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

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Appendix IA.I: Including additional fixed effects in baseline analysis

This table presents estimates of the impact of debt covenant violations on resource allocation controlling for additional fixed effects. Panel A is at the firm-level. The dependent variable is the annual change in natural logarithm of the number of employees aggregated across establishments. Panel B is at the establishment-level and the sample is restricted to manufacturing establishments. The dependent variable is either the annual change in the (log) number of employees at a given establishment or a dummy variable indicating whether the establishment is closed. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. 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. Firm controls and fixed effects are described in Table II. Contemporaneous, lagged and higher-order firm controls are included in every regression. As detailed in Equation (2), each regression in Panel B includes direct effects (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, * denotes 1%, 5%, and 10% statistical significance.

Panel A: Firm-level analysis

Dependent variable: Δ*Log(Employment)*

	[1]	[2]	[3]
Covenant Violation	-0.040***	-0.040***	-0.035***
	(0.009)	(0.009)	(0.011)
Firm 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

Panel B: Establishment-level analysis

Dependent variable:	*ΔLog(Employment)*			*Establishment Closure*		
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Core*	–0.072**			0.019***		
	(0.032)			(0.006)		
Covenant Violation × *Peripheral*	–0.210***			0.039***		
	(0.080)			(0.014)		
Covenant Violation × *Productive*		–0.083**			0.017***	
		(0.039)			(0.006)	
Covenant Violation × *Unproductive*		–0.132***			0.029***	
		(0.045)			(0.009)	
Covenant Violation × *Safe*			–0.050			0.007
			(0.049)			(0.008)
Covenant Violation × *Risky*			–0.126***			0.031***
			(0.042)			(0.006)
Establishment fixed effects	Y	Y	Y	Y	Y	Y
Establishment controls	Y	Y	Y	Y	Y	Y
Firm fixed effects	Y	Y	Y	Y	Y	Y
Firm controls	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	0.56	0.55	0.55	0.55	0.51	0.55

Appendix IA.II: Additional summary statistics for establishment-level tests

This table provides sample summary statistics for establishment *Age* and *Size* across the various establishment subsamples. Statistics in Panels F and G are based on the LBD sample, whereas all other samples are based on the CMF/ASM. All variables are defined in Appendix A.

Establishment characteristic:	*Age*		*Size*	
	Mean	Std.	Mean	Std.
	[1]	[2]	[3]	[4]
Panel A: Industry focus				
Establishment in firm's core industry	20.99	9.21	203.3	438.6
Establishment in firm's peripheral industry	20.94	8.98	99.29	215.9
Panel B: Productivity				
Establishment is productive	20.88	9.10	166.1	351.6
Establishment is unproductive	21.08	9.15	164.9	403.4
Panel C: Operating risk				
Establishment is safe	21.32	9.22	125.9	319.0
Establishment is risky	20.86	9.10	178.0	392.4
Panel D: Industry concentration				
Establishment belongs to firm in concentrated industry	20.87	9.05	152.6	315.8
Establishment belongs to firm in competitive industry	21.03	9.16	172.3	405.1
Panel E: Credit rating				
Establishment belongs to unrated firm	19.94	9.41	87.9	192.2
Establishment belongs to rated firm	21.34	8.99	193.1	419.9
Panel F: CEO's own project				
Establishment is CEO's own project	4.49	3.38	36.97	78.68
Establishment is project from prior CEO	15.20	8.46	54.11	106.1
Panel G: Proximity to CEO's home				
Establishment is close to CEO's home	13.55	9.14	67.49	130.6
Establishment is far from CEO's home	12.85	8.86	64.20	126.0
Panel H: Lender industry experience				
Establishment belongs to firm with experienced lender	21.25	9.24	190.0	420.3
Establishment belongs to firm with lender lacking experience	20.60	9.09	160.1	236.4
Panel I: Lender industry market share				
Establishment belongs to firm with high-market-share lender	21.18	9.20	179.2	404.9
Establishment belongs to firm with low-market-share lender	20.45	9.47	89.37	168.7

Appendix IA.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 annual change in the number of employees divided by average assets, the annual change in 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. Firm controls and fixed effects are described in Table II. Contemporaneous, lagged and higher-order firm controls are included in every regression. All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable:	Δ*Log(Payroll)*	Δ*Employees / Avg. Assets*	Δ*Payroll / 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 firm controls	Y	Y	Y	Y
Higher-order firm 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

