DO LABOR UNIONS INFLUENCE DEBT CONTRACTING?
EVIDENCE FROM PRIVATE AND PUBLIC DEBT MARKETS

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Abstract

Labor market frictions can influence terms of contracting in the credit market and thereby impact the financing costs for the borrowing firms. In this paper, we examine how labor union strength may influence private and public debt covenants. We employ fuzzy Regression Discontinuity Design (RDD) and use plant-level union election outcome data for firms (between 1977 and 2020) as quasi-exogenous shock to examine the effect of labor unions on firm-level loan as well as bond market covenants. Our extensive RDD analysis shows that unionization leads to significantly lower covenants in public bond issuances and in particular reduced levels of (a) Investment, (b) Subsequent financing, and (c) Event-related bond restrictions. Loan markets show limited evidence of covenant reduction implying that bank lending, typically collateralized, is less sensitive to labor market frictions. Firm-level channel analyses show that following successful union elections, stronger unions help mitigate the agency risks and reduce covenant threshold in firms with other forms of monitoring in place (i.e., firms in highly competitive product markets, firms with high institutional ownership, firms with high credit ratings, and firms with better corporate governance). Sub-sample analyses based on firm characteristics show that the negative effect of union on covenant is stronger for firms with higher level of risk ex-ante (i.e., firms with higher R&D investment ratio, firms with higher leverage ratio, and firms with lower profitability ratio). Our results are therefore consistent with the argument that lenders' and unions' interests are closely aligned in non-bankruptcy states, thereby leading to lowering monitoring costs for creditors and reduced dependence on tighter bond covenant restrictions.

Keywords: Covenants, labor unions, debt contracting, agency cost of debt.

JEL classification codes: J51, G32, G33

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1 Introduction

Several studies have shown that labor market characteristics such as labor share and wage growth Favilukis et al. (2020), and labor union Anginer and Warburton (2010) have implications for the credit market. The implication of labor share and wage growth is clear: Labor share and wage growth, through pre-committed payments to labor, exacerbate the riskiness of payments to debtholders. However, the implication of labor unions for debtholders is not totally clear. On one hand, workers' and debtholders' interests are aligned. In good states, debtholders and workers have little to gain due to the fixed nature of their claim on the firm. In bad states, debtholders, and workers receive lower payoff. This state-payoff structure makes both workers and debtholders to strongly resist risky investments which could jeopardize firms' stable cash flows and lead to job losses ("Reduced risky investment"). As a result, unions' activities could benefit debtholders, thus reducing borrowing cost and covenants. On the other hand, workers interests can deviate from debtholders' during bankruptcies. To resist continued employment and maximize the payoff of their members, unions cause endless and costly negotiations, inefficient reorganization, and disruption in the absolute priority rules (APR) ("Increased bankruptcy cost"). Creditors will recognize this increased cost of bankruptcy and as a result impose higher borrowing cost and more strict covenants.

To empirically test for which effect dominates, we use union election outcome data for firms between 1977 and 2020 as quasi-exogenous shock to examine the effect of labor union on number and types of debt covenants.

Our study contributes to the literature along three major lines. First, this study contributes to the literature which examines the impact of labor union. Previous studies on labor union have examined the impact of this non-financial stakeholder on other variables such as wages, profitability, employment, output, cash reserve, leverage and equity value. (Chyz et al. (2013); Hirsch (1991); Lee and Mas (2012)). Second, we also contribute to the literature on conflict of interest between stakeholders. Other studies on covenant inclusion have focused mainly on conflict of interest between managers and shareholders, and debtholders. Bradley and Roberts (2015) assert that borrowers characteristics, as well as creditors' and macroeconomic factors collectively determine covenant structure. The inclusion of debt covenant is one of the means through which the risks

associated with the conflict of interest between shareholders and debtholders can be mitigated. Chava et al. (2010) included in their study the impact of the inclusion of managerial dimension to the tension between shareholders and debtholders. While managerial entrenchment increases investment risk and fraud thus increasing the probability of including associated covenants, managers entrenchment reduces the shareholder opportunism and reduces the need for dividend payout and takeover-specific covenants. It will therefore be interesting to know how labor union affects the inclusion of different categories of covenants. Third, we contribute to the literature on conflict of interest between debtholders and labor force. Studies on the possible conflict of interest between debtholders and labor force have paid attention to price term (i.e borrowing cost) and completely ignored the non-price term of debt contract. For example, Chen et al. (2012) examine the effect of union on borrowing cost by using the industry unionization rate as a proxy for the influence of employees on corporate policies. The paper concluded that unionization leads to reduced borrowing cost, giving support for the reduced risky investment effect. Campello et al. (2018) study the effect of organized labor on bondholders' wealth by observing bond values around union elections. Their result showed unionization leads to an increase in borrowing cost due to increased in-court bankruptcy cost. However, both papers did not consider how much of the pricing of the increased (reduced) risk due to union is translated through the inclusion of stricter (or looser) debt covenant. Although, studies have established that there is an inverse relationship between credit spread and covenant inclusion, and they are both determined concurrently at contract inception (Bradley and Roberts (2015); Matvos (2013); Reisel (2014); Smith Jr and Warner (1979)), Contracting Efficiency Hypothesis suggests that the inclusion of covenants in a contract is increasing in agency risk for bondholders and in cost associated with the risk being managed through other alternatives. This implies that the overall implications of unions (cost and benefits) do not necessarily imply a unilateral effect on borrowing cost and covenants.

2 Background Literature and Hypotheses Development

2.1 Background Literature

The traditional view of the literature on the use of covenants is that there is the possibility of misalignment in the interests of shareholders and debtholders, leading to a need for covenants to protect debtholders from possible expropriation (Bradley and Roberts (2015); Jensen and Meckling (1976); Myers (1977); Warga and Welch (1993)). The traditional view, which assumes complete overlap between the interest of shareholders and managers, was extended to incorporate the specific role of managers in the tension between shareholders and debtholders. Managers' interests can deviate from shareholders' interest especially when managers get stronger and entrenched. Entrenched managers increase the need for investment covenants. This is because they are more likely to invest in inefficient projects with the objective of building their empires. In contrast, entrenched managers reduce the need for some other covenants such as dividend, subsequent financing, and event related covenants due to managers' preference for cash and their resistance to takeover threats (Chava et al. (2010)). This study therefore further extends this framework to include yet another important stakeholder-the employee. Several studies have shown that labor market characteristics, such as rigid wages growth (Favilukis et al. (2020)) , and labor union (Anginer and Warburton (2010)) have implications for the credit market. Labor wages, which are pre-committed payments and fixed, can exacerbate the riskiness of payments to debtholders. Wage growth and labor share are therefore strong determinants of credit spread and debt growth (Favilukis et al. (2020)). Below we detail our arguments on the relation between labor and debt covenants.

2.2 Hypotheses

Employees become even a more significant stakeholder when they form a union and become stronger. Unions have been notable for the protection of their members' interests by increasing their bargaining power in times of contract negotiations. To perform this duty during bankruptcy, unions can gain seats in creditors' committees and interrupt the absolute priority rules (APR), thereby enjoying seniority of claims ahead of secured creditors. Unions can also impose extra costs by

making bankruptcies process last longer by engaging in continuous negotiations (Atanassov and Kim (2009)). Related to this is the 2009 intervention of the US government in the reordering of Chrysler and General Motors' creditors' priority in solvency, which involved ranking junior claims of labor union above the senior claims of debtholders. Campello et al. (2018) study the impact of unionization on borrowing cost of traded bonds by examining the cumulative abnormal returns of closely won and closely lost union election firms around the election event window. The study finds a negative effect of union election victory on bond value (increased credit spread). The result is attributed to an increase in the expected bankruptcy costs for unionized firms. These studies on the possible conflict of interest between debtholders and labor force have paid attention to price term of debt contract (i.e credit spread) and completely ignored the non-price term of debt contract. There is an inverse relationship between credit spread and covenant inclusion, and they are both determined concurrently at contract inception. (Bradley and Roberts (2015); Matvos (2013);Reisel (2014); Smith Jr and Warner (1979)) . It is therefore interesting to examine how much of the perceived risk is translated through the inclusion of stricter covenants. Conversely, unionization can lead to the inclusion of fewer and looser covenants. Labor unions, just like debtholder, are entitled to fixed claims and therefore gain very little in better than average states but lose so much in worse than average states. They, therefore, share the same risk preference as creditors. Unions and creditors advocate against risky investments and oppose takeover threats to preserve members' job security. (Faleye and Trahan (2006); Pagano and Volpin (2005)). Unions could therefore serve as internal monitors leading to less need for stricter covenants. To sum up, there are two potential effects of unions on debt covenants. Unions may increase the need for debt covenants because unions increase the cost of bankruptcy and thus increase the risk for debtholders. This will in turn lead to more or stricter covenants required in debt contracts (increased bankruptcy-cost effect). In contrast, unions may act as effective internal monitor for the firm and discipline the managers to engage in less risky investment. This will lead to fewer or less stringent covenants needed in debt contracts (the reduced risky investment effect). The overall impact of unionization on covenants therefore depends on the which of the two conflicting effects dominates. If increased expected bankruptcy-cost effect dominates, we expect to see stricter covenants. Conversely, if the reduced risky investment channel dominates, we expect to see fewer/looser covenants.

2.2.1 Main Hypotheses

Hypothesis 1 (Fewer total Covenant): To the extent that the marginal benefit of labor unions' activities is greater than the marginal increase in the cost of bankruptcy, included covenants on loans/bonds to unionized firms are likely to be fewer and looser.

Hypothesis 2 (Fewer Investment Restriction): Unions oppose risky investments to ensure job security of their members. As a result, Unionized firms are likely to have fewer Investment restrictions.

Hypothesis 3 (Fewer Dividend Restriction): The effect of union on dividend restriction could be ambiguous. On one hand, unionization could imply less need for a dividend restriction. This is because unions are more likely to make greater demands when the firms hold large cash reserves. Firms with union holding a high cash reserve are more prone to threats of strike. Unionized firms therefore intentionally reduce cash holdings to have bargaining power over labor union. Previous studies found a negative relationship between firm industry unionization and cash holding. (Klasa et al. (2009)). As a result, unionized firms' deliberate decision to reduce cash holding gives less room for dividend payout and thus less need for dividend restriction. On the other hand, unionization could imply more need for a dividend restriction. Unions are associated with high operating risk (Chino (2016)). As a result, creditors could impose stricter dividend restriction to cushion the operating risk.

