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Major Government Customers and Loan Contract Terms

Abstract: We examine the relation between the presence of U.S. government as a major customer and a supplier firm's loan contract terms, using major corporate customers as a benchmark. We find that firms with major government customers are associated with a lower number of covenants and a lower likelihood of having performance pricing provisions in their loan contracts. In contrast, we do not find such associations for firms with major corporate customers. Further, we find no evidence that the existence of major government customers is related to the supplier firm's loan spread, security, or maturity. We conjecture that lenders benefit from the stricter monitoring activities of the government as a major customer and thus use fewer covenants and performance pricing provisions when lending to firms with major government customers than when lending to those with major corporate customers. We provide evidence consistent with this conjecture.

Keywords: major government customers; major corporate customers; loan contract terms.

JEL Classification: G30; H57; L14;

1 Introduction

A firm can be viewed as "a nexus of contracts" among various stakeholders (Jensen and Meckling 1976; Fama and Jensen 1983). It is theoretically and empirically interesting to understand how different contracting relationships interact with each other. In this paper, we investigate how a firm's contracting relationship with its major customers impacts its contracts with creditors. In particular, we examine the relation between the presence of U.S. government as a major customer and the supplier firm's loan contract terms, using major corporate customers as a benchmark.

The U.S. government as a major customer is unique, and its presence can affect the supplier firm's loan contracting differently from major corporate customers through at least two channels. First, it can affect the supplier firm's loan contract terms via its operating risk and performance. On the one hand, prior studies find that major government customers could reduce the supplier firm's operating risk, while major corporate customers generally increase the risk (Dhaliwal et al. 2016; Cohen and Li 2020). The reason is that the government is unlikely to declare bankruptcy, and federal procurement contracts are typically long-term, explicit, and based on cost-plus pricing (Dhaliwal et al. 2016). This reduced operating risk could lead to more favorable loan contract terms. On the other hand, practitioners generally believe that doing business with the government involves more risk than dealing with corporate customers, such as payment delays and the government's unilateral right to terminate the contract (e.g., Millman 2019; Musser 2018). Cohen and Malloy (2016) also show that firms with the government as a major customer have lower capital expenditure, R&D expenditure, and sales growth. These adverse effects are likely to lead to more unfavorable loan contract terms.

Second, having the government as a major customer can also affect the supplier firm's loan contract terms because the government conducts more stringent monitoring activities than corporate customers do. The federal procurement process is highly regulated, and government contractors are subject to a lot of monitoring mandated by laws and regulations (e.g., Federal Acquisition Regulation and Cost Accounting Standards), including financial audits and other reviews by the government (Samuels 2020). The objective of government monitoring is to ensure that the contractor has the ability to fulfill its commitments, including having adequate financial resources to deliver the goods and services specified in the contract and providing services or spare parts for products on an ongoing basis. These monitoring procedures are more extensive and detailed than the financial audits performed by external auditors (Samuels 2020). The government also has more resources to enforce its monitoring, including laws (e.g., the False Claims Act) and federal offices set up or authorized to manage and control federal procurement (e.g., the Defense Contract Administration Agency, the Defense Contract Audit Agency, and the Office of Federal Procurement Policy). Thus, violating federal procurement and contract requirements generally results in more serious consequences than failing to comply with private sector contracts (Sweet et al. 2017; Engstrom 2013).

The strict monitoring by the government as a major customer could make the supplier firm's loan contract terms more or less favorable. On the one hand, to the extent that the government cares about whether the supplier firm can provide services or spare parts for products on an ongoing basis, it cares about the supplier firm's downside risk. Thus, the government's monitoring incentives overlap with those of creditors (Cornell and Shapiro 1987; Hui et al. 2012[1]), who also care about downside risk and want to ensure that the borrowing firm has no financial

[1] Consistent with major government customers caring about the supplier firm's downside risk, Hui et al. (2012) document that firms with major government customers have more conservative accounting.

difficulty and is able to repay interest and principal on time. As a result, creditors may benefit from the government customer's monitoring and allow more favorable loan contract terms. On the other hand, if the government imposes too harsh of a penalty on its supplier firm upon identifying a violation, it may adversely affect the supplier firms' operations and loan contract terms (Millman 2019). For instance, Millman (2019) argues that a major risk for a government contractor is that when an interaction with the government fails, the consequences for the business can be "catastrophic": "a public procurement problem can lead to investigations, criminal charges, and reputational injuries that are rarely attendant to private business conflicts" (page 68).

It is therefore unclear ex ante whether the presence of major government customers affects supplier firms' loan contract terms differently than the presence of major corporate customers.[2] Using a large sample of loan contracts from 1995 to 2014 and a model with firm and year fixed effects, we first document strong evidence that the existence of a major government customer is significantly related to fewer monitoring provisions — covenants and performance pricing provisions — in the supplier firm's loan contracts.[3] In contrast, we do not find such relations with the existence of a major corporate customer.[4] The differential effects of major government versus corporate customers on covenants are statistically and economically significant. We do not find evidence that the presence of major government customers is significantly related to loan spread,

[2] The existence of a government customer may also reflect or lead to political connections. On the one hand, Houston et al. (2014) show that political connections reduce credit risk and thus the costs of bank debt and loan covenants. On the other hand, prior literature suggests that political connections may have an adverse impact on the quality of accounting information and the amount of voluntary disclosure, because there is less need to respond to the capital market's demand for transparency (e.g., Chaney, Faccio, and Parsley 2011; Hung et al. 2018). Thus, lenders may demand greater protection when lending to government contractors.

[3] We identify a customer as a major customer if it accounts for at least 10% of the supplier firm's total sales (e.g., Dhaliwal et al. 2016).

[4] The insignificant effect of major corporate customers could occur for the following reasons. On the one hand, customer base concentration could increase the supplier firm's operating risk (e.g., Dhaliwal et al. 2016). On the other hand, major corporate customers have incentives and powers to monitor the supplier firm due to their stake in the firm (e.g., Cornell and Shapiro 1987; Hui et al. 2012).

collateral requirement, or loan maturity, and these insignificant relations are statistically indistinguishable from the associations between major corporate customers and these loan contract terms.

The negative relation between major government customers and covenant intensity (performance pricing provisions), combined with the insignificant association between major government customers and loan spread, is likely to be consistent with the monitoring channel rather than the operating risk channel.[5] This is because covenants and performance pricing provisions are used specifically to mitigate borrower-lender agency conflicts and increase contracting efficiency (Jensen and Meckling 1976; Asquith, Beatty, and Weber 2005). It is possible that an economic factor that affects the agency problem and monitoring need affects covenant intensity and performance pricing but has no impact on loan spread (Lou and Otto 2020). In contrast, if an economic factor affects a borrower's default risk through its operating risk rather than through agency conflicts, it is very likely that the factor will be priced in loan spread.[6]

To further shed light on whether the documented relation between major government customers and covenant intensity (performance pricing provisions) is driven primarily by the enhanced monitoring performed by government customers, we conduct three sets of additional analyses. First, we show that the negative relation between major government customers and covenant intensity is more pronounced in presidential re-election years. This finding is consistent with the monitoring channel because the government's incentives to monitor its suppliers could be stronger during the re-election years due to taxpayers' voting powers and demand for government

[5] In an untabulated analysis, we find that having major government customers does not affect the supplier firm's estimated default likelihood, CDS spreads, or credit rating, and the effect of major government customers does not differ from that of major corporate customers. This evidence provides further support that it is unlikely that our findings for covenant intensity and performance pricing are due to the operating risk channel.

[6] We acknowledge that the reduced operating risk may also change covenant intensity because agency conflicts vary with the borrower's default risk. However, if an economic factor affects only the agency conflicts but not the default risk, it is possible that covenant intensity changes but loan spread does not.

accountability (Besley and Burgess 2002). In contrast, if the negative association between major government customers and covenant intensity occurs because government contracts reduce the contractors' operating risk, we expect the association to be weaker during re-election years because government purchases are likely to be less sustainable in those periods due to political uncertainty.

Second, we show that the negative association between major government customers and financial covenant intensity is weaker in the presence of an alternative monitoring mechanism — the existence of covenants in outstanding debt. This evidence is consistent with the monitoring channel because prior research shows that new lenders tend to delegate monitoring to existing lenders; thus, the benefit from government monitoring would be smaller when the borrower has more outstanding covenants (Lou and Otto 2020). In contrast, if the negative association between major government customers and financial covenant intensity is due to the reduced operating risk, we would not observe such a weakened association.

Third, we find that major government customers are not associated with the intensity of bond covenants. Because bond covenants play a much smaller monitoring role than loan covenants (Nini, Smith, and Sufi 2012; Sansone and Taylor 2007), the insignificant results for bond covenants support our argument that the negative relation between major government customers and loan covenants is due to government monitoring substituting bank monitoring, not reduced operating risk.

Fourth, we manually collect government procurement contracts and examine whether borrowers that are required to provide financial data to the government customer are associated with different loan contract terms. We find that firms with this requirement in their government procurement contracts are less likely to have performance pricing provisions in their loan contracts. We do not find a similar association for loan spread. To the extent that this contractual

requirement reflects stricter monitoring, the evidence is consistent with the monitoring channel. [7]

The difficulty of identifying the impacts of major government customers on loan contract terms is that certain firms may select the government as a major customer, or the government may select certain firms as its suppliers. Thus, the empirical results we document may simply be a function of firm characteristics, not of the fact that they have a major government customer. We employ two approaches in the main research design to address this endogeneity concern. First, to ensure that our treatment and control firms have similar credit quality, we match loan packages issued by firms with major government customers with those issued by firms without major government customers based on credit rating and year. Second, we incorporate both firm and year fixed effects into the regressions (e.g., Bertrand and Mullainathan 2003, Valta 2012). The firm fixed effects control for time-invariant firm characteristics that may be associated with a firm's having a major government customer, and the year fixed effects control for common time-variant factors (e.g., macroeconomic conditions). This research design allows us to estimate the effect of *within-firm changes* in a firm's business transaction with the government on loan contract terms.

We conduct two additional tests to further mitigate the endogeneity concern. First, we compare the covenants in loans originated before and after a firm becomes a new government supplier. We find consistent evidence that loans issued after a firm becomes a new government contractor contain significantly fewer covenants than those issued before. Second, we follow Cohen, Coval, and Malloy (2011) and use changes in congressional committee chairmanships as a source of exogenous variation in government procurements. We find consistent evidence that the loan contracts of firms headquartered in the states that experience an exogenous increase in

[7] We acknowledge that this conclusion is at best conjectural. However, this does not dilute our contribution to the literature because we focus on the effect of major government customers on the supplier firm's loan contract terms, using major corporate customers as a benchmark.

government procurement contain fewer covenants and are less likely to have performance pricing provisions than the loan contracts of firms not headquartered in such states.

