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Creditor Control Rights and Resource Allocation within Firms

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Abstract

We examine the within-rm resource allocation and restructuring eects of creditor discipline and its relation to performance gains at rms violating debt covenants. We use establishment-level data from the U.S. Census Bureau to demonstrate that covenant violations are followed by large reductions in employment, investment, and more frequent establishment closures among violating rms' noncore business lines and underperforming establishments. We conclude that refocusing operations and improving productive eciency via capital reallocation are important channels through which creditors facilitate the turnaround of rms in technical default.

Keywords: Covenant Violations; Corporate Governance; Control Rights; Creditors

JEL Classifications: G21; G31; G32; G34

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Creditor Control Rights and Resource Allocation within Firms*

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February 24, 2017

Abstract

We examine the within-firm resource allocation and restructuring effects of creditor discipline and its relation to performance gains at firms violating debt covenants. We use establishment-level data from the U.S. Census Bureau to demonstrate that covenant violations are followed by large reductions in employment, investment, and more frequent establishment closures among violating firms' noncore business lines and underperforming establishments. We conclude that refocusing operations and improving productive efficiency via capital reallocation are important channels through which creditors facilitate the turnaround of firms in technical default.

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1 Introduction

A central topic in financial economics is how the allocation of cash flow and control rights among the suppliers of corporate finance should evolve with firm performance. Theoretically, allowing for a state-contingent transfer of control to creditors can alleviate agency problems resulting from the separation of ownership and control, as well as conflicts of interest between debt and equity holders (Jensen and Meckling, 1976). Empirical evidence confirms that governance by creditors not only has profound effects among bankrupt firms (Gilson, 1990), but it also extends to a broad spectrum of firms through technical default. Debt covenant violations shift control rights to creditors, which, given their right to demand immediate repayment, puts them in a strong position to influence corporate investment and financing decisions (Chava and Roberts, 2008; Roberts and Sufi, 2009a). Strikingly, the actions creditors take at firms in technical default to protect their own interests lead to improvements in operating performance that ultimately benefit shareholders (Nini et al., 2009, 2012).

In this paper, we shed light on this activist role of creditors in corporate governance among firms outside of bankruptcy. In particular, we document the precise channels of resource allocation driving the turnaround in operating performance among firms in technical default. Our empirical tests are based on comprehensive establishment-level data from the U.S. Census Bureau (henceforth, Census). These data provide us with disaggregated information on the internal organization of firms, permitting an analysis of the within-firm reallocation and restructuring activities surrounding covenant violations. We focus on a sample of covenant violations disclosed to the Securities and Exchange Commission (SEC) covering the universe of publicly-traded U.S. nonfinancial corporations. We link each of these firms to its constituent establishments over time and measure resource allocation using establishment-level employment, investment, and closure rates. We estimate the dynamic impact of covenant violations at both the firm and establishment levels by comparing changes in behavior before

and after violations between violators and non-violators. We control flexibly for performance metrics used in financial contracts, adapting the research design of Roberts and Sufi (2009a), thus identifying the impact of a violation off the discontinuity occurring at the threshold.

We first provide evidence of significant impacts of covenant violations on firm-level outcomes, including reductions in employment and labor costs, and a greater frequency of establishment closures. The magnitude of these effects are large: for example, we find a typical firm reduces the number of employees by roughly 5 percentage points following a violation (about 12.5 percent of its unconditional standard deviation). These results survive numerous robustness tests, including alternative measures of resource allocation and covenant violations, a regression discontinuity design (RDD) based on covenant threshold levels from loan contracts at the time of origination (Chava and Roberts, 2008), and placebo tests concerning the timing of violations. Importantly, we demonstrate these employment effects are pronounced for firms receiving contractual restrictions in renegotiated contracts (Nini et al., 2009), suggesting operational changes are induced by creditors, as opposed to solely reflecting the voluntary decisions of borrowers.

We then turn to the establishment-level data to investigate the within-firm effects of creditor discipline and its potential connection with improvements in violating firms' operating performance. Our analysis focuses on two important establishment attributes that are motivated by the literature on agency problems and inefficient resource allocation within conglomerate firms: first, whether an establishment operates in a core or peripheral industry of a firm; and, second, establishment productivity.[1]

Two important results emerge. First, we find resources are withdrawn to a greater extent from establishments operating in peripheral industries. Violating firms lay off more

[1]Shleifer and Vishny (1997) and Stein (2003) survey the literature on corporate governance and agency problems within conglomerates. These surveys highlight the potential spillovers of entrenched managers' preferences to firm performance. For example, "quiet life" managers might be slow to fire workers or shutter underperforming plants (Bertrand and Mullainathan, 2003). Alternatively, "grandstanding" or "empire building" managers might operate firms at a suboptimal scale or scope (Gompers, 1996; Williamson, 1964).

employees at continuing peripheral establishments and, along the extensive margin, shutter them more often, relative to those within their core industry focus. This suggests that refocusing operations is an important channel through which creditors improve performance.

Second, following covenant violations, firms' operations retrench from relatively unproductive establishments. To establish this result, we focus on the set of manufacturing firms for which the Census provides highly-detailed information on factor inputs and output. This richness enables us to construct an array of establishment-level productivity measures—including total and individual labor and capital factor productivities—that we estimate both parametrically and non-parametrically. We find that violating firms cut employment and investment at, and close down more often, establishments classified as unproductive. Thus, creditors' ability to induce resource withdrawal from relatively unproductive establishments is a second contributing factor to the improvement in firm performance.

In the final part of the paper, we investigate the role of establishment operating risk. Given creditors are exposed to losses on the downside, naturally we might expect them to extinguish risk after the transfer of control rights. Measuring operating risk based on time-series and cross-sectional variation in establishment outcomes (e.g., operating margins), we find robust evidence that violating firms withdraw resources from riskier units. However, creditors are selective: once we characterize how establishment risk and productivity interact, we observe cuts occurring almost exclusively among establishments classified as both risky and unproductive. Taken together, our evidence indicates that creditor activism can benefit both the creditors and shareholders of violating firms by reducing default risk and improving economic efficiency.

Our findings contribute to empirical research on the importance of creditors in corporate governance, which builds on theoretical work analyzing optimal debt contracting in the presence of agency problems (e.g., Jensen and Meckling, 1976). Earlier work has argued that regulatory and legal impediments—including prohibition of equity investments

and the threat of having their claims equitably subordinated in bankruptcy or litigation under lender liability laws—may limit the scope for creditor intervention outside of default states (Gilson and Vetsuypens, 1994). Prior empirical research therefore emphasizes creditor control through debt restructuring when borrowers are bankrupt (Gilson, 1990; Gilson et al., 1990; James, 1995, 1996; Wruck, 1990), including modern evidence on the role of non-bank lenders (Ivashina et al., 2016; Jiang et al., 2012). More recently, Nini et al. (2012) among others, provide evidence suggesting a more active role for creditors in corporate governance outside of contracting and bankruptcy states. They argue that, following covenant violations, creditors have the power to influence firm decision-making and show that creditor discipline improves operating performance and firm value.[2,3] Our micro-evidence provides support for this thesis by showing that these performance improvements are driven, at least in part, by a redeployment of resources away from relatively unproductive and risky establishments, as well as those operating outside of the firm's core competency.

We identify sources of efficiency gains that are strikingly similar to those associated with major equity-centered governance interventions, notably, mergers and acquisitions (Li, 2013; Maksimovic et al., 2011), private equity transactions (Davis et al., 2014), and hedge fund activism (Brav et al., 2015). However, while the operational adjustments surrounding these interventions are similar, it is important to recognize that the types of firms violating covenants look very different to those targeted by activist shareholders. For example, hedge fund activist targets are mostly mature and generating free cash flow, whereas firms in technical default tend to be cash-strapped and underperforming. Moreover, on the financial side, hedge fund targets subsequently increase leverage and dividends, whereas firms in

[2]They show a turnaround in the ratio of operating cash to assets of about 7 percent in the year following the violation, an effect driven by a reduction in operating costs of between 5 and 10 percent. Violating firms' stock returns (risk-adjusted) rebound at a rate of 5 percent per year within three months of the violation.

[3]Theoretically, creditor control may be value-improving for underperforming firms, since creditors' concave payoff structure gives them sharper incentives to monitor and constrain inefficient managers (Aghion and Bolton, 1992; Dewatripont and Tirole, 1994). In the presence of agency conflicts between management and outside investors, creditor discipline may therefore increase the value of *both* debt and equity.

technical default do the opposite (Nini et al., 2012). Our findings therefore suggest that while equity-centered and creditor-centered governance might be suitable for different firm types or firms at different stages in their life-cycle, the effects of the intervention for capital reallocation and restructuring are quite comparable.

More broadly, our paper relates to the literature on creditor rights and firm outcomes, including risk-taking. In a cross-country analysis, Acharya et al. (2011) find that firms in creditor-friendly bankruptcy regimes have lower leverage and cash-flow risk. In the U.S. context, Eisdorfer (2008) finds evidence of risk-shifting among financially distressed firms, whereas Gilje (2016), in the context of the oil and gas industry, finds that firms with bank loans featuring stricter financial covenants reduce investment risk (i.e., exploratory drilling) as they approach bankruptcy. Prior studies show that covenant violations are followed by conservatism in capital structure (Roberts and Sufi, 2009a), investment (Chava and Roberts, 2008; Nini et al., 2009), employment (Falato and Liang, 2016), and R&D (Chava et al., 2016). We contribute to this literature by providing granular evidence on the within-firm effects of covenant violations for employment, investment, and asset disposals, as well as how these reallocation decisions relate to several important establishment attributes. Importantly, our results suggest that while lenders exercise control with risk-reduction in mind, they discriminate among operations taking into account productivity and upside potential.[4]

2 Data and Empirical Methodology

2.1 Data Sources

Our firm-level data comes from Compustat. This database contains balance sheet and income statement data for publicly-traded U.S. corporations, which are the focus of this

[4]Other research argues that maintaining a relationship with the borrower as a going concern may be valuable to the bank due to reputation costs of default (Gopalan et al., 2011) or future lending and cross-selling opportunities (Bharath et al., 2007).

study. We gather a large number of standard accounting variables primarily to be used as control variables in our analysis. Our sample covers the period from 1996 to 2009. Following Nini et al. (2012), for a firm-year to be included in the sample, we require non-missing data on total assets, total sales, common shares outstanding, and closing share price. We exclude (financial) firms with Standard Industrial Classification (SIC) codes between 6000 and 6999, as well as firms with book value of assets less than $10 million.

We use three establishment-level datasets provided by the Census. First, the Longitudinal Business Database (LBD), which annually tracks all business establishments in the U.S. with at least one paid employee. It provides longitudinal identifiers as well as data on the number of employees, payroll, location, and industry for each establishment. The LBD also records corporate affiliation, allowing us to identify establishment closures.

The Census of Manufacturers (CMF) and Annual Survey of Manufacturers (ASM) provide greater detail on activities for the subset of manufacturing establishments (SIC codes between 3000 and 3999). The CMF is a survey conducted every five years (years ending 2 and 7) and consists of all manufacturing establishments in the United States with at least one paid employee. The ASM is another survey conducted in non-census years (i.e., when the CMF is not conducted) for a subset of these manufacturing establishments. This includes all establishments with greater than 250 employees and some with fewer employees, which are selected with a probability positively correlated with size. Reporting for both of these surveys are mandatory and misreporting is penalized, so the data is of the highest quality. Both the CMF and ASM include information on industry, corporate affiliation, output (total value of shipments), employment, capital expenditures, and on material inputs of each establishment. The level of detail of these manufacturing datasets helps us construct various measures of productivity for each manufacturing establishment.