We therefore hypothesize that, to the extent that the operating risk associated with unions is less than the reduced cash holding effect, unionized firms are likely to have fewer dividend restrictions.

Hypothesis 4 (Fewer Subsequent Financing Restriction): The effect of union on Subsequent financing restriction could be ambiguous. On one hand, unionized firms can intentionally increase leverage to create cash flow demands (of debt payments) to improve its bargaining position with workers. This is because unions engage in rent-seeking behavior when a cash flow shock is positive.(Agrawal and Matsa (2013)) On the other hand, unionization can lead to reduced leverage. This is because unionization increases the operating leverage of firms, thereby increasing the cost of

financial distress for a given level of debt. As a result, firms will intentionally reduce their financial leverage (crowding out effect).(Simintzi et al. (2015)).

We therefore hypothesize that, to the extent that unionized firms are more concerned about the increased cost of financial distress (due to higher operating leverage) than the rent seeking behavior of union, unionized firms are likely to reduce leverage. Creditors will therefore include fewer subsequent financing restrictions on debt to these firms.

Hypothesis 5 (Fewer Event-Related Restriction): Unions strongly impose takeovers in order to maintain job security for their members. As a result, their interest is well aligned with creditors' interest. We therefore expect to see fewer Event related restrictions for unionized firms.

2.2.2 Channel Hypotheses

Hypothesis 6 (Fluidity): Competitive product market is a powerful force for overcoming the agency problem between shareholders and managers. High product market competition forces the management to make the best long term decision and reduce the chances of bankruptcy and job loss (Babar and Habib (2021)). To the extent that union and market forces are complementary in terms of monitoring/disciplining managers, unionized firms in more competitive product markets will experience a stronger decline in covenants.

Hypothesis 7 (Institutional Ownership): Institutional shareholders are positively associated with price efficiency and popularly known as active monitors of the firm. We therefore hypothesize that unionized firms with high institutional presence are more likely to experience stronger decline in covenants.

Hypothesis 8 (Credit Rating): Firms with high credit rating are in a better financial position and are likely to be currently better monitored/ require less monitoring. As a result, we expect that firms with high credit rating are likely to benefit more positively from financial benefits related to unions. We therefore hypothesize that unionized firms with high credit rating are more likely to experience stronger decline in covenants.

Hypothesis 9 (Corporate Governance): Firms with high quality corporate governance are more likely to be perceived favorably buy creditors and are likely to benefit more positively from financial benefits related to unions. We therefore hypothesize that unionized firms with high corporate governance quality are more likely to experience stronger decline in covenants.

3 Data

The data used in the study comes from various sources.

3.1 Union Election Data

The union election data comes from NLRB and covers the period 1977 to 2020. We extra data on firm name, location, SIC code, election date, number of participants, number of votes for and against union and the election result. We plot the total number of elections and the average vote share for the period 1977 to 2020 in Figure 1 below. We observe that there has been a decline in the number of union elections over the years, although the vote share for union remains in the region of 40 to 50 percent for most part of the sample.

[Insert Figure 1 here]

3.2 Bond Data

We obtain issuance data on publicly traded corporate bonds from the Mergent Fixed Income Securities Database (FISD) for the period 1990 to 2018. We obtain issue-level bond data on the amount, coupon rate, covenants and ratings of all the public traded firms. Following Chava et al. (2010), we extract data on restrictive covenants under four braid categories: *Investment restriction*, *Dividend restrictions*, *Subsequent financing restrictions*, and E*vent-related restrictions*. These covenants directly restrict borrower's discretion and policy in terms of investment, subsequent financing, dividend payout, and takeover or/and distress events.

The four broad categories of restrictive covenants can be further subdivided. *Investment restriction* includes indirect investment restriction, merger restrictions, stock sale restrictions, and direct investment restrictions. Indirect investment restrictions include the following: transaction

with affiliates restriction, fixed charge coverage, minimum net worth, restrictions on re-designating subsidiaries, and the after-acquired property clause. *Dividend restriction* includes dividend payment restriction and restriction on other payments. *Subsequent financing restriction* includes debt priority restrictions, stock issuance restrictions, subordinate debt restrictions, restrictions on sale and lease obligations. *Event-related restrictions* include default related event covenants and change in control poison put.

3.3 Loan Data

Loan data is obtained from Dealscan. For each loan we extract several loan-specific characteristics that include borrower, loan spreads, loan maturity, loan size, loan type, loan purpose, collateral requirement and covenant information. The loan data consists of four major categories of covenants - *Performance covenants, Capital covenants, Investment Restriction,* and *Dividend Restriction.*

Performance covenants serve as "trip-wires" and early indicators of distress by using current period information from the income statement, giving lenders the right (but not the obligation) to either renegotiate the debt contract or restrict certain activities of the firm when these covenants are violated. **??**Performance covenants include Maximum Total Debt to Tangible Net Worth, Maximum Net Debt to Assets, Minimum Equity to Asset Ratio, Maximum Senior Leverage, Maximum Loan to Value, Maximum Debt to Equity, Maximum Debt to Tangible Net Worth, Maximum Leverage ratio, Minimum Net Worth to Total Asset, Minimum Quick Ratio, and Minimum Current Ratio. *Capital Covenants* directly control agency problem by imposing a limit on the proportion of leverage in the capital structure using information from the balance sheet. These include Maximum Total Debt to Tangible Net Worth, Maximum Net Debt to Assets, Minimum Equity to Asset Ratio, Maximum Senior Leverage, Maximum Loan to Value, Maximum Debt to Equity, Maximum Debt to Tangible Net Worth, Maximum Leverage ratio, Minimum Net Worth to Total Asset, Minimum Quick Ratio, and Minimum Current Ratio. *Investment restriction* only includes Max Capital Expenditure. *Dividend restriction* is recorded as Yes or No in the data.

For the first 2 categories of covenants, we obtain the number of Performance or Capital covenants as the number of such covenants included on the loan. While for Investment and Dividend restriction, we construct each as a dummy variable equal to 1 if the restriction exists, or 0 otherwise.

3.4 Matching Process

Starting with all elections recorded in the NLRB dataset, we use algorithm as in "SAS SPEDIS Function" adopted by DiNardo and Lee (2004). The algorithm tries to match each name of establishments recorded in the election files to one of the names of firms that have ever existed in CRSP files. A "spelling distance" is specified and the algorithm tries to find possible CRSP company name matches that fall within the spelling distance threshold. We manually verify the validity of each potential matches and delete incorrect matches. We matched 5218 elections to CRSP company names. We then use the corresponding CUSIPs to match with COMPUSTAT data. We restrict the sample to include only union election firms with compustat data before and after the election year. This reduces our sample firms to 973 firms. We then match these firms with firms in FISD bond data using gvkey to arrive at 1829 observations for 271 firms. We also match our union election firms data with DEALSCAN loan data using Dealscan linking table. The linking file provides ID for each loan and borrower and the corresponding Compustat company identifier (Gvkey). Our match therefore gives us corresponding bond/loan (and the associated covenant data) for each union election firm. Finally, we restrict our samples to only bond/loan issued within 3 years after the election year (excluding those issued in the election year). This leaves us with a final sample of 763 observations and 103 firms for bonds, and 362 observations and 101 firms for loans.

Table 1 presents the Industry distribution of important variables. Union elections firms are sorted into different industries based on 1 digit SIC code. We observe that Manufacturing Industry (with SIC code 2 and 3) have the highest number of union election. Health services and Public administration have the highest number of elections in which union won. Services and Health services industries have the largest average vote share of union. We also observe distinct levels of average total number bond and loan covenants for each of these industries.

[Insert Table 1 here]

3.5 Changes in Covenant Computation

The objective of this paper is to examine the impact of unionization on covenant design and inclusion. As such, we calculate the changes in covenant for each firm after election as the difference between number of each covenant type included on the firm's new bond/loan (issued within the

next 3 years after the election) and the number of each covenant type included on bond/loan issued in the year before the election year.*

$$\Delta Covenant_{i,j,t+s} = Covenant_{i,j,t+s} - Covenant_{i,j,t-1} \tag{1}$$

for s =1, 2, and 3

Asides the election date, other important event dates are the petition filing date (when petition was first filed for election) and the case closing date (when election results are certified). According to Block and Roomkin (1982), 83% of the elections hold within 2 months after petition is filed. Lee and Mas (2012) cite that the median number of days between election date and case closing date is 10 days. Taken together, the election event window is therefore only a short period. Since other relevant data (firm specific and bond/loan data) are yearly, we therefore consider the election year the event year and hence all bonds/loans issued during the event year is dropped from all regression analyses.

3.6 The Election/Unionization Process

In the United States, typically, a group of workers attempts to gain legal recognition as a union by first reaching out to and seeking assistance from a labor union. The legal recognition ensures that employer bargains with the union "in good faith" with the protection that the employees can not be dismissed for such association. These rights are well established in the National Labor Relations Act (NLRA). The employees proceed to get support from at least 30% support from workers to file a petition for a union election with the National Labor Relations Board (NLRB). The NLRB decides whether these employees have a common interest and then decides which employees qualify as eligible voters. NLRB conducts the election at the plant site. Election is secret ballot in nature, implying a limit to which voters can be influenced. This provides a reasonable degree of uncertainty in the outcome until election results are officially declared. Union party requires simple majority to win the election, that is, least more than half of the votes casted should be in favor of union for employees to gain legal recognition as a union. Objections can be filed by either party within seven

*For robustness tests, we use 4 other metrics to measures of covenants. Changes in these other metrics are also computed in similar fashion.

days after the election. Another election is arranged if there is sufficient evidence of inappropriate conduct. In the absence of any, if the union still holds a simple majority, then the union is accorded the right to bargain for the employees.

