Financial Resilience in Labor Negotiations [†]

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We investigate the use of financial resilience as a strategic tool in labor negotiations. In a dynamic model of employer-employee negotiations, low leverage and long-term maturity improve a firm's ability to withstand strikes. If employees suffer more from negotiations, this improved *resilience* strengthens the employer's bargaining position. Using data on union elections and policy changes, we find that firms increase (decrease) debt maturity in response to higher (lower) employees' bargaining power while keeping leverage unchanged. In contrast to previous studies, our findings indicate that firms respond to more powerful employees by increasing their financial resiliency to negotiations and strikes.

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"The length of the walkout may hinge on the answers to two crucial questions: How long can the United Auto Workers afford to stay out? And how long can General Motors endure a strike?" **The NYT about 2007 GM's strike**

1 Introduction

Conventional wisdom is that leverage improves a firm's position when bargaining with employees: selling future cash-flow to debtholders reduces the surplus available for negotiations, shielding shareholders' wealth from wage concessions (see Bronars and Deere (1991), Perotti and Spier (1993), and Matsa, 2010). Anecdotal evidence, however, suggests that firms' ability to withstand long negotiations plays a crucial role. This ability depends on a firm's capital structure. If a dispute with workers ends up in a walkout, forgone revenues can impair the firm's capacity to meet its debt obligations, reducing its resilience to negotiations.[1] While the existing literature highlights that negotiations with employees influence capital structure decisions, it has overlooked the role that firms' financial resilience plays in affecting these decisions.

In this paper, we show (both theoretically and empirically) that financial resilience plays a strategic role in labor negotiations. In a dynamic model of employer-employee negotiations, low leverage and long-term maturity improve a firm's *resilience* to strikes. If workers suffer more from negotiations, this improved resilience strengthens the shareholders' bargaining position. These theoretical results have two important implications for firms' strategic use of capital structure. First, they highlight a strategic cost in using high leverage as a bargaining tool. This cost may offset its benefits, emphasized in the literature, making leverage's overall effect on shareholders' position ambiguous. Second, they uncover a strategic role for the maturity structure of debt in negotiations with workers, since longer debt maturity improves a firm's financial resilience and, as a result, its shareholders' bargaining position.

[1] For example, during the 2019 GM's strike, Bloomberg reported that *"GM may have trouble funding its obligations if the strike isn't resolved before raters either cut the outlook or rating"*. This 40-day strike has cost GM about \$3.8 billion to \$4 billion for the year, or 1.6% of its book value of assets.

The model predicts that *both* leverage and debt maturity play a strategic role in labor negotiations. Moreover, they are substitutes as strategic tools: firms that do not raise leverage increase maturity more in response to a positive shock to employees' bargaining power; vice-versa, firms that do not increase maturity are more likely to raise leverage. We use firm-level union elections and the adoption of state-level right-to-work laws to capture an increase and a decrease in employees' bargaining power, respectively. We find that firms respond to more (less) powerful employees by increasing (decreasing) their debt maturity, while keeping their leverage unchanged. The magnitude of these reactions varies across firms in ways consistent with the strategic substitutability mentioned above and other predictions of our model. Moreover, consistent with a strategic motive, we find that firms increase maturity *ahead* of labor negotiations and decrease it *afterwards*.

We illustrate the connection between firms' financial resilience and bargaining outcomes in a repeated version of the random-proposer model of Binmore (1987), in which players are randomly selected to make an offer in each period until an offer is accepted. An offer is a proposed partition of the firm's surplus, which consists of the revenues from production net of the repayment of the firm's debt. Workers halt production until they secure an agreement, making the delay in reaching an agreement costly for both parties. The key feature of the model is that the firm's debt obligation imposes a limit to the length of negotiations. Without revenues from production, the firm cannot meet its debt obligation and goes bankrupt. Both shareholders and workers are *impatient*, in that they discount future payoffs. We assume that shareholders are more patient than workers, which implies that they suffer less from the delay in reaching an agreement.[2]

Because of the costs of delay, an agreement is reached immediately in equilibrium. However, the allocation of surplus depends on the sequence of offers and counteroffers that players would make if an agreement is not reached until the last period before the firm goes bankrupt.[3] Since

[2]The rationale for this assumption is that workers are less diversified than shareholders and rely heavily on wages for their livelihood. If shareholders are less patient than workers, the results are the opposite: financial resilience weakens shareholders' bargaining position.

[3]The last offer before the firm goes bankrupt is always accepted since the alternative for the other party would be to decline and lead the firm into bankruptcy. The equilibrium is then obtained moving backward, as a sequence of offers that makes players indifferent between accepting or refusing the offer at each period.

shareholders are more patient than workers, they suffer less from prolonged negotiations. This is reflected in the equilibrium allocation, with shareholders receiving, all else equal, a relatively larger fraction of surplus. The longer the length of feasible negotiations on the equilibrium path, that is, the greater the firm's resilience to negotiations, the larger the shareholders' competitive advantage.

Our model's implications for firms' capital structure decisions are the following. First, leverage has an ambiguous effect on shareholders' bargaining position. On the one hand, it pushes money off the negotiation table, reducing the surplus available for wage concessions. On the other hand, it reduces the firm's resilience to negotiations by constraining the amount of walkout-induced losses it can withstand before going bankrupt. Second, longer debt maturity *always* strengthens shareholders' bargaining position by delaying the time when the firm's debt is due and increasing its resilience to negotiations. As a result, shareholders use longer debt maturity but not necessarily more leverage to respond to an increase in workers' bargaining power.

Third, leverage and maturity are *substitutes* as strategic tools. That is, more leverage reduces the incentives to use maturity as a bargaining chip, and longer maturity reduces the incentives to use leverage. If leverage is high and negotiations are long, the firm goes bankrupt before its debt is due, because of the losses induced by the labor walkout. This implies that longer maturity improves shareholders' bargaining position only if they are not too levered and can withstand a relatively long negotiation. Similarly, if the firm's debt is very short-term, an increase in leverage does not shorten negotiations, as debt is due before losses from negotiations are too large. As a result, when most of the firm's debt is already short-term, increasing leverage does not hurt shareholders' bargaining position.

We use two different estimation strategies to investigate the strategic use of debt structure in US public firms. The first strategy exploits establishment-level union elections to capture increases in employees' bargaining power. Workers in the US can be represented by a labor union in negotiations with the firm's management. This representation is conditional on more than 50% of workers supporting the formation of a collective bargaining unit in a secret ballot election. We exploit the randomness associated with the elections' outcome to implement a sharp regression discontinuity design (RDD). We compare leverage and debt maturity decisions of firms facing newly unionized workers with those of firms whose workers held a union election but did not become unionized. We find that the average unionized firm increases the long-term debt ratio by 3-percentage points (about 18% of the sample mean) compared to the average non-unionized firm. We do not find statistically significant effects of unionization on financial leverage. Our findings are robust to several empirical specifications.

The second estimation strategy exploits the staggered adoptions of state right-to-work laws (RWLs) as an exogenous reduction in unions' bargaining power. Right-to-work laws weaken organized labor by forbidding mandatory unions' membership and fees as conditions in employment contracts (see Ellwood and Fine (1987) and Holmes, 1998). This creates a free-riding problem because workers of unionized establishments enjoy the benefits of union support without contributing to its costs. Consistent with the theoretical predictions (and the RDD results), we find that firms in states adopting right-to-work laws decrease the maturity of debt relative to otherwise similar firms in other states. The average firm decreases the long-term debt ratio by 2.2 percentage points (about 13% of the sample mean) compared to the average firm in non-right-to-work states. We find weak evidence that firms reduce leverage in response to these laws.[4]

Our results show that firms respond to an increase in employees' bargaining power by reshaping their maturity structure without increasing the debt level. We use the large cross-section of firms in the diff-and-diffs framework to explore the mechanism driving our results. First, we find support for the model's prediction that patient shareholders benefit more from financial resilience. We capture shareholders' *patience* indirectly, by looking at their degree of diversification. We find that, after a *decrease* in workers' bargaining power, the reduction in maturity and the increase in leverage are both more pronounced in firms with more institutional ownership. Second, we find

[4]This latter result contrasts the findings in Matsa (2010) who, using the same experiment and a different sample period (from 1950 to 1960), finds a negative and statistically significant leverage reduction for firms in right-to-work laws states.

evidence consistent with the prediction that leverage and maturity are substitutes as strategic tools. Following the literature on operating leverage (Simintzi, Vig, and Volpin (2015) and Serfling, 2016), we use labor separation rates as a proxy for operating flexibility concerns, which reduce a firm's ability to increase leverage. We find that the reduction in maturity is stronger in firms with a higher separation rate, while there is no different reaction for leverage measures.

We rule out two alternative channels for our results. First, the decrease in maturity may be driven by the credit supply: creditors may require a larger premium for long-term debt due to the increase in cash-flow risk associated with more powerful workers (as in Flannery, 1986). We find no evidence of this alternative narrative, since the maturity reaction to changes in bargaining power is not affected by cash flow volatility. Second, firms may swap public debt for bank loans when facing more powerful employees: since the former is harder to renegotiate with creditors, it may be more effective in pushing surplus off the negotiation table with workers (as in Qiu, 2016). Considering that public debt tends to have longer maturity, our results may be driven by this substitution rather than financial resilience. We do not find support for this alternative mechanism either.

Related Literature

Our paper contributes to a growing literature on the effects of non-financial stakeholders on firms' decision-making (see Matsa (2018) and Pagano (2020) for a review of this literature). The closest work to our paper looks at leverage as a strategic tool in labor negotiations. The intuition at the heart of these studies is formalized in Bronars and Deere (1991) and Perotti and Spier (1993). Both papers consider static models of bargaining and show that increasing leverage *always* improves shareholders' bargaining position. We develop a dynamic model of negotiations and show that, in such a setting, financial resilience plays a strategic role as well. This introduces (i) a trade-off in the use of leverage and (ii) a role for debt maturity as bargaining tools.

Matsa (2010) finds evidence supporting the use of strategic leverage using the cross-sectional correlation between leverage and firm-level unionization and the adoption of state labor laws in the US. We consider firm-level union elections and state-level labor laws but on a larger and more recent sample of firms. We find weak evidence for strategic leverage but a strong evidence supporting the strategic use of debt maturity. The difference between these results is consistent with the *tension* between strategic leverage and financial resilience highlighted by our model.[5] Ellul and Pagano (2019) find that leverage reacts differently to employees' seniority in bankruptcy proceedings depending on the trade-off between strategic concerns in bargaining and credit constraints. We abstract from differences in employees' rights in bankruptcy as our sample comprises only US firms and, thus, there is no heterogeneity along this dimension.

Another line of research focuses on the relationship between firms' operating and financial leverage (see Simintzi et al. (2015) and Serfling, 2016). The main prediction is that firms decrease financial leverage in response to operating flexibility losses associated with more protected workers. Our paper bridges these two strands of literature (i.e., strategic use of capital structure and operating flexibility concerns) in two ways. First, we provide evidence that firms use maturity and not leverage to improve their strategic position in negotiations whenever operating flexibility considerations are more relevant. This suggests that strategic motives still affects those firms' capital structure decisions. Second, we show theoretically that a decrease in financial leverage may improve shareholders' bargaining positions by increasing the firm's resiliency to negotiations. This implies that operating flexibility and strategic considerations do not necessarily contrast each other.

Finally, we contribute to a large theoretical literature on bargaining games (see Binmore (1987) and Muthoo (1999) for a review). First, we build on the traditional intuition in Rubinstein (1982) that more patient players extract more surplus in long negotiations and analyze the use of debt structure to influence the dynamics of negotiations. In our model, the firm's debt obligation creates an endogenous limit to the length of negotiations that shareholders can use to maximize their equilibrium payoffs. Second, we provide evidence that firms use debt structure strategically, in ways consistent with our theoretical insights.

The rest of the paper is organized as follows. Section 2 describes the theoretical framework

[5] Our cross-sectional tests underscore this tension. For example, more patient shareholders are more likely to increase maturity and reduce leverage after a positive shock to workers' bargaining power.

and presents the main results of the model. Section 3 presents the empirical analysis and results. In particular, Section 3.1 describes the regression discontinuity design using union elections and Section 3.2 presents the difference-in-differences analysis employing the adoption of right-to-work laws. Finally, Section 4 concludes. Detailed proofs are presented in Appendix D.

2 Theoretical Framework

The model features two types of risk-neutral agents: shareholders (s) and workers (w) of a firm. Time is discrete, indexed by $t = 0, 1, ..$ and the horizon is infinite. The firm has access to an investment project that generates a revenue 1 and requires both a capital investment k, where $1 > k > 0$, and w's labor input.[6] Shareholders use both equity e and debt D to fund the proejct, which implies we have $e + D = k$. The firm has to pay back to debtholders the amount D at some time $T \in \mathbb{R}_+$, where T is the debt maturity. The values of D and T are taken as given in the first part of the analysis, where we show how the outcome of the negotiations depends on the firm's debt structure.[7] The insights derived here will be then used in Section 2.2, where we analyze the choice of capital structure by shareholders.

The bargaining between s and w unfolds according to the following procedure. At time $t = 0$, with probability α, w makes an offer to s, where an offer is a proposal of a partition of the firm's profits. If s accepts the offer, then an agreement is struck: w engages in production and the revenue 1 realizes; D is paid back to creditors and $1 - D$ is distributed among s and w according to the accepted offer. With probability $1 - \alpha$, s makes the offer at time $t = 0$, and w decides whether to accept it or not. If the party receiving the offer at time $t = 0$ declines it, another round of negotiations takes place at time $t = 1$, with w and s having again probabilities α and $1 - \alpha$ of

[6] In Appendix D.5, we show that our results are robust to adding a stochastic component to the firm's revenue.