Appendix IA.IV: Further analysis of labor productivity

This table presents provides further estimates of the impact of debt covenant violations on asset allocation across productive and unproductive establishments based on measures of labor productivity. 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. In panel A, establishment productivity is estimated using the average wage at the establishment-level relative to other establishments in the same three-digit SIC industry. In panel B, establishments are ranked on the basis of value-added per labor hour in the same three-digit SIC industry. Value-added per labor hour is calculated as a the ratio of the total value of shipments minus material and energy costs divided by total labor hours. 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. Firm controls and fixed effects are described in Table II. Contemporaneous, lagged and higher-order firm controls are included where indicated. As detailed in Equation (2), each regression includes direct effects (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Average wage

Dependent variable: Δ*Log(Employment)*

	[1]	[2]	[3]	[4]
Covenant Violation × *Productive*	-0.090***	-0.091***	-0.125***	-0.125***
	(0.022)	(0.024)	(0.029)	(0.030)
Covenant Violation × *Unproductive*	-0.103***	-0.111***	-0.141***	-0.138***
	(0.033)	(0.037)	(0.040)	(0.039)
Establishment controls	Y	Y	Y	Y
Firm controls	N	Y	Y	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	0.02	0.03	0.03	0.03

Panel B: Value-added per labor hour

Dependent variable: Δ*Log(Employment)*

	[1]	[2]	[3]	[4]
Covenant Violation × *Productive*	-0.079**	-0.049	-0.028	-0.022
	(0.031)	(0.033)	(0.038)	(0.040)
Covenant Violation × *Unproductive*	-0.144***	-0.162***	-0.138***	-0.131***
	(0.033)	(0.038)	(0.042)	(0.044)
Establishment controls	Y	Y	Y	Y
Firm controls	N	Y	Y	Y
Firm fixed effects	Y	Y	Y	Y
Industry × state × year fixed effects	Y	Y	Y	Y
Rounded N	80,000	65,000	50,000	50,000
R^2	0.30	0.32	0.34	0.34

Appendix IA.V: Correlation structure among establishment characteristics

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

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
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		
Size	0.063	0.048	0.023	0.005	-0.032	0.014	0.138	0.045	1.000	
Age	-0.015	-0.025	0.014	-0.015	-0.030	-0.037	0.002	-0.006	0.249	1.000

Appendix IA.VI: Establishment operating risk and within-firm resource allocation under alternative measurement

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. Firm 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. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

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
Firm controls	N	Y	Y	Y	Y	Y	Y	Y
Lagged firm controls	N	N	Y	Y	Y	Y	Y	Y
Higher-order firm 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
Firm controls	N	Y	Y	Y	Y	Y	Y	Y
Lagged firm controls	N	N	Y	Y	Y	Y	Y	Y
Higher-order firm 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

Appendix IA.VII: Interaction between establishment productivity and operating risk under alternative measurement

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. Firm controls are described in Table II. Contemporaneous, lagged and higher-order firm controls are included in every regression. Industry fixed effects are based on establishments' three-digit SIC codes. As detailed in Equation (3), each regression includes intermediate interaction terms (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Employment

Dependent variable: $\Delta Log(Employment)$

	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Productive* × *Safe*	0.046	-0.020	-0.021	-0.027	-0.032	-0.016
	(0.064)	(0.053)	(0.045)	(0.044)	(0.039)	(0.062)
Covenant Violation × *Productive* × *Risky*	-0.088	-0.085	-0.118**	-0.104*	-0.131**	-0.054
	(0.059)	(0.054)	(0.057)	(0.057)	(0.064)	(0.046)
Covenant Violation × *Unproductive* × *Safe*	-0.037	-0.070	-0.040	-0.036	-0.077	0.007
	(0.096)	(0.071)	(0.055)	(0.055)	(0.052)	(0.073)
Covenant Violation × *Unproductive* × *Risky*	-0.160**	-0.140**	-0.201***	-0.205***	-0.179**	-0.165***
	(0.071)	(0.058)	(0.069)	(0.070)	(0.083)	(0.049)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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*	-0.007	0.002	0.012	0.012	0.011	0.002
	(0.012)	(0.011)	(0.009)	(0.009)	(0.008)	(0.015)
Covenant Violation × *Productive* × *Risky*	0.023***	0.022**	0.019*	0.018*	0.024**	0.015
	(0.009)	(0.009)	(0.011)	(0.011)	(0.012)	(0.010)
Covenant Violation × *Unproductive* × *Safe*	0.012	0.008	0.016*	0.012	0.020**	0.003
	(0.013)	(0.013)	(0.010)	(0.010)	(0.009)	(0.017)
Covenant Violation × *Unproductive* × *Risky*	0.024**	0.030***	0.027**	0.034***	0.024	0.030***
	(0.011)	(0.010)	(0.013)	(0.012)	(0.015)	(0.010)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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 IA.VIII: Within-firm investment decisions and establishment operating risk under alternative measurement