4 Empirical methodology

Identifying the effect of unionization on debt covenants is not without challenges. This is due to 2 major reasons. First, unobservable firm characteristics such as firms' profitability and investment opportunities could be driving the observed relationship between union and debt covenants. Second, there is a possibility of reverse causality, whereby low-risk firms, and hence with looser debt covenant structure are more preferred by unions. To address these concerns, we follow Campello et al. (2018) to examine the effect of unionization on creditors using the regression discontinuity design. The RDD approach estimates the effect of unionization by effectively comparing firms in which union closely won in the election to firms in which union closely lost. Unionization status is achieved when vote share of union in the election is greater than 50% The underlying assumption is that for these close election firms with vote share close to the 50% margin, the firms are very similar and the unionization treatment is random. The secret-ballot nature of union elections ensures reduced manipulation of vote, hence enhancing uncertainty about election outcomes. Similarly, for close elections, it is impossible for voters and other agents to correctly anticipate election results. All of the above makes close winners and close losers in union election ex-ante similar and ensures a viable setting for RDD approach. We therefore consider the effect of unionization on new debt issued within 2, and 3 years after election year. (For brevity purpose, we only consider new debts issued within 3 years after election year for heterogeneity and robustness tests)

4.1 The RDD Model

4.1.1 Global Polynomial Regression

The RDD model consists of a regression of the outcome variable on an indicator variable representing union win, while controlling for a polynomial function of order p of the vote share.

$$\Delta Covenant_{i,j,t+s} = \alpha + (Unionization_j) \times \tau + \sum_{n=1}^{p} (X_j - 0.5)^n \times \beta_n + \epsilon_{i,j,t} \tag{2}$$

where i indicates the covenant type, j indicates the union election firm, X is the union vote share in the election, and D is an indicator for union victory that equals 1 if the vote share surpasses 50% and zero otherwise. We subtract 0.5 from vote share X, so that the above expression is centered around the vote share cut-off 50%. The coefficient τ thus measures the jump in covenants as the vote share just passes 50%. In other words, unionization coefficient provides an estimate of the effect of unionization on debt covenants. The polynomial regression approach may achieve greater precision by utilizing all available data in the estimation. However, it could admit biases by imposing a particular functional form onto the relation between bond values and vote shares over a wide range of data. Accordingly, we also consider a local linear regression approach, an estimation over data within a small window h around the assignment cut-off. This approach reduces the potential for biases arising from global functional form assumptions at the cost of reducing statistical power due to the limit imposed on the sample size.

4.1.2 Local Linear Regression

Our local linear regressions can be presented in manner a similar to that used in the polynomial regressions discussed above, where one conveniently estimates the following model. The local linear regressions only considers close election firms (i.e election firms with vote share close to the 50% vote share).

$$\Delta Covenant_{i,j,t+s} = \alpha + (Unionization_j) \times \tau + (X_j - 0.5) \times \beta_1 + \epsilon_{i,j,t} \tag{3}$$

for all election firms with vote share X within 0.5 - h $\leq X_j \leq 0.5 + h$. where h is the Optimally derived bandwidth around the 50% vote share. We estimate these models using both triangular and rectangular (uniform) kernel.

5 Empirical results

5.1 Validity of the RDD Framework

We first test for the validity of RDD setup. For validity of the RDD approach, two conditions are necessary. (1) Continuity of the distribution of the forcing variable (Union vote share) around the cut-off, and (2) Continuity of other covariates around the same cut-off.

5.1.1 Test for Manipulation

We test for possibility of manipulation by examining the distribution of union election vote share. If elections results are manipulated by workers or firms, then we would expect to see different densities around the 50% cut off point. In figure 2(a), we divide the distribution into 20 equally spaced bins and pay closer attention to the bins just before and after the 50% vote share. These bins are very similar in terms of magnitude, and as a result, we do not believe firms manipulate their vote share. Similarly in Figure 2(b), we follow McCrary (2008) methodology to test if there is a jump in the marginal density of vote share around the 50% cut-off. The McCrary (2008) methodology consists of a local linear regression combined with a Wald test to detect jumps in the marginal density of the forcing variable around the treatment assignment cut-off.The dots represent the observed distribution density for each bin for union vote share. The solid lines represent the fitted distribution density functions from local linear regressions on either side of the cut-off (with 95% confidence intervals). The figure shows that the distribution density of vote shares on each side of the cut-off is statistically insignificant. The associated Wald test shows a log difference of –0.24, with a standard error of 0.15. This implies that there is no evidence of manipulation in the vote share, hence we can use the RDD framework

[Insert Figure 2 here]

5.1.2 Test for continuity of other covariates

If union election firms (winners and losers) around the threshold of 50% are similar in all respect, then there is no need to control for covariate in the RDD regression. We can then assume the treatment effect is random and any difference in the outcome variable can be directly ascribed to the treatment effect. We perform a test of mean (t-test) on all Union Election Winners Vs losers within 10% bandwidth of the cut-off point. (i.e firms with voteshare between 40% and 60% only). The result in Table A1 in appendix section shows in a continuity in the covariates since there is no significant difference (at 5% significance level) in any of the covariates around the threshold.

5.2 Graphical analysis of the outcome

We graphically depict the effect of unionization on various covenants. We divide the vote share into 20 equal-sized bins, calculating the conditional mean of covenants corresponding to each bin. We then fit various covenants as third-order polynomial functions of vote shares.The dots represent the conditional mean of covenants. Solid lines fit covenants as polynomial functions of vote shares, and the shaded area represents the 95% confidence interval. In figure 3, we present the graphs for bond covenants, and in figure 4, we present the graphs for loan covenants.

For bonds, Figure 3 shows that within close proximity of the threshold, investment, Subsequent financing, and Event related restrictions significantly decrease once the percentage of votes in favor of unionization crosses the 50% cutoff point,

For loan, Figure 4 shows that within close proximity of the threshold, the confidence interval for all loan covenants overlap, hence no sign of any change in loan covenants due to unionization.

[Insert Figure 3 here]

[Insert Figure 4 here]

5.3 Estimation Result

5.3.1 Polynomial Regression

Table 3 shows the results from global polynomial regressions for debt covenants. Panel A presents the result for Bonds, Panel B presents the result for Loans. We allow for nonlinear relations between covenants and vote share by adding higher order terms of vote share. Specifically, we include third-order terms of vote share. In all regressions, we control for year and firm fixed effects to account for time-specific economic conditions and firm-specific characteristics that can affect both election outcomes and covenants.

[Insert Table 3 here]

For bonds, we observe a reduction in Investment, Subsequent financing, Event-Related, and total restrictions after unionization. The union-led declines in bond covenants that we identify are statistically significant at 5% significance level.

For loans, we do not observe any significant change in any of the loans covenants at the 5% significance level.

5.3.2 Local Linear Regression

We use local linear regressions to verify the results returned from polynomial models. We consider new loan/bonds issued 2 years and 3 years after election year and use both rectangular and triangular kernels for estimation. Table 4 presents the result for bonds, and table 5 presents the results for loans.

[Insert Table 4 here]

[Insert Table 5 here]

The results obtained here are similar with the results from the global polynomial regressions. For bonds, we observe a decline in investment, subsequent financing, event-related, and total restrictions. We do not see an effect for dividends restrictions. The negative coefficient of unionization in

the Investment Restriction regression supports the argument that unions always advocate against risky investments (Chen et al. (2012)). This is beneficial to bondholders, as a result, there is less need for Investment restriction for bonds issued by unionized firms. The result for Subsequent financing restriction implies that creditors are less worried about unionized firms issuing more debt, giving support to the "crowding-out effect" of union (Simintzi et al. (2015)). The negative coefficient of unionization in the Event-Related restriction regression supports the argument that unions oppose takeover threats in order to ensure job security of their members (Pagano and Volpin (2005)), as a result, creditors have less need for Event-related restrictions.

For loans, the results for all covenants are insignificant for Capital, Investment, and Dividend restrictions. We only observe a significant decrease in Financial covenants under rectangular kernel when we consider new loans issued within 2 years after union election. Similar to the result from Zhang et al. (2020), we observe a significant decrease in Performance covenant across both kernels. There are 2 main explanations for the results obtained for Performance covenants. One, Performance-based covenants are used as tripwires and early indicators of distress, as such, they are used as contract renegotiation triggers. However, since unions help monitor the firm, there is less need for such tripwires. Two, tripwires are associated with frequent transfers of control. In the presence of union, transfer of control/contract renegotiation can be more costly due to conflict of interest between unions and debtholders.

Overall, We conclude that the effect of union on loan covenants is weaker relative to bond covenants. This interesting result can be attributable to 2 major differences between loans and bonds which reveal the relatively less importance of loan covenants at debt contract initiation. First, loans are mostly senior and secured by collateral while bonds are not, implying loans' higher hierarchy in capital structure and thus less risky. Second, related to the first point, loan covenants are less strict and are easier to renegotiate as the firm's conditions change (after contract initiation and before maturity) (Chava et al. (2019)). These imply relatively more importance of bond covenants and their sensitivity to firms' conditions at contract initiation.

5.4 Robustness Test

We perform robustness test by using 75% and 125% of the optimal bandwidth.

[Insert Table 6 here]

[Insert Table 7 here]

5.5 Heterogeneity in the Impact of Unionization

We examine the effect of unionization on bonds covenants for different sub-samples based on several factors. Up till now, we have been able to establish that unionization leads to a reduction in investment, subsequent financing, and event-related covenants. Here, we seek to find out for which group of firms is this negative effect the stronger. Our sub-sample analyses can be summarized to be for 2 groups of factors. (1) *Monitoring Incentive* factors - We perform sub-sample analyses based on firms' ex ante monitoring mechanism. We expect that firms with higher product market competition (fluidity), institutional presence (institutional ownership), credit rating of the firm, and corporate governance quality (Board of Directors' independence) have higher monitoring mechanisms in place and thus require less monitoring by creditors. (2) *Fundamental Firm Characteristics* factors - these include firm-specific factors which we believe can possibly affect the risk characteristics of the firm. (Risky investment, operating risk, leverage, profitability, and debt maturity.)

