically selected to avoid the reasoning requirement; to the extent reasoning requirements have an effect that can be anticipated, one might indeed expect parties to try to avoid those requirements if possible. This concern may be addressed in a difference-in-differences framework by excluding contracts around the threshold from the dataset.

B. Discontinuity Design

A second approach to these data focuses on the discontinuity at \$20 million. After the effective date of the implementing regulation, only those contracts valued at over \$20 million required justifications to be awarded without competition. In principle, therefore, we might be able to compare the level of competition for contracts just below and just above the cutoff to estimate the effect of reason-giving on contracting behavior.

For the main analysis, I estimate local linear regressions of the form,

$$c_{it} = \alpha + \Gamma Z_{it} + \theta(V_{it} - x_0) + \rho Large_{it} + \gamma(V_{it} - x_0)XLarge_{it} + \epsilon_{it} \quad (2)$$

where V_{it} is the value of the contract, x_0 is the \$20 million cutoff, and other variables remain as before. The ρ coefficient is again of central interest. I estimate this with triangular kernel weights around bandwidth h .³⁸ As discussed in more detail below, I consider a wide range of possible bandwidths, with a focus on the Imbens-Kalyanaraman optimal bandwidth (2012).³⁹ The estimand identified under this approach is the local average treatment effect around the discontinuity, $E[Y(1) - Y(0)|X = \tau]$, where $Y(1)$ is the outcome for the contract under treatment, $Y(0)$ is the same under no treatment, X is the contract value, and τ is the statutory threshold.

The main concern with this design involves sorting around the cutpoint. For instance,

³⁸Kernel selection follows Imbens and Wooldridge (2007), which recommends a simple kernel choice and exploration of a range of bandwidths.

³⁹Parametric estimates based on cubic polynomials generate qualitatively similar results, available on request.

agencies may fear the act of providing reasons, leading them to locally reduce contract values to avoid the requirement. This fear is likely to be most acute for hard-to-justify contracting actions, suggesting that sorting might produce a depressed competition rate to the left of the cutpoint, and an increased competition rate to the right of the cutpoint. That is, sorting is likely to increase the estimated effect of reason-giving. A common way to test for sorting involves estimating local linear regressions on the density of the running variable to determine if there is a discontinuity around the cutpoint (McCrary 2008). If there is no sorting, one expects a smooth distribution at the cutpoint; evidence of bunching around the cutpoint, on the other hand, suggests that parties may be sorting around the threshold. I implement this test and compare the estimands resulting from this test for the pre- and post-reform periods to assess how concerned we should be by any discontinuities in the reform-era density. Along these same lines, in addition I probe for discontinuities in available covariates around the threshold.

IV. Results

A. Difference-in-Differences Results

i. Main Estimates

As a preliminary pass of the data, consider the trends shown in figure 3, which plots the quarterly trends for large ($> \$20$ million) and small contracts over the series. Note that unlike figure 2, the data in figure 3 attempts to isolate new contracts because they have a more straightforward relationship to the reasoning threshold. The darker dots represent the quarterly averages for large contracts, and the lighter dots the averages for small contracts; the size of the dot is proportional to the number of contracts awarded in that quarter. The dashed vertical line represents the period of the regulatory reform. As can be seen, in most

periods agencies were more likely to compete large contracts than small contracts. Yet for both large and small contracts there is considerable variation period-to-period in the percent of competed awards. Despite the noise, the figure suggests that the trends for large and small contracts were approximately parallel before the 2011 reform. After the reform, we see a growing, consistent divergence between the two trends, suggesting a positive effect of the reasoning requirement on the level of competition.