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. Firm controls are described in Table II. Contemporaneous, lagged and higher-order firm controls are included in every regression. Industry fixed effects are based on establishments' three-digit SIC codes. As detailed in Equations (2) and (3), each regression includes direct effects and intermediate interaction terms (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable: Δ*Investment 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*			0.010	0.017*	0.021*	0.011
			(0.011)	(0.009)	(0.012)	(0.009)
Covenant Violation × *Productive* × *Risky*			0.000	-0.005	-0.002	0.002
			(0.009)	(0.009)	(0.008)	(0.010)
Covenant Violation × *Unproductive* × *Safe*			-0.011	-0.011	-0.008	-0.011
			(0.010)	(0.009)	(0.012)	(0.011)
Covenant Violation × *Unproductive* × *Risky*			-0.027***	-0.030***	-0.028***	-0.023**
			(0.009)	(0.010)	(0.009)	(0.010)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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

Appendix IA.IX: Summary statistics for establishment-level agency tests

This table provides sample summary statistics for the subset of firm-years used in the establishment-level agency tests. All variables are defined in Appendix A.

	Full sample			Nonviolators			Violators		
	N	Mean	Std.	N	Mean	Std.	N	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Panel A: Full LBD sample									
Operating Cash Flow	21,000	0.105	0.117	20,000	0.106	0.118	1,000	0.074	0.090
Leverage	21,000	0.244	0.226	20,000	0.240	0.225	1,000	0.344	0.231
Interest Expense	21,000	0.020	0.021	20,000	0.020	0.021	1,000	0.028	0.023
Net Worth	21,000	0.463	0.278	20,000	0.467	0.278	1,000	0.362	0.263
Current Ratio	21,000	2.390	1.641	20,000	2.418	1.655	1,000	1.759	1.121
Market-to-Book	21,000	1.866	1.333	20,000	1.891	1.347	1,000	1.316	0.784
Panel B: CEO's own project subsample									
Operating Cash Flow	10,000	0.146	0.086	9,000	0.148	0.086	1,000	0.101	0.083
Leverage	10,000	0.237	0.184	9,000	0.234	0.182	1,000	0.299	0.202
Interest Expense	10,000	0.017	0.015	9,000	0.016	0.015	1,000	0.022	0.018
Net Worth	10,000	0.458	0.220	9,000	0.461	0.219	1,000	0.399	0.226
Current Ratio	10,000	2.139	1.287	9,000	2.152	1.297	1,000	1.896	1.062
Market-to-Book	10,000	1.897	1.178	9,000	1.918	1.186	1,000	1.471	0.911
Panel C: Close to CEO's home subsample									
Operating Cash Flow	2,000	0.151	0.079	2,000	0.153	0.078	1,000	0.098	0.067
Leverage	2,000	0.261	0.175	2,000	0.258	0.174	1,000	0.335	0.190
Interest Expense	2,000	0.018	0.014	2,000	0.017	0.014	1,000	0.025	0.017
Net Worth	2,000	0.406	0.207	2,000	0.409	0.206	1,000	0.326	0.223
Current Ratio	2,000	1.754	1.057	2,000	1.757	1.059	1,000	1.683	0.991
Market-to-Book	2,000	1.964	1.250	2,000	1.986	1.259	1,000	1.450	0.860