We use the longitudinal identifiers in LBD to merge the CMF and ASM. We then use the Compustat-SSEL bridge maintained by the Census to match each firm in Compustat to its

establishments. The Compustat-SSEL bridge ends in 2005, so we extend the match to 2009 using employer characteristics including name, address and employer identification number.

Our primary data on financial covenant violations is kindly provided online by Nini et al. (2012).[5] This is a quarterly dataset that contains an indicator variable defining whether each firm-quarter in Compustat has violated a financial covenant. All companies with registered securities are required to disclose covenant violations in quarterly filings with the SEC under Regulation S-X (Beneish and Press, 1993; Roberts and Sufi, 2009a). The authors use a combination of textual analysis and hand collection to carefully identify firms reporting a covenant violation. Their approach captures about 90 percent of actual reported violations. This dataset begins in 1996—the first year in which electronic filing became mandatory with the SEC—and ends in 2009, which explains our choice of sample window.

In robustness tests, we use alternative measures of covenant violations based on loan contract terms at-origination from Reuters' Loan Pricing Corporation's Dealscan database (henceforth, Dealscan) following Chava and Roberts (2008). Dealscan provides a large sample of loan contracts, including detailed information on maintenance covenants based on accounting ratios, that we match to Compustat.[6] We assume firms are bound by a given covenant threshold as stated at origination until the loan matures and take the tightest covenant at a given point in time.[7] In these tests, we restrict the sample merged to Compustat to firms having either net worth or current ratio covenants during the time period from 1996 until 2009. We focus on these covenants for two main reasons. First, Roberts and Sufi (2009a) show that more than 95 percent of loan contracts include at least one finan-

[5]These authors provide an excellent description of covenants in corporate credit agreements, including specific examples of violations from SEC filings. They argue that covenants, while common in most debt contracts, are most prevalent and often binding in bank loans (see also, Taylor and Sansone, 2007).

[6]Thanks to Sudheer Chava and Michael Roberts for providing the Dealscan-Compustat link.

[7]Two caveats apply. First, firms may have overlapping deals, i.e., the first deal matures after the start of the second deal. Second, covenant thresholds can change over the tenure of the loan in a predetermined manner or, say, due to a renegotiation or refinancing of the deal. We address these challenges following Chava and Roberts (2008) (see their Appendix B). We assume firms are subject to a given covenant threshold for the longest maturity of all loans in each package and take the most restrictive covenant across packages.

cial covenant, with the net worth (leverage) and current ratio covenants being among the most common. Second, determining whether a violation has occurred or not for these two covenants is straightforward, since the corresponding accounting variables are standard.

2.2 Variable Construction and Summary Statistics

Our main dependent variable is a measure of employment, which we use to capture how firms allocate resources. We focus primarily on employment because of the completeness of the data provided in the LBD. In most tests, employment is measured as the annual change in the natural logarithm of the number of employees. At the establishment-level, the number of employees comes directly from the LBD. At the firm-level, the number of employees is summed across all of the firm's establishments.

We consider additional employment measures for robustness and also to better understand the channels through which firms adjust resource allocation and potentially achieve cost improvements (i.e., reducing labor costs through the number of employees or wages per employee). We use four such measures based on data from the LBD. First, the annual change in the natural logarithm of payroll. Second, the symmetric growth rate of employment, calculated by dividing the annual change in number of employees by the average of current and lagged number of employees. This measure accommodates both entry and exit as well as limiting the effects of extreme values (Davis et al., 1998). For the third and fourth measures, we use the change in the number of employees and in payroll scaled by the average of current and lagged book value of assets, respectively.

We also analyze establishment closure rates. Such closures represent an extreme form of resource withdrawal that may be less likely to occur absent outside intervention (Bertrand and Mullainathan, 2003). We use longitudinal identifiers from LBD to define for each establishment in year t, a closure indicator variable that is set equal to one if the establishment is closed down in year $t + 1$. This is a dependent variable in the establishment-level analysis.

For the firm-level analysis, we use indicator variable set equal to one if the firm closes any of its establishments in a given year.

In some tests we analyze the investment decisions of manufacturing firms based on data from the CMF and ASM. We calculate investment as the annual change in establishment-level capital expenditures scaled by the establishment-level capital stock. Establishment-level capital stock is estimated using perpetual inventory method following Brav et al. (2015).

Our main independent variable is an indicator set equal to one if a firm violates a covenant in the current year. These violations are considered material information and must be disclosed in SEC filings. We aggregate the quarterly violation data to the annual frequency of the Census data. In light of this data constraint, we take a conservative approach when we measure the occurrence of a violation. To code a firm-year as a violation, we require a violation in at least one quarter of the current year and non-missing covenant information without any violation in all four quarters of the previous year. Effectively, we focus on new covenant violations—those occurring in the current but not the previous year—which is a cleaner setting to observe the effects of creditor influence (e.g., Nini et al., 2012).

To complement our main approach, we also measure covenant violations based on at-origination loan contract terms (i.e., maintenance covenant thresholds) from the Dealscan dataset. We focus on current ratio and net worth covenants due to their ubiquity and standardization. A covenant violation occurs in a given firm-year when the realized current or net worth ratio falls below the threshold specified by either covenant. As an additional robustness test, we restrict the sample to firm-year observations close to the threshold and conduct a RDD in the spirit of Chava and Roberts (2008). We discuss the identification assumptions underlying this test in the next section.

We include in our regressions firm-level accounting ratios on which covenants are written as well as variables to account for observable differences among firms that could affect firm decision-making. We control for operating cash flow, leverage ratio, interest expense scaled

by average assets, net worth over total assets, current ratio, and market-to-book ratio. These variables are winsorized at the 1 and 99 percent levels to limit the effects of outliers. In the establishment-level analysis, we further control for establishment age, the number of establishments per firm, and the number of establishments per three-digit industry segment of the parent firm. Appendix A defines all variables precisely.

With our data restrictions in place, particularly the Compustat-SSEL link, we construct a final sample containing 21,000 firm-year observations covering approximately 2,000,000 establishment-years for the period from 1996 until 2009. Table I presents summary statistics for the full sample, as well as the subsamples of covenant violators and non-violators.[8] The firm-level summary statistics are similar to Nini et al. (2012), reassuring us that sample selection resulting from the Compustat-Census match is not a problem. This is not surprising given the administrative nature of the Census data, i.e., it should cover the universe of Compustat firms. New covenant violations occur in 6.3 percent of firm-year observations.

Comparing violators with non-violators motivates our main results and empirical approach. Notably, both at the firm and establishment levels, the change in employment is larger for violators than for the rest of the sample. In addition, establishments belonging to violating firms experience closures with greater frequency. However, there appear to be significant performance differences between violators non-violators: violators have lower net worth, current ratio, market-to-book ratio, hold less cash, and are more levered. To ensure that our results do not simply reflect differences in these characteristics, we control flexibly for them in our regressions and conduct several falsification and sensitivity tests.

Finally, it is worthwhile noting the differences between the LBD establishments (Panel B) and subsample of manufacturing establishments from the CMF and ASM (Panel C). The rate of covenant violations is about the same for manufacturing (0.040) compared to all other

[8]As per Census disclosure requirements, we round off the number of observations in each table and quantile values are not reported in any summary statistics table.

establishments (0.041). Where manufacturing firms differ is that they tend to own fewer and older establishments. We control for these differences throughout our establishment-level analysis, including tests that focus specifically on manufacturing firms.

2.3 Identification and Empirical Model

We adapt the empirical methodology of Roberts and Sufi (2009a) and Nini et al. (2012) to our setting. To examine the firm-level implications of covenant violations, we estimate the following equation for the annual change in (log) employment:

$$\begin{aligned}\Delta y_{i,t+1} \;=\; & \alpha_t \;+\; \alpha_k \;+\; \beta \text{ Covenant Violation}_{it} \\ & + \gamma_1 \text{ Covenant Controls}_{it} + \gamma_2 \text{ Covenant Controls}_{i,t-1} \\ & + \gamma_3 \text{ Higher-Order Covenant Controls}_{it} + \epsilon_{it}, \end{aligned} \tag{1}$$

where i indexes firms, t indexes years, and k indexes industries. The unit of observation is a firm-year. The dependent variable, $\Delta y_{i,t+1}$, is primarily the within-firm annual change in the natural logarithm of the number of employees.[9,10] The main independent variable, Covenant Violation$_{it}$, is an indicator variable equal to one for a new covenant violation. The α_t and α_k denote year and industry (based on three-digit SIC codes) fixed effects, respectively. The industry fixed effects control for time-invariant differences between industries and the year fixed effects control for aggregate economic shocks.[11] The error term, ϵ_{it}, is assumed to be correlated within-firm and potentially heteroskedastic (Petersen, 2009).

The set of variables labeled Covenant Controls$_{it}$ are included to account for variables on which covenants are written as well as those that may have an independent effect on employ-

[9]Census employment variables are measured as of March 12 each year. For this reason, if a violation occurs in the first or second (third or fourth) quarters of year t, we measure the annual change in employment from year t to $t+1$ ($t+1$ to $t+2$).

[10]Equation (1) is formulated as a linear probability model when we examine establishment closures.

[11]In Appendix IA.I we augment (1) with industry-by-state-by-year fixed effects and obtain similar results.

ment and, more broadly, resource allocation decisions. These include operating cash flow, leverage ratio, interest expense scaled by average assets, net worth over total assets, current ratio, and market-to-book ratio. These variables are the most common ratios included in financial covenants (Roberts and Sufi, 2009a), as well as predictors of firm employment outcomes (Nickell and Wadhwani, 1991). These variables are included linearly, squared, and cubed, as indicated by the higher-order covenant controls term, as well as their one-year lag.

The coefficient of interest, β, measures how a firm's employment responds in percentage point terms to a new covenant violation. If firms reduce employment to improve net cash flows and satisfy creditors worried about the value of their claims, the coefficient β will be strictly negative. The null hypothesis that covenant violations are irrelevant for employment (because firms can find substitute financing or creditors cannot influence operations) corresponds to expecting that β will be zero.

The main identification challenge in the estimation of β is to separate out the effect of violations from expected changes in resource allocation based on differences in fundamentals between violators and non-violators. Our approach addresses this challenge through a comparison of firms close to the covenant threshold by controlling flexibly for continuous functions of the underlying variables—on which covenants thresholds are contracted upon—and utilizing the discontinuous change in firm behavior occurring at the time of a violation (Nini et al., 2012; Roberts and Sufi, 2009a). In effect, the outcomes of violations are measured by comparing firms with similar pre-violation performance and thus similar expected time-series path of outcomes. Specifically, we take the within-firm annual difference in dependent variables, which sweeps out fixed differences in outcomes between violators and non-violators. We also flexibly control for contemporaneous and lagged firm-level covenant control variables known to affect outcomes, as described above, and thus control for pre-violation trend differences between violators and non-violators.