Our study makes two contributions. First, we contribute to the literature on how a firm's customer base characteristics affect firm fundamentals and corporate outcomes (e.g., Patatoukas 2012, Dhaliwal et al. 2016, Campbello and Gao 2017). We show that firms with major government customers have fewer covenants and are less likely to have performance pricing provisions in their loan contracts, whereas major corporate customers do not have such relations. Our study adds to the emerging research that investigates the economic impacts of government customers (e.g., Banerjee et al. 2008; Dhaliwal et al. 2016; Cohen and Li 2020; Cohen and Malloy 2016).

Second, we contribute to the debt contracting literature by showing that lenders can benefit from the monitoring of borrowing firms by other stakeholders, in particular, the government as a major customer. Prior studies focus on how a lender can benefit from other lenders' monitoring of the borrowing firm (e.g., Beatty, Liao, and Weber 2012). Diamond (1984) argues that delegating monitoring to other "specialist" creditors can reduce monitoring costs when borrowers have multiple classes of lenders. Consistent with this argument, Beatty et al. (2012) show that bondholders can delegate monitoring to other creditors through cross-acceleration provisions. We extend this literature by showing that banks can also benefit from major government customers' monitoring.

2 Institutional background

The U.S. government is an important customer of public and private firms. It purchases many of its products and services from suppliers who meet certain qualifications. The federal government spends more than $500 billion a year on private-sector contractors, which accounts for around 14% of the federal budget (Sahadi 2012). The federal procurement process is highly

regulated, and the government applies standardized procurement procedures that conform to the Federal Acquisition Regulation (FAR), a standardized set of regulations used by all federal agencies in procurements. In the basic federal procurement process, the acquisition personnel, after determining their agency's requirements (that is, the goods and services the agency needs), post a solicitation on the Federal Business Opportunities (FedBizOpps) website. Interested companies prepare their offers in response to the solicitation, and the agency personnel evaluate the offers in accordance with applicable FAR provisions. To be eligible to compete for government contracts, a company must obtain a Data Universal Numbering System number and register with the federal government's System for Award Management (Halchin 2012).

The U.S. government strictly monitors its corporate suppliers as mandated by laws and regulations, such as FAR and FAR supplements, Cost Accounting Standards (CAS), and the National Defense Authorization Act (NDAA). Accordingly, government contractors are subject to financial audits and numerous other reviews by the government. Madsen and Abbott (2017) describe the major laws, regulations, and government offices governing federal procurement, concluding that "There is a huge body of law and an enormous federal bureaucracy devoted to careful, detailed management and control of government contracting" (page 9). Federal offices set up or authorized to monitor contractors include the Defense Contract Administration Agency (DCMA), the Defense Contract Audit Agency (DCAA), the Government Accounting Office (GAO), the Office of Federal Procurement Policy (OFPP), and so forth.

The monitoring procedures for government contractors are more extensive and detailed than financial audits performed by external auditors (Samuels 2020). For instance, Section 42.11 of FAR, "Production Surveillance and Reporting," stipulates specific monitoring requirements for government contractors. Production surveillance is a function of contract administration used to

determine contractor progress and identify any factors that may delay performance. The contract administration office determines the extent of production surveillance based on multiple factors, including the contractor's financial capability. When information on contract performance status is needed, contracting officers may require contractors to submit production progress reports.

The DCAA is one of the primary government agencies responsible for overseeing federal procurements (including government contractors from non-defense industries).[8] The DCAA's audits focus on (i) identifying and evaluating all activities that either contribute to or have an impact on proposed or incurred costs of government contracts; (ii) evaluating contractors' financial policies, procedures, and internal controls; and (iii) performing audits that identify opportunities for contractors to reduce or avoid costs (operations audits). The DCAA's major areas of emphasis include (i) business systems, (ii) management policies and procedures, (iii) accuracy and reasonableness of contractors' forward pricing and incurred cost representations, (iv) adequacy and reliability of records and accounting systems, and (v) contractor compliance with contractual provisions that have accounting or financial significance, such as the Cost Principles (FAR Part 31), the Cost Accounting Standards (CAS) Clause (FAR 52.230-2), and the clauses pertaining to the Truth in Negotiations Act (TINA) (FAR 52.215-10, -11, -12, and -13).

The government has incentives to implement these regulations effectively because the public, media, activists, and political rivals constantly scrutinize government actions. The monitoring has become even stricter in the last decade due to the Open Government movement started in 2009 by President Obama, as evident in practitioners' view that compliance costs are much higher for government contracts than for corporate contracts. Many consulting firms and law firms provide services to help their clients comply with government procurement regulations.

[8] See the DCAA (2012) manual: https://www.dcaa.mil/Content/Documents/DCAAM_7641.90.pdf.

PWC is one such provider. Its website includes the following statements that emphasize the importance and complexity of compliance: "Government procurement contracts are financed by taxpayers, putting contractors under the microscope, with rules and scrutiny that are complex and all-encompassing"; "In recent years, federal contracting regulations have grown significantly, touching every part of the process — from Federal Acquisition Regulation (FAR) and Cost Accounting Standards (CAS) to labor and employment rules"; and "Audits are increasingly rigorous."[9]

Although corporate customers also have incentives to monitor suppliers, they lack such regulatory tools. For instance, while corporate customers can require the supplier to provide some financial and non-financial information (Crawford et al. 2020), they cannot review or audit the supplier's internal information. Nor can they require the supplier to change its internal accounting system, as the CAS does. Samuels (2020) shows that the implementation of the CAS improves contractors' internal information process, leading to higher external reporting quality.

Furthermore, if the government discovers a contractor's incompliance, it can impose more serious penalties than corporate customers can. For instance, the government can initiate or participate in lawsuits against federal procurement frauds under the False Claims Act (FCA).[10] The FCA is used more and more frequently by the government over years, with 16,187 FCA cases filed over the period of 1987 to 2016 (Heese and Perez Cavazos 2019). The size of monetary recoveries has also grown from negligible amounts in 1987 to about $5 billion in 2016. Between 2009 and 2013, the total money recoveries from FCA lawsuits reached over $31 billion, which rivals and even overtakes the amount recovered by private enforcement efforts in securities and

[9] https://www.pwc.com/us/en/services/forensics/government-contracting.html.

[10] There are two types of lawsuits under the FCA: non-qui tam cases and qui tam cases. Non-qui tam cases are government-initiated. In contrast, qui tam cases are initiated by whistle-blowers, and the government (i.e., the Department of Justice) can decide whether to join later.

antitrust over the same period (Engstrom 2013; Heese and Perez-Cavazos 2019). In enforcing the FCA and investigating suppliers, the government can obtain assistance from the Department of Justice (DOJ) and various law enforcement agents at the FBI and Office of the Inspector General (Engstrom 2013). The DOJ can use private information, expertise, and other resources across government agencies. In contrast, corporate customers who sue suppliers can obtain evidence only through formal discovery requests in the lawsuits (Engstrom 2013).

In addition to a monetary penalty, a false claim submitted by the supplier can result in administrative sanctions, contractual actions, further civil fraud suits, and even criminal prosecution of the supplier and the individuals who own or operate it (Sweet et al. 2017). The most serious consequence is potential criminal charges. Criminal charges typically do not apply to corporate customers because they are based on laws about defrauding the country, such as 18 U.S.C. § 287, which prohibits a knowing submission of a "false, fictitious, or fraudulent" claim to the United States, and 18 U.S.C. § 286, which prohibits a conspiracy to defraud the United States "by obtaining or aiding to obtain the payment or allowance" of such a claim.[11] A conviction under § 287 (286) can result in a prison sentence of up to 5 (10) years. For instance, on Aug 29, 2006, Schering-Plough agreed to pay over $255 million to settle *civil* FCA charges related to improperly marketing four of its products for unapproved off-label uses, overcharging federal and state health care programs, and paying physicians kickbacks for prescribing its products. For the same violations, Schering-Plough's subsidiary Schering Sales Corp. pleaded guilty to conspiracy to make false statements and paid a $180 million fine to resolve *criminal* charges. The unit was also *permanently barred from participating in all federal health care programs*.[12]

[11] See Sweet et al. (2017) for a list of commonly used federal laws that lead to criminal charges for violating government contracts.

[12] Source: https://www.contractormisconduct.org/misconduct/1264/schering-plough-off-label-marketing-overcharging-kickbacks-off-label-marketing-overcharging-and-kickbacks-civil.

3 Hypothesis development

Major government customers could affect loan contract terms through the operating risk and monitoring channels, and the effect could be different from that of major corporate customers. On the one hand, major government customers may lead to more favorable loan contract terms for the supplier firm, and their effect could be more favorable than that of major corporate customers. First, although major corporate customers generally increase a supplier firm's operating risk, major government customers could reduce it (e.g., Banerjee et al. 2008; Dhaliwal et al. 2016; Campbello and Gao 2017; Cohen and Li 2020). Dhaliwal et al. (2016) show that the concentration of corporate customers is positively associated with the cost of equity, while the concentration of government customers is negatively associated. Cohen and Li (2020) document that demand uncertainty decreases with the concentration of government customers but increases with the concentration of corporate customers. To the extent that reduced operational risk lowers the supplier firm's credit risk, creditors may grant more favorable contract terms to firms with major government customers.

Second, the U.S. government strictly monitors its corporate suppliers, and it can be a better monitor than a major corporate customer. For instance, as we discuss earlier in Section 2, the auditing of government contractors is mandatory and is under the oversight of the DCAA. The auditing of the DCAA not only focuses on detailed cost elements but also emphasizes financial policies, procedures, internal controls, and business systems (e.g., Ahadiat and Ehrenreich 1996; Samuels 2020). Any deficiencies in contractors' accounting systems or material weaknesses in their internal control systems can result in penalties. Moreover, the U.S. government has more regulatory powers than a major corporate customer to enforce its monitoring standards. The government customers' strict monitoring role can reduce creditors' monitoring needs due to their overlapping monitoring objectives.