Appendix IA.X: Lead lender summary statistics by industry market share

This table provides summary statistics for lead lenders by industry market share. The sample is restricted to lead lender-years where: (i) lenders are commercial banks; (ii) lenders submit regulatory filings in the U.S.; and, (iii) years are between 2000 and 2009. Lenders have a high (low) industry market share in a given 3-digit SIC industry-year if they have above (below) median loan origination volume based on the Dealscan data. Lenders are matched to their bank holding company parents. Bank condition ratios are calculated at the bank holding company-year level following Acharya and Mora (2015) using data from the Federal Financial Institutions Examination Council Consolidated Financial Statements for Holding Companies (Form FR Y9-C).*Bank Assets* is the natural logarithm of total assets. *Capital Ratio* is the ratio of book equity to total assets. *NPL Ratio* is the ratio of loans past due 90 days or more and nonaccruals to total loans. *Net Charge-Off Ratio* is the ratio charge offs minus recoveries over total assets. *Unused Loan Commitment Ratio* is unused commitments divided by the sum of unused commitments and loans. *Liquid Assets Ratio* is the sum of cash, federal funds sold and reverse repos, and securities (excluding MBS/ABS) to total assets. *Wholesale Funding Ratio* is the sum of large-time deposits, deposits booked in foreign offices, subordinated debt and debentures, gross federal funds purchased, repos, and other borrowed money divided by total assets. *Net Wholesale Funding Ratio* is wholesale funds less liquid assets over total assets. We drop lender-years involving mergers (years featuring asset growth greater than 10 percent in any quarter) and small bank holding companies (total assets less than $100m).

Lender type:	High market share		Low market share	
	Mean	Std.	Mean	Std.
	[1]	[2]	[3]	[4]
Bank Assets	19.88	1.419	19.50	1.559
Capital Ratio	0.112	0.046	0.112	0.060
NPL Ratio	0.017	0.016	0.016	0.015
Net Charge-Off Ratio	0.003	0.002	0.003	0.002
Unused Loan Commitment Ratio	0.398	0.092	0.379	0.094
Liquid Assets Ratio	0.155	0.090	0.140	0.090
Wholesale Funding Ratio	0.367	0.112	0.347	0.106
Net Wholesale Funding Ratio	0.212	0.140	0.210	0.138

Appendix IA.XI: Lender industry experience with additional lender controls

This table shows how lender experience interacts with the impact of debt covenant violations on establishment resource allocation while controlling for additional lender characteristics. Panel A includes lender fixed effects and a lender size control (total dollar value of loans extended in the current year) and Panel B includes lender-by-year fixed effects. The sample is restricted to manufacturing firms. The unit of observation in each regression is an establishment-year pair. We examine lenders' industry experience defined according to whether the borrower's lead lender lends to other firms in the same industry or if they have a significant (above-median) market share of lending to the borrower's industry or not. If a borrower has multiple lead lenders then the lead bank arranging the most amount of credit in dollar terms is selected. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. The dependent variables, a covenant violation, and control variables are described in Table III and defined in Appendix A. Contemporaneous, lagged and higher-order firm controls are included in every regression. As detailed in Equation (3), each regression includes intermediate interaction terms (point estimates not shown). Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Lender fixed effects and size control

Lender characteristic (Z=1):	Has industry experience				Has high market share			
Dependent variable:	Δ*Log(Employment)*		*Establishment Closure*		Δ*Log(Employment)*		*Establishment Closure*	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation × *Core* × (Z=0)	-0.018		-0.007		0.026		-0.011	
	(0.073)		(0.020)		(0.116)		(0.026)	
Covenant Violation × *Core* × (Z=1)	-0.068		0.008		-0.068		0.009	
	(0.046)		(0.010)		(0.042)		(0.009)	
Covenant Violation × *Peripheral* × (Z=0)	0.037		-0.001		0.023		-0.021	
	(0.092)		(0.027)		(0.133)		(0.028)	
Covenant Violation × *Peripheral* × (Z=1)	-0.150***		0.035***		-0.134***		0.033***	
	(0.038)		(0.012)		(0.050)		(0.010)	
Covenant Violation × *Productive* × (Z=0)		0.046		-0.012		-0.019		-0.016
		(0.119)		(0.027)		(0.123)		(0.044)
Covenant Violation × *Productive* × (Z=1)		-0.059		0.011		-0.067		0.017
		(0.049)		(0.011)		(0.041)		(0.011)
Covenant Violation × *Unproductive* × (Z=0)		-0.028		-0.002		0.128		-0.009
		(0.059)		(0.016)		(0.092)		(0.025)
Covenant Violation × *Unproductive* × (Z=1)		-0.155***		0.026**		-0.136***		0.021**
		(0.044)		(0.011)		(0.042)		(0.008)
Establishment controls	Y	Y	Y	Y	Y	Y	Y	Y
Firm controls	Y	Y	Y	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
Lender size control	Y	Y	Y	Y	Y	Y	Y	Y
Lender fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
R^2	0.33	0.35	0.31	0.31	0.33	0.35	0.34	0.31