Institutional Ownership is measured as the percentage of shares outstanding held by institution. Board of directors' independence is measured as the percentage of inside directors in the entire board. We measure operating risk by obtaining the standard deviation of the ratio of net operating cash flow to lag of asset. Risky Investment is proxied by the ratio of R & D expense to sum of R &D, and Capital expenditure. Leverage is measured as the ratio of debt to asset. Profitability is the ratio of net income to lag asset. We measure maturity in 2 ways. Maturity 1 is the ratio of long-term Bonds (i.e bonds with more than 7 to maturity) to total assets. Maturity 2 is the years to maturity for each bond issued.

We sort election firms into 2 bins based on the value of the variable in the year preceding the election year for each firm, and then based on the median of the generated series, firms with higher (lower) than median values are sorted into the high (low) bin. (This is done for all variables, except for credit rating and operating risk. For operating risk, we use quarterly data for the 3 years (12 quarters) before the election year and exclude all firms with less than 4 observations before sorting into high vs low bins. For credit rating, we use the 3 year pre-election average credit rating of bond

issued by firm as a proxy for credit rating of each firm.) We present our result for the Monitoring Incentive in Table 7 and the result for the Fundamental Firm Characteristics in Table 8. In Panel A of Tables 7 and 8, the dependent variable is the total number of each type of restriction. For robustness test, In Panel B of Tables 7 and 8, we use the average number of each type of restriction.

[Insert Table 8 here]

[Insert Table 9 here]

We find a stronger negative effect of unionization on bond covenants for (a) firms in highly competitive product market (b) firms with high institutional presence (c) firms with high credit rating (d) high corporate governance quality. These groups of firms can be seen as firms that already have a form of monitoring in place, and hence complementary monitoring effect from stronger labor force is perceived by creditors as sufficient reason for creditors to reduce covenants on debt to these firms.

We find some interesting results from our sub-sample analyses based on firm characteristics. First, we also find a stronger negative effect of unionization on bond covenants for firms that engaged in higher level of risky investment prior to the union election. This gives support to the reduced risk channel effect associated with union.[†] For firms that engage in higher level of risky investment, unions have a greater incentive to discourage risky investment in order to ensure job security of their members. This serves as a benefit to creditors, thereby encouraging creditors to reduce covenant levels relative to their pre-election levels.

Overall, we observe that the negative effect of union on covenant is stronger for firms with ex-ante higher levels of risk (except operating risk). These are firms with higher risky investment ratio, higher leverage ratio, and lower profitability. These are the groups of firms for which union are more concerned about their members' job security, wages, and benefits. This relation is reversed for operating risk because unions themselves are associated with higher operating risk, as such, unionization leads to increased operating risk thereby posing additional risk to creditors. Unionization is therefore less beneficial for firms with higher levels of operating risk.

[†]This is consistent with the results from Bradley et al. (2017) who find that unions lead to a significant decrease in in R & D Expenditure.

5.6 Right-to-Work Legislation

We explore the impact of State-level differences in union power to further explore the effect of unions on debt covenants. Right-to-work (RTW) laws, which are enacted at the State level, allow non-union member employees to enjoy benefits of unions without paying dues. Studies show that RTW laws reduce unions' resources, hence limiting their bargaining power. Since Non-RTW states do not suffer from this limited bargaining power, we expect to see a stronger effect of union on debt covenants for election firms in Non-RTW States. We run separate regressions for RTW State Vs Non-RTW States. Table 9 presents our results for RTW State Vs Non-RTW States. The coefficient of unionization is larger in magnitude for Non-RTW States firms implying that unionization does have a stronger negative effect on covenants in Non-RTW States.

[Insert Table 10 here]

6 Concluding remarks

Debt covenants are crucial components of debt contracting (in an uncertain world). Covenants are included in debt contracts as monitoring mechanism to reduce agency costs.Labor market frictions can influence terms of contracting in the credit market and thereby impact the financing costs for the borrowing firms. In this paper, we examine how labor union strength may influence private and public debt covenants.

Theoretically, the effect of strong labor unions on credit contracting is ambiguous. *On one hand*, presence of strong labor unions may imply higher ex-ante risk burden to the lenders due to increased operational inefficiency and cost of bankruptcy, hence increasing the need for more and stricter covenants. *On the other hand*, labor unions by engendering higher employment protection for its members can help curb excessive risk-taking by managers and resist hostile takeovers, thereby resulting in more stable cash flows and less need for onerous covenants. The ultimate effect of union strength on credit market contracting is therefore an open empirical question.

We employ Regression Discontinuity Design (RDD) and use plant-level union election outcome data for firms (between 1977 and 2020) as quasi-exogenous shock to examine the effect of labor unions on firm-level loan as well bond market covenants. Our extensive RDD analysis shows

that unionization leads to significantly lower covenants in public bond issuances and in particular reduced levels of (a) Investment, (b) Subsequent financing, and (c) Event Related bond restrictions. Loan markets show weaker evidence of covenant reduction implying that bank lending, typically collateralized, is less sensitive to labor market frictions.

Firm-level channel analyses show that following successful union elections, stronger unions help mitigate the agency risks and reduce covenant threshold in firms with other forms of monitoring in place (i.e firms in highly competitive product markets, firms with high institutional ownership, firms with high credit ratings, and firms with better corporate governance), and in firms with high risky investment ex-ante. Our results are therefore consistent with the argument that lenders' and unions' interests are closely aligned in non-bankruptcy states, thereby leading to lowering monitoring costs for creditors and reduced dependence on tighter bond covenant restrictions.

Overall, our study uses extensive longitudinal quasi- exogenous firm-level event data of union elections as an identification mechanism and contributes to the literature by shedding light on how the labor market frictions may have beneficial effects on debt market contracting.

Table 1: Descriptive Statistics: by Industry

This table presents descriptive statistics of our sample by industry. Election firms are sorted into Industry groups by the first digit of the matched CRSP SIC. For each industry group, we obtain the total number of elections, percentage of elections won by union, the average vote share for union, and average number of Bond and loan covenants. Voteshare is obtained as the average of total number of votes for union divided by total valid votes. Bond covenant is the average total number of Bond covenants included on new bond offerings. Similarly, Loan covenant is the average total number of financial covenants included on initiated loans

SIC	Industry	# Elections	% won by Union	Voteshare	Bond Cov	Loan Cov
0	Agriculture	55	0.27	0.39	3.53	1.43
1	Mining	135	0.34	0.46	5.26	1.7
2	Light manufacturing	1384	0.37	0.46	4.18	3.43
3	Heavy manufacturing	1164	0.39	0.48	5.03	3.06
4	Transportation	625	0.41	0.49	5.92	4.35
5	Wholesale trade	1107	0.39	0.47	4.81	3.43
6	Finance	79	0.54	0.54	5.6	3.19
7	Services	530	0.56	0.58	5.3	3.65
8	Health services	122	0.57	0.56	4.45	3.16
9	Public administration	17	0.59	0.53	8.4	4.94

Table 2: Univariate Test

This table reports univariate test of union on important firm, bond, and loan characteristics. We label a firm as union election winning(losing) firm if union wins(loses) in its election. In Panel A, we present the univariate test result for union election-winning firms vs union election-losing firms. For this analysis, we use firm values obtained in the election year. In Panel B, we report the univariate test of union on bond, and loan characteristics. We label a firm as union election winning(losing) firm if union wins(loses) in its election. Pre(Post) refers to the observations 3 years before(after) the election year. All election year observations are dropped. Each covenant variable is computed as the total number of that covenant included on new loan/bond issue.

Panel A: Univariate Test on firm Characteristics

	Union Election Winning Firms		Union Election Losing Firms		T-test
Variable	No	Mean	No	Mean	Diff
Firm Characteristics					
ROA	1330	0.103	2043	0.107	-0.003
BM	1263	0.782	1922	0.769	0.012
Liability Ratio	1332	0.586	2047	0.573	0.013*
Cash Ratio	1332	0.068	2046	0.061	-007**
Size	1334	6.973	2048	6.987	-0.014

Panel B: Univariate DID Test on Debt characteristics

	Union Election Winning Firms					Union Election Losing Firms					T-test
	Pre(A)		Post(B)		Post- Pre (C)	Pre(D)		Post(E)		Post- Pre (F)	Dif-in-dif
Variable	Mean	SD	Mean	SD	(B-A)	Mean	SD	Mean	SD	(E-D)	(C-F)
Bond Variables											
Investment Restriction	1.808	1.474	1.57	1.623	-0.238**	1.59	1.390	1.356	1.529	-0.234***	-0.004
Dividend Restriction	0.392	0.856	0.347	0.848	-0.045	0.413	1.017	0.306	0.909	-0.107**	0.063
Subsequent Financing Restriction	1.88	1.465	1.622	1.608	-0.258***	1.609	1.388	1.380	1.540	-0.229***	-0.029
Event Related Restriction	1.364	1.345	1.127	1.436	-0.237***	1.053	1.374	0.881	1.368	-0.171**	-0.066
Total Restriction	5.444	4.245	4.666	4.656	-0.778***	4.665	4.442	3.923	4.610	-0.742***	-0.036
Loan Variables											
Financial Covenant	5.028	4.366	4.323	4.079	-0.705*	4.059	3.639	3.855	3.742	-0.204	-0.501
Performance Covenant	3.912	4.004	3.378	3.147	-0.533*	2.925	2.907	2.832	3	-0.094	-0.440
Capital Covenant	0.747	1.042	0.389	0.989	-0.358***	0.786	1.04	0.661	1.147	-0.125	-0.233*
Investment Restriction	0.369	0.967	0.556	1.262	0.186*	0.348	0.907	0.363	0.939	0.015	0.171
Dividend Restriction	1.566	1.265	1.448	1.314	-0.118	1.265	1.09	1.282	1.362	0.018	-0.136

Table 3: Global Polynomial Regression

This table reports global RDD estimate/effect of unionization on debt covenants controlling for a polynomial of 3 in the vote margin variable. Each covenant type is measured as the total number of that covenant included on new debt issues. For each covenant, we consider different regressions for debt issued within 2 and 3 years after union election.i.e Each *(t+s)* regression considers all observations for firms that issued debt within s years after the union election. Panel A presents the result for bonds, Panel B presents the result for loans. We control for both firm and year fixed effects. Standard errors are clustered by firm.