[7] Here we abstract from credit-market frictions and assume that the payment to debtholders D is equal to the principal (d) raised by the firm. We remove this assumption in Section 2.2, where we allow for costs of leverage and maturity that are not related to the negotiations with employees. It is worth noting that an agreement is reached immediately and the firm never goes bankrupt in equilibrium, which means that debt is risk-free in the baseline model. Assuming that shareholders pay back D as soon as revenues realize would thus suffice to have $d = D$ in an equilibrium with a competitive credit market.

making an offer, respectively. If the offer made at time $t = 1$ is accepted, an agreement is struck then: w engages in production and the revenue δ realize, where $\delta \in (0, 1)$; D is paid back to creditors and $\delta - D$ is distributed among s and w according to the accepted offer. The delay in reaching an agreement has a detrimental effect on the firm's revenue: w halts production until an agreement is reached, and this results in forgone revenues $1 - \delta$ for the firm.

This process of making offers and counteroffers continues until an offer is accepted. An agreement reached at time t consists of a sharing rule y_t, where y_t is s's share and $1 - y_t$ is w's share of the firm's profits $\delta^t - D$. As is typical in bargaining models, making offers confers relatively greater bargaining power than responding to offers. Therefore, the probability with which each player makes offers at each period parameterizes its relative bargaining power.

If an agreement between s and w has yet to be reached at time T, the firm cannot repay D to debtholders and goes bankrupt, in which case both s and w receive a payoff of 0.[8] The firm's ability to meet its debt obligations also depends on the losses due to the negotiation. If bargaining goes on for too long (i.e., if an agreement is yet to be reached at time $\bar{t}$ such that $\delta^{\bar{t}} > D$ but $\delta^{\bar{t}+1} < D$) the firm cannot repay its future obligations and goes bankrupt even if $\bar{t} < T$. The maximal length of negotiations is thus $t^* = \min \left\{ \bar{t}, T \right\}$.[9] Of course, longer maturity always increases the length of negotiations t^* (strictly if $T < \bar{t}$). On the contrary, higher leverage always drecreases t^* (strictly if $\bar{t} < T$), as it reduces the losses due to the walkout the firm can withstand before going bankrupt. These effects of D and T on the length of negotiations cannot be captured by static models of bargaining and, thus, our framework leads to novel implications for firms' capital structure decisions.

Both shareholders and workers are *impatient*, in that they discount future payoffs. This implies that both parties suffer from the delay in reaching an agreement, on top of the destruction of

[8] The assumption that both s and w receive a payoff 0 in case of bankruptcy simplifies the exposition but does not affect any of the results.

[9] If we endogenize the credit market and allow s to try to refinance its debt at time T, there always exists an equilibrium in which debtholders refuse to do so, as they believe that an agreement betweeen s and w will not be reached before time $\bar{t}$. In this case, the equilibrium is the same we analyze here. Of course, longer maturity increases the length of negotiations even if debtholders allow the firm to refinance its debt but refinancing is costly.

surplus due to walkouts. Let $(\delta_s, \delta_w) \in (0,1]^2$ denote s's and w's discount factors, respectively. We assume $\delta_s > \delta_w$, which means that s is more patient than w. If an agreement y_t is reached at time $t \leq \min\left\{\bar{t}, T\right\}$, s's payoff is $\delta_s^t y_t \left(\delta^t - D\right) - e$, where e is the equity they have invested into the project, and w's payoff is $\delta_w^t (1 - y_t)\left(\delta^t - D\right)$. Otherwise, the firm goes bankrupt and s's and w's payoffs are equal to 0. The equilibrium concept is Subgame Perfect Equilibrium (SPE).

2.1 Equilibrium analysis

In this section, we characterize the equilibrium of the bargaining game for given values of (D, T). We will use this characterization in Section 2.2, where we describe the capital structure that maximizes shareholders' payoffs.

The following Proposition characterizes the equilibrium of the bargaining game. Lemma 1 will then describe how the shareholders' equilibrium payoff changes with the debt structure of the firm.

Proposition 1. *Let $t^* = \min\left\{\bar{t}, T\right\}$ denote the maximal length of negotiations (i.e., the last period before the firm goes bankrupt). The equilibrium of the bargaining game is unique; in this equilibrium, we have:*

1. *An agreement is reached immediately in equilibrium, that is, at time $t = 0$.*

2. *The last offer before bargaining breaks down, i.e., y_{t^*}, leaves the player receiving the offer indifferent between accepting y_{t^*} and its bankruptcy payoff of zero. For any time $t < t^*$, the equilibrium offer y_t is such that the player receiving the offer is indifferent between accepting and refusing y_t.*

Because of the costs of delay, an agreement is reached immediately in equilibrium. However, the allocation of surplus depends on the equilibrium *path*. That is, the sequence of offers and counteroffers players would make if an agreement is not reached until t^*, i.e., the last period before the firm goes bankrupt. This is because, at each period $t < t^*$, the player receiving the offer considers whether to accept this offer *or* refuse it and get a chance to make its own offer in the next round of negotiations. The last offer before the firm goes bankrupt is always accepted, since the alternative for the other party would be to decline and lead the firm into bankruptcy. The equilibrium is then obtained moving backward, as a sequence of offers that make players indifferent between accepting or refusing the offer at each period. As a result, the entire path of offers and counteroffers pins down the equilibrium allocation of surplus.

Since shareholders are more patient, they suffer less from refusing an offer and waiting for the next round of negotiations. This is reflected in the equilibrium allocation, with the shareholders receiving, all else equal, a relatively larger fraction of the surplus for any $t^* > 0$. The longer the length of feasible negotiations on the equilibrium path, that is, the further the firm's bankruptcy, the larger the shareholders' competitive advantage in the negotiation. For example, if negotiations can only last one round ($t^* = 0$), s's equilibrium payoff is $u_s^*(0) = (1-\alpha)(1-D)-e$. If negotiations can go on for two rounds ($t^* = 1$), this payoff is instead $u_s^*(1) = (1-\alpha)(1-D)+(1-\alpha)\alpha(\delta_s-\delta_w)(\delta-D)-e$. Since $\delta_s > \delta_w$, we always have $u_s^*(1) > u_s^*(0)$.

Lemma 1. *The following comparative statics results hold in equilibrium:*

1. *The shareholders' equilibrium payoff (u_s^*) may increase or decrease with the level of debt D, while it always (weakly) increases with debt maturity T; moreover, we have:*

   (a) u_s^* strictly increases with D if T is such that $T < \bar{t}$;

   (b) u_s^* strictly increases with T if and only if D is such that $D \leq \delta^{T+1}$.

2. *Let $\tilde{\delta}_s = \delta\delta_s$, $\tilde{\delta}_w = \delta\delta_w$; we have $lim_{(D,T)\to(0,\infty)} u_s^* = \frac{(1-\alpha)(1-\tilde{\delta}_w)}{1-\alpha\tilde{\delta}_s-(1-\alpha)\tilde{\delta}_w} - k$.*

Lemma 1 describes how the shareholders' equilibrium payoff changes with the debt structure of the firm. The result on maturity is straightforward: longer maturity (weakly) increases the maximal length of negotiations and benefits shareholders. Leverage has instead two contrasting effects on shareholders' bargaining position. On the one hand, it reduces the surplus available for negotiations, shielding shareholders' wealth from wage concessions. For example, using $e = k - D$, it easy to see that both $u_s^*(0)$ and $u_s^*(1)$ increase with D. Due to the negotiations, s earns only a fraction $1 - \alpha$

of the return on every dollar of equity invested into the project. Therefore, holding everything else equal, a debt-for-equity swap always benefits s. On the other hand, however, increasing D reduces the maximal length of negotiations, by reducing the losses from walkouts the firm can withstand before going bankrupt. As discussed above, this weakens s's bargaining position. Therefore, the overall effect of leverage on shareholders' equilibrium payoff is generally ambiguous.

We now discuss the interactions between the effects of maturity and leverage on the bargaining. If $D > \delta^{T+1}$, maturity does not affect u_s^*. In this case, the firm would go bankrupt before its debt is due, because of the losses induced by the labor walkout. This means that longer maturity improves s' bargaining position only if the firm is not too levered and can withstand a relatively long negotiation (at least longer than T). Similarly, if $T < \bar{t}$, an increase in leverage does not shorten negotiations, as the firm's debt is due before the natural length of negotiations. Therefore, when most of the firm's debt is already short-term, increasing leverage does not hurt shareholders' bargaining position. These results suggest that debt maturity and leverage are substitutes in their use as strategic tools in negotiations. That is, more leverage reduces the incentives to use maturity as a bargaining chip, and longer maturity reduces the incentives to use leverage.

Finally, we characterize the value of u^* in the limit $D \to 0$ and $T \to \infty$. That is, when the firm's financial structure becomes infinitely resilient to negotiations. It is worth noting that this limit is the same as the standard equilibrium payoff in bargaining models with infinite horizon (see e.g., Muthoo (1999)), so our model converges to one with infinite horizon as $t^* \to \infty$.

2.2 Optimal Capital Structure

In this section, we explore the implication of our analysis for firms' capital structure decisions. We allow shareholders to set the firm's capital structure before negotiations begin at time $t = 0$. We denote the amount raised in debt by shareholders as d, and allow d to be different from the amount D that is due to debtholders at maturity. We let d be a function of the firm's debt structure (D, T), in a way that captures the *non-strategic* costs of higher leverage and longer maturity (more on this shortly). Shareholders use both equity and debt to fund the project; thus, we have $k = e + d$.

For simplicity, we let shareholders (s) choose between four different pairs (D, T), with $D \in \left\{\underline{D}, \overline{D}\right\}$ and $T \in \{0, 1\}$, where $\overline{D} > \underline{D}$ and $\delta \in (\underline{D}, \overline{D})$. The assumption $\overline{D} > \delta$ implies that, if s chooses the high level of debt $\overline{D}$, negotiations can only last one round. The same of course occurs if s chooses the short-term maturity $T = 0$. Negotiations can last two rounds – i.e., $t = 0$ and $t = 1$, if s chooses $(\underline{D}, 1)$, since $\underline{D} < \delta$.

Assumption 1. *We make the following assumptions regarding the amount raised via debt d as a function of its structure (D, T): $d_{(\underline{D},0)} = \underline{D}$, $\overline{D} > d_{(\overline{D},0)}$, $\underline{D} > d_{(\underline{D},1)}$, and $d_{(\overline{D},1)} < d_{(\overline{D},0)}$.*

Assumption 1 captures the non-strategic costs associated with high leverage and long maturity, in a general, reduced-form way. In Appendix D.5, we endogenize these costs by adding to the model a competitive credit market and a stochastic component to the firms' revenues (to allow for bankruptcy in equilibrium). We show that all our results continue to hold in such a setting.

For low debt and short maturity, debtholders do not require a premium on the loan and the principal d raised by the firm is the same amount the firm has to pay back to debtholders, that is, $d_{(\underline{D},0)} = \underline{D}$. This is not the case, however, when debt is high, in which case debtholders receive a premium $\overline{D} - d_{(\overline{D},0)} > 0$. This premium reflects the compensation for the costs of borrowing to a highly levered firm (e.g., bankruptcy risk) that would arise if other frictions were added to the model. The same logic applies for longer maturity, for which we have $\underline{D} - d_{(\underline{D},1)} > 0$. Having both high debt and long maturity requires a even greater premium, since $d_{(\overline{D},1)} < d_{(\overline{D},0)}$ and, as a consequence, $\overline{D} - d_{(\overline{D},1)} > \overline{D} - d_{(\overline{D},0)}$.

The following Proposition characterizes the shareholders' choice of capital structure.

Proposition 2. *The choice of capital structure by shareholders is characterized as follows:*

1. *Shareholders choose a capital structure $(\underline{D}, 1)$ (i.e., use maturity as a bargaining tool), if $d_{(\underline{D},1)} > d_T$ and $d_{(\overline{D},0)} \leq d_D$, where d_T and d_D are defined below. If $d_{(\overline{D},0)} > d_D$, they choose*

$(\underline{D}, 1)$ *if* $d_{(\underline{D},1)} > d_T$ *and the following condition is satisfied:*

$$(1-\alpha)\left[\overline{D} - \underline{D} + \alpha\left(\delta - \underline{D}\right)\left(\delta_s - \delta_w\right)\right] \geq d_{(\overline{D},0)} - d_{(\underline{D},1)}. \tag{1}$$

2. *Shareholders choose a capital structure* $(\overline{D}, 0))$ *(i.e., use leverage as a bargaining tool), if* $d_{(\overline{D},0)} > d_D$ *and condition (1) is not satisfied.*

3. *Otherwise, shareholders choose a capital structure* $(\underline{D}, 0)$*.*

We have $d_T = \underline{D} - (1-\alpha)\,\alpha\left(\delta - \underline{D}\right)\left(\delta_s - \delta_w\right)$ *and* $d_D = (1-\alpha)\overline{D} + \alpha\underline{D}$*.*

We use the results in Proposition 1 to characterize the shareholders' equilibrium payoffs for each choice of capital structure. The optimal capital structure is then pin down by the set of inequalities described in Proposition 2. The following Lemma describes how the optimal capital structure changes with the main parameters of the model.

Lemma 2. *The following comparative statics results hold in equilibrium:*

1. *If workers' bargaining power is sufficiently small (i.e.,* $\alpha \to 0$*), shareholders (s) choose a capital structure* $(\underline{D}, 0)$ *(i.e., use neither maturity nor leverage as bargaining tools). The set of parameters for which* s *chooses* $(\underline{D}, 0)$ *decreases with* α *for any* $\alpha \in (0, \frac{1}{2})$*.*

2. *The set of parameters for which* s *chooses a capital structure* $(\underline{D}, 1)$ *(i.e., use maturity as a bargaining tool) increases with the shareholders' relative patience* $\delta_s - \delta_w$*, and it decreases with non-strategic cost of maturity, i.e., when* $\underline{D}$ *increases and* $d_{(\underline{D},1)}$ *decreases.*

3. *The set of parameters for which* s *chooses a capital structure* $(\overline{D}, 0)$ *(i.e., use leverage as a bargaining tool) decreases with the non-strategic cost of leverage, i.e., when* $\overline{D}$ *increases and* $d_{(\overline{D},0)}$ *decreases.*

If $\alpha \to 0$, none of the inequalities in Part 1 and 2 of Proposition 2 can hold, and the optimal capital structure is $(\underline{D}, 0)$. This result is intuitive: if the bargaining with w is a negligible friction, s

does not need to recur to *inefficiently* high leverage or long maturity to curtail w's wage demands. As α increases, however, it makes room for the strategic use of capital structure. It is worth noticing that a capital structure $(\overline{D}, 1)$ is never optimal. This is an implication of the strategic *substitutability* discussed earlier. If $D = \overline{D}$, negotiations can last only one round ($t^* = 0$); increasing debt maturity in this case does not affect the maximal length of negotiations and, hence, does not improve s's bargaining position. As a result, shareholders *either* use leverage *or* maturity as bargaining tool in the negotiation with workers. They are more likely to use maturity when their relative patience with respect to workers increases (that is, when $\delta_s - \delta_w \uparrow$) and when high leverage becomes relatively more costly (i.e., $\overline{D} - d_{(\overline{D},0)} \uparrow$). Similarly, leverage is more likely to be preferred when longer maturity becomes more expensive (i.e., $\underline{D} - d_{(\underline{D},1)} \uparrow$).