Panel B: Lender-by-year fixed effects

Lender characteristic (Z=1):	Has industry experience				Has high market share			
Dependent variable:	Δ*Log(Employment)*		*Establishment Closure*		Δ*Log(Employment)*		*Establishment Closure*	
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation × *Core* × (Z=0)	-0.007		-0.017		0.075		-0.026	
	(0.096)		(0.021)		(0.122)		(0.030)	
Covenant Violation × *Core* × (Z=1)	-0.075		0.010		-0.079*		0.010	
	(0.053)		(0.011)		(0.044)		(0.011)	
Covenant Violation × *Peripheral* × (Z=0)	-0.000		-0.002		0.007		-0.028	
	(0.118)		(0.031)		(0.177)		(0.034)	
Covenant Violation × *Peripheral* × (Z=1)	-0.164***		0.039***		-0.152***		0.035***	
	(0.036)		(0.012)		(0.051)		(0.011)	
Covenant Violation × *Productive* × (Z=0)		0.074		-0.023		0.000		-0.012
		(0.110)		(0.027)		(0.133)		(0.046)
Covenant Violation × *Productive* × (Z=1)		-0.067		0.015		-0.079*		0.017
		(0.052)		(0.012)		(0.043)		(0.011)
Covenant Violation × *Unproductive* × (Z=0)		-0.049		-0.005		0.153		-0.037
		(0.079)		(0.021)		(0.108)		(0.029)
Covenant Violation × *Unproductive* × (Z=1)		-0.163***		0.029***		-0.151***		0.026***
		(0.043)		(0.011)		(0.044)		(0.009)
Establishment controls	Y	Y	Y	Y	Y	Y	Y	Y
Firm controls	Y	Y	Y	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
Lender × year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
R^2	0.33	0.35	0.31	0.31	0.33	0.35	0.34	0.31

Appendix IA.XII: Placebo covenant violations

This table examines the dynamics effects of debt covenant violations on resource allocation. In Panel A (B, C, and D) the unit of observation in each regression is a firm-year (establishment-year) pair. Each regression repeats the baseline estimation using either a one- or two-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 ("one-year lag") or in the year after the next ("two-year lag"), but not the current nor previous years. The dependent variable is either the annual change in the (log) number of employees, the annual change in investment given by establishment-level capital expenditures over capital stock, or a dummy variable indicating whether the establishment is closed. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. Firm controls and fixed effects are described in Table II. Contemporaneous, lagged and higher-order firm controls are included in every regression. As detailed in Equation (2), each regression includes direct effects (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Firm-level

Placebo timing:	One-year lag		Two-year lag	
Dependent variable:	$\Delta Log(Emp.)$	*Est. Closure*	$\Delta Log(Emp.)$	*Est. Closure*
	[1]	[2]	[3]	[4]
Covenant Violation	0.009	0.010	0.004	-0.023*
	(0.013)	(0.014)	(0.014)	(0.136)
Firm 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	0.07	0.32	0.39	0.41

Panel B: Establishment industry focus

Placebo timing:	One-year lag			Two-year lag		
Dependent variable:	$\Delta Log(Emp.)$	*Est. Closure*	$\Delta Inv.\ Rate$	$\Delta Log(Emp.)$	*Est. Closure*	$\Delta Inv.\ Rate$
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Core*	0.015	0.000	0.017	0.016	0.027	0.038
	(0.015)	(0.006)	(0.029)	(0.014)	(0.087)	(0.064)
Covenant Violation × *Peripheral*	-0.027	0.010	-0.009	-0.041	0.047	0.018
	(0.034)	(0.014)	(0.078)	(0.029)	(0.087)	(0.059)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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	60,000	50,000	50,000	60,000	50,000
R^2	0.35	0.32	0.49	0.35	0.32	0.49

Panel C: Establishment productivity

Placebo timing:	One-year lag			Two-year lag		
Dependent variable:	Δ*Log(Emp.)*	*Est. Closure*	Δ*Inv. Rate*	Δ*Log(Emp.)*	*Est. Closure*	Δ*Inv. Rate*
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Productive*	0.014	-0.002	-0.012	0.012	0.026	0.056
	(0.018)	(0.008)	(0.036)	(0.015)	(0.087)	(0.068)
Covenant Violation × *Unproductive*	0.011	-0.003	0.041	-0.007	0.039	0.006
	(0.022)	(0.008)	(0.038)	(0.019)	(0.087)	(0.054)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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	60,000	50,000	50,000	60,000	50,000
R^2	0.35	0.32	0.49	0.35	0.32	0.49