The objective of government monitoring is to ensure that the contractor can fulfill its commitments, including having adequate financial resources to deliver the goods and services specified in the contract and providing services or spare parts for products on an ongoing basis (Samuels 2020). If the supplier firm has survival issues, it will not be able to fulfill its government contract commitments. Thus, government customers care about the supplier firm's downside risk. This concern for the downside risk is reflected in government customers' demand for conservative financial reporting (Hui et al. 2012). Creditors are concerned primarily about the borrowing firm's downside risk due to their fixed claims on the firm. This concern is also reflected in creditors' demand for accounting conservatism (e.g., Watts 2003; Zhang 2008). To the extent that the government customers' monitoring of the supplier firm reduces creditors' monitoring needs, creditors may grant more favorable contract terms to the firm, such as fewer covenants.[13]

On the other hand, having major government customers may lead to less favorable loan contract terms for the supplier firm, and the effect could be more unfavorable than that of major corporate customers. First, research has shown that contracting with the government can have some adverse impacts on the contractors (Cohen and Malloy 2016; He et al. 2020). Cohen and Malloy (2016) show that firms with the U.S. government as a major customer have lower capital expenditure, R&D expenditure, and sales growth. In contrast, firms with major corporate customers have higher capital expenditure, R&D expenditure, and sales growth. These adverse impacts of major government customers can affect the supplier firm's debt service ability. For example, lower sales growth will likely lead to lower operating cash flows in the near future, which can in turn negatively impact the supplier firm's debt repayment. Second, the mandatory

[13] When the monitoring benefits of covenants are lower, the contracting parties reduce the use of covenants because of the related costs. The direct costs of covenants include the costs of negotiating, implementing, and renegotiating the covenants. The indirect costs include the adverse effects of covenants on the borrowing firm's investment, financing, and operating activities.

monitoring of government customers can also empower them to use regulatory forces to expropriate benefits from their supplier firms or to impose harsh penalties upon the suppliers' contract violations, which may have adverse impacts on their supplier firms' operations and loan contract terms. Practitioners generally believe that doing business with the government involves more risk than dealing with corporate customers, such as payment delays and the government's unilateral right to terminate the contract (e.g., Millman 2019; Musser 2018).

Despite the much higher compliance risk, contractors are still willing to deal with the government because of the potential economic benefits we discuss above. In addition, for certain products, the government has very high bargaining power. For instance, in the defense industry, "the product market is unusual on the demand side because it is dominated by a single customer, the federal government. Other customers are present, such as foreign governments, states, municipalities, and private citizens, but the market is clearly dominated by the single, large customer" (Demski and Magee 1992, page 732).

Given the mixed predictions from the above arguments, we propose the following non-directional hypothesis:

H1: *The effect of major government customers on the supplier firm's loan contract terms is not different from that of major corporate customers.*

We examine the following major loan contract terms: covenant intensity, performance pricing provision, interest spread, loan maturity, and collateral requirement. The agency theory argues that debt covenants mitigate agency problems between debt holders and shareholders (Jensen and Meckling 1976; Myers 1977; Smith and Warner 1979). The incomplete contracting theory, which provides another theoretical perspective on debt covenants, emphasizes control rights and views covenants as a tool to more efficiently allocate control rights (Grossman and Hart

1986; Hart and Moore 1988, 1990; Aghion and Bolton 1992). Building on the incomplete contracting theory, Demerjian (2017) predicts and finds that uncertainty about future economic events and their consequences for firms' creditworthiness is a determinant of using financial covenants, in addition to agency problems. Both the agency theory and incomplete contract theory predict that firms with more agency problems and lower credit quality have more covenants in their loan contracts.

Performance pricing provisions in loan contracts link bank interest rate spreads to borrowers' performance measures, such as credit ratings and debt-to-EBITDA ratio. Asquith et al. (2005) suggest that performance pricing provisions are more common when the potential for adverse selection and moral hazard is higher. Shorter debt maturity enables more frequent monitoring by the lender (Diamond 1991; Rajan and Winton 1995). Armstrong, Guay, and Weber (2010) argue that reduction in maturity can be a substitute for accounting-based covenants in monitoring the borrower. Further, collateral requirement is another contractual tool that creditors use to monitor the borrower, especially when creditors' payoffs are sensitive to the borrower's financial health (Rajan and Winton 1995). Finally, loan spread is negatively associated with the borrowing firm's credit quality (Holmstrom and Tirole 1997; Stulz and Johnson 1985; Boot, Thakor, and Udell 1991; Asquith et al. 2005).

4 Empirical analysis

4.1 Variable measurement and research design

We estimate the following model to examine the effect of major government customers on loan contract terms, using major corporate customers as a benchmark:

$$\begin{aligned} \textit{Loan term} = {} & \alpha + \beta_1 \textit{SaleGov dummy} + \beta_2 \textit{SaleFirm dummy} + \beta_3 \textit{Firm Controls} \\ & + \beta_4 \textit{Loan Controls} + \textit{Credit Rating FE} + \textit{Loan Type FE} \\ & + \textit{Loan Purpose FE} + \textit{Firm FE} + \textit{Year FE} + \varepsilon. \end{aligned} \quad (1)$$

Our main measure of the presence of a major government customer is an indicator variable, *SaleGov dummy*, which equals one if a firm discloses the federal government as a major customer, and zero otherwise.[14] *SaleFirm dummy* is an indicator variable that equals one if a firm has a major corporate customer, and zero otherwise. [15] Although a firm may voluntarily disclose a customer with sales below 10%, we follow Dhaliwal et al. (2016) and define a major government/corporate customer as one that accounts for at least 10% of the supplier firm's sales. This approach mitigates the potential selection bias related to firms' voluntarily reporting customers with sales lower than 10% (Dhaliwal et al. 2016).

We investigate the following loan contract terms (*Loan term*): covenant intensity (*All covenants*), performance pricing provision (*Performance pricing*), loan spread (*Loan spread*), maturity (*Loan maturity*), and collateral requirement (*Loan security*). Following prior studies (e.g., Demiroglu and James 2010; Bradley and Roberts 2015), we quantify the use of loan covenants by simply counting them (*All covenants*). We also separately examine the number of general covenants (*General covenants*) and the number of financial covenants (*Financial covenants*).

An important challenge in identifying the causal effect of the existence of major government customers on loan contract terms is that firms with significant business transactions with the government may be fundamentally different from other firms. For instance, Cohen and Li (2020) document that these firms are smaller, are more profitable, and have less volatile earnings than firms that have no government customers. As a result, the estimated effect of *SaleGov dummy* on loan contract terms could be due to omitted firm characteristics that are associated with both the presence of major government customers and loan contract terms. Our focus on comparing the

[14] Our results are robust to using sales to major government customers as a percentage of total sales.
[15] In addition to major corporate and government customers, a firm may have other major customers, such as individuals and non-profit organizations.

effect of *SaleGov dummy* with that of *SaleFirm dummy* mitigates the endogeneity concern to some extent because this approach helps rule out the possibility that the documented effect of *SaleGov dummy* is due to the existence of a major customer rather than the unique feature of having a major government customer.

We address the endogeneity concern further in the main research design in two ways. First, to ensure that our treatment and control groups are similar in credit risk, we match loan packages issued by firms with major government customers with those issued by firms without major government customers by credit rating and year. Specifically, for each loan package issued by a firm with a major government customer, we require the existence of at least another loan package issued by a firm without a major government customer with the same credit rating and in the same year.[16] We keep only the treatment and control observations that can be matched on credit rating and year.[17]

Second, we follow prior studies (e.g., Bertrand and Mullainathan 2003; Valta 2012; Christensen, Hail, and Leuz 2016) and incorporate both firm and year fixed effects into equation (1). Firm fixed effects control for unobservable time-invariant differences between firms with and without government customers, allowing us to estimate the effect of *within-firm changes* in the existence of a major government customer on loan contract terms. The year fixed effects control for common time-variant factors, such as macroeconomic conditions. As Bertrand and Mullainathan (2003) explain, with this approach, for a firm that experiences a change in *SaleGov dummy* in a given year, all sample firms that do not experience a change in that year serve as control firms. In this sense, equation (1) is essentially a difference-in-differences design (Bertrand

[16] We match treatment observations pertaining to unrated firms with control observations from unrated firms.
[17] A treatment observation can have multiple matched control observations. Similarly, a control observation can also be matched to multiple treatment observations.

and Mullainathan 2003, Valta 2012). To implement the firm fixed effects estimation, we further require each firm to have at least two loans.[18]

We follow prior studies and control for firm and loan characteristics that may be associated with major loan contract terms (e.g., Graham, Li, and Qiu 2008; Costello and Wittenberg-Moerman 2011). Specifically, we control for the following firm characteristics: firm size (*Log(Assets)*), leverage ratio (*Leverage*), asset tangibility (*Tangibility*), returns on assets (*Profitability*), market-to-book ratio (*Market to book*), and the volatility of operating cash flows (*Cash flow volatility*). These variables are defined in Appendix A. Following the literature (e.g., Costello and Wittenberg-Moerman 2011; Li et al. 2016), we measure the firm characteristics in the fiscal year prior to the loan issuance. To capture the effect of monitoring activities by the borrowing firms' existing creditors, we also include an indicator (*Prior covenants*) for the presence of covenants in the borrowing firm's existing loans or bond contracts at the time when the new loan is originated (Lou and Otto 2020).[19]

To further control for the effect of borrowing firms' credit quality, we include fixed effects for all credit rating categories, including an indicator variable for unrated firms. This specification allows us to control for any possible nonlinear effect that a borrower's credit rating may have on loan terms. We also control for the following loan characteristics: the natural logarithm of loan amount (*Log(Amount)*) and maturity (*Log(Maturity)*), as well as fixed effects for loan types and loan purposes. Finally, we cluster the standard errors by each firm to account for potential within-firm dependence in the error terms.[20]

[18] Our results are qualitatively similar when we remove this requirement.
[19] Consistent with new lenders delegating monitoring to existing lenders, Lou and Otto (2020) document that when a firm has more covenants outstanding, its new loan contains fewer covenants. The presence of prior covenants is based on data for previously issued loans and bonds from Dealscan and Mergent FISD. Dropping the indicator *Prior covenants* from the regressions does not change our results.
[20] Our results are robust to clustering the standard errors by industry.

We estimate an OLS model for all loan terms. When the dependent variable is *All covenants*, *General covenants*, or *Financial covenants*, we also estimate a Poisson model in the baseline analysis. When the dependent variable is the use of performance pricing (*Performance pricing*), we also estimate a conditional logit model. Although nonlinear models with firm fixed effects are generally subject to the incidental parameters problem, the coefficients of a Poisson model and a conditional logit model with firm fixed effects can be consistently estimated (Wooldridge 2002; Cameron and Trivedi 2005).

4.2 Data and summary statistics

We obtain major customer data from the Compustat segment files, which provide the types and names of major customers of U.S. public firms along with the dollar amounts of annual sales to the customers. The Statement of Financial Accounting Standards No. 14 (SFAS 14), which was issued by the Financial Accounting Standards Board (FASB) in 1976, requires a supplier to report external customers that individually account for 10% or more of its revenues. Although SFAS 14 was later superseded by SFAS 131, the requirement to disclose such customers remains unchanged for public firms under SEC Regulation S-K Item 101. Although firms are required to disclose only customers that generate 10% or more of their revenues, public firms often voluntarily report customers that generate less than 10% of total sales.