Figure 3: Trends in Competition

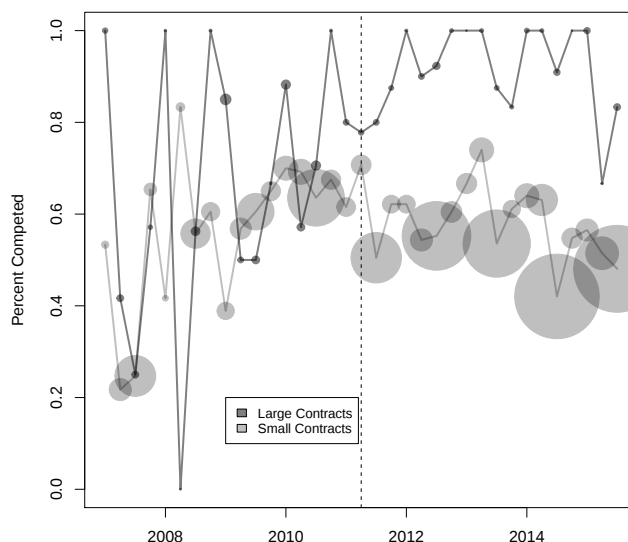


Table 3 presents the main difference-in-difference estimates. Focus first on model 1, reported in the first column of the table. The relevant coefficient indicates that the reasoning requirements induced a roughly 25 percentage point increase in the probability an agency competes an 8(a) contract. This coefficient is statistically significant at conventional levels. As reported in the second column, once we add fixed effects for the year and the

contracting agency, the ρ coefficient increases markedly, suggesting an increase of about 35 percentage points in the likelihood of a competitive contract. The estimate also becomes more precise. Adding covariates slightly attenuates the size of the coefficient, and the estimate again becomes more precise, as reported in the third column.

Table 3: Difference-in-Difference Estimates									
	M1	M2	M3	M4	M5	M6	M7	M8	M9
ρ	0.25 (0.13)	0.35 (0.1)	0.31 (0.08)	0.25 (0.17)	0.37 (0.11)	0.34 (0.09)	0.24 (0.13)	0.34 (0.1)	0.31 (0.08)
$\hat{\rho}$ (1-yr lead)	–	–	–	0 (0.12)	0.07 (0.07)	0.04 (0.06)	–	–	–
Year & Agency FE	N	Y	Y	N	Y	Y	N	Y	Y
Covariates	N	N	Y	N	N	Y	N	Y	Y
Threshold Cases	Y	Y	Y	Y	Y	Y	N	N	N
N	2461	2272	1853	2461	2272	1853	2411	2226	1815
R-squared	0.03	0.23	0.3	0.03	0.23	0.3	0.03	0.23	0.3

Standard errors clustered by contracting agency and reported in parentheses. Covariates include the state of the contract performance, indicators for whether the firm was veteran owned and minority owned.

Columns 4-6 of table 3 repeat the analysis, but these specifications include a placebo lead indicator on reform and an interaction between the lead and large contracts. The relevant interaction term is reported as $\hat{\rho}$ in the table. If the parallel trends assumption holds, this lead should be near-zero and not statistically significant. As reported in columns 4-6, this is true in each of the models. Although the coefficient is positive in each model, it is small relative to the ρ estimates and is not close to statistically significant. This pattern is consistent with the assumption of parallel trends. The ρ coefficients remains basically unperturbed by adding the leads.

The final three columns of table 3 repeat the regressions from the first three columns, but now exclude observations from the dataset within a bandwidth of \$1 million of the threshold. These regressions thus probe the extent to which the difference-in-differences estimates exhibit sensitivity to possible sorting around the threshold. As is evident from

the last three columns, excluding these threshold contracts from the analysis has very little effect on the estimated coefficients.