We complement our baseline approach with a standard RDD that incorporates the actual

contractual level of covenants (Chava and Roberts, 2008).[12] The RDD essentially compares firms that just violate covenants to those that closely avoid doing so. We focus on the net worth and current ratio thresholds and define a firm-year to be in violation if the observed accounting ratio falls below the threshold specified by the contract. Thus, the covenant violation is a discontinuous function of the distance between the accounting ratio and the threshold, which constitutes the basis of the RDD approach.[13] We use this alternative definition of a violation in two sets of robustness tests. The first simply uses it as a substitute independent variable in equation (1). The second restricts the sample to firm-year observations within, say, ± 10 percent of the covenant threshold. Using a narrow bandwidth around the threshold ensures the covenant violation is close to a random event and thus unlikely to correlate with firm characteristics. Moreover, using observations within close proximity of the threshold addresses identification concerns that our estimates are driven by observations far from the threshold that might differ systematically (Bakke and Whited, 2012).

Analyzing the firm-level response to covenant violations can mask important operational changes within the firm. To better understand the channels through which creditor discipline might affect operating performance, we examine establishment-level data. While firms' establishments differ across several important dimensions, we focus on two characteristics that have been emphasized by the literature on resource allocation within conglomerates (e.g., Maksimovic and Phillips, 2008; Stein, 2003): establishment productivity and whether it operates in a core or peripheral industry of a firm. We also examine the role of establishment-level

[12] While our baseline approach does not incorporate explicit covenant thresholds, we proxy for the unobserved thresholds by including lags of the covenant controls. In support of this approximation, Chava and Roberts (2008) show that covenant violations tend to occur about two years after origination.

[13] The RDD uses "locally" exogenous variation in violations arising from the distance to the threshold. Validity of this approach hinges on local continuity, which amounts to continuity of all factors besides the violation through the covenant threshold. This requires that firms cannot perfectly sort themselves on one side of the threshold (Lee and Lemieux, 2010). In our context, this would require that firms manipulate accounting ratios to avoid violations, an outcome mitigated by the institutional features of the U.S. loan market (Chava and Roberts, 2008). Falato and Liang (2016) also show, in our setting, firms are balanced in terms of observables and the net worth and current ratios are smooth through the threshold.

operating risk in determining the resource allocation decision. This analysis is based on the full sample of establishments covering all industries based on the LBD and the subsample of manufacturers based on the CMF and ASM. In the latter sample, we have detailed establishment data on investment, performance, and operating risk.

To examine the effect of violations on resource allocation across establishments within the same firm, we estimate a modified version of (1) following Giroud and Mueller (2015):

$$\begin{aligned}\Delta y_{ij,t+1} \;=\; & \alpha_i \;+\; \alpha_{k(j)} \;\times\; \alpha_{s(j)} \;\times\; \alpha_t \;+\; \beta_1 \text{ Covenant Violation}_{it} \times \text{Yes}_{jt} \\ & +\; \beta_2 \text{ Covenant Violation}_{it} \times \text{No}_{jt} \;+ \gamma_1 \text{ Establishment Controls}_{jt} \\ & +\; \gamma_2 \text{ Covenant Controls}_{it} \;+\; \gamma_3 \text{ Covenant Controls}_{i,t-1} \\ & + \gamma_3 \text{ Higher-Order Covenant Controls}_{it} + \epsilon_{ijt}, \end{aligned} \tag{2}$$

where i, j, $k(j)$, $s(j)$, and t index for firms, establishments, industries and states of the respective establishments, and years, respectively. The unit of observation is an establishment-year. The dependent variable, $\Delta y_{ij,t+1}$, is the within-establishment annual change in resource allocation. Depending on the data source, this could be employment, investment, or establishment closures. The main independent variable, Covenant Violation$_{it}$, is an indicator variable equal to one if an establishment's owner firm violates a covenant. The indicator variable Yes$_{jt}$ (No$_{jt}$) is set equal to one (zero) if the attribute under consideration is satisfied (not satisfied) by a given establishment at the beginning of year t. The set of variables labeled Establishment Controls$_{jt}$ include establishment age, the number of establishments per firm, and the number of establishments per segment. We continue to cluster standard errors at the firm level to account for dependence across establishments of the same firm.

The coefficients of interest are β_1, which captures the effect on the establishments with the attribute of interest, and β_2 which captures the effect on other establishments within the same firm. If firms reduce employment uniformly across establishments then the coefficients

β_1 and β_2 will both be negative and statistically indistinguishable. On the other hand, if β_2 is smaller than β_1 then the firm cuts employment more at establishments not satisfying the criterion (e.g., outside of the core industry focus of the firm). The null hypothesis that covenant violations are irrelevant for establishment-level employment decisions, which corresponds to β_1 and β_2 both equal to zero.

3 Empirical Results

3.1 Covenant Violations and Firm-Level Outcomes

Table II shows the firm-level effect of new covenant violations on the employment outcomes of violators and other firms. Column [1] presents results from estimating equation (1) with only industry and year fixed effects. We see that the coefficient of interest on Covenant Violation$_{it}$, β, is -0.063 and it is statistically significant at 1 percent confidence level. The direction of this estimate is consistent with our expectation that following covenant violations firms lay off employees to improve net cash flows and satisfy creditors' concerns. In terms of economic magnitudes, the estimate implies that a typical covenant violation is associated with a 6.3 percentage point decrease in the number of employees, which constitutes about 15.7 percent of its standard deviation (0.401) among the full sample of firms.

Column [2] adds covenant control variables—operating cash flow, leverage, interest expense, net worth, current ratio, and market-to-book ratio. As expected, their inclusion lowers the estimated coefficient of interest as the comparison group has similar (weak) performance to violating firms. The estimate drops to -0.042, remains significant at the 1 percent level, and continues to be large in economic terms. Column [3] further includes lagged covenant controls to account for pre-violation trend differences between violators and non-violators. The coefficient of interest remains essentially the same in terms of size and significance.

Column [4] augments the specification with the covenant controls both squared and raised

to the third power. These higher-order terms allow us to control more flexibly for the firm fundamentals, on which covenants are written, and exploits the discontinuous change in employment at the time of violation. The inclusion of these controls make little difference to the estimate of β, which is -0.040 and still significant at the 1 percent level.

Next, we consider alternative measures of employment based on data from the LBD. These results serve as both robustness checks and provide further information on the dynamics of employment following covenant violations. Furthermore, this analysis allows us to better understand how firms improve operating performance through cost cutting (i.e., reducing labor costs through the number of employees or wages per employee).

Table III shows the results of re-estimating equation (1) with the alternative dependent variables. Column [1] uses the annual change in the natural logarithm of payroll as a dependent variable. Payroll is the total amount of wages and salaries given to employees summed across a firm's establishments. We see that covenant violations result in a 2.7 percentage point reduction in wages and salaries paid to employees.

Columns [2] and [3] verify that our results are not an artifact of log-transforming our dependent variables. We instead scale the annual change in number of employees and payroll by average assets. Column [4] considers the symmetric growth rate of employment to address outliers and potential extensive margin effects. Each column gives results consistent with our findings so far: violations result in significant drops in number of employees and wages.

In Table IV we examine whether covenant violations lead firms to withdraw resources on a larger scale through establishment closures. We identify closures through establishment longitudinal identifiers in LBD. We define a firm-level variable, Any Establishment Closure$_{i,t+1}$, equal to one if a firm closes any establishment from year t to $t+1$ (and zero otherwise) and estimate (1) as a linear probability model.

Column [1] shows a positive relation between covenant violations and the likelihood of subsequent establishment closure. In columns [2] to [4], we include covenant control variables

along the lines of Table II. The point estimate is about 0.024 and significant at at least the 5 percent confidence level, which indicates a violating firm is about 2.4 percentage points more likely to close an establishment than a non-violator. This estimated effect is moderate given the coarse measurement of closures at the firm level: about 50 percent of all firms close an establishment in a given year. We shall see our estimates become sharper and more economically meaningful in our establishment-level analysis.

Overall, these estimates indicate that loan covenant violations have an economically large and statistically robust impact on firm-level labor outcomes. Our baseline estimates indicate a cut in the number of employees among violating firms on the order of 4 to 6 percentage points relative to non-violators. Given the frequent occurrence of covenant violations and contract renegotiations (Roberts and Sufi, 2009b), these estimates suggest that creditor discipline might be an important determinant of employment outcomes.

Our findings line up quite well with existing estimates from the literature relying on other data sources. Falato and Liang (2016) use data on the number of employees from Compustat and hand-collected layoff announcements to estimate a 10 percent reduction in the workforce among firms in technical default. Moreover, our estimates are quite reasonable in magnitude when compared with less frequent, more severe financial distress events such as bond defaults and bankruptcy filings, which exhibit layoffs of 27 percent and 50 percent, respectively (Agrawal and Matsa, 2013; Hotchkiss, 1995).

3.1.1 Robustness Checks

In this section, we examine the robustness of these firm-level estimates. We first consider alternative definitions of covenant violations based on the Dealscan database of private credit agreements. This dataset provides actual covenant threshold levels for loan contracts at the time of origination, which allows us to implement a RDD based on imputed rather than actual violations, albeit for a smaller sample (Chava and Roberts, 2008). We code a firm-year as a

violation whenever the current value of the accounting ratio (net worth or current) is below the threshold specified in the loan contract. We continue to consider only new violations, meaning both accounting variables must exceed their respective thresholds in every quarter of the prior year and all data required to compute violations must be non-missing.

Panel A of Table V show the results of estimating equation (1) using alternative violation definitions. Column [1] defines a violation based on the net worth and/or current ratio thresholds. The estimate of β is -0.061 and significant at the 1 percent level. Column [2] combines the definitions based on Dealscan and SEC filings, coding violations to occur when either accounting variable falls below its threshold or a violation is reported to the SEC. We see that the coefficient decreases to -0.040 and remains significant at the 1 percent level.

Columns [3], [4], and [5] revert to the violation definition based on covenant thresholds and restricts the sample to firm-year observations within increasingly narrow intervals around the threshold (from ± 20 to ± 10 percent). Implementing the RDD with a narrow bandwidth means the violation is more likely to be random occurrence. This mitigates the concern that information about future investment opportunities (not measured by the control variables) may be captured by distance to the covenant threshold. Each column reports the results of the estimation only including contemporaneous covenant controls, as we implement a conventional RDD here. In each case the coefficient of interest is large and statistically significant at conventional levels. Columns [5] shows that, on average, the number of employees decreases by 4 percentage points post-violation, which is inline with our baseline estimates. This reassures us that we are identifying the effect of covenant violations on employment separately from changes driven by differences in fundamentals between violators and non-violators.

We also investigate the internal validity of our baseline results by checking for pre-existing trends in employment between violators and non-violators. Specifically, we examine the difference in employment outcomes between violators and non-violators in the year prior to the new covenant violation. In Panel B, we shift the violation forward by one year to a

time, by construction, that we know there was no covenant violation. The resulting point estimate of the impact of a covenant violation on employment is small in magnitude and statistically indistinguishable from zero. This is true for all of the measures of employment. This contrasts with our baseline estimate and suggests the negative effect on employment is due to the covenant violation and not some pre-existing trend in firm behavior.

We next examine a setting where we are confident that action by creditors has taken place and therefore the post-violation adjustment in employment is unlikely to reflect voluntary action on the part of the borrower. To this end, we follow Nini et al. (2009) and consider covenant violations that lead to the introduction of new capital expenditure restrictions in renegotiated loan contracts. These restrictions usually apply to annual cash capital expenditures plus new capital leases, expressed either in dollar terms or as a percentage of earnings or revenue. While creditors are in a position to adjust other contract terms (maturity, collateral, rates, etc.) after the covenant violation, Nini et al. (2009) show the elasticity of capital expenditure restrictions with respect to violations is largest in magnitude.