We obtain data on loan characteristics from the Dealscan database. Dealscan is provided by Loan Pricing Corporation (LPC) and contains a wide range of loan characteristics, such as loan amount, interest spread, and covenants.[21] We merge the Dealscan data with the Compustat data

[21] A potential concern with the covenant data in Dealscan is that Dealscan does not report covenants for some loan packages, which may lead to measurement errors. However, to the extent that loans with missing covenant information represent covenant-lite loans, removing them would throw out useful information. Thus, following Costello and Wittenberg-Moerman (2011), we code loans with missing covenant information in Dealscan as having no covenants and include them in our sample. Nevertheless, we also conduct robustness tests using only loans with covenant information. We find qualitatively similar results.

using the linking table provided by Dealscan, which is based on Chava and Roberts (2008).[22] We match each loan with the borrower's financial information in Compustat in the fiscal year prior to the loan issuance. After merging Dealscan with Compustat segment files, excluding financial and utilities firms, matching based on credit rating and year (see Section 4.1), requiring the availability of control variables in the multivariate analyses, and requiring a firm to have at least two loans for the implementation of firm fixed effects, we obtain 9,542 loan packages issued by 2,105 U.S. public firms over the period spanning 1995–2014. We describe the detailed sample selection process in Appendix B.

Table 1 presents summary statistics for our sample. The sample sizes for loan spread, maturity, security, and performance pricing are larger than 9,542 because these variables are measured at the loan facility level. On average, 10% of firms have at least one major government customer, and 47% have at least one major corporate customer. Conditioning on having the U.S. government as a major customer, firms generate 38% of annual sales from their transactions with the government (*SaleGov%*). Conditioning on having a firm as a major customer, firms generate 36% of annual sales from corporate customers (*SaleFirm%*). Although major corporate customers are more common than government customers, percentage sales from these two types of major customers, conditional on the existence of the respective customers, are comparable.

An average firm in our sample has total assets of $3.6 billion. On average, a firm has a leverage ratio of 28%, profitability of 12%, a market-to-book ratio of 1.72, and a tangibility ratio of 30%. Forty-four percent of firms have credit ratings. Conditional on being rated, an average firm has a credit rating of 11, corresponding to S&P's BB+ rating. The average loan amount is

[22] For recent loans that are not covered by the linking table in Dealscan, we manually match them to Compustat by company names and addresses.

$370 million, and the average loan maturity is 47 months.[23] On average, a loan package contains 1.71 financial covenants and 1.66 general covenants. The average loan interest spread is 204 basis points above LIBOR (London Interbank Offer Rate). On average, 76% of loan facilities are secured, and 44% of loan facilities contain performance pricing provisions.

Table 2 shows that the sample firms cover most major economic sectors (based on Fama-French 12 industry classification), with the largest fraction in the manufacturing industry (18.3%). The likelihood of having a major government customer is the highest in the healthcare, medical equipment, and drugs industry (25%) and in the business equipment industry (16%). On average, 10.1% and 6.4% of firm sales in these two industries, respectively, are generated from major government customers.

4.3 Main results

Table 3 presents the regression results related to covenant intensity and the use of performance pricing. The covenant analysis is conducted at the loan package level because all facilities in a loan package are governed by the same set of covenants. Column (1) reports an OLS regression of covenant intensity proxied by the total number of covenants (*All covenants*). The estimated coefficient on *SaleGov dummy* is negative and significant (–0.620, *t*-statistic = –2.917), suggesting that a firm has fewer loan covenants when it has a major government customer than otherwise. In contrast, the estimated coefficient on *SaleFirm dummy* is statistically insignificant (–0.142, *t*-statistic = –1.472). Thus, there is no conclusive evidence that major corporate customers are related to the supplier firm's covenant intensity. Moreover, the coefficient on *SaleGov dummy* is statistically more negative than that on *SaleFirm dummy* (*p*-value = 0.041). The effect of *SaleGov dummy* is also economically more significant than that of *SaleFirm dummy*. The estimated

[23] For a loan package with multiple facilities, we report the maturity and amount of the largest facility.

coefficient on *SaleGov dummy* versus *SaleFirm dummy* indicates that having the government as a major customer is associated with a reduction in the number of covenants by 0.48 (0.62-0.14=0.48) compared to having a major corporate customer. This differential effect accounts for approximately 14% (= 0.48/3.37) of the average number of covenants in the sample. Column (2) repeats the analysis using a Poisson model, and the results are qualitatively similar. These results suggest that the relation between major government customers and covenant intensity is significantly more negative than that between major corporate customers and covenant intensity.

The coefficients on control variables are largely consistent with prior studies (e.g., Graham et al. 2008; Costello and Wittenberg-Moerman 2011). For instance, we find significantly negative coefficients on *Log(Assets)* and *Market to book*, consistent with firms with lower credit quality having more covenants in their loan contracts. The coefficient on *Prior covenant* is reliably negative, suggesting that firms with covenants in the existing loans or bonds have fewer covenants in a new loan. This finding is consistent with new lenders benefiting from the monitoring activities of existing lenders (Lou and Otto 2020).

We then examine the effects of government versus corporate customers on the uses of general covenants and financial covenants separately, because as Christensen, Nikolaev, and Wittenberg-Moerman (2016) note, general and financial covenants may serve different monitoring roles. By separating general and financial covenants, we shed light on what categories of covenants are more affected by major government customers than by major corporate customers. We decompose the total number of covenants (*All covenants*) into the number of general covenants (*General covenants*) and the number of financial covenants (*Financial covenants*), and estimate OLS and Poisson regressions for these two dependent variables in Columns (3)–(6) of Table 3. The coefficients on *SaleGov dummy* are consistently negative and significant in those columns,

whereas the coefficients on *SaleFirm dummy* are all insignificant. Furthermore, the differences in the coefficients of *SaleGov dummy* and *SaleFirm dummy* are significant for the OLS models (*p*-values equal 0.075 and 0.080, respectively, in columns (3) and (5)) and are marginally significant for the Poisson models (*p*-values equal 0.110 and 0.111, respectively, in columns (4) and (6)). In terms of economic magnitudes, the OLS regression coefficients show that the existence of a major government customer is associated with a reduction in the number of general covenants by 0.28 (0.38-0.10=0.28) and the number of financial covenants by 0.20 (0.24-0.04=0.20), compared to having a major corporate customer. These differential effects account for 17% (= 0.28/1.66) and 12% (= 0.20/1.71) of the average numbers of general covenants and financial covenants in our sample, respectively.

In last two columns of Table 3, we analyze the effect of having a major government versus corporate customer on performance pricing provisions in a firm's loan contracts using an OLS model and a conditional logit model. Because performance pricing is a feature at the loan facility level, we perform this analysis at the facility level. While a conditional logit model is not subject to the incidental parameter problem, it would not allow us to consistently estimate the average marginal effects of the explanatory variables (Wooldridge 2002). Thus, we rely on the OLS model to interpret marginal effects. Similar to our results on covenant intensity, the coefficients on *SaleGov dummy* are significantly negative, while the coefficients on *SaleFirm dummy* are statistically insignificant. However, the difference in the coefficients is at most marginally significant (*p*-values equal 0.137 and 0.112 in columns (7) and (8), respectively). On average, firms are 5% (0.067-0.017=0.050, column (7)) less likely to have performance pricing provisions in their loan contracts when they have a major government customer than when they have a major corporate customer. The differential effect is economically significant relative to the average

likelihood of using a performance pricing provision in our sample (44%). Taken together, the evidence in Table 3 indicates that the existence of a major government customer significantly reduces covenant intensity and the use of performance pricing provisions in the supplier firm's loan contract, relative to having major corporate customers. [24]

Table 4 reports the results of examining the effect of major government customers on loan spread, maturity, and security. These analyses are performed at the loan facility level. To conserve table space, we report only the results based on OLS models. The results based on conditional logit models for loan security are consistent with those based on OLS models (untabulated). We find that the coefficients on *SaleGov dummy* are insignificant across all columns, suggesting that having a major government customer is not significantly related to loan spread, maturity, or collateral requirement. The coefficients on *SaleFirm dummy* are also insignificant. Moreover, for each dependent variable, the coefficient on *SaleGov dummy* is statistically indistinguishable from that on *SaleFirm dummy*. Collectively, the results in Table 4 indicate that the relations between major government customers and the supplier firm's loan spread, maturity, and collateral requirement are not statistically different from those of major corporate customers.

4.4 Channel analyses

While our main goal is to examine the effect of major government customers on a supplier's loan contract terms using major corporate customers as a benchmark, we also attempt to shed light on whether the documented effects for covenant intensity and the use of performance pricing provisions are due to the lower operating risk associated with government sales (the risk channel) or the enhanced monitoring by government customers (the monitoring channel). Borrower-lender agency problems and default risk due to firm fundamentals can both impact loan contract terms.

[24] Our results are also robust to additionally controlling for loan spread and collateral requirement (untabulated).

The monitoring channel can work through the former, while the risk channel (as we define it above) relates primarily to the latter.

As loan spread is very sensitive to the borrowing firms' credit risk, the insignificant relation between major government customers and loan spread suggests that the reduced risk is probably not a major channel, because otherwise loan spread would be negatively related to the presence of major government customers.[25] In contrast, when an economic factor reduces the shareholder-creditor agency conflicts, it is possible that it reduces the covenant use but not the loan spread (Jensen and Meckling 1976; Lou and Otto 2020).[26,27] As loan covenants and performance pricing are used mainly as monitoring mechanisms to reduce the agency problem between borrowers and lenders (Jensen and Meckling 1976; Asquith et al. 2005), the negative relation between major government customers and covenant intensity (performance pricing), combined with the insignificant relation between major government customers and loan spread, suggests that enhanced monitoring is likely the primary channel.

We provide several additional analyses to shed further light on this issue. First, we investigate how the association between major government customers and covenant intensity

[25] When operating risk declines, loan spread will decrease because it is a function of default likelihood. When operating risk increases, it could also lead to more covenants because risky borrowers tend to have more severe shareholder-creditor agency conflicts. Thus, an increase in operating risk could lead to two possible outcomes: i) both loan spread and covenants increase, and ii) loan spread increases but covenants do not. Our key point is that an increased risk would lead to a higher spread, because covenants could not completely offset the increased risk.

[26] According to Jensen and Meckling's (1976) framework, when shareholder-creditor agency conflicts increase and nothing is done to address them, loan spread will increase because of creditors' price protection. However, if some monitoring or bonding mechanisms (e.g., debt covenants) were implemented, it would restrict the agency issues. If these mechanisms fully addressed the agency issues, then the loan spread would not increase. If there were still some "residual" agency issues, loan spread would also increase, but to a lesser extent than if no monitoring or bonding mechanisms were implemented at all.