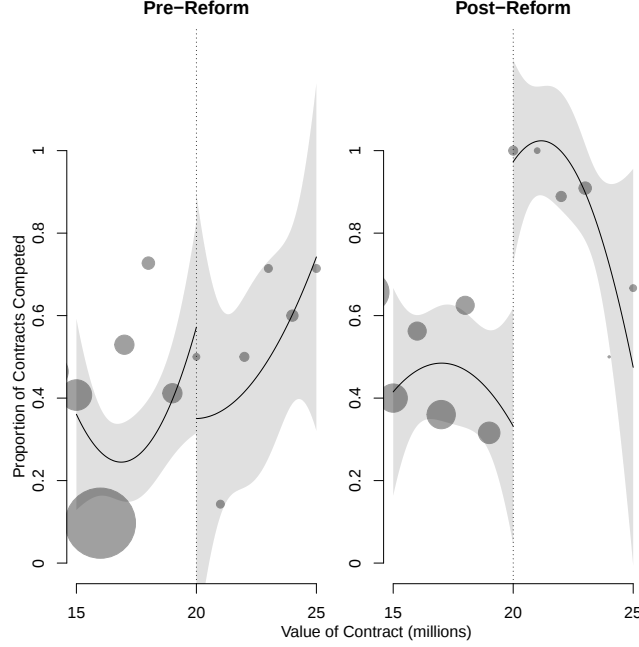
B. Discontinuity Results

It is helpful again to consider initially graphical representations of the data. Figure 4 plots raw and fitted competition levels around the cutoff of \$20 million, before and after the Section 811 reform. In each panel, the dots reflect the proportion of contracts competed within a bin of \$1 millions dollars; the size of the dot is proportional to the number of contracts observed in that bin. The vertical dashed line denotes the relevant \$20 million cutoff. On each side of the cutoff, I estimate a quadratic polynomial, the fit of which is reflected in a solid line, with the shaded grey area emanating from the line reflecting the 95 percent confidence interval of the fit. The left panel presents the figure for the pre-reform era; the right panel, the figure for the post-reform era.

As can be seen in the left panel of this figure, in the pre-reform period the level of contracting appears approximately continuous around the relevant threshold. There is little sign that agencies competed contracts worth a little more than \$20 million more than those contracts worth a little less than \$20 million. The ends of the fitted polynomials, for instance, closely match around the cutoff in the pre-reform period.⁴⁰ Post-reform, the picture is quite different, as shown in the right panel. There, we see a notable discontinuity around the \$20 million threshold. The ends of the fitted polynomials do not come close to matching one another in the reform period—the endpoint of the fitted polynomial above the threshold is markedly higher than the end of the polynomial below the threshold. Most of the analysis below is devoted to quantifying the magnitude of the jump at the \$20 million threshold.

⁴⁰This polynomial is included solely to aid in visualization. The quantitative estimates reported below follow the non-parametric approaches detailed above.

Figure 4: Competition Around Cutoff, Before and After Reform

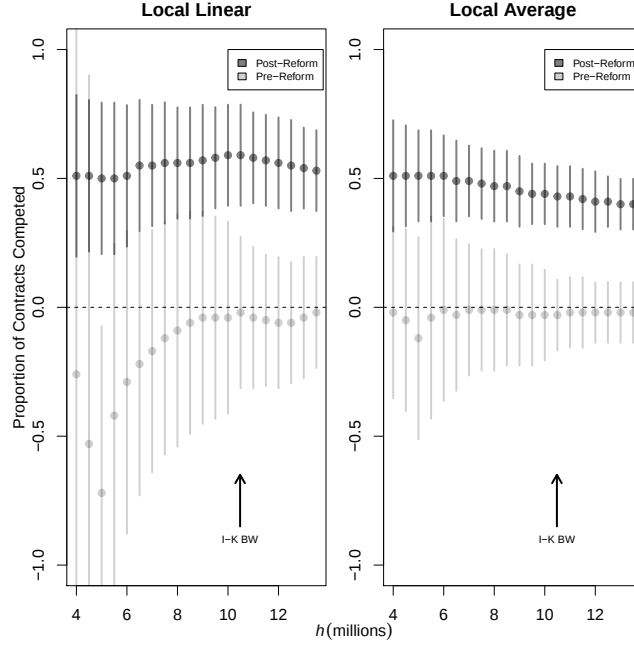


i. Main Estimates

For the main results, I produce estimates through local linear regressions (equation (2)) with a triangular kernel of bandwidth h . It is easy to produce estimates over a range of values for h , so rather than select and report estimates related to a single value, I report results over a wide spectrum of possible values. As is evident below, the choice of bandwidth is consequential. The size of the bandwidth implies a bias-variance tradeoff, in which smaller bandwidths have smaller bias but larger variance, and just the opposite for larger bandwidths. In this light, scholars have proposed a variety of algorithms for selecting the optimal bandwidth (see Ludwig and Miller 2007), notably including that developed in Imbens and Kalyanaraman (2012).

The left panel of figure 5 shows the discontinuity estimates in the pre- and post-reform

Figure 5: RD Estimates, Before and After Reform



periods under a range of possible h values using local linear regressions (see equation 2).⁴¹ On the x-axis runs the size of the bandwidth, for values of h in $(4 + \frac{n}{2})_{n=0}^{19}$ (million denomination), and on the y-axis the estimated coefficient. Each dot in the figure represents a point estimate for a given h value, and the lines around the points reflect 95 percent confidence intervals. The darker dots represent the series of estimates for the post-reform period and the lighter dots represents the series of estimates for the pre-reform period. A black arrow indicates the Imbens-Kalyanarman optimal bandwidth.