Panel A: Global Polynomial Regression- Bond

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Unionization	-2.920**	-2.811**	-1.123**	-1.079***	-0.152	-0.033	-0.996**	-1.006**	-0.649*	-0.693*
	(-2.108)	(-2.528)	(-2.540)	(-3.003)	(-0.628)	(-0.199)	(-2.169)	(-2.559)	(-1.741)	(-1.860)
Constant	0.937	-1.190	0.665	-0.526	0.078	-0.515	0.659	-0.531	-0.465	0.381
	(0.671)	(-1.162)	(0.960)	(-1.475)	(0.259)	(-1.630)	(0.883)	(-1.427)	(-0.453)	(0.773)
Observations	437	763	437	763	437	763	437	763	437	763
Polynomial	3	3	3	3	3	3	3	3	3	3
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.535	0.508	0.489	0.476	0.634	0.547	0.496	0.501	0.584	0.547

Panel B: Global Polynomial Regression- Loan

	Financial		Performance		Capital		Investment		Dividend	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	t+2	t+3	t+2	t+3	t+2	t+3	t+2	t+3	t+2	t+3
Unionization	-1.043	-0.582	-1.584	-1.044	0.633*	0.559*	-0.091	-0.097	-0.670	-0.186
	(-0.462)	(-0.360)	(-0.857)	(-0.779)	(1.854)	(1.664)	(-0.361)	(-0.502)	(-1.112)	(-0.311)
Constant	2.147	2.116**	2.262*	2.643***	-0.344*	-0.313	0.229	-0.214	1.602***	0.833**
	(1.348)	(2.273)	(1.749)	(3.420)	(-1.881)	(-1.056)	(1.121)	(-1.076)	(3.961)	(2.371)
Observations	196	362	196	362	196	362	196	362	196	362
Polynomial	3	3	3	3	3	3	3	3	3	3
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-Squared	0.736	0.656	0.728	0.636	0.745	0.643	0.868	0.738	0.757	0.591

Table 4: Local Linear Regression- Bond Covenants

This table reports local RDD estimate/effect of unionization on different types of bond covenants. Each covenant type is measured as the total number of that covenant included on new bond issues. For each covenant, we consider different regressions for bonds issued within 2 and 3 years after union election.i.e Each *(t+s)* regression considers all observations for firms that issued bond within s years after the union election using both triangular and rectangular kernel. Standard errors are clustered by firm.

Panel A: Triangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Unionization	-5.739***	-5.489***	-2.140***	-2.082***	0.032	0.057	-2.199***	-2.113***	-1.432***	-1.350***
	(-3.181)	(-4.360)	(-3.052)	(-4.371)	(0.134)	(0.376)	(-3.002)	(-4.222)	(-3.572)	(-4.091)
Obs	248	432	248	432	248	432	248	432	248	432

Panel B: Rectangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Unionization	-3.913**	-3.819***	-1.408**	-1.456***	-0.109	0.023	-1.498**	-1.510***	-0.899***	-0.875***
	(-2.422)	(-3.400)	(-2.278)	(-3.446)	(-0.418)	(0.126)	(-2.315)	(-3.469)	(-2.789)	(-3.209)
Obs	248	432	248	432	248	432	248	432	248	432

Table 5: Local Linear Regression- Loan Covenants

This table reports local RDD estimate/effect of unionization on different types of loan covenants. Each covenant type is measured as the total number of that covenant included on new loan issues. For each covenant, we consider different regressions for bonds issued within 2 and 3 years after union election.i.e Each *(t+s)* regression considers all observations for firms that issued loan within s years after the union election. Panel A reports results using triangular kernel, Panel B reports rectangular kernel and Panel C reports the global polynomial regression controlling for a polynomial of 3 in the vote margin variable and including both firm and year fixed effects. Standard errors are clustered by firm.

Panel A: Triangular Kernel

	Financial		Performance		Capital		Investment		Dividend	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Unionization	-2.239	-1.136	-3.413**	-1.947**	0.573	0.589	0.601	0.223	0.120	-0.064
	(-1.321)	(-1.014)	(-2.559)	(-2.214)	(0.736)	(1.315)	(1.296)	(0.892)	(0.255)	(-0.196)
Obs	116	202	116	202	116	202	116	202	116	202

Panel B: Rectangular Kernel

	Financial		Performance		Capital		Investment		Dividend	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Unionization	-4.052**	-1.774	-4.710***	-2.524***	0.243	0.537	0.416	0.213	-0.565	-0.431
	(-2.312)	(-1.627)	(-3.205)	(-2.772)	(0.424)	(1.411)	(0.902)	(0.776)	(-1.208)	(-1.273)
Obs	116	202	116	202	116	202	116	202	116	202

Table 6: Robustness Test: Local linear regression results for Bond covenants

This table reports local RDD estimate/effect of unionization on different types of covenants *using 75% and 125%* of the optimal bandwidth. We consider different regressions for bonds issued 3 years after the union election using triangular and uniform kernel. Standard errors are clustered by firm.

Panel A: Triangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Optimal Bandwidth	75%	125%	75%	125%	75%	125%	75%	125%	75%	125%
Unionization	-7.097***	-4.747***	-2.634***	-1.820***	0.066	0.032	-2.618***	-1.855***	-1.911***	-1.105***
	(-4.511)	(-4.070)	(-4.544)	(-4.180)	(0.404)	(0.204)	(-4.330)	(-4.082)	(-4.350)	(-3.725)
Obs	328	499	328	499	328	499	328	499	328	499

Panel B: Rectangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Optimal Bandwidth	75%	125%	75%	125%	75%	125%	75%	125%	75%	125%
Unionization	-5.655***	-3.717***	-2.182***	-1.465***	0.017	0.064	-2.233***	-1.469***	-1.256***	-0.846***
	(-4.217)	(-3.263)	(-4.370)	(-3.641)	(0.091)	(0.391)	(-4.204)	(-3.515)	(-3.561)	(-2.593)
Obs	328	540	328	540	328	540	328	540	328	540

Table 7: Robustness Test: Local linear regression results for Loan covenants

This table reports local RDD estimate/effect of unionization on different types of covenants *using 75% and 125%* of the optimal bandwidth. We consider different regressions for loans issued 3 years after the union election using triangular and uniform kernel. Standard errors are clustered by firm.

Panel A: Triangular Kernel

	Financial		Performance		Capital		Investment		Dividend	
	(1) 75%	(2) 125%	(3) 75%	(4) 125%	(5) 75%	(6) 125%	(7) 75%	(8) 125%	(9) 75%	(10) 125%
Unionization	-0.080	-1.888*	-0.893	-2.451***	0.712	0.489	0.102	0.073	0.594	-0.394
	(-0.068)	(-1.841)	(-1.081)	(-2.868)	(1.184)	(1.286)	(0.409)	(0.343)	(1.593)	(-1.280)
Obs	149	236	149	236	149	236	149	236	149	236

Panel B: Rectangular Kernel

	Financial		Performance		Capital		Investment		Dividend	
	(1) 75%	(2) 125%	(3) 75%	(4) 125%	(5) 75%	(6) 125%	(7) 75%	(8) 125%	(9) 75%	(10) 125%
Unionization	-1.260	-2.707***	-2.057	-2.820***	0.443	0.290	0.354	-0.178	-0.087	-0.642*
	(-0.809)	(-2.627)	(-1.623)	(-3.262)	(0.981)	(0.950)	(1.084)	(-0.644)	(-0.192)	(-1.843)
Obs	149	244	149	244	149	244	149	244	149	244

Table 8: Monitoring Incentive Factors: Heterogeneity in the Impact of Unionization on Bond Covenant

This table reports the local RDD estimate/effect of unionization on bond covenants for different subsample based on monitoring by other forces using triangular kernel. In Panel A (Panel B), the dependent variable is the *total number* (*average number*) of each type of covenant. We categorize firms into two subsamples based on the median of product market fluidity, institutional ownership, credit rating, and corporate governance. Firms are sorted into bins using values from the year before the election year. Institutional Ownership is measured as the percentage of shares outstanding held by institution. We use the 3 year pre election average credit rating of bond issued by firm as a proxy for credit rating of each firm. Board of directors' independence is measured as the percentage of inside directors in the entire board. Standard errors are clustered by firm.

Panel A: Monitoring Incentive Factors:Test- Heterogeneity

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High	(7) Low	(8) High	(9) Low	(10) High
Fluidity	-3.241**	-10.535***	-1.247**	-3.543***	-0.266	-0.075	-1.069**	-3.604***	-0.658	-3.313***
	(-2.168)	(-4.144)	(-2.536)	(-3.762)	(-0.792)	(-0.227)	(-2.258)	(-3.799)	(-1.520)	(-6.324)
Institutional Ownership	-1.297	-8.235***	-0.672	-2.973***	0.185	0.078	-0.775	-2.984***	-0.035	-2.356***
	(-0.612)	(-6.605)	(-0.961)	(-7.765)	(0.441)	(0.600)	(-1.056)	(-7.554)	(-0.067)	(-4.520)
Credit Rating	-0.672	-8.133***	-0.591	-2.925***	0.431	-0.108*	-0.555	-2.983***	0.042	-2.116***
	(-0.271)	(-7.695)	(-0.712)	(-7.103)	(0.778)	(-1.900)	(-0.656)	(-6.958)	(0.093)	(-5.530)
Board of Directors' independence	-0.789	-10.824***	-0.487	-3.516***	-0.402	0.079	-0.522	-3.593***	0.623	-3.795***
	(-0.516)	(-4.754)	(-1.048)	(-5.299)	(-1.227)	(0.223)	(-1.107)	(-5.320)	(1.075)	(-5.448)

Panel B: Monitoring Incentive Factors: Robustness Test- Heterogeneity

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High	(7) Low	(8) High	(9) Low	(10) High
Fluidity	0.023	-1.082***	-0.135	-0.246	-0.057	0.070***	0.064	-0.259	0.150	-0.648***
	(0.032)	(-2.912)	(-0.576)	(-1.442)	(-0.336)	(2.852)	(0.278)	(-1.518)	(0.703)	(-6.205)
Institutional Ownership	0.335	-0.731**	-0.086	-0.254**	0.241	0.069	-0.071	-0.212*	0.252	-0.334*
	(0.489)	(-2.162)	(-0.368)	(-2.165)	(1.328)	(1.171)	(-0.261)	(-1.947)	(1.270)	(-1.827)
Credit Rating	0.744	-0.619**	-0.050	-0.168	0.440**	-0.034**	0.053	-0.156	0.300	-0.261*
	(0.994)	(-2.034)	(-0.215)	(-1.335)	(2.223)	(-2.091)	(0.204)	(-1.248)	(1.503)	(-1.823)
Board of Directors' independence	0.621	-1.713***	0.169	-0.460***	-0.144	0.014	0.134	-0.439***	0.462	-0.827***
	(0.827)	(-4.529)	(0.751)	(-3.989)	(-0.916)	(0.156)	(0.581)	(-3.778)	(1.491)	(-6.012)

Table 9: Fundamental Firm Characteristics Channels

This table reports the local RDD estimate/effect of unionization on bond covenants for different subsample using triangular kernel. In Panel A (Panel B), the dependent variable is the *total number* (*average number*) of each type of covenant. We categorize firms into two subsamples based on the median of risky investment, operating risk, leverage, profitability, and maturity. Firms are sorted into bins using values from the year before the election year. Operating risk is proxied by the Standard deviation of the ratio of operating cash flow to lag asset using quarterly data for the 3 years preceding the election year. Standard errors are clustered by firm.