[27] Lou and Otto (2020) examine how debt heterogeneity in firms' debt structure affects the use of covenants in their loan contracts and find that debt heterogeneity is positively associated with covenant intensity but not significantly associated with loan spread. They argue that the finding is consistent with their theoretical argument because "the key argument underpinning our prediction that debt heterogeneity leads to more covenants (rather than higher interest spreads) is that debt heterogeneity increases the inefficiencies associated with liquidity defaults and that covenants can help reduce these inefficiencies." This is because covenants "allow borrowers and creditors to increase total surplus they can share," whereas "increasing the interest rate on the loan would not have the same effect" (page 8 of Lou and Otto's (2020) Internet Appendix).

(performance pricing) varies with the government's incentives to monitor its suppliers. We follow Besley and Burgess (2002) and argue that the government has stronger incentives to monitor its suppliers around the presidential re-election years in order to attract more votes. Therefore, we expect that the negative association between major government customers and covenant intensity (performance pricing) we document in Table 3 will be stronger around the presidential re-election years, if the negative association is due to the monitoring channel. In contrast, if the negative associations are due to the risk channel, we expect them to be weaker around the re-election years as government purchases are likely to be less sustainable due to political uncertainty.

For this analysis, we add *Re-election* and its interactions with *SaleGov dummy* and *SaleFirm dummy* to equation (1), where *Re-election* is an indicator variable that equals one if the loan is issued in a presidential re-election or pre re-election year, and zero otherwise (Besley and Burgess 2002). While the government monitoring intensity will reduce after the re-election year and the level of covenants is a function of the monitoring needed throughout the loan life, we focus on the monitoring intensity in the loan origination year for two main reasons. First, for a loan issued in the re-election or pre re-election year, the proportion of the loan life that is subject to strict government monitoring is higher than a loan issued in other years, especially when loan maturity is short. The average loan maturity in our sample is only 47 months and, due to the high frequency of loan renegotiation (Roberts and Sufi 2019), the "realized" maturity could be much shorter. Second, government monitoring can induce some changes for the contractors (e.g., cost system modification and hiring additional staff) that are unlikely to completely reverse when the monitoring weakens (Ahadiat and Ehrenreich 1996; Samuel 2020).[28]

[28] In addition, to the extent that lenders have a larger stake in a loan at the beginning of the loan life (higher total future interest and possibly higher principal amount) compared to the later period, they may care more about the monitoring need at the beginning of the loan life than in the later period.

The results are presented in Table 5. The coefficients of *SaleGov dummy*×*Re-election* are consistently negative and significant when the dependent variables are *All covenants*, *General covenants*, and *Financial covenant*s (-0.587, -0.263, and -0.323, respectively). In contrast, we do not find significant results for *SaleFirm dummy*×*Re-election* for these dependent variables. Furthermore, the difference between the coefficients of the two interactions terms is significant for the regressions of *All covenants* and *Financial covenants* (p-value = 0.024 and 0.009, respectively), and it is marginally significant for the regression of *General covenant* (p-value = 0.125). For *Performance pricing*, the coefficients of the two interaction terms are both insignificant and statistically indistinguishable from each other. Overall, the evidence in Table 5 supports our conjecture that the negative relation we document between major government customers and covenant intensity is primarily due to the monitoring channel.[29]

Second, we investigate how the association between major government customers and covenant intensity (performance pricing) varies with an alternative monitoring mechanism — the existence of covenants in outstanding debt. Prior research shows that new lenders tend to delegate monitoring to existing lenders; thus, the benefit of monitoring by government customers would be smaller when the borrower has more outstanding covenants (e.g., Lou and Otto 2020). Accordingly, we expect that the negative association between major government customers and covenant intensity (performance pricing) in Table 3 will be weaker in the presence of covenants from existing debt if the negative associations are due to the monitoring channel. However, if the negative association is due to the risk channel, we would not have such a prediction.

For this analysis, we recompute the variable *Prior covenants* as an indicator that equals one if a firm has covenants in an existing debt (loan or bond) but did not have a major government

[29] In an untabulated analysis, we calculate the fraction of the loan life that is expected to be covered by pre re-election and re-election years and use an indicator for high fraction as the interaction variable. We find similar results.

customer when that debt was taken, and zero otherwise. The recalculation mitigates the concern that the use of covenants in the prior debt could be a function of having major government customers prior to debt issuance and thus could already reflect the effect of major government customers.[30] We then add the interaction terms *SaleGov dummy*×*Prior covenants* and *SaleFirm dummy*×*Prior covenants* to equation (1).[31] The results are presented in Table 6. For all dependent variables of covenants and performance pricing, the coefficient of *SaleGov dummy*×*Prior covenants* is positive, whereas it is significant only for *Financial covenants* (0.317, *t*-statistic = 1.993). In contrast, the coefficient of *SaleFirm dummy*×*Prior covenants* is negative and insignificant in all regressions. Furthermore, the difference between the coefficients of the two interaction terms is significant for *Financial covenants* (*p*-value = 0.030) and is marginally significant for *All covenants* (*p*-value = 0.121). These results are consistent with our argument that the benefit of government monitoring is smaller when there are alternative monitoring mechanisms (i.e., prior covenants), and they support our conjecture that the negative relation between major government customers and covenant intensity is primarily due to the monitoring channel. The stronger result for financial covenants is likely due to the stronger role that financial covenants play in allocating control rights (Christensen, Nikolaev, and Wittenberg-Moerman 2016).

Third, because bond covenants play a much smaller monitoring role than loan covenants (Nini, Smith, and Sufi 2012; Sansone and Taylor 2007), we examine the effect of major government customers on bond covenants as a falsification test. Although covenants are common to all types of debt agreements, including bond and note indentures, they are typically more numerous, detailed, and tightly set in private loan agreements (Nini et al. 2012). Financial

[30] When we use *Prior covenants* as defined in equation (1), we obtain arguably stronger results: we find significant coefficients of *SaleGov dummy*×*Prior covenants* for both *All covenants* and *General covenants* (untabulated).
[31] Note that the recomputed *Prior covenants* is also included in equation (1) as a control variable.

covenants in private loan agreements are *maintenance-based*, meaning that the borrower must comply with the covenant on a regular basis. In contrast, financial covenants in bond indentures are usually *incurrence-based*, meaning that the borrower must comply only at the time of a specific event, such as issuing a new debt. Thus, Nini et al. (2012, page 1720) conclude that "The inability to avoid maintenance-based covenants makes private loan contracts much more restrictive." Therefore, we expect a weaker or no association between major government customers and the intensity of bond covenants, if the negative relation between major government customer and loan covenants is primarily due to the monitoring channel. In contrast, if the negative relation is due to the risk channel, we expect similar findings for bond covenants because they are also a function of operating risk.

We obtain data on bond characteristics from the Mergent Fixed Income Securities Database (FISD) and follow Nikolaev (2010) to construct the overall intensity of covenants in bonds (*All covenants-bond*). We match each bond issue with the issuer's financial information in Compustat in the fiscal year prior to the bond issuance. Since bondholders do not have access to borrowers' private information as banks do, we impose a three-month time lag to ensure that the prior year's financial data is publicly available (e.g., Beatty et al. 2012). As in the loan analysis, we control for firm characteristics and bond characteristics, as well as credit rating, firm and year fixed effects. Table 7 reports the results. In both the OLS and Poisson models, the coefficients of *SaleGov dummy* and *SaleFirm dummy* are insignificant and are statistically indistinguishable from each other. The insignificant association between major government customers and bond covenant intensity further supports our conjecture that the negative relation between major government customer and loan covenants is primarily due to the monitoring channel.

Fourth, we investigate the effects of the requirement to provide financial data to the government in government contracts on covenant intensity and performance pricing. If the government's monitoring through financial audits and reviews is the primary channel for our results, we expect these borrowers to have fewer covenants and be less likely to have performance pricing provisions in their loan contracts. For this analysis, we obtain government procurement contracts from the Federal Procurement Data System-Next Generation database (FPDS-NG) for the sample period of 1995–2014 (e.g., Goldman et al. 2013; Samuels 2020). Table 8 reports the results of this analysis, which is conditional on firms for which we can identify a government procurement contract signed within one year before the loan initiation date. To implement firm fixed effects, we require a firm to have a least two observations in the sample. The treatment variable, *Financial data*, is an indicator variable that equals one if the procurement contract requires the firm to provide cost and pricing data to the government during the contract term. Despite the relatively small sample size, the coefficient on *Financial data* is negative in all columns, and it is significant when the dependent variable is *Performance pricing* (column (4)). This evidence suggests that loan contracts are less likely to contain performance pricing provisions when the borrowers are required to provide financial data to the government in the procurement contracts, which is consistent with the monitoring channel.

Overall, the analyses in Tables 5 to 8 provide further support that the negative association between major covenant customers and covenant intensity (the use of performance pricing) is driven primarily by the additional monitoring provided by the government customers. That said, we acknowledge that this evidence is suggestive, and we cannot completely rule out reduced operating risk as a channel.

4.5 Additional analyses

We conduct two additional analyses to further mitigate the endogeneity concern. First, we examine changes of covenants and performance pricing provisions for firms that become a government contractor for the first time in our sample period. Specifically, we restrict the sample to firms that have at least one loan issued before and at least one loan issued after they become a government contractor for the first time, and then we compare covenants and performance pricing provisions in loans originated before and after a firm becomes a new government contractor. Table 9 reports the results. As a result of the restriction we impose, the sample size of this analysis is quite small (380). *Post* is an indicator variable that equals one if a loan is issued after a firm becomes a government contractor for the first time, and zero otherwise. Despite the small sample size, we find consistent evidence that loans issued after a firm becomes a new government contractor contain significantly fewer covenants than those issued before. The coefficient on *Post* is negative and statistically significant in both the OLS and Poisson regressions when the dependent variables are *All covenants* and *Financial covenants*. For *General covenants* and *Performance pricing*, we find a negative but insignificant coefficient on *Post*.

Second, we follow Cohen et al. (2011) and use changes in congressional committee chairmanships as a source of exogenous variation in government procurements.[32] According to Cohen et al. (2011), the selection of a congressional committee's chair is usually determined through a seniority structure within the controlling party. To be appointed chair under most circumstances, a congressman must become the most senior member of the committee belonging to the party controlling the House of Congress. Chairman turnover generally arises from the resignation (or defeat) of the incumbent or from a change in the party controlling that branch of Congress, both of which depend almost entirely on political circumstances in other states. Thus,

[32] We obtain the data on changes in congressional committee chairmanships from the supplemental material of Cohen et al. (2017) at https://doi.org/10.1086/694203.

ascension to a chairmanship is unrelated to events or conditions in the new chairman's home state. Therefore, this setting can be generally viewed as a plausibly exogenous shock to federal government procurements.