Consider initially the darker series of dots in the left panel, which represent the estimates for the post-reform period. Moving from left to right in the figure for this series, we gradually increase the size of the bandwidth around the threshold from \$4 to \$13.5 million.⁴²

⁴¹These estimates include covariates, such as the state of contract performance. Estimates without covariates tend to be qualitatively similar, available on request.

⁴²Notice that we cannot increase the size of the bandwidth beyond \$13.5 million without extending the

As shown in the left panel of figure 5, in any event the size of the estimate does not appear particularly sensitive to the choice of bandwidth during the reform period: for essentially all bandwidths, the size of the estimate is about 0.5. This is true, notably, in the area around the Imbens-Kalyanaraman optimal bandwidth— $h \approx 10.5$. Such coefficients indicate that the reasoning requirement locally increased the probability of contract competition by about fifty percentage points. This estimate is substantially larger than the difference-in-differences estimates, which tended to be more on the order of an increase of about 35 percentage points, though the estimand there was the ATT rather than the local effect, as in this exercise.

The lighter series of dots reflect the estimates for the pre-reform period. Because no reasoning requirement existed for this period around the threshold of \$20 million, the estimates should not resemble those of the post-reform period. This falsification test produces the expected results: the estimated coefficients tend to be small in magnitude and to be not statistically significant, particularly around the Imbens-Kalyanaraman optimal bandwidth. This suggests that the estimates for the post-reform period owe to the reform itself rather than to some other institutional artifact.

Although the local linear estimates tend to be favored in the literature, it is also of interest to examine an even simpler non-parametric approach: local averages. To do so, we simply estimate,

$$c_{it} = \alpha + \Gamma Z_i + \rho Large_{it} + \epsilon_{it} \quad (3)$$

where all remains as defined above, and again we limit attention to bandwidths h with triangular kernel weights. The estimates from this exercise appear in the right panel of figure 5.

As is evident from that panel of the figure, the estimates tend to resemble those from the linear regression specification, with a few differences. Perhaps most notably, the

lower-end of the window below \$6.5 million, the level at which the relevant legal standards take effect for manufacturing contracts.

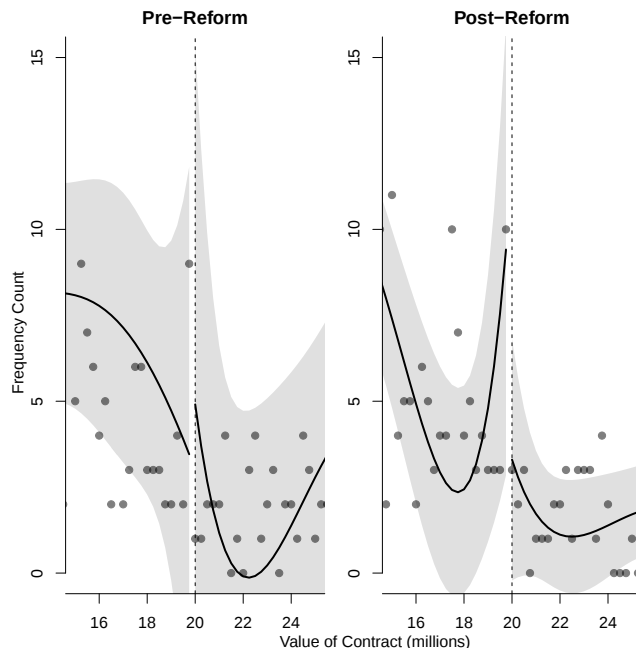
estimates appear to decrease more consistently with the size of the bandwidth. The other notable point is that the estimates in the pre-reform period tend to be more stable around zero.

ii. Validity

The main threat to the validity of the discontinuity estimates is sorting around threshold. Contracting officers may for instance shave value of a contract if it is otherwise around \$20 million to avoid providing reasons for a sole-source award. This behavior seems particularly likely to occur in cases where the sole-source award is difficult to justify. A common test for this type sorting behavior involves examining the density of the running variable around the threshold. To the extent the density is not continuous around the cutpoint, that suggests sorting, which may pose a threat to the validity of the estimates (McCrary 2008). Another similar approach involves probing for discontinuities in the values of covariates around the threshold, which again might constitute evidence of sorting. I examine these approaches, both before and after the reform.