Data for this exercise are kindly provided online by Nini et al. (2009). These data contain a representative sample of 3,720 private credit agreements between banks and 1,931 publicly traded U.S. corporations pulled from SEC filings and identified at the firm-year level. About 30% of these contracts contain capital expenditure restrictions. We focus on the intersection of this dataset and our Compustat-LBD firm-year level sample. We compare employment before and after the renegotiation for three groups of firms. First, firms with new contracts that do not restrict capital expenditures. Second, firms with new contracts that contains a new restriction and the prior contract does not contain a restriction. Third, firms receiving a contract that contains a restriction and the prior contract already contains a capital expenditure restriction (or we are missing the prior contract). Based on these three groups, we define two indicator variables: New Capital Expenditure Restriction (second group) and Old Capital Expenditure Restriction (third group). The first group of firms

without any capital expenditure restriction either before or after the renegotiation are the omitted group in the regression.[14]

Panel C of Table V estimates the employment effects of capital expenditure restrictions across these three groups of firms. Column [1] controls for industry and year fixed effects and indicates that the introduction of a new capital expenditure restriction leads to a 9 percentage point reduction in employment. This effect is significant at the 1 percent level. There is no effect for firms signing a new contract without a new restriction. Columns [2] to [4] repeat the estimation including additional sets of controls and the estimate remains negative—although the magnitude reduces to -0.065 with the full set of controls—and significant at conventional levels for the new capital expenditure restriction group only.

This last piece of evidence supports the idea that the firm employment effects documented in this section are the outcome of creditor actions (brought about, for example, through contractual restrictions) as opposed to self-correcting behavior on the part of borrowers.

3.2 Internal Resource Allocation: Establishment-Level Analysis

3.2.1 Establishments Operating in Core and Peripheral Business Lines

From this point on, we analyze the effects of creditor discipline on resource allocation among establishments belonging to the same firm. We first test for a heterogeneous response among establishments operating in core and peripheral business lines. Since peripheral business lines are outside the main scope of the firm, these activities may be less developed, could arise from managers' private incentives, or management may lack experience relative to core business lines (e.g., Gompers, 1996; Scharfstein and Stein, 2000). Thus, withdrawing resources from these establishments and refocusing may improve operating efficiency and decrease the risk of failure, thus improving firm performance and value (e.g., Lang and Stulz,

[14] Appendix IA.II shows the summary statistics for the full sample of matched firm-years and conditional on having an old and new capital expenditure restriction.

1994; Schoar, 2002). On the other hand, diversification from an operational standpoint could increase the value of debt—provided cash flows are not perfectly correlated (i.e., a "coinsurance" effect, as in Lewellen, 1971)—in which case we might see no change in focus.

To test for the importance of industry focus in resource allocation, we turn to the establishment-level data from LBD. We follow Maksimovic and Phillips (2002) and, for each firm, classify a three-digit SIC industry as core (peripheral) if its payroll summed across establishments is more (less) than 25 percent of the firm's total payroll. Each establishment within the firm is characterized as core or peripheral based on its industry classification. We then estimate our establishment-level regression model (2) allowing for differential sensitivities among establishments operating in the firm's core or peripheral business lines following a new covenant violation. The estimated coefficients on $\text{Violation}_{it} \times \text{Core}_{jt}$ and $\text{Violation}_{it} \times \text{Peripheral}_{jt}$ measure these heterogeneous responses. Table VI shows the results.

In columns [1] to [4] the dependent variable is the establishment-level change in the natural logarithm of the number of employees. In column [1], we perform the estimation without any covenant controls and find that covenant violations result in a decrease of 2.7 percentage points in core establishments and 8.4 percent in peripheral establishments. Both point estimates are significant at conventional levels. In column [2], we add covenant controls and the coefficients of interest are estimated to be -0.026 and -0.090, still statistically significant at conventional levels. Columns [3] and [4] include further controls but the finding does not change: firms decrease employment significantly at both core and peripheral establishments, but the effect is about twice as large at peripheral establishments.[15]

Column [5] reports results from regressions where the dependent variable is an indicator variable for establishment closure. In this case, the dependent variable is equal to one if the establishment is closed in the subsequent year and zero otherwise. Here, a similar pattern

[15]We test whether these coefficients are statistically distinct using F-tests. In each case, we find the difference between coefficients is significantly different from zero at 1 percent confidence level.

emerges: the coefficients of interest are significantly positive for both types of establishment, but the coefficient for peripheral establishments is much larger (0.013 versus 0.039). Once again, this difference is statistically significant at the 1 percent level based on an F-test.

Table VII further examines the robustness of these results to our classifications of core and peripheral industries. We conduct two tests. First, in columns [1] and [2], we use finer information on establishment industry codes to classify industries. In particular, we focus on four-digit SIC codes and maintain the 25 percent threshold (e.g., Giroud and Mueller, 2015). In columns [3] to [4], we maintain the use of three-digit SIC codes but now adopt a 50 percent payroll threshold to classify industries within a firm as core or peripheral. For both sets of tests, we find very similar results relative to Table VI, indicating that this finding is not an artifact of our industry classification scheme.

Overall, these establishment-level results indicate a large withdrawal of resources from violating firms' operations, particularly, establishments operating in peripheral industries. Specifically, following covenant violations, firms decrease employment more at their continuing peripheral establishments and, along the extensive margin, close them significantly more often. Thus, our findings suggest that increasing the focus of firms' operations following covenant violations is an important channel through which creditor discipline may improve firm operating performance and market valuations.

3.2.2 Establishment Productivity

We next analyze the effects of covenant violations on within-firm reallocation across productive and unproductive establishments. If creditor discipline improves operating performance then, naturally, we expect resource withdrawal from less productive establishments.

We focus primarily on the sample of manufacturers using the CMF and ASM. These data provide detailed information on manufacturing establishments, including output and factor inputs, allowing us to construct an array of productivity measures. We can measure total,

labor, and capital productivity several ways both parametrically and non-parametrically, which gives us confidence that measurement error is not driving our results. We first use total factor productivity (TFP) to estimate establishment productivity. We follow the literature to compute TFP using Census data (e.g., Foster et al., 2008). TFP is estimated as the difference between actual and predicted output, where the latter is estimated using a log-linear Cobb-Douglas production function with capital, labor, and materials as inputs.

We rank establishments on the basis of their within-firm productivity ranking—productive (unproductive) establishments fall above (below) the median of TFP of the establishments belonging to the same firm in a given year—and consider the within-industry ranking later in a robustness test.[16] Given the richness of the manufacturing data, we examine effects of covenant violations on establishment-level investment, in addition to employment and closures. To implement our tests, we estimate (2) allowing high and low productivity establishments to display different sensitivities of establishment outcomes to violations.

Table VIII shows the within-firm effects of productivity on employment and closures. In columns [1] to [8], the dependent variable is the annual change in the natural logarithm of the number of employees. Column [1] indicates that firms cut employment at both productive and unproductive establishments, although layoffs are considerably larger at unproductive establishments. The coefficients show a decrease in number of employees of 5.7 and 19.0 percentage points for productive and unproductive establishments, respectively. As we introduce covenant controls, the estimated effect on productive establishments diminishes in size and statistical significance. In column [4], with the full set of controls, layoffs at productive establishments are indistinguishable from zero. In contrast, unproductive establishments experience employment cuts that are large and statistically significant at the 1 percent level. Furthermore, F-tests confirm that the difference in the estimates between productive and

[16] If industry production is heterogeneous in terms of capital, labor, and total factor productivity then within-firm productivity rankings might be misleading, especially for firms spread across several industries.

unproductive establishments is always statistically significant at conventional levels.

We next examine the robustness of employment outcomes to alternative measures of productive efficiency. In column [5], we consider a within-industry (three-digit SIC code) TFP ranking of establishments and find a similar result as compared to using the within-firm productivity ranking. The estimates indicate that following a violation firms decrease the number of employees at unproductive establishments by 14.3 percentage points, whereas the change in employment at productive establishments is statistically insignificant.

We consider three more refined measures of labor productivity commonly used in the literature (e.g., Brav et al., 2015). First, in column [6], we use value-added per labor hour, which is total value of shipments minus material and energy costs divided by total labor hours. Second, in column [7], we use output divided by total labor hours. Finally, in column [8], we use wage per hour. Each time we use a within-industry productivity ranking to determine which establishments are relatively productive. It can be seen that following covenant violations the withdrawal of labor resources occurs most strongly at establishments with low labor productivity. In contrast to the productive establishment interaction, the unproductive establishment interaction is always negative, larger in magnitude, and statistically significant at the 1 percent confidence level.[17] Finally, in column [9] we examine establishment closures and find that, along the extensive margin, firms only close unproductive establishments. Here, we revert to the within-firm TFP ranking, as in column [1].

In Table IX we uncover similar patterns for investment. We consider the investment rate as a dependent variable, which we measure as the annual change in establishment-level capital expenditures scaled by the establishment-level capital stock. Following covenant violations, violating firms cut the investment rate by between 2.0 and 2.7 percentage points

[17]Appendix IA.III examines the importance of labor productivity for the universe of firms using the LBD data. Following Silva (2013), labor productivity is measured as establishment payroll per employee, i.e., the average wage. The coefficient on unproductive establishments range from -0.215 to -0.254 (significant at the 1 percent level) and insignificant for productive establishments. These patterns are consistent with Table VIII, which suggests they are not specific to the manufacturing industry.

at unproductive establishments, relative to the establishments of non-violators. There is virtually zero effect on productive establishments. This pattern holds either for the within-firm TFP ranking (columns [1] to [4]) and the within-industry TFP ranking (column [5]).

In column [6] we proxy for capital productivity based return on capital (ROC) (e.g., Giroud and Mueller, 2015), which has the advantage of being a simple and nonparametric measure. ROC is calculated as total value of shipments minus labor, material, and energy costs scaled by capital stock. Very similar results emerge: compared to the investment rate of non-violator establishments, the investment rate decreases by 0.015 among violating firms' establishments with below-median within-firm ROC (significant at the 5 percent level) and indistinguishable from zero in the case of productive establishments.

We next analyze how establishment productivity and industry focus interact in the response of firms to covenant violations.[18] Table X presents the results of estimating (2) further interacting these two establishment characteristics. Two key results obtain. First, we observe that the cuts occurring at manufacturing establishments outside of the core focus of violating firms are in line with the estimates for all industries (see Table VI). Second, on the interaction between focus and productivity, we see that the cuts occur among unproductive plants in both core and peripheral industries, however, they are far larger in magnitude at the peripheral establishments. For example, column [2] shows a 10.8 percentage point reduction in employment at Core $\times$ Unproductive establishments (significant at the 5 percent level), about half the size of the 22.5 percentage point cut at Peripheral $\times$ Unproductive establishments (significant at the 1 percent level). This finding is consistent with managers withdrawing resources primarily from less productive establishments, although the peripheral characteristic appears to play an important amplification role.

In summary, this evidence highlights the importance of establishment productivity in firm decision-making following covenant violations. We find strong evidence that violating

[18] Appendix IA.IV confirms productivity is not highly correlated with focus among establishments.

firms cut employment and investment at unproductive establishments and close them down more frequently. Overall, the taking away of resources from and disposal of relatively unproductive establishments appears to be a second channel through which creditors facilitate the turnaround of the firm and enhance its valuation.