Combining Proposition 2 and Lemma 2, we obtain the following empirical predictions.

Empirical Predictions. *Following a positive shock to workers' bargaining power:*

1. *Firms increase* ***either*** *debt maturity* ***or*** *leverage;*

2. *Firms for whom increasing leverage is more costly are more likely to increase maturity;*

3. *Firms with more patient shareholders are more likely to increase maturity.*

The predictions associated with a negative shock to workers' bargaining power are the mirror image of the ones above.

3 Empirical analysis

The theoretical framework in Section 2 shows that *both* leverage and debt maturity play a strategic role in labor negotiations.[10] In this section, we investigate the strategic use of debt structure in US public firms using two different empirical identification strategies.

[10]Data on collective agreements' expiration dates suggest that firms adjust both these dimensions ahead of labor negotiations. Figure 1 plots the average leverage and debt maturity around collective agreements expiration dates (i.e., the time when the firm's management and labor representatives re-negotiate contractual terms). These plots show an increase of overall leverage and long-term debt in the three years leading to re-negotiations and a reduction afterwards, while short-term debt displays the opposite dynamics.

First, we exploit establishment-level union elections to capture an increase in workers' bargaining power (α) and analyze firms' leverage and debt maturity responses in a regression discontinuity design. Second, we use the adoptions of state-level right-to-work laws to capture a decrease in α in a difference-in-differences setting. We find that firms respond to an increase (decrease) in α by increasing (decreasing) their debt maturity while keeping their leverage unchanged.[11]

Altogether, our results show that firms respond to more powerful employees by reshaping their maturity structure without increasing the debt level. We use the large cross-section of firms in the diff-and-diffs framework to explore the mechanism driving our results, and find evidence supporting the theoretical mechanism in Section 2.

3.1 Empirical identification using union elections

In this section, we use establishment-level unionization events to capture increases in workers' relative bargaining power and study how firms optimally adjust their debt structure. We find that firms respond to labor unionization by increasing debt maturity without systematically raising their financial leverage.

3.1.1 Data description

We collected establishment-level data on union elections from 1977 to 2014. The dataset contains full information about the certification procedure of a representative union for a specific firm's establishment.[12] For every union election, we have information about the firm's name, the calendar date on which the election has been officially closed, the number of workers eligible to vote, the valid votes cast, the votes in favor and against the formation of a bargaining unit, and the outcome. Regulation mandates that all workers of a firm's establishment are unionized if more than half of

[11] We find similar qualitative results for the correlation between industry union coverage and firms' debt structure (see results in Table IA1), even though this correlation does not have a causal interpretation.

[12] Data on elections from 1977 to 1999 are from Holmes (2006) and available on Thomas Holmes's website: www.thomas-holmes.com. For the 2000-2014 period, we hand-collected the data from the NLRB website https://www.nlrb.gov/reports-guidance/reports/election-reports

the workers eligible to vote favor the union.

The union election data lacks firms' identifiers. We followed Lee and Mas (2012) and used companies' legal name to match the election data to financial information contained in Compustat. We implemented the Jaro-Winkler string-matching algorithm and kept only matches with at least a 90% matching probability. We then proceeded to a manual check, which led to a total of 3,400 elections for which we could verify the correctness of matches. Of these, around 21% have been held in the same State as the firm headquarters while 41% of establishments have the same 2-digit Standard Industrial Classification (SIC) code as the headquarters (with 63% of them exhibiting the same 1-digit SIC code). Finally, around 70% of elections are in firms with 2-digit SIC code from 10 to 40, which include Mining and Construction (SIC from 10 to 17) and Manufacturing (SIC from 20 to 39). These statistics match those in DiNardo and Lee (2004), alleviating the concerns about our matching procedure's quality.

Firms can hold multiple elections across years either because an election is held many times for the same establishment or because the firm has more than one establishment hosting a union election. Considering that we compute the outcome variables over multiple years, we ensure that firms do not appear in both the treated and control group due to closely-held elections. We perform the baseline analysis on a sample of firms that have not hosted elections in the past four years. This procedure reduces the number of elections to 1,463. We report the number of observations in each table based on the leverage and maturity variables' availability.

Table 1 reports summary statistics for a sample of firms that underwent a union election and could be matched to Compustat. We follow the literature and exclude both financial and utility firms from the sample. Our data roughly matches sample size and variables' first moments of data in other studies using union election as the empirical identification strategy (see Campello, Gao, Qiu, and Zhang, 2018). The variable list and description table contains more details about the definition and computation of dependent and control variables. We follow Barclay and Clifford (1995) to construct firms' debt maturity measures.

3.1.2 Empirical methodology - Regression Discontinuity

We employ a regression discontinuity design (hereafter also RDD) to establish the causal link between increased employees' bargaining power (captured by unionization events) and firms' debt structure decisions. Firms undergoing union elections are assigned to the treated and control group depending on whether the union wins or loses, respectively. Elections' rules exogenously determine the threshold separating treated and control firms. Specifically, a union wins if more than 50% of eligible workers favor a collective bargaining unit. We measure firms' leverage and debt maturity responses to unionization as the discontinuous jump of these variables at the 50% threshold point.

We estimate the following regression,

$$\Delta y_i = \alpha + \beta_1 \text{Dummy win}_i + f(X_i) + \epsilon_i \tag{2}$$

where Δy_i is the change in firm's i debt structure in response to unionization, Dummy win$_i$ is an indicator variable equal to one if a union wins an election in firm i, and zero otherwise, and $f(X_i)$ is a flexible functional form of running variable X_i, which is the share of votes casts in favor of the union. This variable, often referred to as running variable, assigns firms to treated or control depending on whether the share is more or less than 50%, respectively.

The general definition of the financial response to unionization is given by the following equation,

$$\Delta y_i = \ln(\bar{y}_{i;t,t+m-1}) - \ln(\bar{y}_{i;t-1,t-n}), \tag{3}$$

where $\bar{y}$ is the average of the financial response variable computed over m and n years. The time t is the fiscal year in which the election takes place. All RDD results presented in the tables are obtained with the setting: $n = 3$ and $m = 2$. Figure 3 shows how estimates change by letting m going from one to three years after the election. For the main results, I fix $n = 3$ because firms' debt maturity dynamic is downward sloping over the years (see Custódio, Ferreira, and Laureano, 2013), this means that taking the mean over more years in the past makes it harder to find a positive jump in the long-term debt maturity measures.

3.1.3 Main results

We find a positive and statistically significant effect of unionization on firms' debt maturity – firms respond to increases in workers' bargaining power by lengthening the average maturity of their debt. Panel A in Table 3 reports the estimated effect of unionization on debt maturity variables. We use several proxies to measure debt maturity and find similar qualitative results across them. The most conservative estimate shows that unionized firms increase the ratio of long-term debt to assets by about 18% more than those avoiding unionization. We obtain similar qualitative effects using the fraction of debt with maturity larger than three years as a dependent variable. We estimate a negative effect on the short-term debt ratio but no statistical significance. Results are robust to polynomials with different orders – Columns (1) to (4) – for the running variable. The within-sample economic magnitude of our estimates is substantial. Long-term debt ratio increases by around 3-percentage points or $30 million for the average firm (around 1% of the total value of assets). This indicates that the fraction of debt with a maturity longer than three years for the average firm goes from 61% to 70%. Results are both qualitatively and quantitatively similar using debt with a maturity longer than five years.

We do not find a significant leverage change in response to unionization. This result is consistent with existing evidence (see Schmalz, 2015). Panel B in Table 3 presents the coefficients from estimating the model in Equation (2) using book, net, and market leverage as dependent variables. Columns (1) to (4) report results for the model with polynomials of different degrees. All estimates for the three dependent variables are not statistically significant. Consistent with leverage having an ambiguous effect on shareholders' bargaining position (Lemma 1), we do not find evidence that firms increase leverage in response to more powerful employees.

Figure 3 and 4 provide graphical evidence of the discontinuity of debt maturity and leverage policies around the 50% cut-off. Overall, figures confirm the regression analysis' results. Figure 3 exhibits a discontinuous jump at the 50% threshold for measures of debt maturity. Moreover, there is a larger discontinuity in the second year after the election's conclusion, as highlighted by the average effect's confidence interval. Results using the long-term debt ratio variable confirm that the effect grows larger in the second year after a unionization election.[13] Figure 4, instead, shows that the average firm that gets unionized does not increase its leverage more than the average firm escaping unionization. The figure shows no jumps at the 50% cut-of for either measure of firms' leverage.

3.1.4 Robustness tests

We perform several robustness and validity tests to corroborate our main findings. We estimate the RDD leverage and maturity models on a sample of firms undergoing union elections for the first time, and we exclude any other election held by the same firm. Results are in Table IA3. Our findings are consistent with the previous estimates obtained from a sample where we include firms holding multiple elections. The point estimates for maturity are similar to those in Panel A of Table 3 using the full sample of elections. This evidence mitigates the concern that sample-selection might drive our results.[14]

Results in Table IA4 are local linear regression estimates to address the concern that the global polynomial approach uses data far from the critical 50% cut-off, which improves the statistical power but introduces bias. The local linear approach reduces the likelihood of bias by using only a subset of data around the 50% cut-off point. We estimate several local linear regressions using different bandwidths around the 50% threshold and the optimal bandwidths suggested by Imbens and Kalyanaraman (2012) (IK) and Calonico, Cattaneo, and Titiunik (2014) (CCT).[15] We do not find statistically significant relationships between unionization and firms' leverage for

[13]This result is untabulated but available upon request.

[14]We obtain similar results also for the other proxies of firms' debt maturity.

[15]These two methods belong to the so-called "plug-in" procedures. The optimal bandwidth is estimated in terms of actual data characteristics. The objective is to find an optimal level that balances the degree of bias and precision. Heuristically more estimated bias leads to smaller bandwidth, while the higher conditional variance of the estimate leads to a larger bandwidth. These two forces lead to an interior optimal.

any bandwidth. Findings for the debt maturity variables are similar to those using the global polynomial.

Finally, to ensure that our estimates reflect firms' response to unionization, we run a placebo test using arbitrarily chosen thresholds and show that the real 50% cut-off captures shifts in employees' power. In Table IA5, we find that union has a positive and statistically significant effect on maturity only when using the 50% cut-off as a relevant threshold to separate firms in treated and control. We do not find positive and statistically significant effects of unionization on leverage for any cut-off.

3.1.5 Assumptions and validity tests

The RDD setting relies on the assumption that elections' outcomes cannot be correctly predicted. The failure of this assumption would undermine the inference power. For example, a rational manager who can accurately forecast the election's result would react accordingly before the election. We take steps to mitigate this concern. First, we include only polls with at least 50 eligible workers, implying that forecasting the result is more challenging as the number of voters grows (Table 1 reports summary statistics about the number of workers casting votes in our union elections' sample). We account for potential manipulation of elections' outcomes by controlling for the winning margins. It is likely to observe sharper elections' outcome (e.g., everybody votes in favor or against the union) in case of manipulation.

Second, we provide evidence on the continuity of the running variable and firms' observable characteristics at the 50% cut-off point. Following McCrary (2008), we perform a discontinuity test procedure. Figure 2 plots the estimated distribution of the running variable. The density function is statistically continuous at the 50% threshold. The formal statistical test confirms the visual evidence. The Z-statistic obtained by using McCrary's test is 0.76, and so we cannot reject the null hypothesis that the distribution is continuous at the critical threshold of 50%.[16]

[16] If the manager could systematically manipulate elections' outcome, we should observe a break of the running variable distribution (Share of votes) right above and below the critical 50% cut-off. We should observe an upward break of the distribution if the sample suffers from self-selection. It might be that employees only request an election if they are sure of the positive outcome. However, the latter concern would likely cast sharper election outcomes.

We mitigate the concern that treated and control firms are *ex-ante* systematically different in observable characteristics by looking at the continuity of firms' observable characteristics at 50% cut-off. Unionized and escapee firms in the sample are comparable from the observable perspective. We run a standard validity test by looking at firm-level characteristics in the year preceding an election. Table IA6 shows that, in the year before the election, characteristics of firms in treated and control groups are not statistically different. We obtain these results by estimating the same model in equation (4) where the dependent variables are firms' observable characteristics. We estimate this model for different election's winning/losing margins from the 50% cut-off.

3.2 Empirical identification using staggered passage of right-to-work laws

In this section, we exploit the staggered passage of right-to-work laws across U.S. states to capture a decrease in the negotiation power of unions. We find a decrease in long-term debt ratios but no statistically significant effects on leverage in response to these laws' introduction. Cross-sectional tests support the economic mechanism highlighted in the theoretical model.

3.2.1 Empirical strategy and data

The literature has shown the adverse effects of right-to-work laws on union power (see Ellwood and Fine (1987) and Abraham and Voos, 2000). Right-to-work laws forbid union security agreements between unions and employers, which compel employees to join the union or pay union fees as a condition in the employment contract. A unionized firm cannot force a newly hired employee to join the union or pay union fees in a state with right-to-work laws. There are two effects on union negotiation power. First, employees have fewer incentives to join a union because they enjoy collective bargaining benefits without contributing financially. Second, the limited financial viability of unions reduces their ability to negotiate favorable contracts.