Panel A: Fundamental Firm Characteristics Channels: Heterogeneity

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High	(7) Low	(8) High	(9) Low	(10) High
Operating risk	-6.807**	-2.469	-2.619***	-0.850*	-0.298	-0.102	-2.629***	-0.761	-1.261**	-0.757
	(-2.522)	(-1.520)	(-2.730)	(-1.683)	(-0.709)	(-0.493)	(-2.705)	(-1.492)	(-2.247)	(-1.279)
Risky Inv(RD/RD+Capex)	-2.604**	-6.093***	-1.136***	-1.946***	0.035	-0.038	-1.079**	-2.308***	-0.424	-1.801***
	(-2.263)	(-5.616)	(-2.634)	(-4.759)	(0.147)	(-0.518)	(-2.452)	(-6.006)	(-1.435)	(-4.373)
Leverage	-2.714**	-3.631*	-0.867**	-1.615**	-0.248**	0.284	-1.046**	-1.574*	-0.554	-0.726**
	(-2.266)	(-1.752)	(-2.134)	(-2.041)	(-2.152)	(0.727)	(-2.349)	(-1.924)	(-1.388)	(-2.074)
Profitability	-8.074***	0.408	-2.819***	-0.111	0.114	-0.044	-2.898***	-0.144	-2.471***	0.707**
	(-4.117)	(0.457)	(-4.080)	(-0.379)	(0.383)	(-0.246)	(-4.174)	(-0.493)	(-5.913)	(2.159)
Maturity 1(LongtermBond/Asset)	-4.374***	-2.270*	-1.791***	-0.759**	-0.013	0.125	-1.816***	-0.849**	-0.755**	-0.787**
	(-3.962)	(-1.799)	(-4.563)	(-2.187)	(-0.047)	(0.383)	(-4.650)	(-2.205)	(-2.109)	(-1.962)
Maturity 2(Years)	-2.963***	-3.785***	-1.283***	-1.318**	0.045	0.089	-1.295***	-1.419**	-0.430	-1.137***
	(-2.894)	(-2.778)	(-3.904)	(-2.186)	(0.180)	(0.383)	(-3.794)	(-2.234)	(-1.253)	(-3.001)

Panel B: Fundamental Firm Characteristics Channels: Robustness Test- Heterogeneity

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) Low	(2) High	(3) Low	(4) High	(5) Low	(6) High	(7) Low	(8) High	(9) Low	(10) High
Operating risk	0.021	0.050	-0.092	0.004	0.076	-0.021	-0.076	0.107	0.114	-0.040
	(0.041)	(0.072)	(-0.514)	(0.019)	(0.695)	(-0.171)	(-0.414)	(0.485)	(0.739)	(-0.167)
Risky Inv(RD/RD+Capex)	0.599*	-0.987**	0.097	-0.192	0.116	-0.024	0.175	-0.371**	0.211*	-0.401**
	(1.806)	(-2.292)	(0.836)	(-1.264)	(1.258)	(-0.409)	(1.452)	(-2.388)	(1.783)	(-2.365)
Leverage	-0.387	1.164***	-0.138	0.326**	-0.102	0.269***	-0.162	0.360***	0.015	0.209
	(-0.802)	(3.129)	(-0.808)	(2.468)	(-1.589)	(2.809)	(-0.883)	(2.975)	(0.094)	(1.348)
Profitability	-0.715*	0.941*	-0.213	0.182	0.144	0.050	-0.235	0.233	-0.410***	0.476***
	(-1.741)	(1.956)	(-1.465)	(1.232)	(1.594)	(0.489)	(-1.535)	(1.479)	(-3.604)	(2.697)
Maturity 1(LongtermBond/Asset)	-0.165	0.617***	-0.138	0.202***	0.006	0.188***	-0.102	0.186**	0.068	0.041
	(-0.448)	(2.930)	(-1.098)	(2.674)	(0.049)	(2.736)	(-0.820)	(2.045)	(0.537)	(0.289)
Maturity 2(Years)	0.160	0.435**	-0.060	0.195***	0.030	0.173***	-0.019	0.169**	0.209	-0.102
	(0.383)	(2.051)	(-0.470)	(2.665)	(0.237)	(2.647)	(-0.144)	(2.010)	(1.464)	(-0.684)

Table 10: Right to work Law- Bond Covenants

This table reports local RDD estimate/effect of unionization on different types of bond covenants both for RTW and non-RTW states. Each covenant type is measured as the total number of that covenant included on new bond issues. For each covenant, we consider bonds issued within 3 years after the union election using both triangular and rectangular kernel. Standard errors are clustered by firm.

Panel A: Triangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
RTW State	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Unionization	-6.113***	-3.088**	-2.343***	-1.228***	-0.120	0.464*	-2.434***	-1.120***	-1.216***	-1.204***
	(-5.142)	(-2.343)	(-4.963)	(-2.828)	(-0.624)	(1.904)	(-5.101)	(-2.628)	(-3.588)	(-2.778)
Obs	300	132	300	132	300	132	300	132	300	132

Panel B: Rectangular Kernel

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
RTW State	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Unionization	-4.807***	-1.673	-1.872***	-0.579	-0.147	0.401*	-1.969***	-0.551	-0.819***	-0.944**
	(-4.264)	(-1.272)	(-4.291)	(-1.367)	(-0.727)	(1.727)	(-4.490)	(-1.282)	(-2.766)	(-2.258)
Obs	300	132	300	132	300	132	300	132	300	132

Appendix A: Definition of all variables

Firm-specific Variables	***(Source: Compustat and CRSP)***
ROA	Earnings before interest and tax (EBIT)/total assets
Profitability	The ratio of net income to lag asset value.
BM	the ratio of the book value of equity to the market value of equity
Liability Ratio	the ratio of the total debt to total asset.
Cash Ratio	the ratio of cash and short term investment to total asset.
Size	the natural logarithm of total asset.
Leverage	The ratio of total debt to asset
Operating risk	The standard deviation of the ratio of net operating cash flow to lag of asset.
Risky Investment	The ratio of R&D expenditure to sum of R&D and Capital Expenditure.
Election-specific Variables	***(Source: NLRB)***
Unionization	A Post election dummy variable that equals one if union wins in the election or zero otherwise
VoteShare	The ratio of number of votes for Union to the total number of valid votes
Bond-specific Variables	***(Source:FISD)***
Investment	**Investment Restriction** - Merger restrictions, Indirect Investment restrictions, Stock Sale restrictions Transaction with affiliates restriction, Fixed charge coverage, Minimum net worth, Restrictions on redesignating subsidiaries, and the After-acquired property clause
Dividend	**Dividend Restriction** - Dividend payment restriction and Restriction on other payments.
Subsequent Finance	**Subsequent Financing Restriction** - Debt priority restrictions, Stock issuance restrictions Subordinate debt restrictions, and Restrictions on sale & lease obligations.
Event Related	**Event Related Restriction** - Default related event covenants and Change in control poison put.
Total Restriction	Sum of the above restrictions
# of Bonds	Number of bonds issued by a firm in a single year
Bond size	The logarithm of bond offering
YieldSpread	The average bond spread over treasury yield
Maturity 1	The ratio of long term new issue (with maturity greater than 7 years) to total new issues
Maturity 2	The number of years to maturity for new issues.

Loan-specific Variables	***(Source: DEALSCAN)***
Financial	Financial Covenant (Performance and Capital Covenant)
Performance	**Performance Covenant** - Max. Total Debt to Tangible Net Worth, Max. Net Debt to Assets Min. Equity to Asset Ratio, Max. Senior Leverage, Maximum Loan to Value, Max. Debt to Equity Max. Debt to Tangible Net Worth, Max. Leverage ratio, Min. Net Worth to Total Asset Min. Quick Ratio, and Min. Current Ratio.
Capital	**Capital Covenant** - Max. Total Debt to Tangible Net Worth, Max. Net Debt to Asset. Min. Equity to Asset Ratio, Max. Senior Leverage, Maximum Loan to Value, Max. Debt to Equity Max. Debt to Tangible Net Worth, Max. Leverage ratio, Min. Net Worth to Total Asset Min. Quick Ratio, and Min. Current Ratio.
Investment	**Investment**-Max Capital Expenditure
Dividend	Dividend Restriction
Covenant Specific Variables	
Total #	Total number of covenants across all bonds for each firm year
Average #	Ratio of number of bonds with covenant to number of bonds issued in a given firm year
Average $	Ratio of value of bonds with covenant to value of bonds issued in a given firm year
Weighted #	Weighted average number (number weighted) of covenants across all bonds for a given firm year

Appendix B: Sample construction

This table describes the sample selection process for our analysis. We detail the sample size following various selection criteria, arriving with the final sample of election firms.