3.2.3 Establishment Operating Risk

In this final section, we examine the importance of establishment operating risk for resource allocation decisions after the transfer of control rights to creditors. Risk-taking on the operational side might expose the firm to large potential losses. Management might undertake excessively risky investments due to a lack of information or skill. Alternatively, these operating decisions might be optimal from the perspective of shareholders who reap the gains on the upside, but at the expense of creditors who are exposed to the losses on the downside. Consequently, in the presence of shareholder-creditor conflicts of interest, creditors may prefer to shift resources away from projects that have high operating risk.

We construct industry-level measures of operating risk based on the variance on establishment outcomes. Following Maksimovic et al. (2011), our main measure of risk is the cross-sectional standard deviation of operating margins across manufacturing establishments in the same three-digit SIC code, where operating margins are calculated as the total value of shipments minus all input costs divided by the value of shipments. Operating margins can only be calculated the CMF/ASM data, so we continue to focus on manufacturing establishments. We also wish to examine the interactions between operating risk and productivity, further necessitating the focus on manufacturers. For each three-digit SIC code-year, we calculate operating risk and classify an establishment as "Risky" if it belongs to an industry with above-median standard deviation of operating margins and "Safe" otherwise.

Table XI presents the results of estimating equation (2) using a risk-based classification of establishments. In panel A, the dependent variable is the annual change in the natural

logarithm of the number of employees. Columns [1] to [4] use our main measure of operating risk and indicate that layoffs are present only at risky establishments. The estimated coefficients show a decrease in number of employees of between 11.3 and 15.4 percentage points for risky establishments (always significant at the 1 percent level), whereas layoffs at safe establishments are indistinguishable from zero.[19]

The remaining columns of panel A use alternative measures of establishment operating risk for robustness.[20] In column [5], we classify establishments as safe or risky instead based on the cross-sectional standard deviation of operating margins across Compustat firms at the three-digit SIC code level. Columns [6] and [7] uses the time-series standard deviation of the average industry operating margin at the three-digit SIC level based on Compustat firms using 5 and 10 years of data, respectively. Finally, in column [8] we use the time-series standard deviation of the average industry ratio of operating cash flows to assets. While using the establishment-level data allows for a cleaner measurement of which industries an establishment operates in and therefore its operating risk, we nevertheless find similar patterns in layoffs emerge based on measures based on firm-level data. Finally, we find similar results when we instead examine establishment closure as a dependent variable in panel B. These findings collectively support the idea that creditor influence brings about a decline in operational risk-taking through a reallocation of resources following covenant violations and the transfer of control rights.

In a final step, we characterize how establishment productivity and operating risk interact. The results are shown in Table XII. We see very clearly that layoffs are concentrated among the establishments that are considered to be both unproductive and risky. For example, column [1] of panel A shows a 16.2 percentage point reduction in employment at Unproductive $\times$ Risky establishments (significant at the 1 percent level) and nowhere else.

[19] F-tests indicate that the difference between risky and safe establishments point estimates is statistically significant at at least the 5 percent confidence level.

[20] Appendix IA.IV shows that these operating risk measures are not perfectly correlated.

In this column we use our preferred measures of productivity and risk, however, this finding persists across the various alternative measures defined above. This large and statistically robust effect holds for establishment closures in panel B and is particularly stark for investment.[21] Thus, while riskier operations experience cuts, resources are withdrawn from unproductive units and therefore are likely to benefit both creditors and shareholders by both reducing default risk and improving productive efficiency.

4 Conclusion

Using establishment-level data from the U.S. Census Bureau, we provide detailed evidence on how U.S. publicly-traded corporations adjust their operations in response to debt covenant violations. We first show that covenant violations are followed by significant employment cutbacks. A typical violating firm lays off between 4 and 6 percent of its labor force, as compared to similar non-violating firms. Using the Census micro-data, we look inside the black box of the firm and document two patterns of within-firm resource allocation following covenant violations. First, we show that firms reduce the scope of their operations by withdrawing resources significantly more from peripheral establishments outside of the firm's core business lines. Second, we show that total and individual factor productivities are important determinants of resource allocation. Specifically, firms violating covenants subsequently reduce employment and capital expenditures entirely at unproductive establishments.

Our evidence sheds light on previously unexplored channels through which creditors may have a disciplining influence on firms' day-to-day operations, well outside of bankruptcy. We find the shift of control rights associated with covenant violations brings about significant operational changes, leading firms to refocus operations in favor of productive establishments within core business lines. These channels may explain, as least in part, the gains in violating

[21] Appendix IA.V shows capital expenditure cuts only among unproductive and risky establishments.

firms' operating performance and valuations following violations (Nini et al., 2009, 2012).

Our results are consistent with a valuable delegated monitoring role of creditors. Regulatory changes in the wake of the the Great Recession and recent financial innovations may impede the ability of lenders to perform this role. Notably, stricter capital regulation and new liquidity requirements levied on banks increase the cost of originating and holding corporate loans, particularly long-term loans to risky borrowers that may benefit most from monitoring. In addition, the introduction of "covenant light" loan contracts with weaker lender protection—namely, loans excluding maintenance covenants (Ivashina and Becker, 2016)—may reduce the occurrence of covenant violations and therefore scope for creditor discipline. Finally, relatively new credit risk transfer tools such as credit default swaps separate control rights from potential losses (Parlour and Winton, 2013), which may weaken incentives to intervene when borrowers violate covenants (Bolton and Oehmke, 2011; Chakraborty et al., 2015). Investigating the role of banks and other creditors in corporate governance in rapidly evolving, modern credit markets remains an exciting area for future research.

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Table I
Summary Statistics

This table provides sample summary statistics. Panel A provides firm-level statistics. Panels B and C provide establishment-level statistics. The unit of observation in Panels A and B and C, respectively, is a firm-year and establishment-year. All variables are defined in Appendix A.

	Full Sample			Non-Violators			Violators		
	N	Mean	Std.	N	Mean	Std.	N	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Panel A: Firm-Level									
ΔLog(Employment)	21,000	-0.061	0.401	19,000	-0.002	0.399	2,000	-0.062	0.424
ΔLog(Payroll)	21,000	0.000	0.410	19,000	0.004	0.408	2,000	-0.047	0.431
Symmetric Employment Growth	21,000	0.018	0.308	19,000	0.018	0.306	2,000	0.029	0.334
ΔEmployees/Average Assets	21,000	9.453	47.376	19,000	9.322	48.448	2,000	11.392	26.895
ΔPayroll/Average Assets	21,000	0.349	2.697	19,000	0.347	2.776	2,000	0.388	0.966
Establishment Closure	21,000	0.472	0.499	19,000	0.471	0.499	2,000	0.486	0.500
Covenant Violation	21,000	0.063	0.244	19,000	0	0	2,000	1	0
Operating Cash Flow	21,000	0.075	0.246	19,000	0.077	0.250	2,000	0.050	0.174
Leverage	21,000	0.256	0.456	19,000	0.252	0.466	2,000	0.315	0.280
Interest Expense	21,000	0.023	0.074	19,000	0.023	0.076	2,000	0.028	0.035
Net Worth	21,000	0.432	0.967	19,000	0.435	0.995	2,000	0.393	0.371
Current Ratio	21,000	2.772	4.615	19,000	2.821	4.744	2,000	2.048	1.724
Market-to-Book	21,000	2.029	3.170	19,000	2.063	3.255	2,000	1.533	1.305
Panel B: Establishment-Level (LBD)									
ΔLog(Employment)	2,000,000	-0.138	0.664	1,900,000	-0.133	0.655	100,000	-0.251	0.832
Establishment Closure	2,000,000	0.054	0.227	1,900,000	0.053	0.224	100,000	0.087	0.282
Covenant Violation	2,000,000	0.041	0.197	1,900,000	0	0	100,000	1	0
Age	2,000,000	13.021	8.811	1,900,000	13.065	8.819	100,000	11.973	8.552
Establishments per Firm	21,000	93.710	356.328	20,000	93.872	357	1,000	90	347
Establishments per Segment	93,000	22.003	154.284	90,000	21.913	154	3,000	24.377	162
Core	2,000,000	0.764	0.424	1,900,000	0.761	0.427	100,000	0.841	0.365
Labor Productivity	2,000,000	0.051	6.968	1,900,000	0.052	7.114	100,000	0.029	0.050
Panel C: Establishment-Level (CMF/ASM)									
ΔLog(Employment)	50,000	-0.193	0.814	48,000	-0.186	0.795	2,000	-0.378	1.158
ΔInvestment Rate	50,000	-0.008	0.158	48,000	-0.007	0.157	2,000	-0.025	0.161
Establishment Closure	50,000	0.035	0.185	48,000	0.034	0.18	2,000	0.077	0.267
Covenant Violation	50,000	0.040	0.197	48,000	0	0	2,000	1	0
Age	50,000	20.973	9.127	48,000	21.034	9.122	2,000	19.527	9.116
Establishments per Firm	8,000	7.427	14.091	7,000	7.654	14.412	1,000	4.337	8
Establishments per Segment	21,000	2.959	4.675	20,000	2.985	4.700	1,000	2.436	4.105
Core	50,000	0.653	0.476	48,000	0.647	0.478	2,000	0.808	0.411
Total Factor Productivity	50,000	1.823	0.658	48,000	1.826	0.66	2,000	1.765	0.609
Labor Productivity (Alt. 1)	50,000	114.415	288.128	48,000	116.309	293.188	2,000	69.333	104.312
Labor Productivity (Alt. 2)	50,000	233.327	919.057	48,000	235.547	924.285	2,000	180.473	782.704
Labor Productivity (Alt. 3)	50,000	0.019	0.031	48,000	0.020	0.032	2,000	0.018	0.016
Return on Capital	50,000	5.920	604.419	48,000	6.110	617.968	2,000	1.714	4.135
Operating Risk	50,000	2.428	15.417	48,000	2.422	15.612	2,000	2.569	9.349
Operating Risk (Alt. 1)	50,000	15.161	67.914	48,000	15.372	68.896	2,000	10.141	40.702
Operating Risk (Alt. 2)	50,000	0.014	0.012	48,000	0.014	0.012	2,000	0.016	0.013
Operating Risk (Alt. 3)	50,000	0.017	0.011	48,000	0.017	0.011	2,000	0.018	0.012
Operating Risk (Alt. 4)	50,000	0.016	0.011	48,000	0.016	0.011	2,000	0.017	0.014
Operating Risk (Alt. 5)	50,000	25.904	169.89	48,000	26.180	171.685	2,000	19.801	134.152

Table II
Covenant Violations and Resource Allocation: Firm-Level Analysis

This table shows estimates of the firm-level impact of debt covenant violations on asset allocation. The unit of observation in each regression is a firm-year pair. The dependent variable is the annual change in the natural logarithm of the number of employees aggregated across establishments. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Covenant controls include operating cash flow scaled by average assets, leverage, interest expense, net worth, current ratio, and market-to-book ratio. Higher-order and lagged covenant controls refer to the second and third power and one-year lag of the covenant controls, respectively. All variables are defined in Appendix A. Industry fixed effects are based on three-digit SIC codes. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable: ΔLog(Employment)				
	[1]	[2]	[3]	[4]
Covenant Violation	-0.063***	-0.042***	-0.042***	-0.040***
	(0.007)	(0.008)	(0.009)	(0.009)
Operating Cash Flow		0.013***	0.061**	0.119***
		(0.013)	(0.028)	(0.036)
Leverage		0.048**	-0.063*	-0.095
		(0.020)	(0.032)	(0.078)
Interest Expense		-0.085	-0.372	0.332
		(0.182)	(0.257)	(0.848)
Net Worth		0.073***	0.032	0.050
		(0.014)	(0.026)	(0.032)
Current Ratio		0.001	-0.007***	0.000
		(0.001)	(0.002)	(0.006)
Market-to-Book		0.019***	0.022***	0.061***
		(0.001)	(0.002)	(0.010)
Lagged Covenant Controls	N	N	Y	Y
Higher-Order Covenant Controls	N	N	N	Y
Industry Fixed Effects	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y
Rounded N	30,000	26,000	21,000	21,000
R^2	0.02	0.12	0.11	0.11