We create an indicator variable for congressional chairman turnover (*Shock_top1chair*) that equals one if a senator (representative) from the state where the firm is headquartered was appointed the chairman of the top-ranked Senate Finance Committee (the House Ways and Means Committee) in the three years prior to the new loan issuance, and zero otherwise. We estimate equation (1) with *SaleGov dummy* and *SaleFirm dummy* replaced with *Shock_top1chair*, using the measures of covenant intensity and performance pricing as the dependent variables. The results reported in Table 10 indicate that the estimated coefficients of *Shock_top1chair* are consistently negative, and they are significant except for *Financial covenants* (columns (5) and (6)). This evidence suggests that when government procurement increases exogenously, loan contracts contain fewer covenants and are less likely to have performance pricing provisions. [33]

5 Conclusion

We investigate how having the U.S. government as a major customer is associated with firms' loan contract terms, using major corporate customers as a benchmark. Major U.S. government customers may affect the supplier firm's loan contract terms through their effects on the supplier firm's operating risk, as well as their strict monitoring of the supplier firm. We find that a firm's loan contracts contain fewer covenants and are less likely to have a performance pricing provision when it has a major government customer than otherwise. In contrast, the

[33] In an untabulated test, we also employ an instrumental variable (IV) analysis. Specifically, we follow Dhaliwal et al. (2016) and use the total government sales of each three-digit SIC industry scaled by total industry sales as an instrument variable for our treatment variable *SaleGov dummy*. We continue to find that the existence of major government customers is negatively related to the number of covenants (both general and financial covenants) and the use of performance pricing provisions.

presence of a major corporate customer is not significantly associated with covenant intensity or the use of performance pricing provisions. The differential effect of major government versus corporate customers on covenants is statistically and economically significant.

We conjecture that our findings on covenant intensity and the use of performance pricing provisions are primarily due to lenders benefiting from major government customers' strict monitoring of the supplier firm, not the reduced operating risk. This is the case because having a major government customer is not significantly associated with loan spreads, which are sensitive to the borrowing firm's default risk resulting from its operating risk. Furthermore, consistent with our conjecture, we find that the negative relation between major government customers and covenant intensity is stronger when the government's monitoring incentive is higher (i.e., around presidential re-election years) and is weaker in the presence of an alternative monitoring mechanism (i.e., the existence of covenants in outstanding debt). We do not find a significant association between major government customers and the intensity of bond covenants, consistent with bond covenants playing a much smaller monitoring role than loan covenants. In addition, we find that loan contracts are less likely to contain performance pricing provisions when the borrowers are required to provide financial data to the government in the procurement contracts, further supporting the monitoring explanation.

Our study contributes to the literature on how a firm's customer base characteristics affect firm fundamentals and corporate strategies, as well as the literature on debt contracting. It highlights the uniqueness of the government as a major customer in terms of its monitoring incentives and effectiveness. Future studies can explore the impact of the government as a major customer on other corporate outcomes, such as managerial behavior and financial misconduct.

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Appendix A: Variable Definitions

Variable	Definition
Major customer measures	
SaleGov%	Sales to the U.S. government as a major customer as a percentage of total sales.
SaleGov dummy	Dummy variable equal to one if a firm has the U.S. government as a major customer, and zero otherwise.
SaleFirm%	Sales to major corporate customers as a percentage of total sales.
SaleFirm dummy	Dummy variable equal to one if a firm has a least one major corporate customer, and zero otherwise.
Other firm characteristics	
Cash flow volatility	Standard deviation of quarterly cash flows from operations over the 12 prior quarters divided by sales.
Credit rating	Numeric values assigned to firm ratings issued by S&P ranging from 1 to 23 with the rating "AAA" equal to one. If a firm is unrated, it takes a value of zero.
Financial data	Dummy variable that equals one if the procurement contract contains a requirement that the firm provide cost and pricing data to the government during the contract term.
Market to book	Market value of equity plus book value of debt divided by total assets.
Leverage	Long-term debt plus debt in current liabilities divided by total assets.
Tangibility	Net property, plant, and equipment divided by total assets.
Total assets	Book value of total assets.
Prior covenants	Dummy variable equal to one if there are already covenants specified in a firm's existing loans and bonds outstanding when a new loan is issued.
Profitability	Earnings before interest, tax, depreciation, and amortization divided by total assets.
Shock_top1chair	Dummy variable equal to one if a senator (representative) from the state where the firm is headquartered was appointed chairman of the top-ranked Senate Finance Committee (the House Ways and Means Committee) in the three years prior to the new loan issuance, and zero otherwise.
Re-election	Dummy variable that equals one if it is a presidential re-election or pre re-election year, and zero otherwise.
Unrated	Dummy variable equal to one if a firm is unrated, and zero otherwise.
Debt characteristics	
Callable	Dummy variable that equals one if a bond is callable.
All covenants	Total number of covenants included in the loan contract.
All covenants-bond	Total number of covenants included in the bond contract.
Financial covenants	Total number of financial covenants included in the loan contract.
General covenants	Total number of general covenants included in the loan contract.
Loan	Dummy variable that equals one (zero) if a debt contract is a loan (bond).
Log(Amount)	Natural logarithm of the face value of the loan.
Log(Maturity)	Natural logarithm of the maturity of the loan.
Loan spread	Difference between the interest rate on a loan and the LIBOR.
Loan security	Dummy variable that equals one if a loan is backed by collateral.
Performance pricing	Dummy variable that equals one if a loan has a performance pricing provision.

Appendix B: Sample Selection

	# of Packages
1. Start with the loan packages issued by U.S. public firms in Dealscan over the sample period from 1995 to 2014	43,539
2. Keep the loan packages with GVKEYs	37,240
3. Drop packages issued by financial and utilities firms	28,621
4. Merge with Compustat Segment file and keep only observations that can be matched to the segment file	15,320
5. Keep packages with information available for all control variables	11,774
6. Keep packages that can be matched to another one by credit rating and year	10,642
6. Keep packages issued by firms with at least two packages in the sample	9,542

This table presents the sample selection process. The unit of observation is a loan package.

Table 1. Summary Statistics

Variable	*N*	Mean	Median	Std. Dev.
Firm characteristics				
SaleGov dummy	9,542	0.10	0.00	0.30
SaleFirm dummy	9,542	0.47	0.00	0.50
SaleGov% (*SaleGov%*>0)	930	0.38	0.35	0.20
SaleFirm% (*SaleFirm%*>0)	4,481	0.36	0.32	0.22
Total assets (mills)	9,542	3584.50	796.01	8683.57
Log(Assets)	9,542	6.68	6.68	1.81
Leverage	9,542	0.28	0.26	0.21
Tangibility	9,542	0.30	0.22	0.24
Profitability	9,542	0.12	0.12	0.10
Market to book	9,542	1.72	1.45	0.95
Cash flow volatility	9,542	0.05	0.04	0.05
Prior covenants	9,542	0.77	1.00	0.42
Unrated	9,542	0.56	1.00	0.50
Credit rating	4,171	10.97	11.00	2.81
Loan characteristics				
Loan amount (mills)	9,542	369.75	160.00	567.90
Log(Amount)	9,542	4.94	5.08	1.58
Loan maturity (months, package level)	9,542	46.78	51.00	23.95
Log(Maturity) (package level)	9,542	3.66	3.93	0.69
All covenants	9,542	3.37	3.00	3.20
Financial covenants	9,542	1.71	2.00	1.52
General covenants	9,542	1.66	1.00	2.15
Loan spread	11,724	2.04	1.75	1.24
Log(Maturity) (facility level)	14,318	3.70	4.08	0.67
Loan security	10,608	0.76	1.00	0.42
Performance pricing	14,318	0.44	0.00	0.50

This table presents summary statistics of our sample of 9,542 loan packages issued by 2,105 firms over the time period of 1995-2014. The descriptive statistics of loan spread, loan security, and performance pricing are at the facility level. For loan maturity, we present descriptive statistics at both the package and facility levels. Variable definitions are in Appendix A.

Table 2. Industry Distribution

Industry name	*N*	Percentage	*SaleGov dummy*	*SaleFirm dummy*	*SaleGov%*	*SaleFirm%*
Consumer Nondurables	849	8.90%	0.00	0.61	0.00%	21.06%
Consumer Durables	445	4.66%	0.05	0.53	1.60%	19.42%
Manufacturing	1,742	18.26%	0.11	0.45	4.00%	13.87%
Oil, Gas, and Coal Extraction and Products	930	9.75%	0.01	0.81	0.17%	33.35%
Chemicals and Allied Products	342	3.58%	0.02	0.41	0.24%	13.53%
Business Equipment	1,640	17.19%	0.16	0.44	6.40%	16.33%
Telephone and Television Transmission	185	1.94%	0.02	0.37	0.67%	12.25%
Wholesale, Retail, and Some Services	910	9.54%	0.05	0.32	1.62%	10.46%
Healthcare, Medical Equipment, and Drugs	859	9.00%	0.25	0.37	10.10%	15.30%
Other	1,640	17.19%	0.11	0.40	3.88%	14.91%

This table reports the industry (Fama-French 12 industries) distribution of 9,542 loan packages issued by 2,105 firms over the time period of 1995-2014, and the related information on major government and corporate customers.

Table 3. The Effects of Major Government Customers on Covenant Intensity and Performance Pricing

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All covenants		*General covenants*		*Financial covenants*		*Performance pricing*	
SaleGov dummy	–0.620***	–0.160***	–0.380***	–0.200**	–0.240**	–0.125**	–0.067**	–0.427**
	(–2.917)	(–2.761)	(–2.707)	(–2.555)	(–2.358)	(–2.162)	(–2.296)	(–2.491)
SaleFirm dummy	–0.142	–0.036	–0.104	–0.058	–0.038	–0.017	–0.017	–0.110
	(–1.472)	(–1.262)	(–1.547)	(–1.420)	(–0.800)	(–0.613)	(–1.094)	(–1.176)
Log(Assets)	–0.415***	–0.140***	–0.266***	–0.177***	–0.149***	–0.100***	0.027**	0.143*
	(–4.938)	(–5.555)	(–4.622)	(–5.113)	(–3.526)	(–3.913)	(2.025)	(1.745)
Leverage	0.115	0.018	0.279	0.135	–0.164	–0.098	–0.122***	–0.632**
	(0.364)	(0.218)	(1.279)	(1.187)	(–1.153)	(–1.227)	(–2.761)	(–2.386)
Tangibility	–0.103	–0.086	–0.252	–0.219	0.149	0.027	0.015	–0.223
	(–0.174)	(–0.496)	(–0.629)	(–0.919)	(0.542)	(0.162)	(0.161)	(–0.411)
Profitability	0.486	0.062	–0.179	–0.151	0.665***	0.267*	0.290***	2.157***
	(1.078)	(0.426)	(–0.555)	(–0.689)	(2.753)	(1.786)	(3.571)	(3.883)
Market to book	–0.111**	–0.039**	–0.052	–0.047*	–0.058**	–0.031*	–0.014	–0.083
	(–2.003)	(–2.316)	(–1.352)	(–1.875)	(–2.105)	(–1.874)	(–1.497)	(–1.358)
Cash flow volatility	–1.636	–0.537	–0.808	–0.598	–0.828	–0.549	0.062	0.606
	(–1.410)	(–1.498)	(–1.090)	(–1.239)	(–1.434)	(–1.531)	(0.354)	(0.577)
Prior covenants	–0.255***	–0.063**	–0.043	–0.022	–0.212***	–0.106***	–0.048***	–0.333***
	(–2.672)	(–2.288)	(–0.641)	(–0.542)	(–4.401)	(–4.041)	(–3.223)	(–3.412)
Log(Amount)	0.560***	0.188***	0.365***	0.238***	0.195***	0.129***	0.046***	0.286***
	(10.667)	(9.899)	(10.385)	(9.352)	(7.868)	(7.092)	(8.458)	(8.413)
Log(Maturity)	–0.072	–0.023	–0.084	–0.068**	0.012	0.021	0.051***	0.277***
	(–0.965)	(–0.893)	(–1.622)	(–1.969)	(0.360)	(0.828)	(5.343)	(4.333)
Fixed effects:								
Credit Rating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model	OLS	Poisson	OLS	Poisson	OLS	Poisson	OLS	C. Logit
No. of Observations	9,542	9,542	9,542	9,542	9,542	9,542	14,318	11,148
Adj. R^2/Pseudo R^2	0.384	0.292	0.362	0.338	0.380	0.220	0.329	0.175
P-value for testing *SaleGov dummy = SaleFirm dummy*	0.041	0.061	0.075	0.110	0.080	0.111	0.137	0.112