Panel D: Establishment operating risk

Placebo timing:	One-year lag			Two-year lag		
Dependent variable:	Δ*Log(Emp.)*	*Est. Closure*	Δ*Inv. Rate*	Δ*Log(Emp.)*	*Est. Closure*	Δ*Inv. Rate*
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Safe*	0.012	-0.012	-0.026	0.022	0.018	0.080
	(0.021)	(0.010)	(0.050)	(0.021)	(0.088)	(0.085)
Covenant Violation × *Risky*	0.013	0.002	0.009	-0.004	0.037	0.071
	(0.016)	(0.007)	(0.042)	(0.015)	(0.088)	(0.093)
Establishment controls	Y	Y	Y	Y	Y	Y
Firm 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	60,000	50,000	50,000	60,000	50,000
R^2	0.35	0.32	0.49	0.35	0.32	0.49

Appendix IA.XIII: Matched sample analysis

This table reports summary statistics and point estimates from a difference-in-differences matching estimator. Each firm violating a covenant is matched to candidate control firm using a nearest-neighbor propensity score matching with replacement and a tolerance of 10^{-5}. Propensity scores are estimated for each firm based on current and lagged annual firm performance metrics (*Operating Cash Flow*, *Leverage*, *Interest Expense*, *Net Worth*, *Current Ratio*, and *Market-to-Book*). Panel A shows the sample averages of these performance metrics for the violator and matched control samples. In Panel B repeats the baseline firm and establishment regressions for the matched sample. The unit of observation in columns [1] and [5] is a firm-year pair and establishment-year pairs in the remaining columns. The dependent variable is either the annual change in the (log) number of employees or a dummy variable indicating whether the establishment is closed. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. As detailed in Equation (2), each regression includes direct effects (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Summary statistics for violators and matched control

	Violators			Matched control			Diff. in	
	N	Mean	Std.	N	Mean	Std.	means	t-stat.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Operating Cash Flow$_t$	1,000	0.050	0.174	1,000	0.057	0.220	-0.007	-1.032
Leverage$_t$	1,000	0.315	0.280	1,000	0.317	0.309	-0.002	-0.216
Interest Expense$_t$	1,000	0.027	0.031	1,000	0.027	0.046	-0.000	-0.002
Net Worth$_t$	1,000	0.393	0.371	1,000	0.396	0.437	-0.003	-0.198
Current Ratio$_t$	1,000	2.048	1.725	1,000	2.075	1.955	-0.027	-0.445
Market-to-Book$_t$	1,000	1.533	1.305	1,000	1.545	1.150	-0.012	-0.360
Operating Cash Flow$_{t-1}$	1,000	0.093	0.158	1,000	0.094	0.179	-0.001	-0.278
Leverage$_{t-1}$	1,000	0.284	0.236	1,000	0.296	0.246	-0.012	-1.315
Interest Expense$_{t-1}$	1,000	0.025	0.032	1,000	0.026	0.041	-0.001	-1.334
Net Worth$_{t-1}$	1,000	0.424	0.912	1,000	0.427	0.324	-0.003	-0.109
Current Ratio$_{t-1}$	1,000	2.256	1.680	1,000	2.293	2.716	-0.037	-0.454
Market-to-Book$_{t-1}$	1,000	1.672	1.761	1,000	1.681	1.379	-0.009	-0.149

Panel B: Matching estimates

Dependent variable:	Δ*Log(Employment)*				*Establishment Closure*			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation	-0.090**				0.015**			
	(0.037)				(0.007)			
Covenant Violation × *Core*		-0.033*				0.012*		
		(0.019)				(0.007)		
Covenant Violation × *Peripheral*		-0.130***				0.025**		
		(0.039)				(0.011)		
Covenant Violation × *Productive*			-0.063				0.014*	
			(0.041)				(0.008)	
Covenant Violation × *Unproductive*			-0.124**				0.017**	
			(0.054)				(0.008)	
Covenant Violation × *Safe*				0.003				-0.001
				(0.052)				(0.011)
Covenant Violation × *Risky*				-0.126***				0.021**
				(0.044)				(0.009)
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
State fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Rounded N	5,000	5,000	5,000	5,000	6,000	6,000	6,000	6,000
R^2	0.10	0.08	0.10	0.10	0.10	0.10	0.10	0.10

