# Senior Lender Monitoring and Bankruptcy Inefficiencies

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## Motivation & Research Question

### Senior Lender Control in Bankruptcy

- Firms increasingly enter bankruptcy having pledged virtually all their assets to senior lenders (Hotchkiss et al., 2023)
- The level of secured debt increases the sales of going concern businesses, increases asset sales and liquidations (Gilson et al., 2021;Ayotte and Morrison, 2009)
- DIP financing further strengthens creditor influence, it is over-collateralized and spreads high despite near-zero risk (Triantis,2020; Eckbo et al., 2023)

**Question: How does senior lender control change as firms approach bankruptcy?**

## Overview

- **Within-firm changes** in lenders' monitoring behaviors and control rights prior to bankruptcy
- First evidence on how senior lender **pre-bankruptcy monitoring behaviors affect bankruptcy outcome**
  - Recovery rate for senior lenders (↑) and junior lenders (↓)
  - Fire sale in bankruptcy (↑)
  - Inter-creditor conflicts (↑)
- **Collateral value** as the key mechanism driving changes in lender behavior

## Data (Bankruptcy & Loan)

### Bankruptcy & Loan Data

- UCLA-LoPucki Bankruptcy Data (290 firms)
- Bloomberg Law: Debt recovery rate by instrument, 363 fire sale, inter-creditor opposition on DIP loan
- Corporate filings 10-K, 10-Q, 8-K
  - Event-level: Loan paths of all loans outstanding 5 years before the bankruptcy (Origination, Restatement, Amendment, Waiver, Forbearance, Termination)
  - Quarterly-level: Financial covenants (Types, Thresholds)

### Classification of Financial Covenant

- General debt-related
  - All debt ratio (debt to EBITDA, capitalization, asset ratio), Coverage ratio covenant (interest, fixed charge, debt service coverage)
  - 76 percent of loans with maintenance covenants have leverage ratio in 2018 (Brauning, Ivashina, and Ozdagli, 2022)
- Other covenants
  - Cash flow (EBITDA, net income), Secured debt (senior secured debt ratio, first lien debt ratio), Collateral (collateral coverage ratio, asset coverage ratio, loan-to-value ratio), Liquidity (liquidity, availability, cash, current ratio), Net worth (net worth, tangible net worth)
- Springing covenant
  - Triggered only if the borrower's line of credit is used beyond a contractually determined threshold