This table presents results for the effects of a firm's business transaction with the government on covenant intensity and performance pricing of its loan contracts. The dependent variables are the total number of covenants (*All covenants*), the total number of general covenants included (*General covenants*), the total number of financial covenants (*Financial covenants*), and an indicator variable that equals one if a loan has a performance pricing provision (*Performance pricing*). The main explanatory variables are *SaleGov dummy*, an indicator for the presence of major government customers, and *SaleFirm dummy*, an indicator for the presence of major corporate customers. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics or *z*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 4. The Effects of Major Government Customers on Loan Spread, Maturity, and Security

Variable	(1)	(2)	(3)
	Loan spread	*Loan maturity*	*Loan security*
SaleGov dummy	0.011	–0.029	–0.008
	(0.113)	(–0.909)	(–0.289)
SaleFirm dummy	–0.048	–0.011	–0.017
	(–1.247)	(–0.677)	(–1.251)
Log(Assets)	–0.204***	0.002	–0.060***
	(–5.796)	(0.111)	(–5.433)
Leverage	0.674***	–0.126**	0.099***
	(6.085)	(–2.340)	(2.626)
Tangibility	0.172	0.049	–0.105
	(0.778)	(0.482)	(–1.427)
Profitability	–2.024***	0.448***	–0.223***
	(–8.010)	(4.108)	(–3.619)
Market to book	–0.073***	–0.011	–0.030***
	(–3.144)	(–1.066)	(–3.565)
Cash flow volatility	–0.097	–0.023	–0.054
	(–0.212)	(–0.093)	(–0.408)
Prior covenants	0.019	0.008	0.021*
	(0.553)	(0.524)	(1.676)
Log(Amount)	–0.067***	0.069***	–0.026***
	(–4.617)	(10.002)	(–5.370)
Log(Maturity)	–0.052*		0.019**
	(–1.719)		(2.037)
Fixed effects:			
Credit Rating	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes
Model	OLS	OLS	OLS
No. of Observations	11,724	14,318	10,608
Adj. R^2	0.645	0.545	0.660
P-value for testing *SaleGov dummy = SaleFirm dummy*	0.604	0.634	0.782

This table presents results for the effects of a firm's business transaction with the government on interest spread, loan maturity, and collateral requirement. The analyses are at the loan facility level. The sample size varies with the availability of the dependent variable. The main explanatory variables are *SaleGov dummy*, an indicator for the presence of major government customers, and *SaleFirm dummy*, an indicator for the presence of major corporate customers. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 5. Major Government Customers and Covenant Intensity and Performance Pricing: The Moderating Effect of Presidential Re-election Years

Variable	(1)	(2)	(3)	(4)
	All covenants	*General covenants*	*Financial covenants*	*Performance pricing*
SaleGov dummy	-0.428**	-0.294**	-0.134	-0.058*
	(-1.966)	(-2.039)	(-1.265)	(-1.839)
SaleGov dummy×Re-election	-0.587***	-0.263*	-0.323***	-0.030
	(-2.735)	(-1.846)	(-3.212)	(-0.788)
SaleFirm dummy	-0.133	-0.099	-0.034	-0.019
	(-1.307)	(-1.381)	(-0.679)	(-1.137)
SaleFirm dummy×Re-election	-0.057	-0.027	-0.030	0.006
	(-0.446)	(-0.306)	(-0.470)	(0.267)
Log(Assets)	-0.408***	-0.262***	-0.145***	0.027**
	(-4.847)	(-4.558)	(-3.430)	(2.045)
Leverage	0.123	0.283	-0.160	-0.122***
	(0.391)	(1.299)	(-1.127)	(-2.749)
Tangibility	-0.061	-0.233	0.172	0.016
	(-0.103)	(-0.583)	(0.628)	(0.181)
Profitability	0.489	-0.178	0.666***	0.290***
	(1.086)	(-0.551)	(2.763)	(3.574)
Market to book	-0.111**	-0.052	-0.059**	-0.014
	(-2.013)	(-1.357)	(-2.118)	(-1.504)
Cash flow volatility	-1.654	-0.816	-0.838	0.060
	(-1.429)	(-1.102)	(-1.453)	(0.341)
Prior covenants	-0.256***	-0.043	-0.213***	-0.048***
	(-2.681)	(-0.644)	(-4.415)	(-3.234)
Log(Amount)	0.560***	0.365***	0.195***	0.046***
	(10.670)	(10.389)	(7.869)	(8.462)
Log(Maturity)	-0.072	-0.084	0.012	0.051***
	(-0.961)	(-1.620)	(0.362)	(5.349)
Fixed effects:				
Credit Rating	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes	Yes
Model	OLS	OLS	OLS	OLS
No. of Observations	9,542	9,542	9,542	14,318
Adj. R^2	0.384	0.362	0.381	0.329
P-value for testing *SaleGov dummy×Re-election = SaleFirm dummy×Re-election*	0.024	0.125	0.009	0.386

This table presents analyses of how the effect of a firm's business transaction with the government on covenant intensity and the use of performance pricing in its loan contracts varies with the presidential re-election years. The dependent variables are the total number of covenants (*All covenants*), the total number of general covenants (*General covenants*), the total number of financial covenants (*Financial covenants*), and an indicator variable that equals one if a loan has a performance pricing provision (*Performance pricing*). *Re-election* is an indicator variable that equals one if it is a presidential re-election or pre re-election year, and zero otherwise. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 6. Major Government Customers and Covenant Intensity and Performance Pricing: The Moderating Effect of Existing Covenants

Variable	(1)	(2)	(3)	(4)
	All covenants	*General covenants*	*Financial covenants*	*Performance pricing*
SaleGov dummy	-0.761***	-0.434***	-0.327***	-0.084***
	(-3.285)	(-2.799)	(-2.985)	(-2.636)
SaleGov dummy×Prior covenants	0.489	0.172	0.317**	0.063
	(1.459)	(0.724)	(1.993)	(1.157)
SaleFirm dummy	-0.116	-0.103	-0.013	-0.015
	(-0.887)	(-1.115)	(-0.202)	(-0.715)
SaleFirm dummy×Prior covenants	-0.041	-0.001	-0.040	-0.004
	(-0.287)	(-0.012)	(-0.562)	(-0.155)
Log(Assets)	-0.424***	-0.266***	-0.158***	0.024*
	(-5.047)	(-4.622)	(-3.754)	(1.831)
Leverage	0.108	0.287	-0.179	-0.127***
	(0.346)	(1.316)	(-1.263)	(-2.868)
Tangibility	-0.110	-0.251	0.142	0.013
	(-0.187)	(-0.629)	(0.520)	(0.150)
Profitability	0.465	-0.185	0.650***	0.285***
	(1.035)	(-0.575)	(2.711)	(3.519)
Market to book	-0.110**	-0.052	-0.057**	-0.014
	(-1.988)	(-1.357)	(-2.066)	(-1.486)
Cash flow volatility	-1.631	-0.816	-0.815	0.064
	(-1.413)	(-1.101)	(-1.421)	(0.367)
Prior covenants	-0.196*	-0.088	-0.108**	-0.024
	(-1.799)	(-1.177)	(-2.068)	(-1.390)
Log(Amount)	0.559***	0.365***	0.193***	0.046***
	(10.632)	(10.378)	(7.816)	(8.445)
Log(Maturity)	-0.072	-0.084	0.012	0.051***
	(-0.970)	(-1.622)	(0.343)	(5.331)
Fixed effects:				
Credit Rating	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes	Yes
Model	OLS	OLS	OLS	OLS
No. of Observations	9,542	9,542	9,542	14,318
Adj. R^2	0.384	0.362	0.379	0.328
P-value for testing *SaleGov dummy×Prior covenants= SaleFirm dummy×Prior covenants*	0.121	0.478	0.030	0.251

This table presents analyses of how the effect of a firm's business transaction with the government on covenant intensity and the use of performance pricing in its loan contracts varies with the existence of covenants in outstanding debt contracts. The dependent variables are the total number of covenants (*All covenants*), the total number of general covenants (*General covenants*), the total number of financial covenants (*Financial covenants*), and an indicator variable that equals one if a loan has a performance pricing provision (*Performance pricing*). *Prior covenants* is an indicator that equals one if a firm has covenants in an existing debt (loan or bond) but did not have a major government customer when that debt was taken, and zero otherwise. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 7. The Effect of Major Government Customers on Bond Covenants

Variable	(1)	(2)
	All covenants-bond	
SaleGov dummy	–0.009	0.065
	(–0.014)	(0.649)
SaleFirm dummy	0.439	0.075
	(1.357)	(1.421)
Log(Assets)	–0.476*	–0.145**
	(–1.794)	(–2.473)
Leverage	0.064	0.067
	(0.062)	(0.412)
Tangibility	–3.520**	–0.253
	(–2.122)	(–0.893)
Profitability	1.283	0.005
	(0.530)	(0.012)
Market to book	–0.386	–0.091*
	(–1.554)	(–1.851)
Cash flow volatility	9.578	1.531
	(1.357)	(1.390)
Prior covenants	0.840	0.193*
	(1.507)	(1.686)
Log(Amount)	0.747***	0.395**
	(12.157)	(2.399)
Log(Maturity)	0.012	–0.003
	(0.182)	(–0.174)
Callable	0.636*	0.113
	(1.886)	(1.268)
Loan		
Fixed effects:		
Credit Rating	Yes	Yes
Firm & Year	Yes	Yes
Model	OLS	Poisson
No. of Observations	2,366	2,366
Adj. R^2/Pseudo R^2	0.849	0.507
P-value for testing *SaleGov dummy = SaleFirm dummy*	0.599	0.937