Appendix IA.XIV: Threshold-based violations

This table presents threshold-based estimates of the impact of debt covenant violations on resource allocation. Panel A considers threshold-based definitions of covenant violations. 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. 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. Column [3] uses an instrumental variables implementation in which a reported covenant violation is first regressed on the (minimum) distance to the threshold across the net worth or current ratios, and, in the second stage (output shown), employment is regressed on the fitted value of *Covenant Violation*. The first-stage F-test for nullity of the instrument is above 10 and so the instrument is not weak. Columns [4] to [6] use the covenant violation definition from [1], but restrict the sample to firm-year observations where relevant accounting variables are within ±20, 15, 10 percent of the covenant threshold. Column [7] uses the mean square error-optimal bandwidth (based on the Calonico et al. (2014) implementation of the Imbens and Kalyanaraman (2011) rule). Panel B examines establishment-level outcomes based on the model in column [3] of Panel A. The dependent variable is either the annual change in the (log) number of employees at a given establishment or a dummy variable indicating whether the establishment is closed. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. As detailed in Equation (2), each regression includes direct effects (point estimates not shown). Panel C reports balancing tests for firm-level covariates. Columns [1] to [4] take the model in column [4] of Panel A and replaces the dependent variable with *Operating Cash Flow*, *Leverage*, *Interest Expense*, and *Market-to-Book*, respectively. Firm 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. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Firm-level outcomes

Dependent variable: Δ*Log(Employment)*				Sharp RDD bandwidth (percent)			
	OLS	OLS	IV	±20	±15	±10	Optimal
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Covenant Violation	-0.061***	-0.040***	-0.057***	-0.047**	-0.038*	-0.040*	-0.051**
	(0.020)	(0.008)	(0.011)	(0.024)	(0.021)	(0.024)	(0.020)
Operating Cash Flow	0.317***	0.128***	0.123***	0.237***	0.317**	0.262**	0.282***
	(0.090)	(0.026)	(0.031)	(0.103)	(0.113)	(0.123)	(0.102)
Leverage	0.071	-0.118*	0.019	-0.115	-0.186	-0.204	-0.107
	(0.224)	(0.071)	(0.024)	(0.109)	(0.114)	(0.128)	(0.111)
Interest Expense	-3.439	0.509	0.136	0.751	0.759	1.171	0.417
	(2.411)	(0.717)	(0.254)	(1.001)	(1.100)	(1.189)	(0.991)
Net Worth	0.012	0.049	0.074***	-0.003	-0.034	(0.039)	-0.008
	(0.104)	(0.027)	(0.019)	(0.098)	(0.100)	(0.108)	(0.100)
Current Ratio	-0.020	-0.002	-0.005***	-0.006	-0.010	-0.007	-0.007
	(0.026)	(0.006)	(0.002)	(0.011)	(0.010)	(0.010)	(0.011)
Market-to-Book	0.033	0.063***	0.014***	0.039***	0.033**	0.013	0.040***
	(0.040)	(0.009)	(0.003)	(0.013)	(0.016)	(0.018)	(0.013)
Lagged firm controls	Y	Y	Y	N	N	N	N
Higher-order firm controls	Y	Y	Y	N	N	N	N
Industry fixed effects	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y	Y
Rounded N	4,000	22,000	4,000	2,000	2,000	1,000	2,000
R^2	0.13	0.12	0.14	0.17	0.17	0.18	0.17

Panel B: RDD for establishment-level outcomes

Dependent variable:	Δ*Log(Employment)*			*Establishment Closure*		
	[1]	[2]	[3]	[4]	[5]	[6]
Covenant Violation × *Core*	-0.042			0.012		
	(0.052)			(0.011)		
Covenant Violation × *Peripheral*	-0.137**			0.044***		
	(0.054)			(0.013)		
Covenant Violation × *Productive*		-0.006			0.003	
		(0.049)			(0.011)	
Covenant Violation × *Unproductive*		-0.117**			0.024*	
		(0.051)			(0.014)	
Covenant Violation × *Safe*			-0.018			0.002
			(0.056)			(0.011)
Covenant Violation × *Risky*			-0.091**			0.030***
			(0.046)			(0.011)
Industry fixed effects	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y
State fixed effects	Y	Y	Y	Y	Y	Y
Rounded N	4,000	4,000	4,000	4,000	4,000	4,000
R^2	0.18	0.15	0.15	0.20	0.07	0.14