As an initial pass on the question of sorting, consider figure 6, which plots the density of the contract values, before (left panel) and after (right panel) the reform of interest. In each panel, each dot reflects the number of contracts that fall into bins of \$250,000. The vertical dashed line in each panel denotes the \$20 million threshold. On each side of the cutpoint in the panels, I plot the fit of a fourth-order polynomial with 95 percent confidence intervals. The test described in McCrary (2008) proposes examining whether there exists a discontinuity in the density around the threshold: if there is no sorting, the density should be continuous at the cutpoint; if there is sorting, there may be a discontinuity at the cutpoint. In the context of this analysis, sorting is most likely to manifest in unusual mass in the distribution of the running variable short of the cutpoint, as contracting agencies shave contract value to avoid the requirements triggered at \$20 million.

Figure 6: Contract Value Densities, Before and After Reform



The densities in figure 6 provide suggestive visual indication of possible sorting around the threshold. In particular, the bin immediately before the threshold in both panels appears to contain an unusually large number of contracts. This is most evident in the left panel, for the pre-reform period, where this bin contains more contracts than any other in the figure. A similar pattern may be observed in the right panel, for the reform period, though the jump in pre-cutpoint density appears more modest.

Despite these suggestive figures, more formal tests based on local linear regressions (McCrary 2008) do not indicate a sorting problem in these panels. For the reform period, the difference in densities around the cutpoint is small and not statistically significant ($\theta = -0.46$, $SE = 0.34$). The estimate for the pre-reform period is also small, but reaches significance ($\theta = -0.98$, $SE = 0.30$).⁴³ This pattern also suggests another point: sorting,

⁴³As McCrary demonstrates, the size of the bins is of secondary consequence in this test, and experimen-

to the extent it exists, is unlikely to result from the reasoning requirement of interest in this analysis. This is evident from the fact that, if anything, the jump in bin height appears greater in the *pre-reform* period than in the post-reform period. Such a jump in the pre-reform period may be motivated by other legal requirements triggered at \$20 million,⁴⁴ norms or practices in the various contracting agencies, or perhaps cognitive biases around that number.

Another set of tests in similar spirit involves probing for discontinuities in covariates around the cutoff. I conduct this covariates test for the (1) minority owned firm (2) veteran owned firm (3) DC-area place of performance and (4) DC-area vendor location. There is no obvious reason that the proportion of firms with those characteristics would change in a discontinuous way around the threshold, but perhaps for possible sorting. For instance, more “sophisticated” DC-area parties might be more able to facilitate sorting, to the extent it occurs. Employing the same local linear regressions approach described in III.B, but now with these covariates as the dependent variables, there is no consistent evidence of discontinuities.⁴⁵ The relevant ρ coefficients may be found in table 4. In the pre-reform period, reported in the bottom panel, two of the four outcomes return with relatively small and insignificant relevant coefficients, but the proportion of veteran-owned firms appears to sharply decrease above the cutoff, and the proportion of minority owned firms also decreases, but more modestly. In the post-reform period, reported in the top panel, all of the four outcomes return with small and insignificant relevant coefficients. Notably the outcomes with perhaps the most theoretical motivation—DC-area place of performance or vendor location—return with small and insignificant relevant coefficients in the pre- and post-reform periods. On the whole, therefore, this set of covariates tests therefore supports the more formal test

tation supports that view in this analysis. The bin size reported for these results is 250,000.

⁴⁴For example, certain defense awards in excess of \$20 million must be reported to congressional defense committees at least 30 days before the agency enters the contract. 48 C.F.R. § 217.170. This separate requirement does not change over the period of analysis.

⁴⁵These specifications also remove other covariates from the right hand side.

around the density in the running variable, indicating that sorting is not likely an overriding concern in these data, particularly in the post-reform period.