The theoretical model predicts that firms decrease leverage *or* maturity in response to weaker labor unions and, thus, we expect a negative sign for the point estimates on these two variables.

Intuitively, if leverage and maturity levels have been chosen strategically to gain negotiation power over unions, we expect these levels to be lower in the absence of strategic motives.

Currently, 27 US states are adopting right-to-work laws.[17] These laws have been adopted in different years across US states. We use the staggered introduction of these laws to implement a difference-in-differences model in which we compare the debt structure policies of firms headquartered in states introducing right-to-work laws to firms headquartered in states that did not adopt these laws in the same year. Specifically, we estimate the following fixed-effects model,

$$y_{ijst} = a_i + a_{jt} + \beta_2 RWL_{st} + \gamma X_{ijst} + \epsilon_{ijst}, \tag{4}$$

the variable RWL takes value one from the year a state, s, introduces right-to-work laws onward, and zero otherwise. We saturate the model by including firms' control, X, firm fixed-effects to absorb unobservable time-invariant firms' heterogeneity, and industry-by-year fixed effects to capture time-varying unobservable industry characteristics. The error term, ϵ, contains all the unexplained variation of the dependent variable, y (i.e., a firm's leverage or maturity). The coefficient β_2 will have a causal interpretation if the residual variation in the error term, ϵ, is uncorrelated with states' decisions to introduce right-to-work-laws.

We estimate the empirical model using all firms in Compustat and their headquarter locations to match companies and US states.[18] The maximum sample period available is from 1950 to 2018, but the debt maturity information is only available starting from 1974. We have a total of fourteen right-to-work adoptions between 1950 and 2018 and eight for which we have information about debt maturity. The parallel trends analysis reveals evidence of anticipation in the full sample period and, thus, we restrict our sample to the right-work-law changes since 2000.[19] Figure 5 supports

[17] Table IA8 report the list of states and the year of adoption. Missouri passed the right-to-work bill in 2017 under the republican Governor Eric Greitens. However, the bill never became effective as it was blocked in 2018 by a popular referendum.

[18] A similar matching strategy can be found in Matsa (2010), Agrawal and Matsa (2013), Heider and Ljungqvist (2015), and Klasa, Ortiz-Molina, Serfling, and Srinivasan (2018) among others.

[19] For the debt maturity variable, we lose only two events. In 1976, Louisiana adopted these laws while the state of Idaho introduced them in 1985. The inclusion of these two events does not affect the estimates, but it introduces

the assumption that law changes are not anticipated. The difference in debt structure between the treated and control groups before the law changes are indistinguishable from zero. We take this as supportive evidence of the parallel trends' assumption at the core of the difference-in-differences framework.

3.2.2 Main Results

Table 4 reports all the estimates from difference-in-differences model for both leverage and maturity measures. Estimates show a statistically significant reduction in debt maturity as measured by the long-term leverage and debt fraction with a maturity longer than three years. In Columns (1), we find a 2.2 percentage points reduction in the long-term debt ratio (around 13% of the sample mean). In Column (3), we find that the fraction of debt with a maturity longer than three years goes down by 2.3 percentage points (around 4.5% of the sample average). Column (4) shows that firms reduce their book leverage by 1.2 percentage points, but this effect is statistically significant at less than 10% confidence interval. In Column (6), we find a negative and significant effect on market leverage. Given its dependency on market values, it is difficult to interpret this result as a shareholders' decision. Overall, results suggest a reshape of the debt structure while leaving the level of debt statistically unchanged.

3.2.3 Economic channels

This section exploits firms' heterogeneity to investigate the cross-sectional implications of our model. We estimate the baseline model in Equation (4) and interact the right-to-work variable with measures of institutional investors ownership (capturing shareholders' patience), industry-level separation rate (capturing operating leverage as in Simintzi et al., 2015), and standard deviation of earnings (capturing profit variability as in Matsa, 2010). Estimates are reported in Table 5.

The model shows that patient shareholders gain more from a financial resilient capital structure

pre-trends evidence. Hence, we exclude them. Our results are similar in economic magnitude when using the full sample of right-work-law changes (see Table IA2).

(i.e., long maturity and low leverage), as they suffer less from long negotiations. We capture shareholders' *patience* indirectly, by looking at their degree of diversification. We use the percentage of institutional investors' holding in a firm's stock as a proxy for their degree of diversification.[20] We find that, after a decrease in workers' bargaining power, the reduction in maturity and the increase in leverage are more pronounced in firms with more institutional ownership.

Following the literature on operating leverage (Simintzi et al. (2015) and Serfling, 2016), we use the labor separation rate as a proxy for operating flexibility concerns, which reduce a firm's ability to increase leverage. We find that the reduction in maturity is stronger in firms with a higher separation rate, while there is no different reaction for leverage measures. This is consistent with the model's prediction that leverage and debt maturity act as strategic substitutes in labor negotiations: firms where operating flexibility considerations are more relevant, are more likely to use maturity as a bargaining tool.[21]

Finally, we explore the alternative channel that changes in maturity are linked to cash flow volatility (following Matsa, 2010, we use profit variability as a proxy). In our sample, profit variability increases after the negative shock to workers' bargaining power. The decrease in maturity may then be driven by the credit supply, since creditors may require a larger premium for long-term debt due to the increase in cash-flow risk (Flannery, 1986). We find no support for this alternative narrative, since the maturity reaction to changes in bargaining power is not statistically different for firms with higher profit variability.

A potential confounder for our results is that firms may swap public debt for bank loans when facing more powerful employees: since the former is harder to renegotiate with creditors, it may be more effective in pushing surplus off the negotiation table with workers (as in Qiu, 2016). Considering that public debt tends to have longer maturity, our results may be driven by this

[20] We acknowledge that shareholders' patience is hard to capture and our measure is a noisy proxy for it. Institutional ownership has also been used as a measure of shareholders' sophistication and quality of governance (e.g., Chung and Zhang, 2011).

[21] The operating leverage channel predicts that firms with higher separation rate increase leverage after a decrease in workers' bargaining power. We do not find evidence of an increase in leverage for these firms.

substitution rather than financial resilience. We use data on firms' debt structure to separate different sources of financing.[22] Results in Table 6 show that firms do not adjust the fractions of bank and public debt after the introduction of RWLs, suggesting that this alternative mechanism is not at play in our sample.

4 Conclusion

This paper investigates the use of financial resilience as a strategic tool in labor negotiations. We develop a dynamic model of employer-employee negotiations and derive two main results. First, increasing leverage has an ambiguous effect on shareholders' bargaining position, as it reduces financial resilience; this contrasts with the common intuition derived from static models. Second, longer debt maturity improves financial resilience and, thus, shareholders' bargaining position. We take these theoretical predictions to the data and find supporting evidence for them. Our paper indicates that firms respond to more powerful employees by increasing their financial resiliency to negotiations and strikes. This finding contrasts the literature's conventional belief that powerful non-financial stakeholders contribute to making firms riskier due to high labor-induced strategic leverage.

[22]Table IA7 reports summary statistics for this data; the main moments distributions match the ones in Colla, Ippolito, and Li (2013) even though our sample period is different.

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A Variables List and Descriptions

Variable Label	Description
	Panel A: Dependent variables
Book leverage	Ratio between the total book value of debt (Compustat variables dltt + dlc) over the total value of assets.
Net leverage	Ratio between the total book value of debt (Compustat variables dltt + dlc) minus the values of cahs holding (Compustat variable che) over the total value of assets.
Market leverage	Ratio between the book value of debt (Compustat variables dltt + dlc) over the sum of market value of equity (Compustat variables csho times prcc_f) plus the book value of debt
LT debt ratio(>3Y)	The ratio between debt maturity longer than three years (Compustat variables dltt - dd2 - dd3) over the total value of assets (Compustat variable *at*)
LT debt ratio(>5Y)	The ratio between debt with maturity longer than three years (Compustat variables dltt - dd2 - dd3 - dd4 - dd5) over the total value of assets (Compustat variable *at*)
ST debt ratio (<2Y)	The ratio between debt maturing withing two years (Compustat variables dd1 + dd2) and the total asset value (Compustat variable at)
Debt mat.(>3Y)	Fraction of debt with maturity longer than three years. It is computes as the dollar value of debt with maturity longer than three years (Compustat variables dltt - dd2 - dd3) over the total dollar value of debt (Compustat variables dltt + dlc)
Debt mat.(>5Y)	Fraction of debt with maturity longer than three years. It is computes as the dollar value of debt with maturity longer than three years (Compustat variables dltt - dd2 - dd3 - dd4 - dd5) over the total dollar value of debt (Compustat variables dltt + dlc)

(Continued)

Variable Label	Description
	Panel B: Union variables
Total votes	Number of valid votes cast in an election at the firm's establishment level
Votes for union	Number of valid votes cast in an election in favor of the unionization of the firm's establishment
Votes against union	Number of valid votes cast in an election against the unionization of the firm's establishment
Eligible voters	Total number of employees with the right to vote in an union election
Share of votes	The ratio between the variable *Votes for Union* and the variable *Total Votes*
Dummy win	Dummy variable which takes value one if the union is the winner of a given election, and zero otherwise
Union coverage	Fraction of worker in an industry covered by a collective bargaining agreement or a union contract. Data is from Union Membership and Coverage Database at www.unionstats.com , maintained by Barry Hirsch and David MacphersonCensus.
	Panel C: Firm-level control variables
Total asset	Total value of assets (Compustat variable at)
Total debt	Total value of debt outstanding (Compustat dltt plus dlc)
Cash	Ratio between cash and short term investment (Compustat variable che) and the total value of assets
Market-to-book (M/B)	Ratio of market value of assets (Compustat variables at plus csho times prcc_f-ceq) over the total value of assets
Firm size	Natural logarithm of the sales
Collateral (Cltr)	Ratio between the sum of inventories (Compustat variable *invt*) and property, plant and equipment (Compustat variable *ppent*) over the total value of assets

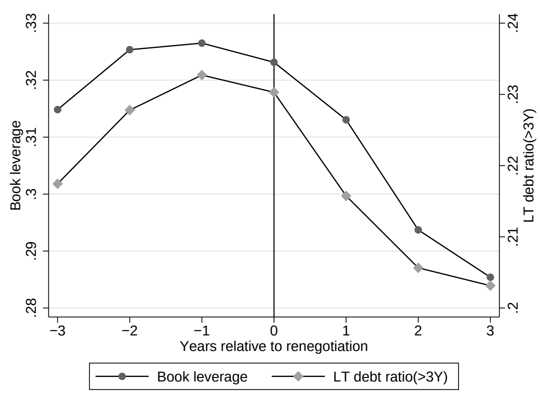
(Continued)

Variable Label	Description
Whited-Wu (ww)	Computed using the following equation, $$\begin{aligned} ww = & -0.091 * ib - 0.062 * \textit{D-divid} \\ & + 0.021 * (dltt/at) - 0.004 * ln(at) \\ & + 0.102 * (\textit{SIC3-growth-sale}) - 0.035 * (\textit{firm-growth-sale}), \end{aligned}$$ where *ib* is the Compustat variable income before extraordinary items, *dummy-dividend* is a dummy variable which takes value one is the firm pays dividend and zero otherwise, *dltt/at* is the ratio between long term debt to total asset, *ln(at)* is the natural logarithm of total asset, the last two terms are industry (as defined by 3-digit SIC code) sales growth and the firm's sales
Abnormal earnings	Ratio of difference between the income before extraordinary items, adjusted for common or ordinary stock equivalents (Compustat item *ibadj*) for time t and $t-1$ over the market value of equity (Compustat variables csho times prcc_f)
Profitability (ROA)	The ratio of earnings before interest, taxes, depreciation and amortization (Compustat variable *ebitda*) scaled by the total value of assets
Z-Score	The modified Altman Z-Score which is computed as follows, $$\begin{aligned} \text{Z-Score} = & 3.3 \frac{\text{EBITDA}}{\text{total assets}} + \frac{\text{sales}}{\text{total assets}} \\ & + 1.4 \frac{\text{retained earnings}}{\text{total asset}} + 1.2 \frac{\text{working capital}}{\text{total assets}} \end{aligned} \quad (5)$$
Separation rate	Estimated number of workers whose job in the previous quarter continued and ended in the given quarter divided by average employment count. Data is from the Quarterly Workforce Indicators (QWI) dataset available on the Census website

B Figures

Figure 1. (Debt structure dynamics around labor renegotiations) The figure plots averages of firms' debt maturity and leverage for a three-year window around the expiration of collective bargaining agreements with workers. Data is from the Federal Mediation and Conciliation Service. We use a three-year window to match the sample frequency of collective bargaining renegotiations, which is on average 2.7 years. Variable list and descriptions table contains details about the definition and computation of the variables in the figure.

(a) Leverage and debt maturity



(b) Short- and long-term debt maturity

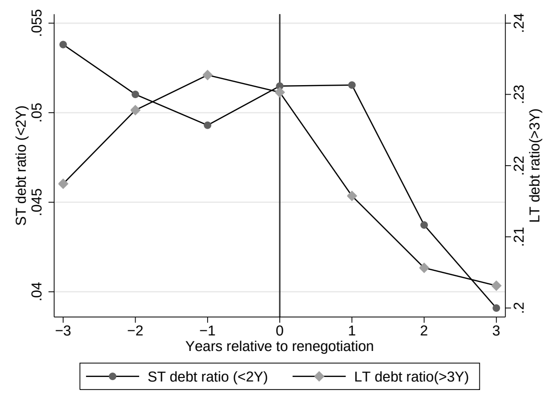


Figure 2. (RDD - Continuity of the running variable share of votes cast) The figure plots the density of the running variable, Share of Votes, measured as the ratio between votes for union and the total valid votes cast in an election. We follow McCrary (2008) to test for a discontinuity in the distribution of the running variable at the critical 50% threshold. The thin solid line is the 95% confidence interval around the fitted density. Union elections data are from the National Labor Relations Board (NLBR).