Panel C: Balancing tests for firm performance metrics

Dependent variable:	*Operating Cash Flow*	*Leverage*	*Interest Expense*	*Market-to-Book*
	[1]	[2]	[3]	[4]
Covenant Violation	-0.011	0.011	-0.000	-0.001
	(0.010)	(0.010)	(0.001)	(0.082)
Industry fixed effects	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y
Rounded N	500	500	500	500
R^2	0.60	0.90	0.88	0.50

Appendix IA.XV: Analysis of capital expenditure restrictions

This table presents estimates of the firm-level effects of debt covenant violations for the set of firms with renegotiated contracts. Panel A shows sample summary statistics. Panel B shows the measured effect on employment following the approach in Table II. 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.

Panel A: Summary statistics

	Full sample			Old restriction			New restriction		
	N	Mean	Std.	*N*	Mean	Std.	*N*	Mean	Std.
	[1]	[2]	[3]	[4]	[5]	[6]	[4]	[5]	[6]
Δ*Log(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

Panel B: Effects of capital expenditure restrictions

Dependent variable: Δ*Log(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 firm controls	N	N	Y	Y
Higher-order firm 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

Appendix IA.XVI. Addressing potential measurement error in market-to-book

This table examines the sensitivity of the impact of debt covenant violations to measurement error in the market-to-book ratio. The dependent variable is the annual change in natural logarithm of the number of employees at the firm (columns [1] and [5]) or establishment level (remaining columns). Columns [1] to [4] estimate these relations incorporating higher-order cumulants of the data (as advocated by, e.g., Erickson et al., 2014; Erickson and Whited, 2000). Variables used in the estimation are demeaned with respect to the stated fixed effects (indicated with a "D"). All cumulant conditions up to degree five are incorporated into the estimation. Columns [5] to [8] use *Macro-q* instead of market-to-book as an alternative measure of investment opportunities. *Macro-q* is defined as the sum of debt and equity less inventory divided by the start-of-period capital stock. 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. An establishment is considered productive if its within-firm total factor productivity (TFP) rank is above the median TFP of the establishments belonging to the firm in a given year, and unproductive otherwise. An establishment is considered safe (risky) if its industry standard deviation of operating margins is below (above) the median of all industries in a given year. Controls and fixed effects are described in Tables II and III. Where indicated, regression includes direct effects (point estimates not shown). All variables are defined in Appendix A. Standard errors (in parentheses) are clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable: Δ*Log(Employment)*								
Measurement error approach:	Higher-order cumulants estimation				Substitute *Macro-q*			
Level of estimation:	Firm	Establishment			Firm	Establishment		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Covenant Violation	-0.047***				-0.046***			
	(0.008)				(0.008)			
Covenant Violation × *Core*		-0.035*				-0.080***		
		(0.021)				(0.028)		
Covenant Violation × *Peripheral*		-0.147***				-0.200***		
		(0.040)				(0.064)		
Covenant Violation × *Productive*			-0.026				-0.065*	
			(0.024)				(0.033)	
Covenant Violation × *Unproductive*			-0.114***				-0.165***	
			(0.031)				(0.041)	
Covenant Violation × *Safe*				0.006				-0.004
				(0.035)				(0.044)
Covenant Violation × *Risky*				-0.090***				-0.148***
				(0.023)				(0.036)
Firm controls	Y	Y	Y	Y	Y	Y	Y	Y
Establishment controls	N/A	Y	Y	Y	N/A	Y	Y	Y
Firm fixed effects	N/A	D	D	D	N	Y	Y	Y
Industry fixed effects	D	N/A	N/A	N/A	Y	N/A	N/A	N/A
Year fixed effects	D	N/A	N/A	N/A	Y	N/A	N/A	N/A
Direct effects	N/A	D	D	N/A	N	Y	Y	N/A
Industry × state × year fixed effects	N/A	D	D	D	N	Y	Y	Y
Rounded N	26,000	65,000	65,000	65,000	26,000	65,000	65,000	65,000
R^2	0.091	0.32	0.32	0.32	0.11	0.33	0.32	0.32