Table 4: Examining Covariate Continuities

Post-Reform Period				
	Minority Owned	Veteran Owned	DC Performance	DC Vendor
ρ	-0.02 (0.06)	-0.03 (0.05)	0.05 (0.09)	0.02 (0.09)
N	1274	1274	1274	1274
R-squared	0.02	0	0.01	0.01
Pre-Reform Period				
	Minority Owned	Veteran Owned	DC Performance	DC Vendor
ρ	-0.08 (0.04)	-0.3 (0.05)	-0.03 (0.07)	0.07 (0.08)
N	1187	1187	1187	1187
R-squared	0.01	0.29	0.05	0.11

Note that “DC” refers to an indicator for whether the place of contract performance or vendor location was in any of Virginia, DC, or Maryland. Bandwidths selected via the I-K method if possible or set to the maximum feasible value given the support of the data (\$13.5).

V. Other Implications

The main analysis addresses the outcome of greatest interest: the effect of reason-giving requirements on compliance with statutory objectives. As shown above, public reasoning requirements appear to dramatically enhance the extent to which agencies compete awards. Notably, this occurs even without any changes to the underlying legal standards. Also as noted above, however, reasoning requirements may affect several other margins of interest, some of which might be thought of as ancillary benefits, and others of which might be thought of as costs. A hypothesis, for instance, is that because reason-giving induces conformity to statutory objectives, the it might reduce the incentives around rent-seeking.⁴⁶ On the other

⁴⁶I consider this possibility in a companion paper, Stiglitz (2021).

hand, the literature suggests a number of costs implicated by procedural requirements, such as the reform in this study.

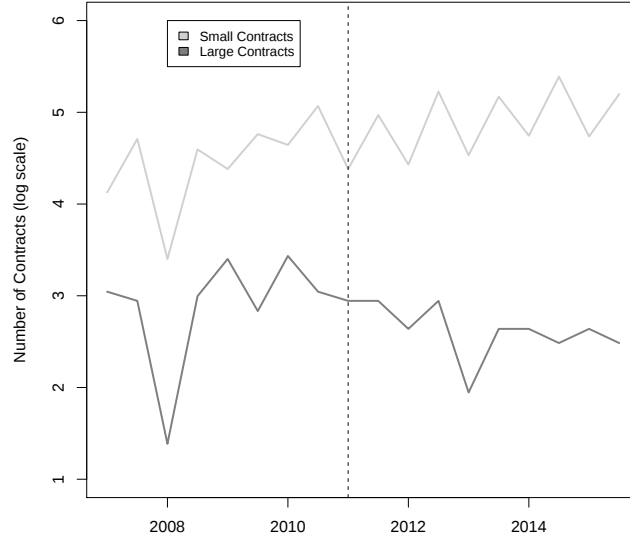
A. Contract Volume

The main contention in the debate over so-called ossification is that analytical requirements imposed on agencies by courts and Congress paralyze agencies (McGarity 1992; for empirical examinations of this claim see, e.g., O’Connell 2008, Yackee and Yackee 2011). To the extent agencies would pursue statutory objectives absent the reasoning requirements, those requirements should be viewed as an unnecessary burden to be eliminated. The results above, of course, indicate that reasoning requirements substantially enhance compliance with statutory objectives, but even so there may be a tradeoff between compliance with statutory objectives and the volume of administrative or regulatory actions. Reasoning requirements, for instance, may reduce the variance of outcomes around some statutory objective and also reduce the number of regulatory actions feasible under some budget constraint.

To examine this possible tradeoff, I calculate the (log) number of large ($> \$20$ million) and small ($\leq \$20$ million) contracts in each six month period in the series. Because the legal and reasoning requirements remain constant for small contracts over this period, that class of contracts again may be used as a control group to determine whether the reform affected the volume of agency actions. Figure 7 plots the log number of small and large contracts in each six month period. Broadly the two series track each other prior to the reform. They seem to diverge somewhat after the date of reform—denoted by a vertical dashed line—with a seeming decline in the number of large contracts. This figure suggests that the reform may have reduced the volume of agency action in the area affected by the reasoning reform.⁴⁷

⁴⁷The GAO, similarly, reports a decline in the volume of large contracts awarded by the Department of Defense under the program following the reform (Mackin 1996).

Figure 7: Number of Small and Large Contracts



More formally, I estimate,

$$\log(k_{st}) = \alpha + \tau_t + \beta_1 \text{Large}_s + \beta_2 \text{Reg}_t + \rho \text{Large}_s \text{XReg}_t + \epsilon_{st} \quad (4)$$

where k_{it} is the number of new contracts that appear in time period t for a class s , τ_t is an (optional) fixed effect for the sixth month period, Large_s takes a one if the class s is large and zero otherwise, and Reg_t takes a one if the time period is after the reform and a zero otherwise. The main coefficient of interest again is ρ , which one expects to be negative if the reasoning requirement suppresses agency action.