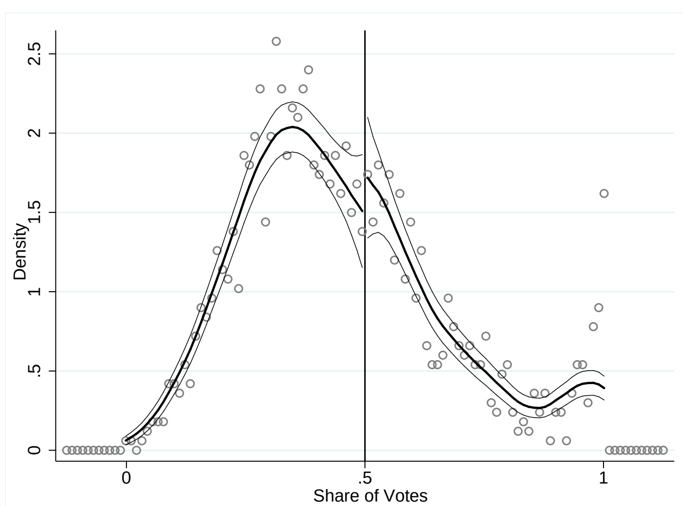


Figure 3. (Maturity response to unionization) The figure plots debt maturity response to a unionization election. ΔDebt mat.>3Y and ΔDebt mat.>5Y are respectively changes in the fraction of total debt with maturity longer than three and five years. The x-axis reports the running variable *Share of Votes*, which is computed as the fraction of total votes cast in favor of unionization. The left and right columns show the maturity response computed over the first, second and third year after the election for each variable of interest. Solid lines are fitted quadratic polynomial estimates. The dashed lines plot the 90% confidence interval. The dots are averages of the maturity variables computed over 20 equally-spaced bins. The discontinuity of the outcome variable at the 50% threshold of the Share of votes variable represents the estimated causal effect of unionization. Elections data are from NLRB. Data on the maturity are from Compustat.

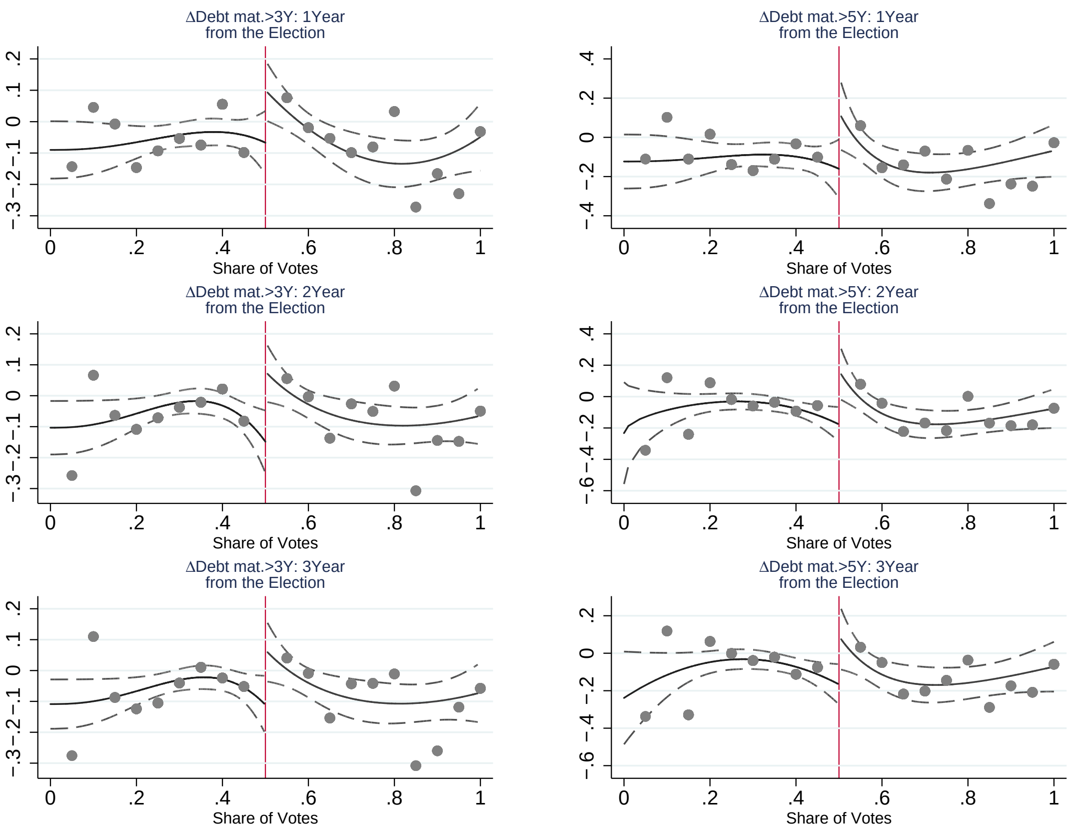


Figure 4. (Leverage response to unionization) The figure plots book (variable $\Delta Leverage$) and market (variable $\Delta MarketLeverage$) leverage responses to unionization elections. The x-axis reports the running variable *Share of Votes*, which is computed as the fraction of total votes cast in favor of unionization. The left and right columns show the maturity response computed over the first, second and third year after the election for each variable of interest. Solid lines are fitted quadratic polynomial estimates. The dashed lines plot the 90% confidence interval. The dots are averages of the maturity variables computed over 20 equally-spaced bins. The discontinuity of the outcome variable at the 50% threshold of the Share of votes variable represents the estimated causal effect of unionization. Elections data are from NLRB. Data on the maturity are from Compustat.

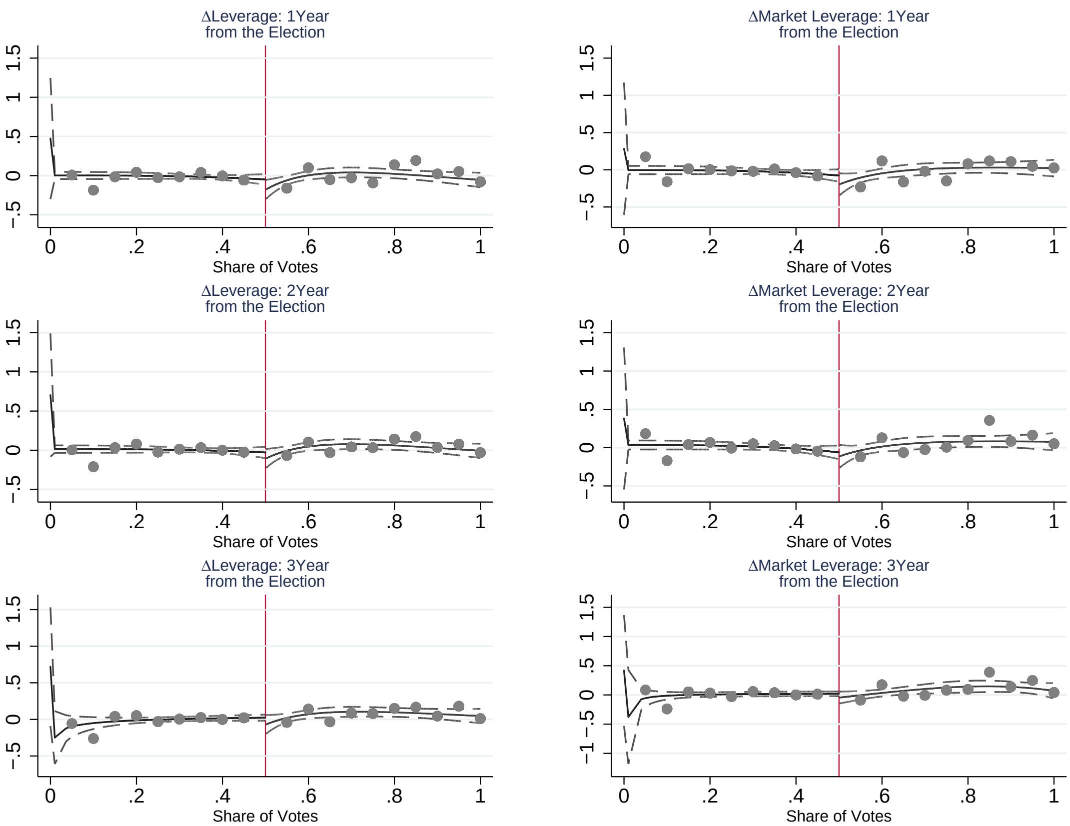
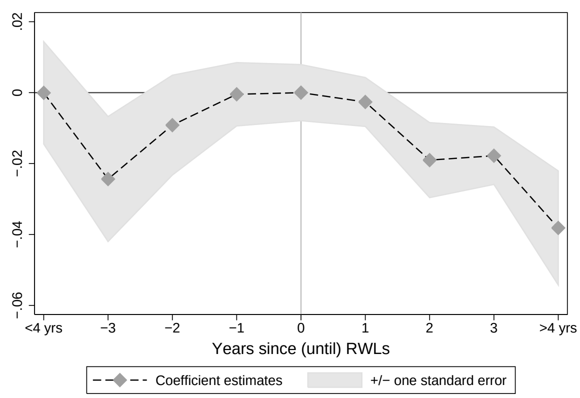
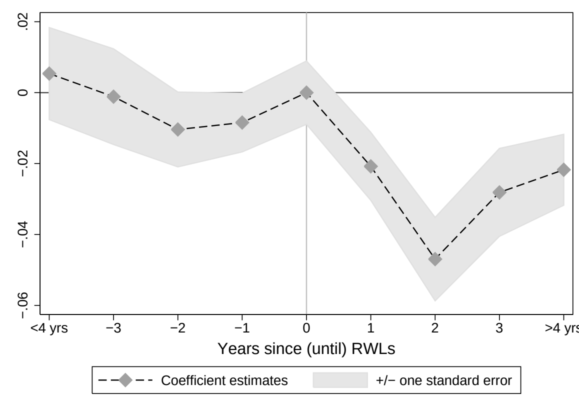


Figure 5. (Parallel trends in diff-in-diffs framework) The figure plots the dynamic effect of RWLs on book leverage. We centered every right-work-law's adoption as date zero and estimated a model with indicators for every year to and after the adoption date. We saturate the model by including two indicators equal to one if there are more than four years before or after the adoption date. We exclude the time-zero indicator variable such estimates are relative to the time of the law adoption. The regressions include industry-by-year and firm fixed effects. Standard errors are clustered at the state level.

(a) Parallel trends for book leverage



(b) Parallel trends for debt maturity



C Main Results - Tables

Table 1. (Summary statistics - Union elections sample) The table reports summary statistics for variables of firms holding union elections. Financial information is from Compustat. Union election data is from Holmes (2006) for the period 1977-1999. Data from 2000 to 2014 is hand-collected from the National Labor Relations Board website. The sample consists of 1,463 firm-year observations (1,246 unique firms) for which we have information about union elections and there is a four-year gap between election. Financial variables have been winsorized at 1% tails. The variable list and description table contains more details about variables' definition and computation.

	Mean	Std. Dev.	Min	Median	Max
	Panel A. Dependent variables				
Book leverage	0.286	0.180	0.000	0.265	0.870
Net leverage	0.217	0.225	-0.578	0.215	0.952
Market leverage	0.330	0.220	0.000	0.303	0.939
LT debt ratio(>3Y)	0.181	0.155	0.000	0.154	0.984
LT debt ratio(>5Y)	0.137	0.133	0.000	0.108	0.984
ST debt ratio(<2Y)	0.045	0.066	0.000	0.027	0.853
Debt mat.>3Y	0.611	0.260	0.000	0.669	1.000
Debt mat.>5Y	0.460	0.258	0.000	0.477	1.000
	Panel B. Union elections				
Dummy win	0.357	0.479	0.000	0.000	1.000
Share of votes	0.456	0.218	0.000	0.418	1.000
Eligible voters	222.304	362.365	50.000	119.000	5300.000
	Panel C. Firm characteristics				
Total asset ($M)	3534.703	7222.587	0.762	595.338	31189.223
Total Debt ($M)	974.012	2035.448	0.000	147.350	8784.787
Cash	0.070	0.084	0.000	0.038	0.613
Investment	0.078	0.062	0.000	0.063	0.453
Market-to-book	1.078	0.923	0.074	0.982	16.456
Collateral	0.577	0.189	0.000	0.603	0.936
Abnormal earnings	-0.018	0.324	-2.871	0.007	3.202
Profitability (ROA)	0.150	0.094	-1.205	0.149	0.442
Z-score	3.641	2.828	-2.423	3.152	56.447

Table 2. (Summary statistics - Full sample of firms in Compustat) The table contains summary statistics for the sample used in the difference-in-difference analysis in Section 3.2. The sample comprises 121,933 firm-year observations for 17,304 unique firms. We employ this sample to estimate the model in Equation 4. Financial variables have been winsorized at 1% tails.