Table A7: Election Sample Selection

	Observations	Firms
Elections (1977-2020)	140280	112854
Elections without conflicting result	138432	111494
Merged with CRSP and Compustat	5218	1436
Elections with Compustat data before and after election date	3440	973
Merged with FISD - **Bond**	1829	271
Merged with Dealscan - **Loan**	1659	425
Bond- Within 3 years after election, excluding observations in election year	763	103
Loan- Within 3 years after election, excluding observations in election year	362	101

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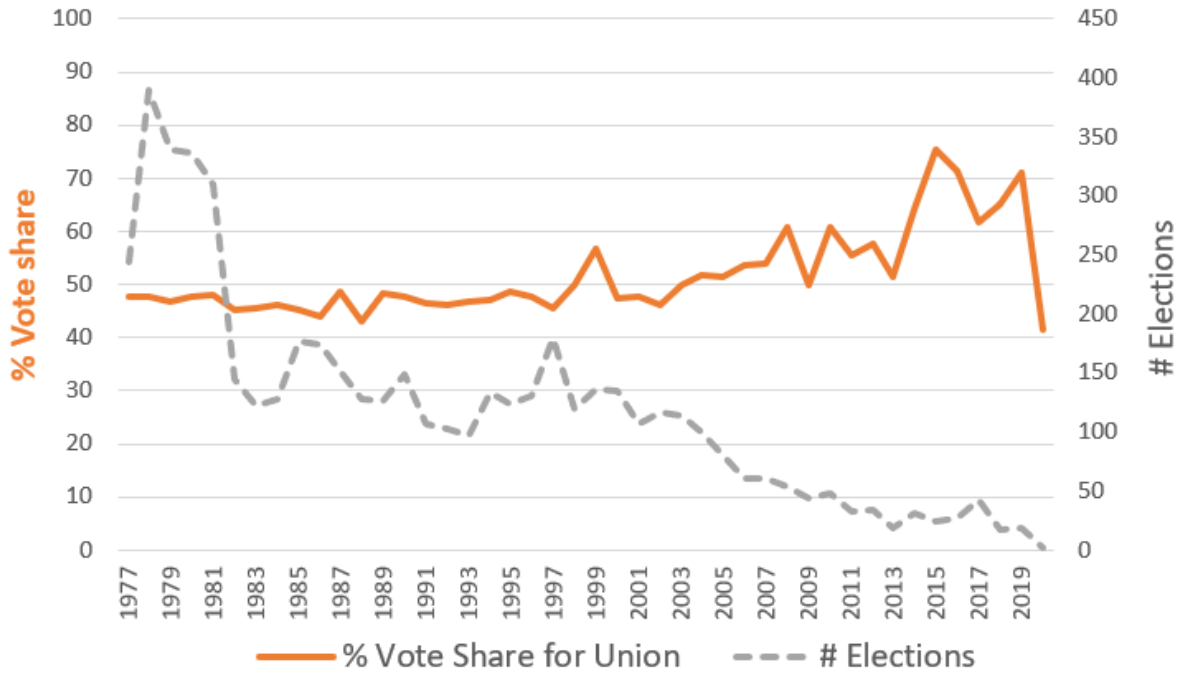
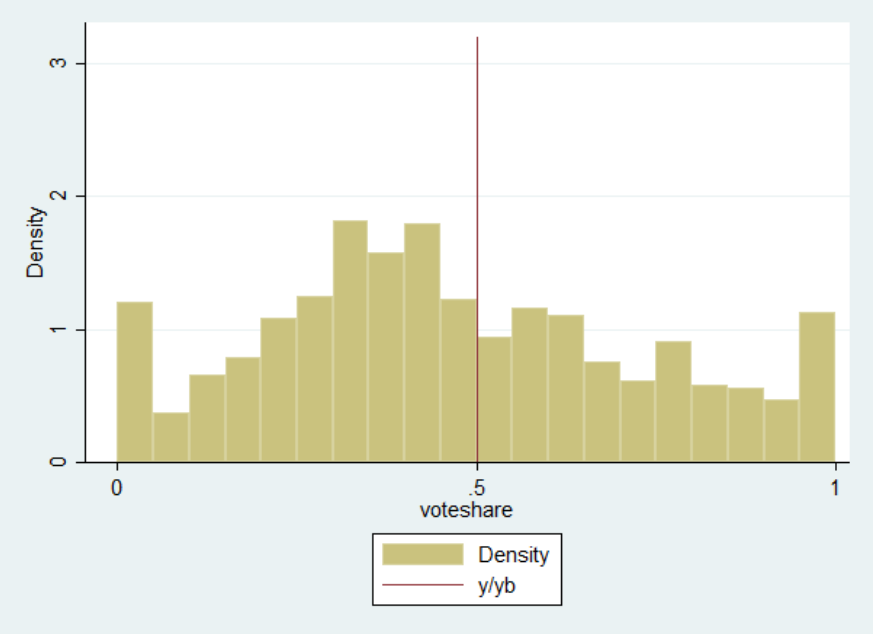


Figure 1: Occurrence and results of union elections

This figure plots the occurrence and results of union elections over our sample period. The solid line represents the average percentage votes in favor of a union (Percentage vote share for union). The dashed line represents the total number of elections.

(a) Distribution of votes



(b) Density Distribution of votes

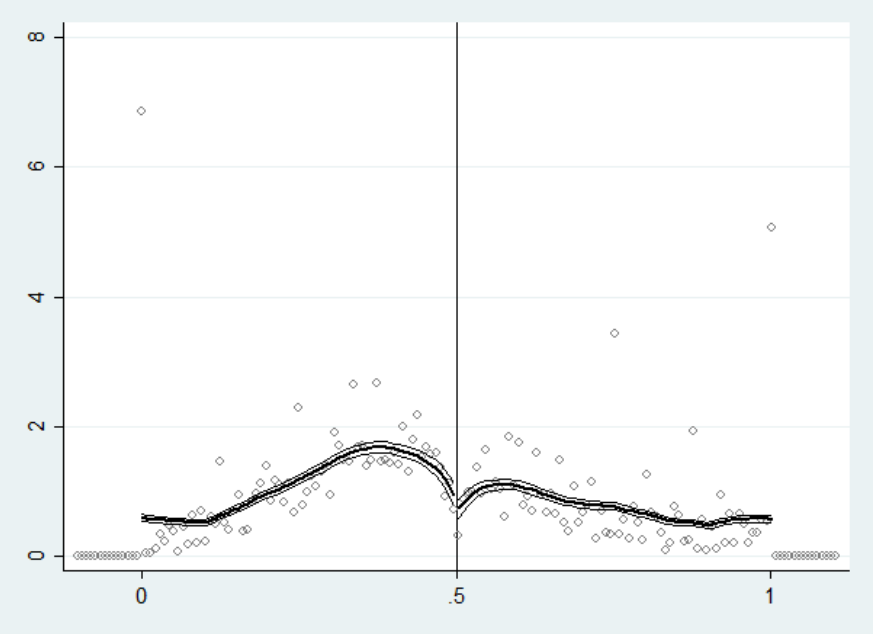
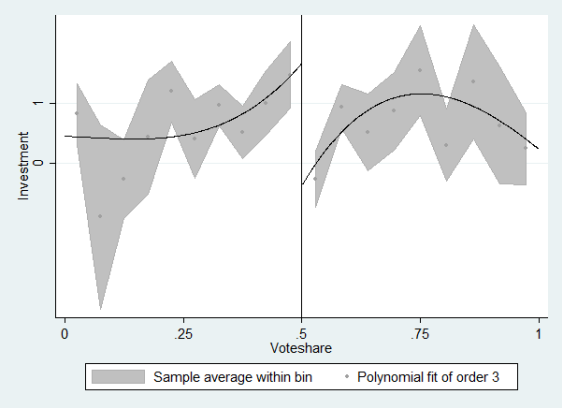


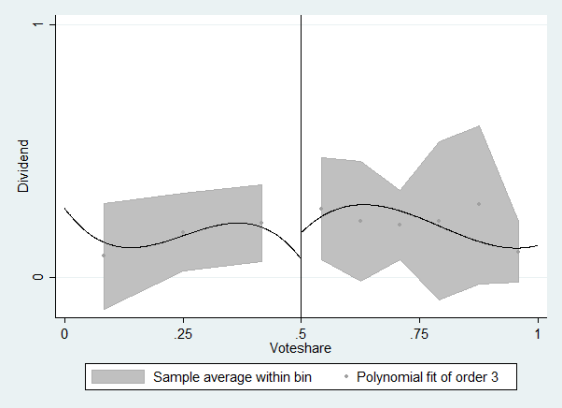
Figure 2: Distribution of Votes

Panel (a) plots a histogram of the distribution of the number of elections with the percentage of votes for union in our sample across 20 equally spaced bins (with a 5% bin width). Panel (b) plots the density of union vote shares following the procedure in McCrary (2008). The x axis is the percentage of votes favoring unionization. The dots represent the observed distribution density for each bin for union vote share. The darker solid line represents the fitted density function of the forcing variable (voteshare for union) with a 95% confidence interval (lighter solid lines) around the fitted line. Union election results are from the NLRB over 1977–2020.