As reported in table 5, the results from this exercise tend to support the idea that reasoning requirements imply a tradeoff of agency compliance with statutory objectives and the volume of agency action. The first column in this table does not include time fixed

Table 5: Changes in Contract Volume

	M1	M2
ρ	-0.78 (0.3)	-0.78 (0.18)
Period FE	N	Y
N	36	36
R-squared	0.85	0.97

effects. The estimate for ρ in this first regression suggests a very substantial decrease in large contracting activity. The coefficient is marginally significant at the ten percent level, though by construction the number of observations and therefore statistical power in is limited in this exercise. The second column includes period fixed effects. The estimate in this second regression is very close to that of the first regression, though it is more precisely estimated and reaches statistical significance at conventional levels.

Of course, this exercise cannot evaluate the tradeoff between compliance and volume. As an opening complication, it may be that contract volume decreased precisely by eliminating contracts awarded due to favoritism that could not be justified publicly—or it may be that the procedural requirement inhibited the agencies from pursuing meritorious awards. The analysis cannot parse this question. But these results suggests such a tradeoff exists and provides support for the premises of the ossification debate (e.g., McGarity 1992; Seidenfeld 1996; Coglianese 2002; O’Connell 2008; Wu 2010).

B. Composition of Awarded Firms

It is possible that the reform affects not only the volume of contracts but also their composition. Certain parties may be more sophisticated and able to navigate the new reasoning requirement or the competitive bidding process, for example. The FAR Council, moreover, evinced particular concern over the effect the reform would have on tribal entities during the rulemaking effort, holding three tribal outreach and consultation meetings prior to issuing

the interim rule.⁴⁸ Given these concerns, it is likewise of interest to examine whether tribal entities fared more poorly than others under the reform.

To examine these issues, I estimate,

$$k_{it} = \alpha + \tau_t + \Gamma Z_{it} + \beta_1 Reg_{it} + \beta_2 Large_{it} + \rho Reg_{it} X Large_{it} + \epsilon_{it} \quad (5)$$

where all remains as in the main difference-in-differences equations, except for the dependent variable. I consider three outcomes of interest: (1) an indicator for whether the firm is owned by a tribal entity, an Alaska Native Corporation, or a Native Hawaiian; (2) an indicator for whether the firm is veteran-owned; (3) an indicator for whether the place of contract performance is in the DC-area (DC-VA-MD); and (4) an indicator for whether the contract vendor lists its address in the DC-area.

Table 6: Changes in Contract Composition

	M1	M2	M3	M4	M5	M6	M7	M8
ρ	-0.26 (0.12)	-0.35 (0.1)	-0.27 (0.22)	-0.02 (0.08)	-0.06 (0.12)	0.1 (0.09)	0.01 (0.16)	0.21 (0.07)
Year & Agency FE	N	Y	N	Y	N	Y		
N	2461	2272	2461	2272	2461	2272	2461	2272
R-squared	0.03	0.21	0.03	0.2	0.02	0.37	0.02	0.32

Dependent variable in M1-M2: indicator for tribal ownership of firm; in M3-M4: indicator for veteran ownership; in M5-M6: indicator for DC-area (DC-VA-MD) place of contract performance; in M7-M8: indicator for DC-area vendor location. Standard errors clustered by contracting agency and reported in parentheses.

The results from this exercise, reported in table 6, suggest that the reform altered the composition of the entities receiving awards. Focusing on the preferred specifications with year and agency fixed effects, the results indicate that the reform reduced the proportion of new awards to tribally-affiliated firms by about a third. This result may speak to an interaction between the reasoning requirement and the varying legal standards that apply to tribal and non-tribal entities (see II.B). Or it may plausibly speak to differential access to

⁴⁸76 Fed. Reg. 14,559 (Mar. 16, 2011).

sophisticated legal advice or connections. There is indeed further evidence that legal sophistication plays a role in the ability to navigate reasoning requirements. Though the reform did not notably change the proportion of contracts with a DC-area place of performance (M6),⁴⁹ it appears that the reform increased the proportion of contracts awarded to firms with offices in the DC-area by about 21 percentage points (M8). As DC-area firms plausibly have more ready access to sophisticated legal advice, this result suggests that legal sophistication may mediate the reasoning and competition requirements introduced by Section 811. Still another interpretation is that tribes were associated with a disproportionate number of unjustifiable contracts, leading to disproportionate losses under the reason-giving reform.