	Mean	Std. Dev.	Min	Median	Max
	Panel A. Dependent variables				
Book leverage	0.278	0.195	0.000	0.255	0.910
Net leverage	0.156	0.290	-0.983	0.182	0.877
Market leverage	0.303	0.245	0.000	0.250	0.972
LT debt ratio (>3Y)	0.158	0.160	0.000	0.120	0.998
LT debt ratio (>5Y)	0.120	0.136	0.000	0.077	0.998
ST debt ratio (<2Y)	0.048	0.081	0.000	0.020	0.987
Debt mat.>3Y	0.505	0.336	0.000	0.563	1.000
Debt mat.>5Y	0.385	0.308	0.000	0.360	1.000
	Panel B. Firm characteristics				
Total asset ($M)	2100.413	6524.206	0.041	175.399	80671.781
Total Debt ($M)	600.438	1864.895	0.001	36.557	23564.520
Cash	0.122	0.160	0.000	0.060	0.991
Investment	0.073	0.078	0.000	0.050	0.590
Market-to-book	1.833	2.640	0.249	1.273	149.807
Collateral	0.604	0.348	0.000	0.599	2.497
Abnormal earnings	-0.021	0.622	-11.539	0.005	16.144
Profitability (ROA)	0.067	0.494	-16.068	0.126	0.778
Z-score	3.280	8.804	-350.219	2.988	210.938

Table 3. (Debt structure response to union elections) The table reports RDD estimates (Equation (2)) for leverage and debt maturity measures. The changes are computed as log difference of the two-year after and three-years before averages. Model (1) to (4) report results for polynomials of order three, four, five, and six, respectively. Variable list and descriptions table contains more details on the definition of the dependent variables. Standard errors in parenthesis are robust and clustered at firm-level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
Polynomial	Three	Four	Five	Six
	Panel A. Maturity			
	Dep. var.: ΔLT debt ratio(>3Y)			
Dummy win	0.185**	0.187**	0.282***	0.283***
	(0.0869)	(0.0867)	(0.101)	(0.101)
Obs.	797	797	797	797
	Dep. var.: ΔST debt ratio(<2Y)			
Dummy win	-0.0965	-0.0934	-0.115	-0.126
	(0.156)	(0.157)	(0.178)	(0.178)
Obs.	730	730	730	730
	Dep. var.: ΔDebt mat.(>3Y)			
Dummy win	0.139**	0.141**	0.174**	0.173**
	(0.064)	(0.064)	(0.075)	(0.076)
Obs.	797	797	797	797
	Panel B. Leverage			
	Dep. var: ΔBook leverage			
Dummy win	0.003	-0.001	0.009	0.006
	(0.062)	(0.062)	(0.071)	(0.071)
Obs.	1,143	1,143	1,143	1,143
	Dep. var: ΔNet leverage			
Dummy win	0.069	0.068	0.093	0.095
	(0.096)	(0.096)	(0.113)	(0.113)
Obs.	1,071	1,071	1,071	1,071
	Dep. var: ΔMarket Leverage			
Dummy win	0.003	-0.001	0.011	0.006
	(0.078)	(0.077)	(0.088)	(0.088)
Obs.	1,012	1,012	1,012	1,012

Table 4. (Debt structure response to right-to-work laws) The table reports results for the difference-in-differences estimation exploiting the staggered introduction at state-level of righ-to-work laws. The table comprises results for leverage and maturity measures. Refer to the variable list and description for more details about variables' definition and computation. Standard errors in parenthesis are robust and clustered at state level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Maturity			Leverage		
	LT debt ratio(>3Y)	ST debt ratio(<2Y)	Debt Mat.>3Y	Book leverage	Net book leverage	Market leverage
RWLs	-0.022***	-0.004	-0.023*	-0.012	-0.013	-0.020**
	(0.008)	(0.005)	(0.012)	(0.009)	(0.019)	(0.009)
Profitability (ROA)	-0.003***	-0.000	-0.000	-0.006***	-0.004	-0.009***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Size	0.014***	0.001	0.034***	0.012***	0.045***	0.016***
	(0.002)	(0.001)	(0.004)	(0.002)	(0.002)	(0.002)
Collateral	0.061***	0.092***	0.005	0.195***	0.706***	0.191***
	(0.014)	(0.007)	(0.027)	(0.012)	(0.034)	(0.013)
Market-to-book	-0.001***	-0.000	-0.001*	0.000	-0.002***	-0.006***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Industry-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.6679	0.3504	0.5399	0.6463	0.7771	0.6967
Obs.	48,941	59,493	35,372	68,852	68,839	68,758

Table 5. (Economic channels) The table reports results from the cross-sectional analysis. The reported coefficients are obtained by estimating the maturity model in Equation (4) and interacting the main variable Rwl with variables institutional investors ownership (capturing shareholders' patience), industry-level separation rate (capturing operating leverage as in Simintzi et al., 2015), and standard deviation of earnings (capturing profit variability as in Matsa, 2010). Panel A reports result for the maturity variables, while Panel B shows results for the leverage variables. Industry fixed effects are at the two-digit Standard Industrial Classification level for all specifications except the ones in Column (2) and (5), which are at the four-digit North American Industry Classification System level due to the definition of the separation rate variable. Standard errors in parenthesis are robust and clustered at state level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Maturity					
	LT debt ratio(>3Y)			ST debt ratio(<2Y)		
Rwl × Inst. ownership	-0.010			0.043***		
	(0.021)			(0.005)		
Rwl × Separation rate		-0.213**			-0.081	
		(0.087)			(0.069)	
Rwl × Profit variab.			-0.005			-0.004
			(0.005)			(0.005)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.7006	0.6613	0.6650	0.3714	0.3398	0.3652
Obs.	35,801	46,806	38,337	42,868	57,045	45,581
	Panel B. Leverage					
	Book leverage			Market leverage		
Rwl × Inst. ownership	0.043***			0.084***		
	(0.014)			(0.013)		
Rwl × Separation rate		-0.159			-0.062	
		(0.123)			(0.139)	
Rwl × Profit variab.			-0.001			-0.004
			(0.009)			(0.007)
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.7151	0.6387	0.6777	0.7486	0.7010	0.7124
Obs.	49,095	66,065	52,214	49,079	65,978	52,156

Table 6. (Debt structure - Several sources of debt) . Panel A reports result for the maturity variables, while Panel B shows results for the leverage variables. Industry fixed effects are at the two-digit Standard Industrial Classification level for all specifications except the ones in Column (2) and (5), which are at the four-digit North American Industry Classification System level due to the definition of the separation rate variable. Standard errors in parenthesis are robust and clustered at state level. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dep var.: Fraction of the following debt types						
	Commercial paper	Revolving debt	Term loans	Bonds and notes	Capital lease	Hybrid securities	Other borrowings
RWLs	0.002	-0.028	-0.002	0.022	0.016***	-0.001	-0.010
	(0.003)	(0.027)	(0.022)	(0.030)	(0.005)	(0.001)	(0.012)
Profitability (ROA)	-0.000***	0.006***	0.006**	-0.016***	0.004***	-0.000	-0.001
	(0.000)	(0.002)	(0.003)	(0.003)	(0.002)	(0.000)	(0.001)
Size	0.001***	0.007**	-0.001	0.003	-0.011***	0.000	-0.000
	(0.000)	(0.003)	(0.003)	(0.003)	(0.003)	(0.000)	(0.002)
Collateral	0.003**	0.121***	-0.021	-0.129***	0.027*	-0.002	0.001
	(0.001)	(0.023)	(0.022)	(0.025)	(0.015)	(0.001)	(0.010)
Market-to-book	-0.000	0.001**	-0.000	-0.001	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Industry-by-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.6299	0.6094	0.5789	0.6071	0.5232	0.5215	0.4175
Obs.	46,832	46,832	46,832	46,832	46,832	46,832	46,832

D Proofs

D.1 Proof of Proposition 1

The equilibrium is characterized by backward induction, starting from the last period before the firm goes bankrupt. The party making the last offer extracts all of the remaining surplus, i.e., $\delta^{t^*} - D$ (any offer that would leave the party making it a lower fraction of surplus would be suboptimal). The party receiving the offer always accepts it, as is indifferent between the offer and the bankruptcy payoff 0.

Let $v_s(x, t^*)$ denote s's equilibrium-path payoff if negotiations were to end at time x, when t^* is the maximal length of negotiations. Since w makes an offer with probability α and s with probability $1 - \alpha$, we have:

$$v_s(t^*, t^*) = (1-\alpha)\left(\delta^{t^*} - D\right); \quad v_w(t^*, t^*) = \alpha\left(\delta^{t^*} - D\right).$$

Continuing our way backward, the previous round of negotiations (i.e., at time $t^* - 1$) follows the same logic. The party making the offer extracts as much surplus as possible, which implies making an offer that makes the party receiving it indifferent between accepting or refusing it. If s makes an offer $(y_{t^*-1}, 1 - y_{t^*-1})$, where y_{t^*-1} is the share of surplus that goes to s, this is such that $1 - y_{t^*-1} = \delta_w \alpha\left(\delta^{t^*} - D\right)$ and, thus, $y_{t^*-1} = \delta^{t^*-1} - D - \delta_w \alpha\left(\delta^{t^*} - D\right)$. Similarly, w's offer would be $y_{t^*-1} = \delta_s(1-\alpha)\left(\delta^{t^*} - D\right)$ and $1 - y_{t^*-1} = \delta^{t^*-1} - D - \delta_s(1-\alpha)\left(\delta^{t^*} - D\right)$.

It follows that we have:

$$\begin{aligned}
v_s(t^*-1, t^*) &= (1-\alpha)\left[\delta^{t^*-1} - D - \delta_w v_w(t^*, t^*)\right] + \alpha\delta_s v_s(t^*, t^*) \\
&= (1-\alpha)\left(\delta^{t^*-1} - D\right) - (1-\alpha)\delta_w v_w(t^*, t^*) + \alpha\delta_s v_s(t^*, t^*) \\
&= (1-\alpha)\left(\delta^{t^*-1} - D\right) + \Delta(t^*);
\end{aligned}$$

$$v_w(t^*-1, t^*) = \alpha\left(\delta^{t^*-1} - D\right) - \Delta(t^*),$$

where $\Delta(t^*) \equiv (1-\alpha)\alpha(\delta_s - \delta_w)\left(\delta^{t^*} - D\right)$.

Going one more period backward, we have:

$$\begin{aligned}
v_s(t^*-2,t^*) &= (1-\alpha)\left[\delta^{t^*-2}-D-\delta_w v_w(t^*-1,t^*)\right]+\alpha\delta_s v_s(t^*-1,t^*) \\
&= (1-\alpha)\left(\delta^{t^*-2}-D\right)-(1-\alpha)\delta_w\left[\alpha\left(\delta^{t^*-1}-D\right)-\Delta(t^*)\right] \\
&\quad +\alpha\delta_s\left[(1-\alpha)\left(\delta^{t^*-1}-D\right)+\Delta(t^*)\right] \\
&= (1-\alpha)\left(\delta^{t^*-2}-D\right)-\delta_w(1-\alpha)\alpha\left(\delta^{t^*-1}-D\right) \\
&\quad +\delta_s\alpha(1-\alpha)\left(\delta^{t^*-1}-D\right)+\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*) \\
&= (1-\alpha)\left(\delta^{t^*-2}-D\right)+\Delta(t^*-1)+\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*);
\end{aligned}$$

$$v_w(t^*-2,t^*) = \alpha\left(\delta^{t^*-2}-D\right)-\Delta(t^*-1)-\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*),$$

where $\Delta(t^*-1)\equiv(1-\alpha)\alpha(\delta_s-\delta_w)\left(\delta^{t^*-1}-D\right)$.

Following the same logic, we obtain:

$$\begin{aligned}
v_s(t^*-3,t^*) &= (1-\alpha)\left[\delta^{t^*-3}-D-\delta_w v_w(t^*-2,t^*)\right]+\alpha\delta_s v_s(t^*-2,t^*) \\
&= (1-\alpha)\left(\delta^{t^*-3}-D\right)-(1-\alpha)\delta_w\left\{\alpha\left(\delta^{t^*-2}-D\right)-\Delta(t^*-1)-\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*)\right\} \\
&\quad +\alpha\delta_s\left\{(1-\alpha)\left(\delta^{t^*-2}-D\right)+\Delta(t^*-1)+\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*)\right\} \\
&= (1-\alpha)\left(\delta^{t^*-3}-D\right)+\Delta(t^*-2)+\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*-1) \\
&\quad +\left[(1-\alpha)\delta_w+\alpha\delta_s\right]^2\Delta(t^*);
\end{aligned}$$

$$\begin{aligned}
v_w(t^*-3,t^*) &= \alpha\left(\delta^{t^*-3}-D\right)-\Delta(t^*-2)-\left[(1-\alpha)\delta_w+\alpha\delta_s\right]\Delta(t^*-1) \\
&\quad -\left[(1-\alpha)\delta_w+\alpha\delta_s\right]^2\Delta(t^*),
\end{aligned}$$

where $\Delta(t^*-2)\equiv(1-\alpha)\alpha(\delta_s-\delta_w)\left(\delta^{t^*-2}-D\right)$.

Continuing the sequence until time 0, we have:

$$v_s(0,t^*>0)=(1-\alpha)(1-D)+(1-\alpha)\alpha(\delta_s-\delta_w)\sum_{j=1}^{t^*}\left(\delta^j-D\right)\left[(1-\alpha)\delta_w+\alpha\delta_s\right]^{j-1}, \qquad (6)$$

and $v_s(0,0)=(1-\alpha)(1-D)$.

Shareholders' equilibrium payoff is then $u_s^*(t^*)=v_s(0,t^*)-e$.

The firm approaches an infinitely resilient debt structure, i.e., $t^* \to \infty$, when $(D, T) \to (0, \infty)$. Taking the limit for $(D, t^*) \to (0, \infty)$ of the expression in Equation (6) yields:

$$\begin{aligned} \lim_{(D,t^*)\to(0,\infty)} v_s\left(0, t^*\right) &= 1 - \alpha + (1-\alpha)\,\alpha\left(\delta_s - \delta_w\right)\delta \lim_{t^*\to\infty} \sum_{j=1}^{t^*} \delta^{j-1}\left[(1-\alpha)\,\delta_w + \alpha\delta_s\right]^{j-1} \\ &= \frac{(1-\alpha)\left(1-\delta\delta_w\right)}{1-\alpha\delta\delta_s-(1-\alpha)\delta\delta_w}. \end{aligned}$$

D.2 Proof of Lemma 1

We prove Lemma 1 in three steps. In the first step, we show that $u_s^*(t^* = t') \geq u_s^*(t^* = t'')$, where $u_s^*(t^*)$ is the shareholder's equilibrium payoff when t^* is the maximal length of negotiations, for any $t' > t''$ and $\delta_s > \delta_w$. As a consequence, u_s^* always increases (at least weakly) with debt maturity T. We then prove that u_s^* strictly increases with T if and only if $D < \delta^{T+1}$. In the second step, we show that u_s^* may increase or decrease with the level of debt D, and that it always increases with D when $T < \bar{t}$.