Table III
Alternative Measurement of Labor Outcomes

This table presents estimates of the firm-level impact of debt covenant violations on resource allocation using alternative measures of employment. The unit of observation in each regression is a firm-year pair. Columns [1] to [4] use the annual change in (log) payroll, the number of employees divided by average assets, payroll divided by average assets, and the symmetric employment growth rate, respectively, as the dependent variable. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Covenant controls and fixed effects are described in Table II. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable:	ΔLog(Payroll)	ΔEmployees / Avg. Assets	ΔPayroll / Avg. Assets	Symmetric Emp. Growth
	[1]	[2]	[3]	[4]
Covenant Violation	-0.027***	-0.222**	-0.011***	-0.026**
	(0.008)	(0.104)	(0.003)	(0.013)
Operating Cash Flow	0.134***	2.158***	0.099***	0.101**
	(0.036)	(0.343)	(0.016)	(0.051)
Leverage	-0.071	0.548	0.016	-0.163
	(0.080)	(0.844)	(0.031)	(0.104)
Interest Expense	-0.178	-19.283**	-1.051***	0.623
	(0.862)	(8.974)	(0.325)	(1.125)
Net Worth	0.085***	-0.074	0.012	0.057
	(0.029)	(0.329)	(0.013)	(0.046)
Current Ratio	-0.005	-0.015	-0.002	0.006
	(0.006)	(0.056)	(0.002)	(0.008)
Market-to-Book	0.093***	0.355***	0.026***	0.031**
	(0.011)	(0.095)	(0.005)	(0.013)
Lagged Covenant Controls	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y
Rounded N	21,000	21,000	21,000	21,000
R^2	0.10	0.07	0.16	0.02

Table IV
Covenant Violations and Establishment Closures

This table shows estimates of the impact of debt covenant violations on firm-level establishment closures. The unit of observation in each regression is a firm-year pair. The dependent variables indicate whether the firm closed any establishment in a year. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Covenant controls and fixed effects are described in Table II. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable: Any Establishment Closure				
	[1]	[2]	[3]	[4]
Covenant Violation	0.004	0.026**	0.027**	0.024**
	(0.011)	(0.011)	(0.012)	(0.012)
Operating Cash Flow		0.071***	-0.016	0.143***
		(0.018)	(0.026)	(0.036)
Leverage		-0.003	0.042	-0.157
		(0.030)	(0.037)	(0.126)
Interest Expense		0.204	0.073	4.033***
		(0.212)	(0.259)	(1.268)
Net Worth		-0.080***	0.007	0.007
		(0.022)	(0.029)	(0.043)
Current Ratio		-0.014***	-0.005**	-0.016
		(0.001)	(0.002)	(0.011)
Market-to-Book		-0.014***	-0.008***	-0.038**
		(0.002)	(0.002)	(0.016)
Lagged Covenant Controls	N	N	Y	Y
Higher-Order Covenant Controls	N	N	N	Y
Industry Fixed Effects	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y
Rounded N	30,000	26,000	21,000	21,000
R^2	0.12	0.31	0.32	0.32

Table V
Robustness Checks for Firm-Level Analysis

This table presents robustness checks for the estimates of the firm-level impact of debt covenant violations on resource allocation. The unit of observation in each regression is a firm-year pair. Panel A considers a threshold-based definition of covenant violations. The dependent variable is the annual change in natural logarithm of the number of employees aggregated across establishments. Columns [1] and [2] consider alternative covenant violation definitions based on covenants threshold data. Column [1] defines a covenant violation to occur if either the net worth or current ratio falls below their respective thresholds in the current but not previous year. Column [2] requires either a reported covenant violation in a SEC 10-K or 10-Q filing or either net worth or current ratio to fall below a threshold. Columns [3] to [5] use the covenant violation definition from [1], but restrict the sample to firm-year observations where relevant accounting variables are within ±20, 15, and 10 percent of the covenant threshold. Panel B repeats the baseline estimation using a one-year lagged (placebo) covenant violation. A placebo covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the next year but not the current nor previous years. Panel C considers the subsample of borrowers with renegotiated credit agreements that may contain covenants with direct restrictions on capital expenditure. The New Capital Expenditure Restriction indicator variable equals one when the new contract contains a capital expenditure restriction and the previous contract for the same borrower did not. The Old Capital Expenditure Restriction indicator variable equals one when the new contract contains a capital expenditure restriction and New Capital Expenditure Restriction is equal to zero. Covenant controls and fixed effects are described in Table II. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Panel A: Threshold-Based Violations					
Dependent Variable: ΔLog(Employment)			RDD Bandwidth (Percent)		
			±20	±15	±10
	[1]	[2]	[3]	[4]	[5]
Covenant Violation	-0.061***	-0.040***	-0.047**	-0.038*	-0.040*
	(0.020)	(0.008)	(0.024)	(0.021)	(0.024)
Operating Cash Flow	0.317***	0.128***	0.237***	0.317**	0.262**
	(0.090)	(0.026)	(0.103)	(0.113)	(0.123)
Leverage	0.071	-0.118*	-0.115	-0.186	-0.204
	(0.224)	(0.071)	(0.109)	(0.114)	(0.128)
Interest Expense	-3.439	0.509	0.751	0.759	1.171
	(2.411)	(0.717)	(1.001)	(1.100)	(1.189)
Net Worth	0.012	0.049	-0.003	-0.034	(0.039)
	(0.104)	(0.027)	(0.098)	(0.100)	(0.108)
Current Ratio	-0.020	-0.002	-0.006	-0.010	-0.007
	(0.026)	(0.006)	(0.011)	(0.010)	(0.010)
Market-to-Book	0.033	0.063***	0.039***	0.033**	0.013
	(0.040)	(0.009)	(0.013)	(0.016)	(0.018)
Lagged Covenant Controls	Y	Y	N	N	N
Higher-Order Covenant Controls	Y	Y	N	N	N
Industry Fixed Effects	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y
Rounded N	4,000	22,000	2,000	2,000	1,000
R^2	0.13	0.12	0.17	0.17	0.18

Panel B: Placebo Violations (One-Year Lag)

Dependent Variable:	ΔLog(Emp.)	ΔLog(Payroll)	ΔEmployees / Avg. Assets	ΔPayroll / Avg. Assets	Symmetric Emp. Growth
	[1]	[2]	[3]	[4]	[5]
Covenant Violation	0.009	-0.013	-0.019	0.030	0.013
	(0.013)	(0.013)	(0.014)	(0.552)	(0.034)
Covenant Controls	Y	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y	Y
Rounded N	21,000	21,000	21,000	21,000	21,000
R^2	0.10	0.10	0.02	0.07	0.16

Panel C: Capital Expenditure Restrictions

Dependent Variable: ΔLog(Employment)

	[1]	[2]	[3]	[4]
Old Capital Expenditure Restriction	0.012	0.018	0.022	0.022
	(0.015)	(0.017)	(0.018)	(0.018)
New Capital Expenditure Restriction	-0.090***	-0.070*	-0.067*	-0.065*
	(0.036)	(0.036)	(0.036)	(0.036)
Operating Cash Flow		-0.041	0.143	0.405*
		(0.113)	(0.181)	(0.232)
Leverage		0.094	-0.015	-0.067
		(0.077)	(0.114)	(0.263)
Interest Expense		0.683	1.110	2.457
		(0.758)	(1.032)	(2.544)
Net Worth		0.120**	0.127	0.108
		(0.061)	(0.092)	(0.124)
Current Ratio		0.012	0.011	-0.009
		(0.011)	(0.011)	(0.031)
Market-to-Book		0.040***	0.050***	-0.031
		(0.010)	(0.015)	(0.045)
Lagged Covenant Controls	N	N	Y	Y
Higher-Order Covenant Controls	N	N	N	Y
Industry Fixed Effects	Y	Y	Y	Y
Year Fixed Effects	Y	Y	Y	Y
Rounded N	3,000	2,000	2,000	2,000
R^2	0.04	0.13	0.13	0.13

Table VI
Resource Allocation and Establishment Industry Focus

This table presents estimates of the within-firm impact of debt covenant violations on resource allocation among establishments within the core and peripheral industry focus of the firm. The unit of observation in each regression is a establishment-year pair. Core (peripheral) establishments are establishments operating in three-digit SIC industries that account for more than (less than) 25% of the firm's total employment expenditures. The dependent variables in columns [1] to [4] and [5] are the annual change in the (log) number of employees and a dummy variable indicating whether an establishment is closed or not, respectively. A covenant violation occurs when a firms reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable:	ΔLog(Employment)				Est. Closure
	[1]	[2]	[3]	[4]	[5]
Covenant Violation × Core	-0.027*	-0.026*	-0.048***	-0.049***	0.013***
	(0.015)	(0.016)	(0.018)	(0.019)	(0.001)
Covenant Violation × Peripheral	-0.084***	-0.090***	-0.103***	-0.097***	0.039***
	(0.036)	(0.035)	(0.040)	(0.038)	(0.002)
Establishment Controls	Y	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y	Y
Higher-Order Covenant Controls	N	N	N	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y
Rounded N	3,000,000	2,500,000	2,000,000	2,000,000	2,000,000
R^2	0.13	0.14	0.15	0.15	0.14

Table VII
Robustness Checks for the Analysis of Establishment Industry Focus

This table presents robustness checks for the estimates of the within-firm impact of debt covenant violations on resource allocation among establishments based on alternative classifications of establishments' industry focus. The unit of observation in each regression is a establishment-year pair. Columns [1] and [2] define peripheral establishments as establishments operating in 4-digit SIC industries accounting for less than 25% of the firm's total employment expenditures. In columns [3] and [4], they are establishments operating in 3-digit SIC industries that account for less than 50% of these expenditures. The dependent variables in columns [1] and [3], and [2] and [4] are annual change in the (log) number of employees, and a dummy variable indicating whether the establishment is closed, respectively. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Alternative Measurement:	4-Digit SIC		50 Percent Cutoff	
Dependent Variable:	ΔLog(Emp.)	Est. Closure	ΔLog(Emp.)	Est. Closure
	[1]	[2]	[3]	[4]
Covenant Violation × Core	-0.048***	0.013***	-0.050***	0.012***
	(0.018)	(0.001)	(0.019)	(0.001)
Covenant Violation × Peripheral	-0.094***	0.036***	-0.085***	0.031***
	(0.034)	(0.002)	(0.033)	(0.001)
Establishment Controls	Y	Y	Y	Y
Covenant Controls	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y
Rounded N	2,000,000	2,000,000	2,000,000	2,000,000
R^2	0.15	0.14	0.15	0.14