This table shows the results of the effects of major government customers on bond covenants. The dependent variable is the total number of covenants in a bond (*All covenants-bond*). The main explanatory variables are *SaleGov dummy*, an indicator for the presence of major government customers, and *SaleFirm dummy*, an indicator for the presence of major corporate customers. All regressions include credit rating, firm, and year fixed effects. As loan type and purpose do not apply to bonds, we do not include the loan type and purpose fixed effects in this analysis. Standard errors are clustered at the firm level. *t*-statistics or *z*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 8. The Effects of Requirement to Provide Financial Data in Government Contracts on Covenant Intensity and Performance Pricing

Variable	(1)	(2)	(3)	(4)
	All covenants	*General covenants*	*Financial covenants*	*Performance pricing*
Financial data	–0.267	-0.148	-0.120	–0.172**
	(–0.889)	(-0.723)	(-0.707)	(–2.464)
Log(Assets)	–0.345	-0.201	-0.144	–0.002
	(–1.130)	(-0.911)	(-0.986)	(–0.040)
Leverage	1.410	1.121*	0.289	–0.104
	(1.561)	(1.689)	(0.692)	(–0.796)
Tangibility	–0.480	-0.997	0.517	–0.145
	(–0.330)	(-1.009)	(0.621)	(–0.520)
Profitability	–4.335*	-2.395	-1.940	–0.627*
	(–1.688)	(-1.563)	(-1.370)	(–1.718)
Market to book	0.306	0.214	0.092	0.054
	(1.266)	(1.333)	(0.757)	(1.362)
Cash flow volatility	–11.433**	-6.798*	-4.635*	0.756
	(–2.167)	(-1.851)	(-1.722)	(1.002)
Prior covenants	0.298	0.359*	-0.061	–0.130**
	(1.033)	(1.897)	(-0.365)	(–2.334)
Log(Amount)	0.501***	0.286***	0.215***	0.046***
	(3.017)	(2.736)	(2.783)	(2.795)
Log(Maturity)	0.262	0.051	0.211*	0.067**
	(1.185)	(0.351)	(1.907)	(2.178)
Fixed effects:				
Credit Rating	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes	Yes
Model	OLS	OLS	OLS	OLS
No. of Observations	924	924	924	1,351
Adj. R^2	0.372	0.362	0.378	0.343

This table presents results for the analysis of whether borrowers that are required to provide financial data (cost and pricing information) to the government customer in their procurement contracts obtain different loan contract terms. The analysis is conditional on firms for which we can identify a government procurement contract signed within one year before the loan initiation date. We also require each firm to have at least two observations in the regression. The treatment variable, *Financial Data*, is an indicator variable that equals one if the procurement contract requires the firm to provide cost and pricing data to the government during the contract term, and zero otherwise. Standard errors are clustered at the firm level. *t*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 9. Covenant Intensity and Performance Pricing of New Government Contractors

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All covenants		*General covenants*		*Financial covenants*		*Performance pricing*	
Post	-1.054*	-0.287*	-0.347	-0.076	-0.707***	-0.370***	-0.012	-0.585
	(-1.891)	(-1.879)	(-0.957)	(-0.360)	(-2.878)	(-2.758)	(-0.155)	(-0.765)
SaleFirm dummy	-0.593	-0.149	-0.506	-0.249	-0.087	-0.083	0.082	0.906
	(-1.128)	(-0.836)	(-1.439)	(-1.081)	(-0.352)	(-0.485)	(0.995)	(1.264)
Log(Assets)	-0.777**	-0.196**	-0.315	-0.176	-0.462***	-0.253***	-0.036	-0.334
	(-2.003)	(-1.984)	(-1.179)	(-1.198)	(-2.770)	(-2.680)	(-0.849)	(-0.774)
Leverage	0.609	0.250	1.102	0.775	-0.493	-0.133	-0.109	2.110*
	(0.420)	(0.721)	(1.100)	(1.572)	(-0.781)	(-0.421)	(-0.554)	(1.689)
Tangibility	0.362	-0.479	0.192	-0.783	0.170	-0.184	0.768*	4.995*
	(0.100)	(-0.512)	(0.082)	(-0.596)	(0.111)	(-0.226)	(1.819)	(1.746)
Profitability	-4.778	-1.030	-5.621***	-2.437	0.843	0.215	0.963**	18.748***
	(-1.437)	(-1.077)	(-2.709)	(-1.593)	(0.479)	(0.237)	(2.426)	(3.951)
Market to book	0.049	0.015	0.013	-0.017	0.036	0.030	-0.085*	-1.655***
	(0.182)	(0.290)	(0.065)	(-0.187)	(0.346)	(0.663)	(-1.979)	(-4.761)
Cash flow volatility	-12.697**	-3.449*	-7.847**	-3.384	-4.851	-2.984	-0.316	-25.561*
	(-2.246)	(-1.660)	(-2.346)	(-1.240)	(-1.464)	(-1.229)	(-0.269)	(-1.707)
Prior covenants	0.379	0.015	0.692**	0.282	-0.312	-0.159	0.014	-0.203
	(0.727)	(0.113)	(2.167)	(1.330)	(-1.226)	(-1.386)	(0.244)	(-0.342)
Log(Amount)	0.452*	0.162*	0.217	0.152	0.235**	0.168**	0.022	0.134
	(1.796)	(1.796)	(1.294)	(1.226)	(2.102)	(2.109)	(0.858)	(0.599)
Log(Maturity)	0.407	0.147	0.259	0.240	0.148	0.086	0.058	0.104
	(0.805)	(0.864)	(0.771)	(1.089)	(0.726)	(0.564)	(1.288)	(0.283)
Fixed effects:								
Credit Rating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm &Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model	OLS	Poisson	OLS	Poisson	OLS	Poisson	OLS	C. Logit
No. of Observations	380	380	380	380	380	380	559	433
Adj. R^2/Pseudo R^2	0.309	0.301	0.304	0.346	0.360	0.238	0.389	0.444

This table presents results for comparing covenant intensity and the use of performance pricing provisions in loans issued before and after a firm becomes a new government contractor. The dependent variables are the total number of covenants (*All covenants*), the total number of general covenants included (*General covenants*), the total number of financial covenants (*Financial covenants*), and an indicator variable that equals one if a loan has a performance pricing provision (*Performance pricing*). *Post* is an indicator variable that equals one if a loan is issued after a firm becomes a government contractor for the first time in the sample period, and zero otherwise. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics or *z*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.

Table 10. The Effects of Congressional Chairman Turnover on Covenant Intensity and Performance Pricing

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All covenants		*General covenants*		*Financial covenants*		*Performance pricing*	
Shock_top1chair	-1.434*	-0.394*	-0.926**	-0.731*	-0.508	-0.251	-0.225**	-2.281**
	(-1.853)	(-1.681)	(-2.003)	(-1.798)	(-1.269)	(-1.407)	(-2.010)	(-2.414)
Log(Assets)	-0.339	-0.176***	-0.168	-0.210***	-0.171*	-0.154***	-0.036	-0.232
	(-1.616)	(-3.020)	(-1.227)	(-2.655)	(-1.673)	(-2.820)	(-1.062)	(-1.112)
Leverage	0.671	0.170	0.640	0.386	0.031	0.012	-0.045	0.181
	(0.939)	(0.917)	(1.327)	(1.579)	(0.097)	(0.070)	(-0.444)	(0.238)
Tangibility	-0.354	-0.299	-0.625	-0.613	0.271	0.029	0.178	0.733
	(-0.275)	(-0.823)	(-0.730)	(-1.237)	(0.413)	(0.082)	(0.855)	(0.511)
Profitability	-0.452	-0.268	-0.902	-0.524	0.450	-0.010	0.271	1.785
	(-0.416)	(-0.824)	(-1.320)	(-1.197)	(0.744)	(-0.029)	(1.424)	(1.123)
Market to book	-0.114	-0.037	-0.030	-0.027	-0.085	-0.042	-0.004	-0.012
	(-0.895)	(-1.078)	(-0.356)	(-0.548)	(-1.300)	(-1.170)	(-0.202)	(-0.089)
Cash flow volatility	-2.751	-1.130	-0.430	-0.496	-2.321*	-1.798**	-0.530	-3.564
	(-1.074)	(-1.440)	(-0.237)	(-0.451)	(-1.841)	(-2.249)	(-1.361)	(-1.320)
Prior covenants	-0.789***	-0.205***	-0.255**	-0.146**	-0.534***	-0.237***	-0.087***	-0.537**
	(-4.761)	(-4.195)	(-2.310)	(-1.987)	(-5.529)	(-4.769)	(-2.847)	(-2.205)
Log(Amount)	0.588***	0.226***	0.314***	0.230***	0.274***	0.207***	0.053***	0.387***
	(7.771)	(7.416)	(6.624)	(5.801)	(6.923)	(6.813)	(5.396)	(5.827)
Log(Maturity)	0.142	-0.021	0.092	-0.039	0.050	0.005	0.078***	0.440***
	(1.021)	(-0.473)	(0.977)	(-0.626)	(0.779)	(0.113)	(4.345)	(3.284)
Fixed effects:								
Credit Rating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan Type & Purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm & Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Model	OLS	Poisson	OLS	Poisson	OLS	Poisson	OLS	C. Logit
No. of Observations	3,727	3,727	3,727	3,727	3,727	3,727	5,387	3,402
Adj. R^2/Pseudo R^2	0.441	0.333	0.437	0.386	0.424	0.248	0.383	0.238

This table presents results of the analysis based on congressional chairman turnover as an exogenous shock to a firm's business transactions with the government, following Cohen et al. (2011). The dependent variables are the total number of all covenants (*All covenants*), the total number of general covenants (*General covenants*), the total number of financial covenants (*Financial covenants*), and an indicator variable for performance pricing provisions (*Performance pricing*). The main explanatory variable is an indicator for congressional chairman turnover (*Shock_top1chair*), which takes the value of one if a senator (representative) from the state where the firm is headquartered was appointed chairman of the top-ranked Senate Finance Committee (the House Ways and Means Committee) in the three years prior to the new loan issuance, and zero otherwise. All regressions include credit rating, loan type and purpose, and firm and year fixed effects. Standard errors are clustered at the firm level. *t*-statistics or *z*-statistics are in parentheses below parameter estimates. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively. All variables are defined in Appendix A.