Step One

Shareholders' equilibrium payoffs are described by equation (6). For any two consecutive periods t' and $t'-1$, we have:

$$u_s^*\left(t'\right) - u_s^*\left(t'-1\right) = (1-\alpha)\,\alpha\left(\delta_s - \delta_w\right)\left(\delta^{t'} - D\right)\left[(1-\alpha)\,\delta_w + \alpha\delta_s\right]^{t'-1}.$$

Given that $\delta_s > \delta_w$, the expression above is always positive. It follows that $u_s^*\left(t^*\right)$ always increases with the length of negotiations, since $u_s^*\left(t'\right) > u_s^*\left(t'-1\right)$ and $u_s^*\left(t'-1\right) > u_s^*\left(t'-2\right)$ imply $u_s^*\left(t'\right) > u_s^*\left(t'-2\right)$, and so on.

The length of negotiations is pinned down by the firm's debt structure, as $t^* = \min\left\{\bar{t}, T\right\}$, where $\bar{t}$ is such that $D \in (\delta^{\bar{t}}, \delta^{\bar{t}+1})$. If D is sufficiently small, so that $T < \bar{t}$, then t^* and, thus, s's equilibrium payoff strictly increases with T. However, if D is such that $T > \bar{t}$, then T does not affect t^* and s's equilibrium payoff do not depend on T in this case.

Step Two

We prove the first part of Step Two by examples. Let $u_s^*\left(D\right)$ denote s's equilibrium payoff for a given level of leverage D, and consider three different levels $D \in \{0, D', D''\}$, where $\delta > D'' > D' > \delta^2$. We have $t^* = 1$ for $D \in \{D', D''\}$ and $t^* = \infty$ for $D = 0$. As a consequence, $u_s^*\left(D\right)$ takes the following values:

$$
\begin{aligned}
u_s^*\left(D \in \left\{D', D''\right\}\right) &= (1-\alpha)\left[1 - D + (1-\alpha)\,\alpha\,(\delta_s - \delta_w)\left(\delta^{t'} - D\right)\right] - k + D; \\
u_s^*\,(D = 0) &= \frac{(1-\alpha)\,(1-\delta\delta_w)}{1 - \alpha\delta\delta_s - (1-\alpha)\delta\delta_w} - k.
\end{aligned}
$$

First, notice that we always have $u_s^*\,(D = D'') > u_s^*\,(D = D')$. The length of negotiations is the same for D'' and D', but D'' reduces the surplus available for negotiations and, therefore, benefits s. Second, consider the following limit:

$$
\lim_{(\delta_s,\delta_w)\to(1,0)} u_s^*\,(D = 0) - u_s^*\left(D = D''\right) = \frac{1-\alpha}{1-\alpha\delta} - (1-\alpha)\left[1 - D'' + (1-\alpha)\,\alpha\left(\delta - D''\right)\right].
$$

It is easy to verify that the inequality above is always satisfied for any $D'' \in \left(\delta^2, \delta\right)$. Therefore, when $(\delta_s, \delta_w) \to (1, 0)$, we have $u_s^*\,(D = D'') > u_s^*\,(D = D')$ and $u_s^*\,(D = 0) > u_s^*\,(D = D'')$, which implies that u_s^* is generally non-monotone in D.

If $T = 0$, we have $u_s^*\,(0) = (1-\alpha)\,(1-D) - k + D$, which is always increasing in D. If $T \geq 1$ and D is such that $T < \bar{t}$ (i.e., $D < \delta^{T+1}$), we have $t^* = T$. It follows that, if we restrict the domain to values $D \in \left(0, \delta^{T+1}\right)$, the expression for $v_s^*\,(0, t^*)$ in Equation (6) is differentiable in D, as t^* does not depend on D. As a result, for $D \in \left(0, \delta^{T+1}\right)$ and $T \geq 1$, taking the derivative of $u_s^*\,(t^*)$ with respect to D yields:

$$
\begin{aligned}
\frac{\partial u_s^*\,(t^*)}{\partial D} \quad | \quad_{D\in(0,\delta^{T+1})} &= -\,(1-\alpha) - (1-\alpha)\,\alpha\,(\delta_s - \delta_w)\sum_{j=1}^{t^*}\left[(1-\alpha)\,\delta_w + \alpha\delta_s\right]^{j-1} + 1 \\
&= 1 - (1-\alpha)\left[1 + \alpha\,(\delta_s - \delta_w)\sum_{j=1}^{t^*}\left[(1-\alpha)\,\delta_w + \alpha\delta_s\right]^{j-1}\right] \\
&> 1 - (1-\alpha)\left[1 + \frac{\alpha\,(\delta_s - \delta_w)}{1 - (1-\alpha)\,\delta_w - \alpha\delta_s}\right] > 0,
\end{aligned}
$$

since the summation $\sum_{j=1}^{t^*}\left[(1-\alpha)\,\delta_w + \alpha\delta_s\right]^{j-1}$ converges to $\frac{1}{1-(1-\alpha)\delta_w - \alpha\delta_s}$ as $t^* \to \infty$. Therefore, $u_s^*\,(t^*)$ always increases with D when $T < \bar{t}$.

D.3 Proof of Proposition 2

We use the results in Proposition 1 to characterize the shareholders' equilibrium payoffs u_s^* for each choice of capital structure. We have:

$$\begin{aligned} u_s^*\left(\underline{D},0\right) &= (1-\alpha)\left(1-\underline{D}\right)-k+\underline{D}; \\ u_s^*\left(\underline{D},1\right) &= (1-\alpha)\left[1-\underline{D}+\alpha\left(\delta_s-\delta_w\right)\left(\delta-\underline{D}\right)\right]-k+d_{(\underline{D},1)}; \\ u_s^*\left(\overline{D},0\right) &= (1-\alpha)\left(1-\overline{D}\right)-k+d_{(\overline{D},0)}; \\ u_s^*\left(\overline{D},1\right) &= (1-\alpha)\left(1-\overline{D}\right)-k+d_{(\overline{D},1)}. \end{aligned}$$

If s chooses $D=\overline{D}$, negotiations last only one round regardless of the debt maturity. If s chooses $(\underline{D},1)$, we have instead two rounds of negotiation.

The optimal capital structure is pin down by a set of inequalities. First, notice that $u_s^*(\overline{D},0) > u_s^*(\overline{D},1)$, as $d_{(\overline{D},0)} > d_{(\overline{D},1)}$ by Assumption 1. As a consequence, $(\overline{D},1)$ is always dominated and never selected in equilibrium. We will thus focus on the remaining three possible capital structures in the rest of this proof.

We have that $(\underline{D},0)$ dominates $(\overline{D},0)$ if the following inequality is satisfied:

$$(1-\alpha)\left(1-\underline{D}\right)-k+\underline{D} \geq (1-\alpha)\left(1-\overline{D}\right)-k+d_{(\overline{D},0)},$$

which implies

$$(1-\alpha)\,\overline{D}+\alpha\underline{D} \equiv d_D \geq d_{(\overline{D},0)}. \tag{7}$$

Similarly, $(\underline{D},0)$ dominates $(\underline{D},1)$ if the following inequality is satisfied:

$$(1-\alpha)\left(1-\underline{D}\right)-k+\underline{D} \geq (1-\alpha)\left[1-\underline{D}+\alpha\left(\delta-\underline{D}\right)\left(\delta_s-\delta_w\right)\right]-k+d_{(\underline{D},1)},$$

which implies

$$\underline{D}-\alpha\left(1-\alpha\right)\left(\delta-\underline{D}\right)\left(\delta_s-\delta_w\right) \equiv d_T \geq d_{(\underline{D},1)}. \tag{8}$$

Therefore, if both $d_{(\overline{D},0)} \leq d_D$ and $d_{(\underline{D},1)} \leq d_T$, shareholders choose $(\underline{D},0)$. If we have $d_{(\overline{D},0)} \leq d_D$ but $d_{(\underline{D},1)} \geq d_T$, s chooses $(\overline{D},0)$ since, in this case, $(\overline{D},0)$ dominates $(\underline{D},0)$, which in turn dominates $(\underline{D},1)$. Similarly, if $d_{(\overline{D},0)} \geq d_D$ but $d_{(\underline{D},1)} \leq d_T$, s chooses $(\underline{D},1)$ since, in this case, $(\underline{D},1)$ dominates $(\underline{D},0)$, which in turn dominates $(\overline{D},0)$.

Finally, if both $d_{(\overline{D},0)} \geq d_D$ and $d_{(\underline{D},1)} \geq d_T$, s chooses either $(\overline{D},0)$ or $(\underline{D},1)$. In this case, s

chooses $(\underline{D}, 1)$ if the following inequality is satisfied:

$$(1-\alpha)(1-\underline{D}) - k + d_{(\overline{D},0)} \geq (1-\alpha)\left[1-\underline{D}+\alpha(\delta-\underline{D})(\delta_s-\delta_w)\right] - k + d_{(\underline{D},0)},$$

which implies

$$(1-\alpha)\left[\overline{D}-\underline{D}+\alpha(\delta-\underline{D})(\delta_s-\delta_w)\right] \geq d_{(\overline{D},0)} - d_{(\underline{D},1)}. \tag{9}$$

Otherwise, s chooses $(\overline{D}, 0)$. Inequality (9) above is the same as inequality (1) in Proposition 2.

D.4 Proof of Lemma 2

Shareholders choose $(\underline{D}, 0)$ when both $d_{(\overline{D},0)} \leq d_D$ and $d_{(\underline{D},1)} \leq d_T$. First, notice that d_D (in inequality (7) always decreases with α; d_T (in inequality 8) decreases with α for any $\alpha \in (0, \frac{1}{2})$, and decreases otherwise. It follows that the set of parameters for which shareholders choose $(\underline{D}, 0)$ decreases with α for any $\alpha \in (0, \frac{1}{2})$. Second, notice that d_D approaches $\overline{D}$ and d_T approaches $\underline{D}$ as α approaches 0. Since we have $\overline{D} > d_{(\overline{D},0)}$ and $\underline{D} > d_{(\underline{D},1)}$, it follows that s always chooses $(\underline{D}, 0)$ when α approaches 0.

An increase in the difference $\delta_s - \delta_w$ always increases the left-hand side of inequality (9), making the inequality easier to be satisfied, and reduces the value of d_T. Therefore, the set of parameters for which s chooses $(\underline{D}, 1)$ increases with $\delta_s - \delta_w$. The inequality $d_{(\underline{D},1)} > d_T$, is a necessary condition for s to choose $(\underline{D}, 1)$. Since d_T always increases with $\underline{D}$, this inequality is harder to satisfy when $\underline{D}\uparrow$ or $d_{(\underline{D},1)}\downarrow$. Similarly, the left-hand side of inequality (9) decreases with $\underline{D}$ while its right-hand side decreases with $d_{(\underline{D},1)}$. Therefore, the set of parameters for which shareholders choose $(\underline{D}, 1)$ decreases when $\underline{D}\uparrow$ and/or $d_{(\underline{D},1)}\downarrow$.

Following the same logic, since d_D always increases with $\overline{D}$, the inequality $d_{(\overline{D},0)} > d_D$ is harder to satisfy when $\overline{D}\uparrow$ and/or $d_{(\overline{D},0)}\downarrow$. Similarly, the left-hand side of inequality (9) increases with $\overline{D}$ while its right-hand side increases with $d_{(\underline{D},1)}$. Therefore, the set of parameters for which shareholders choose $(\underline{D}, 0)$ decreases when $\overline{D}\uparrow$ and/or $d_{(\underline{D},1)}\downarrow$.

D.5 Adding to the model - credit market & other frictions

In this section, we endogenize the non-strategic costs of leverage and maturity, which are captured in a reduced-form way (Assumption 1) in Section 2.2. We show that our results continue to hold in a setting where these costs are endogenous.

We make two modifications to the model setup in Section 2.2. First, we introduce a stochastic component to the firm's revenue, which allows for the possibility of bankruptcy in equilibrium (i.e., even if s and w reach an agreement immediately). Let $x \in \{\underline{D}, \delta^t\}$ denote the firm's revenues if an agreement is reached at time t. With probability $p \in (0,1)$, we have $x = max\{\underline{D}, \delta^t\}$; otherwise, $x = \underline{D}$. It follows that the low level of debt $\underline{D}$ is always risk-free, as $x \geq \underline{D}$ for any of its realizations. The high level of debt $\overline{D}$ is instead risky: even if an agreement is reached before time $\bar{t}$, $\overline{D}$ is paid back only with probability p (i.e., if $x = 1$). The distribution of x is common knowledge among the agents in the model. Second, we add a competitive credit market. Debtholders are risk-neutral and have a discount factor $\delta_c \in (0,1)$. Their breakdown condition pins down the amount d raised by the firm as a function of its debt structure (D, T). We assume that the firm's debt is non-callable, which means that it can only be paid at maturity. Therefore, when $T = 1$, even if the firm generates revenues immediately in equilibrium, debtholders will receive a premium to compensate for the delay in the payment.

Equilibrium Analysis. We first describe the amount of funds s raises in debt as a function of the debt structure. If s chooses $(\underline{D}, 0)$, debtholders' zero profit condition is $-d_{(\underline{D},0)} + \underline{D} = 0$, which implies $d_{(\underline{D},0)} = \underline{D}$. This is because the low level of debt is risk-free and debtholders are paid at time $t = 0$, so there is no discounting. If s chooses $(\underline{D}, 1)$, debtholders' zero profit condition is instead $-d_{(\underline{D},1)} + \delta_c \underline{D} = 0$, which implies $d_{(\underline{D},1)} = \delta_c \underline{D} < \underline{D}$, as debtholders discount the repayment of the debt. As we discussed above, the high level of debt is paid off only with probability p in equilibrium and, thus, debtholders break even if $-d_{\left(\overline{D},1\right)} + p\overline{D} = 0$ when s chooses $\left(\overline{D}, 0\right)$. Therefore, we have $d_{\left(\overline{D},1\right)} = p\overline{D} < \overline{D}$. Finally, we have $-d_{\left(\overline{D},1\right)} + \delta_c p\overline{D} = 0$ when s chooses $\left(\overline{D}, 1\right)$, which implies $d_{\left(\overline{D},1\right)} = \delta_c p\overline{D}$.