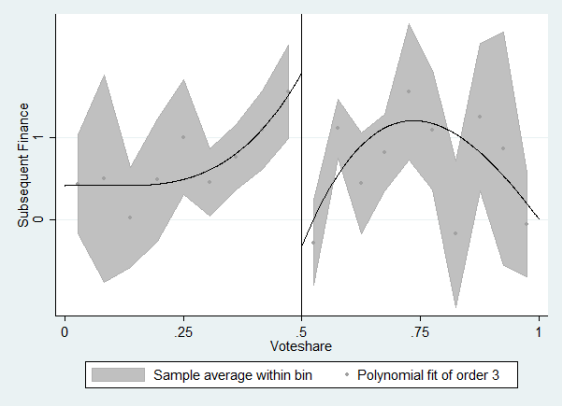
(a) Investment Restriction



(b) Dividend Restriction



(c) Subsequent Financing Restriction



(d) Event Related Restriction

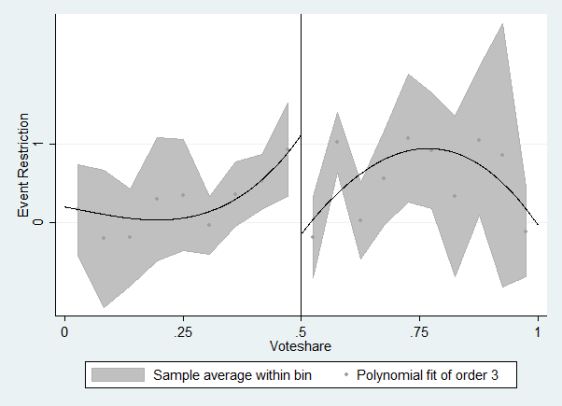
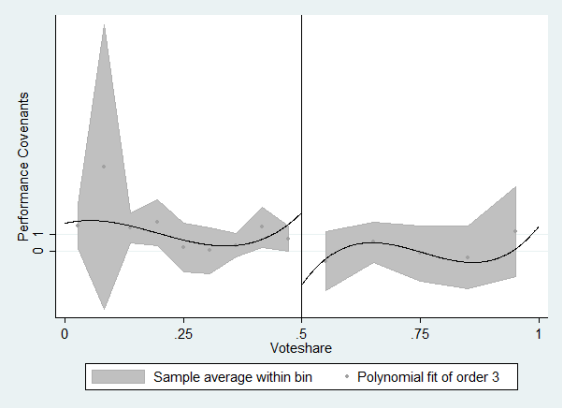


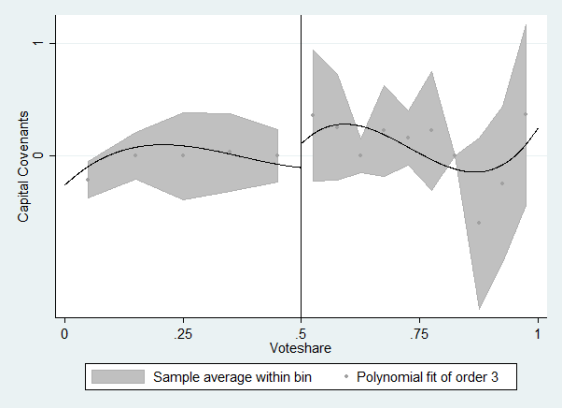
Figure 3: Regression Discontinuity Plots - Bond Covenants

This figure shows the bond covenants in the next 3 years following an election against the union vote share. The horizontal axis represents the union vote share, and the vertical axis represents the various Bond covenant types. The dots are covenants conditional means for each of the 20 equally sized bins of union vote share. The solid lines represent the fitted third-order polynomial function, and the shaded area represents the 95% confidence intervals of the polynomial estimation.

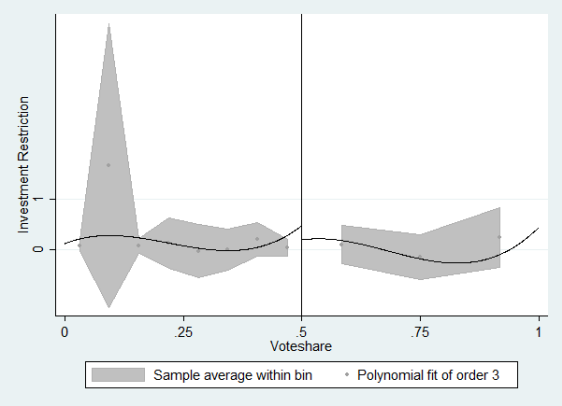
(a) Performance Covenants



(b) Capital Covenants



(c) Investment Restriction



(d) Dividend Restriction

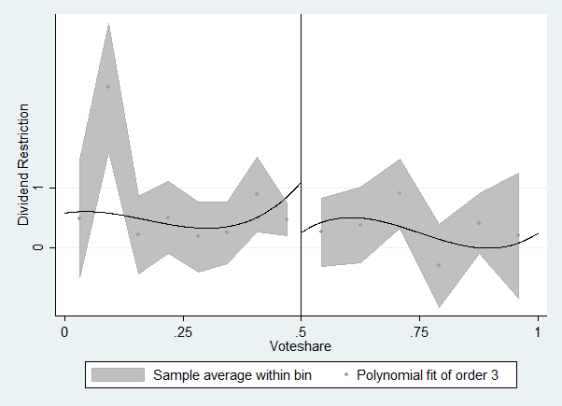


Figure 4: Regression Discontinuity Plots - Loan Covenants

This figure shows the bond covenants in the next 3 years following an election against the union vote share. The horizontal axis represents the union vote share, and the vertical axis represents the various Loan covenant types. The dots are covenants conditional means for each of the 20 equally sized bins of union vote share. The solid lines represent the fitted third-order polynomial function, and the shaded area represents the 95% confidence intervals of the polynomial estimation.

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Evidence from Private and Public Debt Markets.

Internet Appendix: Additional Tables

July 2023.

Table A1: Test of Continuity of Covariates

This table reports the univariate test from comparing close win firms to close loss firms. This univariate test considers only firms where the voteshare falls between 40% and 60% and performs a test of mean for Union election winning firms Vs Union election losing firms.

	Union Election Winning Firms		Union Election Losing Firms		T-test
Variable	No	Mean	No	Mean	Diff
Firm Characteristics					
ROA	371	0.106	551	0.105	0.001
BM	356	0.801	514	0.750	0.050
Liability Ratio	371	0.601	551	0.576	0.024 *
Cash Ratio	371	0.055	551	0.065	-0.010*
Size	371	7.06	551	7.002	-0.400

Table A2: Robustness Test: Local linear regression results for bond covenants: Rectangular Kernel

This table reports local RDD estimate/effect of unionization on different types of covenants using 4 different metrics. For each metric, we consider different regressions for bonds issued 2,and 3 years after union election.The dependent variable here is the total number of each type of covenant. *(t+s)* regression considers all observations for firms that issued bond within s years after the union election using triangular kernel. Standard errors are clustered by firm.

	Total Restriction		Investment		Dividend		Subsequent Financing		Event Related	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Total #	-3.913**	-3.819***	-1.408**	-1.456***	-0.109	0.023	-1.498**	-1.510***	-0.899***	-0.875***
	(-2.422)	(-3.400)	(-2.278)	(-3.446)	(-0.418)	(0.126)	(-2.315)	(-3.469)	(-2.789)	(-3.209)
Average #	0.156	0.072	0.032	-0.022	0.086	0.083	0.030	-0.011	0.008	0.021
	(0.427)	(0.241)	(0.267)	(-0.202)	(1.080)	(1.139)	(0.222)	(-0.090)	(0.067)	(0.204)
Average dollar	-0.024	-0.062	0.034	-0.022	0.086	0.082	0.030	-0.013	0.001	0.016
	(-0.172)	(-0.534)	(0.288)	(-0.205)	(1.080)	(1.122)	(0.222)	(-0.107)	(0.010)	(0.155)
Weighted #	0.128	0.056	0.022	-0.030	0.080	0.084	0.025	-0.015	0.001	0.016
	(0.347)	(0.184)	(0.184)	(-0.268)	(1.010)	(1.155)	(0.179)	(-0.124)	(0.007)	(0.158)
Obs	248	432	248	432	248	432	248	432	248	432

Table A3: Local Linear Regression - Loan

This table reports local RDD estimate/effect of unionization on different types of Loan covenants. Each covenant type is measured using **5 different metrics**. For each covenant, we consider different regressions for loans issued within 2 and 3 years after union election.i.e Each *(t+s)* regression considers all observations for firms that issued loan within s years after the union election using only triangular kernel. Standard errors are clustered by firm.

	Financial		Performance		Capital		Investment		Dividend	
	(1) t+2	(2) t+3	(3) t+2	(4) t+3	(5) t+2	(6) t+3	(7) t+2	(8) t+3	(9) t+2	(10) t+3
Total #	3.535	2.224	2.161	-0.421	0.849	1.136	-0.202	-0.234	2.315***	1.668
	(1.001)	(0.852)	(1.109)	(-0.254)	(0.835)	(1.465)	(-0.403)	(-0.766)	(2.590)	(1.515)
Average #	0.801	1.123	0.175	-0.117	-0.094	0.232	-0.017	-0.066	1.510**	1.067*
	(0.640)	(0.933)	(0.191)	(-0.200)	(-0.206)	(0.433)	(-0.065)	(-0.486)	(2.542)	(1.667)
Average dollar	0.647	0.423	0.518	0.328	-0.495	-0.282	-0.021	-0.067	0.720	0.420
	(1.114)	(1.113)	(0.952)	(1.101)	(-1.467)	(-1.373)	(-0.078)	(-0.495)	(1.223)	(0.953)
Weighted #	0.652	1.048	0.037	-0.119	-0.099	0.215	-0.013	-0.059	1.550**	1.086*
	(0.509)	(0.873)	(0.039)	(-0.205)	(-0.217)	(0.399)	(-0.048)	(-0.428)	(2.566)	(1.672)
Weighted dollar	0.969	1.212	0.344	-0.116	-0.084	0.252	-0.021	-0.067	1.474**	1.038*
	(0.785)	(1.004)	(0.394)	(-0.196)	(-0.184)	(0.473)	(-0.078)	(-0.495)	(2.512)	(1.652)
Observations	196	362	196	362	196	362	196	362	196	362

Table A4 : Changes in Bond and Firm characteristics

This table reports the effect of unionization on bond and firm characteristics using triangular kernel. We measure leverage using the ratio of total debt to Asset. Maturity is measured as both the ratio of issued long-term bonds (i.e greater than 7 years), and the number of years to maturity. To compute changes in each variable, We compare post-election values to their values in year t-1. We also consider observations for 1,2,3 years after election. Standard errors are clustered by firm.

Triangular Kernel

	(1)	(2)	(3)
	t+1	t+2	t+3
Bond size	2.175	1.524	0.724
	(0.582)	(0.618)	(0.337)
Yield Spread	1.154*	-0.388	-0.332
	(1.957)	(-0.525)	(-0.588)
Leverage (All firms)	-0.064	-0.161	-0.150
	(-1.368)	(-1.103)	(-1.111)
Leverage (Bond sample firms)	-0.253*	-0.231**	-0.262***
	(-1.799)	(-1.993)	(-2.783)
Maturity 1(LongtermBond/Asset)	0.000*	0.000	0.000
	(1.792)	(0.970)	(0.111)
Maturity 2 (Years)	-1.013	3.555	0.577
	(-0.159)	(0.793)	(0.151)