Table VIII
Resource Allocation and Establishment Productivity

This table presents estimates of the within-firm impact of debt covenant violations on resource allocation among productive and unproductive manufacturing establishments. The unit of observation in each regression is an establishment-year pair. The dependent variable in columns [1] to [8] is the annual change in the (log) number of employees and in column [9] a dummy variable indicating whether the establishment is closed. In columns [1] to [4] and [9] each establishment is classified as productive or unproductive depending on its within-firm total factor productivity (TFP) ranking. An establishment is considered productive (unproductive) if its corresponding TFP rank is above (below) the median TFP of the establishments belonging to the firm in a given year. Column [5] uses the within-industry total factor productivity to rank establishments. Columns [6] to [8] use three measures of labor productivity: value-added per labor hour, output divided by total labor hours, and wage per hour. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable:	ΔLog(Employment)								Est. Closure
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Covenant Violation × Productive	-0.057*	-0.051	-0.045	-0.040	-0.013	-0.018	-0.029	0.035	0.008
	(0.031)	(0.033)	(0.037)	(0.039)	(0.041)	(0.040)	(0.040)	(0.045)	(0.008)
Covenant Violation × Unproductive	-0.190***	-0.188***	-0.142***	-0.135***	-0.143***	-0.134***	-0.128***	-0.181***	0.026***
	(0.037)	(0.041)	(0.046)	(0.048)	(0.045)	(0.044)	(0.045)	(0.050)	(0.008)
Establishment Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	N	N	N	Y	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	80,000	65,000	50,000	50,000	50,000	50,000	50,000	50,000	60,000
R^2	0.30	0.32	0.34	0.34	0.34	0.34	0.34	0.34	0.32

Table IX
Establishment Productivity and Investment

This table presents estimates of the within-firm impact of debt covenant violations on resource allocation among productive and unproductive manufacturing establishments. The unit of observation in each regression is an establishment-year pair. The dependent variable the annual change in investment given by establishment-level capital expenditures over capital stock. In columns [1] to [4] each establishment is classified as productive or unproductive depending on its within-firm total factor productivity (TFP) ranking. An establishment is considered productive (unproductive) if its corresponding TFP rank is above (below) the median TFP of the establishments belonging to the firm in a given year. Column [5] uses the within-industry total factor productivity to rank establishments. Column [6] uses return on capital to measure capital productivity. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable: ΔInvestment Rate						
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × Productive	-0.004	0.006	0.006	0.004	0.007	-0.002
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Covenant Violation × Unproductive	-0.027***	-0.020***	-0.022***	-0.024***	-0.022***	-0.015**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)
Establishment Controls	Y	Y	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y	Y	Y
Higher-Order Covenant Controls	N	N	N	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y
Rounded N	70,000	60,000	50,000	50,000	50,000	50,000
R^2	0.25	0.26	0.26	0.26	0.26	0.26

Table X
Interaction Between Establishment Industry Focus and Productivity

This table presents estimates of how the within-firm impact of debt covenant violations on resource allocation among establishments within the core and peripheral industry focus of the firm interacts with establishment productivity. The sample is restricted to manufacturing firms. The unit of observation in each regression is a establishment-year pair. Core (peripheral) establishments are establishments operating in three-digit SIC industries that account for more than (less than) 25% of the firm's total employment expenditures. The dependent variables in columns [1] to [3] and [4] to [6] are the annual change in the (log) number of employees and a dummy variable indicating whether an establishment is closed or not, respectively. In columns [2] and [5] ([3] and [6]) each establishment is classified as productive or unproductive depending on its within-firm (within-three-digit SIC industry) total factor productivity (TFP) ranking. An establishment is considered productive if its corresponding TFP rank is above the median TFP of the establishments belonging to the firm (industry) in a given year, and unproductive otherwise. A covenant violation occurs when a firms reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable:	ΔLog(Employment)			Establishment Closure		
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × Core	-0.065**			0.015***		
	(0.031)			(0.006)		
Covenant Violation × Peripheral	-0.136***			0.027**		
	(0.040)			(0.011)		
Covenant Violation × Core × Productive		-0.028	-0.003		0.010	0.006
		(0.033)	(0.031)		(0.007)	(0.009)
Covenant Violation × Core × Unproductive		-0.108**	-0.119**		0.022**	0.022***
		(0.044)	(0.053)		(0.009)	(0.008)
Covenant Violation × Peripheral × Productive		-0.069	-0.045		0.023	0.014
		(0.066)	(0.054)		(0.018)	(0.018)
Covenant Violation × Peripheral × Unproductive		-0.225***	-0.215**		0.035**	0.038**
		(0.077)	(0.097)		(0.018)	(0.018)
Establishment Controls	Y	Y	Y	Y	Y	Y
Covenant Controls	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y
Rounded N	50,000	50,000	50,000	60,000	60,000	60,000
R^2	0.34	0.34	0.34	0.32	0.32	0.32

Table XI
Importance of Establishment Operating Risk for Resource Allocation

This table presents estimates of the impact of debt covenant violations on within-firm resource allocation as a function of the operating risk. The sample is restricted to manufacturing firms. The unit of observation in each regression is an establishment-year pair. In panel A the dependent variable is the annual change in the (log) number of employees and in panel B it is a dummy variable indicating whether the establishment is closed. In columns [1] to [4] each establishment is classified as safe or risky depending on the cross-sectional standard deviation of operating margins across Census establishments in the same three-digit SIC code. Operating margins are calculated as the total value of shipments minus all input costs divided by the value of shipments made by the establishment. An establishment is considered safe (risky) if its corresponding industry standard deviation of operating margins is below (above) the median of all industries in a given year. Column [5] classifies establishments as safe or risky instead based on the cross-sectional standard deviation of operating margins across Compustat firms at the three-digit SIC code level. Column [6] ([7]) uses the time-series standard deviation of the average industry operating margin at the three-digit SIC level based on Compustat firms using 5 (10) years of data. Column [8] uses the time-series standard deviation of the average industry ratio of operating cash flows to assets at the three-digit SIC level based on Compustat firms using 5 years of data. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Panel A: Employment

Dependent Variable: ΔLog(Employment)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation × Safe	-0.010	-0.005	-0.012	-0.004	-0.043	-0.030	-0.031	-0.053
	(0.044)	(0.044)	(0.049)	(0.051)	(0.045)	(0.040)	(0.042)	(0.037)
Covenant Violation × Risky	-0.154***	-0.149***	-0.119***	-0.113***	-0.107***	-0.157***	-0.152***	-0.155***
	(0.033)	(0.037)	(0.034)	(0.036)	(0.038)	(0.052)	(0.046)	(0.057)
Establishment Controls	Y	Y	Y	Y	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	N	N	N	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	80,000	65,000	50,000	50,000	50,000	50,000	50,000	50,000
R^2	0.30	0.32	0.34	0.34	0.34	0.34	0.34	0.34

Panel B: Establisment Closure

Dependent Variable: Establishment Closure

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation × Safe	0.006	0.003	0.003	0.002	0.006	0.014*	0.013*	0.015**
	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)	(0.007)	(0.007)	(0.006)
Covenant Violation × Risky	0.031***	0.028***	0.025***	0.024***	0.026***	0.024***	0.026***	0.025***
	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.009)
Establishment Controls	Y	Y	Y	Y	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	N	N	N	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	100,000	80,000	60,000	60,000	60,000	60,000	60,000	60,000
R^2	0.27	0.29	0.32	0.32	0.32	0.32	0.32	0.32

Table XII
Interaction between Establishment Productivity and Operating Risk

This table presents estimates of how the within-firm impact of debt covenant violations on resource allocation among establishments with varying productivity interacts with operating risk. The sample is restricted to manufacturing firms. The unit of observation in each regression is an establishment-year pair. In panel A the dependent variable is the annual change in the (log) number of employees and in panel B it is a dummy variable indicating whether the establishment is closed. In columns [1] to [5] ([6]) each establishment is classified as productive or unproductive depending on its within-firm (within-three-digit SIC industry) total factor productivity (TFP) ranking. An establishment is considered productive if its corresponding TFP rank is above the median TFP of the establishments belonging to the firm (industry) in a given year, and unproductive otherwise. In column [1] each establishment is classified as safe or risky depending on the cross-sectional standard deviation of operating margins across Census establishments in the same three-digit SIC code. Operating margins are calculated as the total value of shipments minus all input costs divided by the value of shipments made by the establishment. An establishment is considered safe (risky) if its corresponding industry standard deviation of operating margins is below (above) the median of all industries in a given year. Column [2] classifies establishments as safe or risky instead based on the cross-sectional standard deviation of operating margins across Compustat firms at the three-digit SIC code level. Column [3] ([4]) uses the time-series standard deviation of the average industry operating margin at the three-digit SIC level based on Compustat firms using 5 (10) years of data. Column [5] uses the time-series standard deviation of the average industry ratio of operating cash flows to assets at the three-digit SIC level based on Compustat firms using 5 years of data. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Panel A: Employment

Dependent Variable: ΔLog(Employment)

	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × Productive × Safe	0.071	0.011	-0.002	-0.008	-0.016	0.019
	(0.068)	(0.052)	(0.048)	(0.044)	(0.045)	(0.076)
Covenant Violation × Productive × Risky	-0.080	-0.067	-0.095	-0.082	-0.099	-0.025
	(0.051)	(0.054)	(0.061)	(0.056)	(0.063)	(0.049)
Covenant Violation × Unproductive × Safe	-0.086	-0.105	-0.065	-0.061	-0.099*	-0.027
	(0.086)	(0.071)	(0.055)	(0.055)	(0.055)	(0.096)
Covenant Violation × Unproductive × Risky	-0.162***	-0.166***	-0.234***	-0.237***	-0.220***	-0.185***
	(0.063)	(0.059)	(0.077)	(0.070)	(0.083)	(0.055)
Establishment Controls	Y	Y	Y	Y	Y	Y
Covenant Controls	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y
Rounded N	50,000	50,000	50,000	50,000	50,000	50,000
R^2	0.34	0.34	0.34	0.34	0.34	0.34

Panel B: Establishment Closure

Dependent Variable: Establishment Closure

	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × Productive × Safe	-0.012	-0.002	0.010	0.010	0.009	-0.003
	(0.013)	(0.011)	(0.009)	(0.009)	(0.008)	(0.015)
Covenant Violation × Productive × Risky	0.022**	0.021**	0.017	0.016	0.020*	0.013
	(0.009)	(0.009)	(0.011)	(0.011)	(0.012)	(0.010)
Covenant Violation × Unproductive × Safe	0.018	0.014	0.020*	0.015	0.022**	0.007
	(0.017)	(0.012)	(0.011)	(0.010)	(0.010)	(0.016)
Covenant Violation × Unproductive × Risky	0.026***	0.031***	0.030**	0.037***	0.030**	0.033***
	(0.010)	(0.011)	(0.013)	(0.012)	(0.015)	(0.010)
Establishment Controls	Y	Y	Y	Y	Y	Y
Covenant Controls	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y
Rounded N	60,000	60,000	60,000	60,000	60,000	60,000
R^2	0.32	0.32	0.32	0.32	0.32	0.32

Appendix A: Variable Definitions

This appendix presents definitions for the variables used throughout the paper.