The following lemma summarizes these results and replaces Assumption 1 in Section 2.2.

Lemma 3. *In equilibrium, the amount raised via debt d as a function of its structure (D, T) is as follows: $d_{(\underline{D},0)} = \underline{D}$, $\overline{D} > d_{\left(\overline{D},0\right)} = p\overline{D}$, $\underline{D} > d_{(\underline{D},1)} = \delta_c \underline{D}$, and $d_{\left(\overline{D},1\right)} < d_{\left(\overline{D},0\right)} = \delta_c p\overline{D}$.*

As a result, s's equilibrium payoff as a function of the debt structure (D, T) is as follows:

$$
\begin{aligned}
u_s^*(\underline{D}, 0) &= (1-\alpha)\, p\, (1-\underline{D}) - k + \underline{D}; \\
u_s^*(\underline{D}, 1) &= (1-\alpha)\, p\, [1-\underline{D} + \alpha\,(\delta_s - \delta_w)\,(\delta - \underline{D})] - k + \delta_c \underline{D}; \\
u_s^*\left(\overline{D}, 0\right) &= (1-\alpha)\, p\left(1-\overline{D}\right) - k + p\overline{D}; \\
u_s^*\left(\overline{D}, 1\right) &= (1-\alpha)\, p\left(1-\overline{D}\right) - k + \delta_c p\overline{D}.
\end{aligned}
$$

If $D = \underline{D}$ and the firm's realized revenue is low (i.e., $x = \underline{D}$, which occurs with probability $1 - p$), the surplus available for negotiations is 0, as there is no surplus left after paying back the debt. Therefore, s receives a positive surplus only with probability p. Similarly, if $D = \overline{D}$ and

$x = \underline{D}$, the firm goes bankrupt even if an agreement between s and w has been reached. As result, s receives a positive surplus only with probability p also in this case.

Proposition 3. *The choice of capital structure by shareholders is characterized as follows:*

1. *Shareholders choose a capital structure* $(\underline{D}, 1)$ *(i.e., use maturity as a bargaining tool), if* $\delta_c > \widetilde{\delta_c}$ *and* $p \leq \widetilde{p}$*, where* $\widetilde{\delta_c}$ *and* $\widetilde{p}$ *are defined below. If* $p > \widetilde{p}$*, they choose* $(\underline{D}, 1)$ *if* $\delta_c > \widetilde{\delta_c}$ *and the following condition is satisfied:*

$$(1-\alpha)\left[\overline{D} - \underline{D} + \alpha\left(\delta - \underline{D}\right)\left(\delta_s - \delta_w\right)\right] \geq \overline{D} - \frac{\delta_c}{p}\underline{D}. \tag{10}$$

2. *Shareholders choose a capital structure* $(\overline{D}, 0))$ *(i.e., use leverage as a bargaining tool), if* $p > \widetilde{p}$ *and condition (10) is not satisfied.*

3. *Otherwise, shareholders choose a capital structure* $(\underline{D}, 0)$*.*

We have $\widetilde{\delta_c} = 1 - (1-\alpha)\,\alpha p\left(\frac{\delta}{\underline{D}} - 1\right)(\delta_s - \delta_w)$ *and* $\widetilde{p} = \underline{D}\left[\underline{D}\,(1-\alpha) + \alpha\overline{D}\right]^{-1}$.

Proposition 3 describes the optimal capital structure. The non-strategic costs of leverage and maturity are $\overline{D}(1-p)$ and $\underline{D}(1-\delta_c)$, respectively. The comparative statics in Lemma 2 continue to hold in this extension of the model.

Internet Appendix

Financial Resilience in Labor Negotiations †

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Table IA1. (Debt structure and industry-level union coverage) This table reports results from estimating a panel regression model between firms' maturity and leverage decisions and using as main explanatory variable the industry-level union coverage. This variable is the industry-level fraction of workers cover by a collective bargaining agreement or a union contract. The variable list and description contains for details about definitions and computation. Standard errors in parenthesis are robust and clustered at industry level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Maturity			Leverage		
	LT debt ratio(>3Y)	LT debt ratio(>5Y)	Debt Mat.>3Y	Book leverage	Net leverage	Market leverage
Union coverage	0.055	0.050*	0.135**	0.018	0.032	0.071
	(0.037)	(0.030)	(0.056)	(0.054)	(0.080)	(0.061)
Size	0.017***	0.013***	0.052***	0.011***	0.035***	0.013***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.005)	(0.002)
Collateral	0.082***	0.054***	0.057**	0.204***	0.624***	0.260***
	(0.016)	(0.012)	(0.026)	(0.023)	(0.074)	(0.023)
Market-to-book	-0.002***	-0.001***	-0.002***	-0.002***	-0.006***	-0.013***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Profitability (ROA)	-0.011***	-0.009***	0.008**	-0.030***	-0.019**	-0.033***
	(0.002)	(0.001)	(0.004)	(0.004)	(0.008)	(0.006)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.1397	0.1365	0.1998	0.1047	0.3219	0.1980
Obs.	94,139	82,602	75,035	123,498	123,478	123,170

Table IA2. (Debt structure response to right-to-work laws - sample period 1974-2019) The table reports results for the difference-in-differences estimation exploiting the staggered introduction at state-level of righ-to-work laws for the sample period from 1974 to 2019. The beginning of the sample period is dictated by the availability of the maturity variables in Compustat. The table comprises results for leverage and maturity measures. The variable list and description contains for details about definitions and computation. Standard errors in parenthesis are robust and clustered at state level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	Book leverage	LT debt ratio(>3Y)	LT debt ratio(>5Y)	ST debt ratio(<2Y)	Debt Mat.>3Y
RWLs	-0.019**	-0.019***	-0.010*	-0.003	-0.024*
	(0.008)	(0.005)	(0.006)	(0.004)	(0.014)
Profitability (ROA)	-0.017***	-0.009***	-0.007***	-0.001	0.000
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Size	0.015***	0.017***	0.012***	-0.001	0.043***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
Collateral	0.135***	0.027***	0.014***	0.045***	-0.059***
	(0.010)	(0.006)	(0.005)	(0.004)	(0.012)
Market-to-book	-0.002***	-0.002***	-0.001***	-0.001***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Industry-by-year FE	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.5757	0.5941	0.5852	0.3270	0.5366
Obs.	177,524	140,548	127,025	151,285	116,376

Table IA3. (RDD - first time elections) The table reports RDD estimates of global polynomials. The sample includes only observations for the first time an election is held at a given firm. I used the official closing date (year and month) to determine the first election for firms who experienced multiple elections during the sample period. Model (1) to (4) estimate a global polynomial of order three, four, five, and six, respectively. Panel A reports results for the leverage regression while Panel B displays results for the maturity regression. Standard errors are robust to heteroskedasticity and clustered at firm level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

Global Polynomial	(1) Three	(2) Four	(3) Five	(4) Six
	Panel A. Dep. var: ΔLT debt ratio (>3Y)			
Dummy win	0.224**	0.236**	0.287**	0.288**
	(0.0974)	(0.0969)	(0.112)	(0.112)
Observations	654	654	654	654
	Panel B. Dep. var: ΔBook leverage			
Dummy win	-0.0419	-0.0479	-0.0476	-0.0524
	(0.0663)	(0.0666)	(0.0760)	(0.0755)
Observations	945	945	945	945

Table IA4. (RDD - Local linear regressions using several bandwidths) This table reports results of local linear regression estimations on the impact of unionization on. In Panel A, the dependent variable in all specifications is ΔLT debt ratio (>3). In Panel B, the dependent variable in all specifications is ΔBook leverage. The main explanatory variable is the Dummy win, which take value of one if an election is won by a representative union and zero otherwise. Columns (1) and (2) using optimal bandwidth computed following the procedure in Calonico et al. (2014) (CCT) and Imbens and Kalyanaraman (2012) (IK). Columns (3) to (6) estimate the linear regression on samples with different bandwidths to the left and right of the critical 50% cut-off. The bandwidths used are specified on top of every specification. Standard errors in parenthesis are robust to heteroskedasticity and clustered at firm-level. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Bandwidth:	[0.32,0.68]	[0.34,0.66]	[0.45,0.55]	[0.35,0.65]	[0.25,0.75]	[0.15,0.85]
	Panel A. Dep. var.: ΔLT debt ratio (>3Y)					
Dummy win	0.240**	0.325***	0.152	0.344***	0.192**	0.159**
	(0.0989)	(0.112)	(0.160)	(0.110)	(0.0867)	(0.0795)
Obs.	447	392	128	367	590	693
	Panel B. Dep. var.: ΔBook leverage					
Dummy win	-0.00924	-0.0184	-0.121	-0.0386	0.00705	-0.00668
	(0.0713)	(0.0775)	(0.139)	(0.0805)	(0.0598)	(0.0561)
Obs.	648	574	189	536	842	1,002

Table IA5. (RDD - Placebo test with arbitrary winning threshold) The table reports estimates the main model in Equation (2) using arbitrary assignment critical thresholds points. We estimate a six-order polynomial but results are similar using other polynomial orders. The critical threshold of each specification is indicated on top of the estimates. These critical thresholds re-define the percentage of valid votes for unions to win an election. The model labelled True" is the one with the actual exogenously given threshold of 50%. Standard errors are robust and clustered at firm-level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	Union elections' arbitrary winning thresholds						
	(1)	(2)	(3)	True	(5)	(6)	(7)
	5%	20%	35%	50%	65%	80%	95%
	Panel A. Dep. var.: ΔDebt ratio >3Y						
Dummy win	0.0681	-0.0272	-0.0527	0.185**	0.0783	-0.236	0.0466
	(0.290)	(0.153)	(0.0720)	(0.0869)	(0.125)	(0.219)	(0.211)
Obs.	797	797	797	797	797	797	797
	Panel B. Dep. var.: ΔBook leverage						
Dummy win	0.0611	-0.0199	-0.0764	0.00292	0.0606	-0.0290	-0.222*
	(0.209)	(0.102)	(0.0529)	(0.0620)	(0.0843)	(0.168)	(0.132)
Obs.	1,143	1,143	1,143	1,143	1,143	1,143	1,143

Table IA6. (RDD - Continuity of firms' observable characteristics at the cut-off threshold) This table provide the validity test results for the RDD analysis, which tests the continuity assumption of firms' observable characteristics in the year before a unionization election. The null hypothesis is that there are no systematic observable differences between firms that win and lose a unionization election. Results are for a global polynomial of degree six in the share of votes for union. Rows report the dependent variables tested. Columns report coefficients of the explanatory variable, Dummy win, for different winning/losing margins from the 50% threshold. Model (1) considers elections with all margins, model (2) winners and losers within a 20%, model (3) winners and losers within 10%, model (4) winners and losers within 5%. Regressions include year fixed effects. Standard errors in parenthesis are robust and clustered at firm level. $***$, $**$, and $*$ indicate significance at the 1%, 5%, and 10% level, respectively.

	Explanatory variable: Dummy Win			
	Election's Winning/Losing Margin			
	(1)	(2)	(3)	(4)
Dependent Variables	[0, 1]	[0.30, 0.70]	[0.40, 0.60]	[0.45, 0.55]
Size_{t-1}	0.139	0.0397	-0.171	0.736
	(0.272)	(0.420)	(0.701)	(1.229)
Cash_{t-1}	0.00566	0.00976	0.0178	0.00307
	(0.0117)	(0.0196)	(0.0258)	(0.0425)
M/B_{t-1}	0.0236	0.155	0.252	0.305
	(0.130)	(0.178)	(0.224)	(0.374)
Oper. Leverage_{t-1}	0.0813	-0.0975	-0.133	-0.143
	(0.161)	(0.224)	(0.247)	(0.343)
Roa_{t-1}	-0.00233	0.00998	0.0146	0.0109
	(0.0126)	(0.0187)	(0.0219)	(0.0329)
Z-Score_{t-1}	0.326	0.116	0.584	0.702
	(0.355)	(0.471)	(0.525)	(0.843)

Table IA7. (Summary statistics - Full sample of firms in Compustat) The table contains summary statistics for the merged Compustat-Capital IQ capital structure dataset. The sample period is from 2000 to 2019.

	Mean	Std. Dev.	Min	Median	Max	Obs.
Commercial paper	0.006	0.039	0.000	0.000	1.000	78,748
Revolving debt	0.295	0.353	0.000	0.121	1.000	78,748
Term loans	0.254	0.338	0.000	0.052	1.000	78,748
Bonds and notes	0.333	0.365	0.000	0.179	1.000	78,748
Capital lease	0.058	0.192	0.000	0.000	1.000	78,748
Hybrid securities	0.001	0.016	0.000	0.000	0.910	78,748
Other borrowings	0.054	0.169	0.000	0.000	1.000	78,748

Table IA8. (States adopted right-to-work laws) This table reports the years in which U.S. states adopted right-to-work laws. Given Compustat data availability, every change that happened before 1950 will not be capture by our difference-in-differences model. Data can be found https://www.ncsl.org/research/labor-and-employment/right-to-work-laws-and-bills.aspx

State	*Year Introduction RWLs*
Albama	1953
Alaska	No
Arizona	1946
Arkansas	1947
California	No
Colorado	No
Connecticut	No
Delaware	No
District of Columbia	No
Florida	1944
Georgia	1947
Hawaii	No
Idaho	1985
Illinois	No
Indiana	2012
Iowa	1947
Kansas	1958
Kentucky	2017
Louisiana	1976
Maine	No
Maryland	No
Massachusetts	No
Michigan	2012
Minnesota	No
Mississippi	1954
Missouri	No
Montana	No

State	*Year Introduction RWLs*
Nebraska	1946
Nevada	1951
New Hampshire	No
New Jersey	No
New Mexico	No
New York	No
North Carolina	1947
North Dakota	1947
Ohio	No
Oklaoma	2001
Oregon	No
Pennsylvania	No
Rhode Island	No
South Carolina	1954
South Dakota	1946
Tennessee	1947
Texas	1947
Utah	1955
Vermont	No
Virginia	1947
Washington	No
West Virginia	2016
Wisconsin	2015
Wyoming	1963