VI. Conclusion

How do we discipline the behavior of those who enjoy relatively fixed and uniform salaries, cannot easily be fired, and do not face elections? Though not typically framed in this way, this is a question core to the organization of our public institutions. The answer implicit in the law and practices of bureaucratic bodies and courts is public reasoning. Both the law that governs bureaucracies and the norms and practices of judicial behavior key heavily off of competencies in reason-giving. The survival of a rule or order often depends on the adequacy of the accompanying reasons, as judged by a third party.⁵⁰ Professional reputations and relational status arrangements often depend importantly on peer judgments about reasoning capacities (Lebovits 2008).

Despite this centrality, there is virtually no quantitative observational evidence on how reasoning requirements influence the behavior of public actors. If public reasoning is truly at the foundation of our legal institutions, this silence is not in fact a surprise, as it will be challenging to find variation in requirements that can be usefully examined in an empirical

⁴⁹I also find no evidence of changes in the proportion of veteran-owned firms winning contracts.

⁵⁰That party might be another agency, a federal court, or a higher court.

study. Thus the evidence that does exist comes from laboratory experiments, which allow the researcher to manipulate institutional features. Though informative, laboratory experiments suffer inherent limitations. Exploiting a natural experiment around federal contracting, this study presents the observational examination of how public reasoning requirements affect fidelity to statutory objectives.

The main results from this study indicate that reasoning requirements substantially increase compliance with statutory objectives. Compelling official to explain sole-source contracts increased the proportion of contracts that were competed by 35-50 percentage points in preferred specifications. This finding appears robust to a wide range of estimation strategies and substantiates a central claim of those arguing the importance of public reasoning. Reasoning requirements, that is, seem to represent a viable response to the vexing issue of accountability absent financial and electoral sanctions.

Secondary results suggest a complex set of trade offs associated with public reasoning. Public reasoning requirements appear to reduce the volume of agency activity and to substantially privilege those with access to sophisticated “procedural and reasoning” professionals, at least in the short term. The composition of new contracts subjected to reasoning requirements shifted away from firms owned by tribal entities, and toward those with addresses in the DC-area. It is possible that this compositional shift is transitory. It is also possible that these tradeoffs may be managed by incorporating their consideration into the reasoning requirement. The statutory objective that this reasoning reform keyed into was competition; keying reason-giving to other objectives may enhance those objectives. But if not, how one assesses the trade offs associated with public reasoning depends on value-weights outside of this analysis.

One feature of the natural experiment in this study is that the reasoning requirement only affects actions presumed not to be in compliance with the statute. That is, if an agency competes a contract, it need not offer an explanation; it need only do so if it wishes

to enter a sole-source contract. This might appear out of line with many public sector reasoning requirements. Agencies must explain their choice in notice-and-comment rules, for instance, regardless of the underlying choice; judicial opinions, likewise, attach regardless of disposition. The most uncontroversial interpretation of this natural experiment, therefore, is that it examines reasoning requirements of the “comply-or-explain” variety.⁵¹ But it is also fair to see this analysis as a more general heuristic examination of reasoning requirements as plain compliance with governing authorities tends to require little explanation. A judge, for instance, that squarely follows precedent typically does not need to explain his action beyond a citation; a judge departing from a precedent, on the other hand, must justify that departure.

It is challenging to find useful variation in reasoning requirements—again, sensibly, to the extent they do work in our system—but further research would help color and qualify the findings of this analysis. Although this natural experiment involved public reasoning, for instance, as well as third party approval, it did not feature a public participation component, common to rulemaking by administrative bodies, and courts insofar as they consider amici briefs. Likewise, a range of additional secondary outcomes, such as the interaction between public reasoning and the incentives to rent-seeking and lobby, remain theoretically relevant but unexplored.

⁵¹One view, for example, is that under arbitrariness review agencies need to offer a quantified cost-benefit analysis or explain why they did not, *Business Roundtable v. S.E.C.*, 647 F.3d 1144, 1149 (D.C. Cir. 2011).

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