Variable	Definition	Source
Panel A: Firm-Level Variables		
ΔLog(Employment)	Annual change in the natural logarithm of number of employees summed across establishments	LBD
ΔLog(Payroll)	Annual change in the natural logarithm of payroll summed across establishments	LBD
Symmetric Employment Growth	Twice the annual change in total employees over the sum of current and lagged employment	LBD
ΔEmployees/Average Assets	Annual change in the number of employees divided by the average of current and lagged book assets	LBD, Compustat
ΔPayroll/Average Assets	Annual change in payroll divided by the average of current and lagged book assets	LBD, Compustat
Establishment Closure	Indicator variable equal to one if the firm closes any establishment in the current year	LBD
Covenant Violation	Indicator variable equal to one if the firm violates a covenant in the current but not previous year	Nini et al. (2012)
New Capital Expenditure Restriction	Indicator variable equal to one if the new contract contains a capital expenditure restriction and the previous contract for the same borrower does not	Nini et al. (2009)
Old Capital Expenditure Restriction	Indicator variable equal to one if the new contract contains a capital expenditure restriction and New Capital Expenditure Restriction is equal to zero	Nini et al. (2009)
Operating Cash Flow	Operating income before depreciation divided by average assets	Compustat
Leverage	Sum of debt in current liabilities and long-term debt divided by total assets	Compustat
Interest Expense	Interest expense divided by average assets	Compustat
Net Worth	Stockholders equity divided by total assets	Compustat
Current Ratio	Current assets divided by current liabilities	Compustat
Market-to-Book	Market value of equity minus book equity (adjusted for deferred taxes) divided by total asets	Compustat
Panel B: Establishment-Level Variables		
ΔLog(Employment)	Annual change in the establishment-level natural logarithm of number of employees	LBD
ΔInvestment Rate	Annual change in establishment-level capital expenditures divided by capital stock	CMF/ASM
Establishment Closure	Indicator variable equal to one if the establishment is closed	LBD
Covenant Violation	Indicator variable equal to one if the parent firm had a covenant violation in the current but not previous year	Nini et al. (2012)
Age	Number of years since the first year the establishment first appears in the LBD	LBD
Establishments per Firm	The total number of establishments of the parent firm	LBD
Establishments per Segment	The average number of establishments per three-digit industry segment of the parent firm	LBD
Core	Establishment operates in three-digit SIC industry containing at least 25% of firm employment	LBD
Total Factor Productivity	Establishment-level log total factor productivity computed following Foster et al. (2013)	CMF/ASM
Labor Productivity	Average wage defined as payroll divided by number of employees	LBD
Labor Productivity (Alt. 1)	Value-added per labor hour defined as sales minus materials and energy costs divided labor hours	CMF/ASM
Labor Productivity (Alt. 2)	Output divided by total labor hours	CMF/ASM
Labor Productivity (Alt. 3)	Wage per hour defined as payroll divided by total labor hours	CMF/ASM
Return on Capital	Sales minus material and energy costs and payroll divided by establishment-level capital stock	CMF/ASM
Operating Risk	Cross-sectional volatility of establishment operating margins at three-digit SIC code level	CMF/ASM
Operating Risk (Alt. 1)	Cross-sectional volatility of firm operating margins at the three-digit SIC code level	CMF/ASM
Operating Risk (Alt. 2)	5-year time-series volatility of average industry operating margin at the three-digit SIC level	Compustat
Operating Risk (Alt. 3)	10-year time-series volatility of average industry operating margin at the three-digit SIC level	Compustat
Operating Risk (Alt. 4)	5-year time-series volatility of average industry ratio of operating cash flows to assets at the three-digit SIC level	Compustat
Operating Risk (Alt. 5)	Cross-sectional volatility of establishment return on capital at three-digit SIC code level	CMF/ASM

Internet Appendix for "Creditor Control Rights and Resource Allocation within Firms"

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Appendix IA.I: Firm-Level Analysis with Additional Fixed Effects

This table presents estimates of the firm-level impact of debt covenant violations on resource allocation controlling for additional fixed effects. The unit of observation in each regression is a firm-year pair. The dependent variable is the annual change in natural logarithm of the number of employees aggregated across establishments. A covenant violation occurs when a firms reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Covenant controls include operating cash flow scaled by average assets, the leverage ratio, the interest expense, the net worth, the current ratio, and the market-to-book ratio. Higher-order and lagged covenant controls refer to the second and third power and one-year lag of the covenant controls, respectively. All variables are defined in Appendix A. Industry fixed effects are based on three-digit SIC codes. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denotes 1%, 5%, and 10% statistical significance.

Dependent Variable: ΔLog(Employment)			
	[1]	[2]	[3]
Covenant Violation	-0.040***	-0.040***	-0.035***
	(0.009)	(0.009)	(0.011)
Covenant Controls	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y
Industry Fixed Effects	Y	N	N
Year Fixed Effects	Y	N	N
State Fixed Effects	Y	N	N
Industry × State Fixed Effects	N	Y	N
State × Year Fixed Effects	N	Y	N
Industry × Year Fixed Effects	N	Y	N
Industry × State × Year Fixed Effects	N	N	Y
Rounded N	21,000	21,000	21,000
R^2	0.12	0.17	0.25

Appendix IA.II: Summary Statistics for Sample of Renegotiated Contracts

This table provides firm-level sample summary statistics for the set of firms with renegotiated contracts. The New Capital Expenditure Restriction indicator variable equals one when the new contract contains a capital expenditure restriction and the previous contract for the same borrower did not. The Old Capital Expenditure Restriction indicator variable equals one when the new contract contains a capital expenditure restriction and New Capital Expenditure Restriction is equal to zero. The unit of observation is a firm-year. All variables are defined in Appendix A.

	Full Sample			Old Restriction			New Restriction		
	N	Mean	Std.	N	Mean	Std.	N	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]	[4]	[5]	[6]
ΔLog(Employment)	2,000	0.020	0.392	1,000	0.004	0.382	500	-0.069	0.594
Operating Cash Flow	2,000	0.136	0.103	1,000	0.124	0.096	500	0.095	0.074
Leverage	2,000	0.312	0.199	1,000	0.348	0.228	500	0.353	0.177
Interest Expense	2,000	0.024	0.019	1,000	0.030	0.024	500	0.030	0.023
Net Worth	2,000	0.397	0.214	1,000	0.373	0.274	500	0.353	0.219
Current Ratio	2,000	1.864	0.192	1,000	1.940	1.070	500	1.823	0.959
Market-to-Book	2,000	1.634	1.098	1,000	1.376	0.810	500	1.146	0.534

Appendix IA.III: Labor Productivity Split Based on LBD Data

This table presents estimates of the firm-level impact of debt covenant violations on asset allocation across productive and unproductive establishments based on data from the LBD. The unit of observation in each regression is an establishment-year pair. The dependent variable is the annual change in the (log) number of employees. Establishment productivity is estimated using the average wage at the establishment-level relative to other establishments in the same 3-digit SIC industry. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls and fixed effects are described in Table II. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable: ΔLog(Employment)				
	[1]	[2]	[3]	[4]
Covenant Violation × Productive	0.030	0.030	-0.011	-0.012
	(0.023)	(0.024)	(0.029)	(0.030)
Covenant Violation × Unproductive	-0.215***	-0.223***	-0.255***	-0.254***
	(0.034)	(0.038)	(0.041)	(0.041)
Establishment Controls	Y	Y	Y	Y
Covenant Controls	N	Y	Y	Y
Lagged Covenant Controls	N	N	Y	Y
Higher-Order Covenant Controls	N	N	N	Y
Firm Fixed Effects	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y
Rounded N	3,000,000	2,500,000	2,000,000	2,000,000
R^2	0.13	0.14	0.15	0.15

Appendix IA.IV: Correlation Structure Among Establishment Characterstics

This table provides the correlation structure among establishment characteristics. All variables are defined in Appendix A.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Operating Risk	1.000							
Operating Risk (Alt. 1)	0.243	1.000						
Operating Risk (Alt. 2)	-0.005	-0.019	1.000					
Operating Risk (Alt. 3)	0.046	0.035	0.526	1.000				
Operating Risk (Alt. 4)	0.001	-0.095	0.304	0.236	1.000			
Operating Risk (Alt. 5)	0.302	0.242	-0.065	-0.029	-0.074	1.000		
Core	0.023	0.018	-0.036	-0.048	-0.067	0.012	1.000	
TFP	0.009	0.024	0.014	0.018	0.022	0.038	0.034	1.000

Appendix IA.V: Investment and the Interaction Between Establishment Productivity and Operating Risk

This table presents estimates of how the within-firm impact of debt covenant violations on resource allocation among establishments with varying productivity interacts with operating risk. The sample is restricted to manufacturing firms. The unit of observation in each regression is an establishment-year pair. The dependent variable the annual change in investment given by establishment-level capital expenditures over capital stock. In columns [1], [3], and [6] each establishment is classified as safe or risky depending on the cross-sectional standard deviation of operating margins across Census establishments in the same three-digit SIC code. Operating margins are calculated as the total value of shipments minus all input costs divided by the value of shipments made by the establishment. An establishment is considered safe (risky) if its corresponding industry standard deviation of operating margins is below (above) the median of all industries in a given year. Columns [2] and [4] classify establishments as safe or risky instead based on the cross-sectional standard deviation of operating margins across Compustat firms at the three-digit SIC code level. Column [5] uses the cross-sectional standard deviation of the return on capital across Census establishments in the same three-digit SIC code. Return on capital is calculated as the total value of shipments minus all input costs divided by the capital stock of the establishment. In columns [3] to [5] ([6]) each establishment is classified as productive or unproductive depending on its within-firm (within-three-digit SIC industry) total factor productivity (TFP) ranking. An establishment is considered productive if its corresponding TFP rank is above the median TFP of the establishments belonging to the firm (industry) in a given year, and unproductive otherwise. A covenant violation occurs when a firm reports a covenant violation in a SEC 10-K or 10-Q filing in the current but not previous year. Establishment controls include age, the number of establishments, and the number of establishments per segment. Covenant controls are described in Table II. Industry fixed effects are based on establishments' three-digit SIC codes. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denote statistical significance at the 1, 5, and 10 percent level.

Dependent Variable: ΔInvestment Rate						
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × Safe	0.001	0.004				
	(0.008)	(0.007)				
Covenant Violation × Risky	-0.010	-0.014*				
	(0.007)	(0.008)				
Covenant Violation × Productive × Safe			0.011	0.017*	0.020	0.014
			(0.011)	(0.009)	(0.012)	(0.009)
Covenant Violation × Productive × Risky			0.001	-0.003	-0.001	0.004
			(0.009)	(0.009)	(0.008)	(0.010)
Covenant Violation × Unproductive × Safe			-0.012	-0.012	-0.008	-0.013
			(0.010)	(0.009)	(0.012)	(0.011)
Covenant Violation × Unproductive × Risky			-0.028***	-0.032***	-0.030***	-0.025***
			(0.009)	(0.010)	(0.009)	(0.009)
Establishment Controls	Y	Y	Y	Y	Y	Y
Covenant Controls	Y	Y	Y	Y	Y	Y
Lagged Covenant Controls	Y	Y	Y	Y	Y	Y
Higher-Order Covenant Controls	Y	Y	Y	Y	Y	Y
Firm Fixed Effects	Y	Y	Y	Y	Y	Y
Industry × State × Year Fixed Effects	Y	Y	Y	Y	Y	Y
Rounded N	50,000	50,000	50,000	50,000	50,000	50,000
R^2	0.26	0.26	0.26	0.26	0.26	0.26

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