## Changes in Covenants

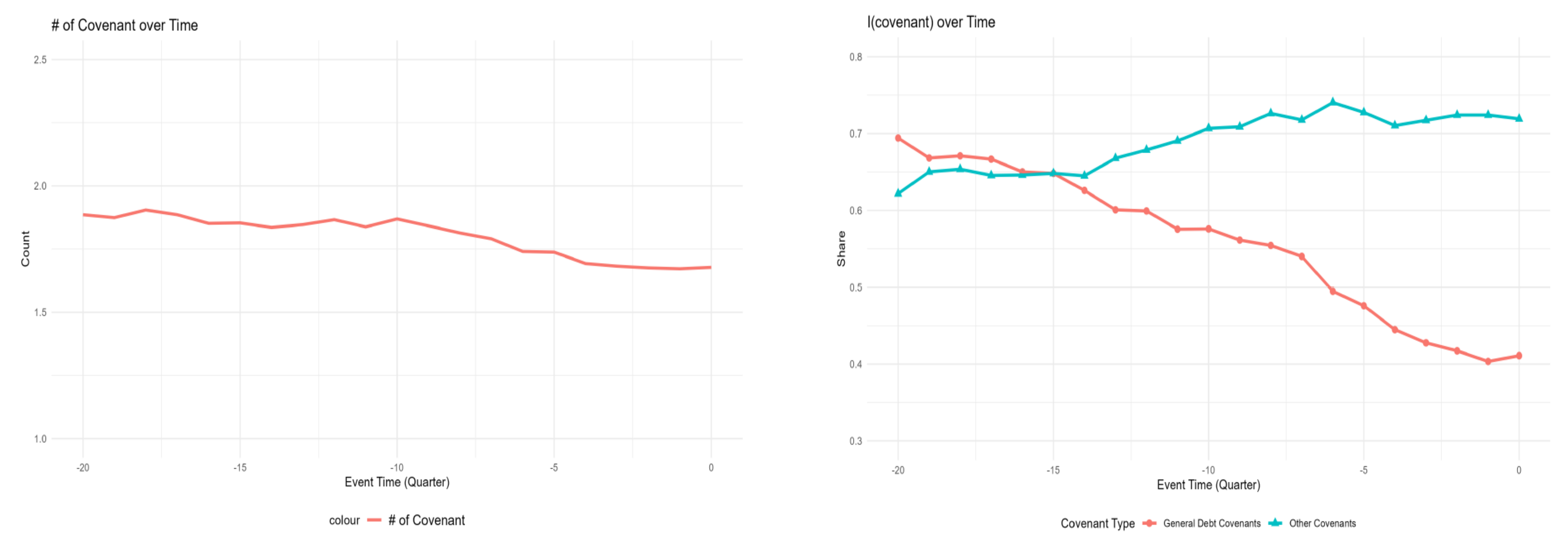

Figure 1: Number and Type of Covenants in Event time

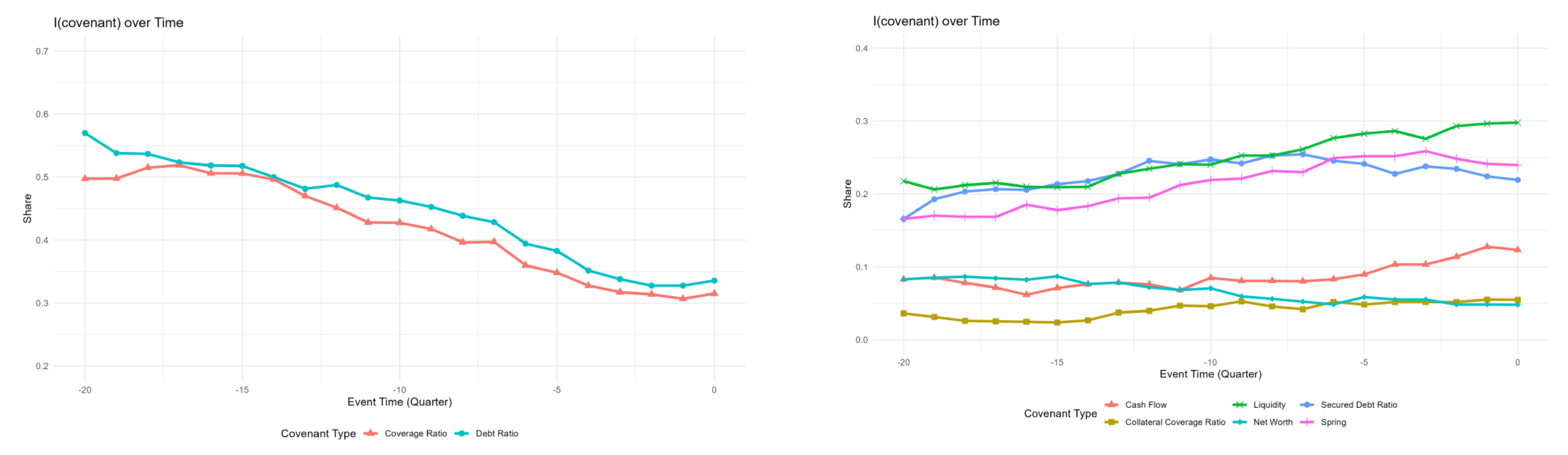

Figure 2: Breakdown of the Type of Covenants in Event time

### Groups based on the history of covenants:

- **Always**: Always had the general debt-related covenant
- **Shift-Other**: Shifted away from general debt-related covenant to other covenants
- **Shift-Spring**: Shifted away from general debt-related covenant to springing covenants
- **Shift-None**: Shifted away from general debt-related covenant to no covenants
- **Never**: Never had general debt-related covenant

## Covenant Change (Extensive) & Bankruptcy Outcome

| | Total | Secured | Junior | Unsecured |
|---|---|---|---|---|
| Never | 1.121 | −1.500 | −9.227* | −12.013** |
| | (4.007) | (3.895) | (5.066) | (5.250) |
| Shift-Spring | −6.035 | 8.059 | −14.939** | −11.476* |
| | (5.539) | (5.382) | (6.308) | (6.551) |
| Shift-None | 3.017 | 6.658 | −6.223 | 6.470 |
| | (6.260) | (6.465) | (7.540) | (8.701) |
| Shift-Other | −6.176 | 1.818 | −1.756 | −4.072 |
| | (4.488) | (4.334) | (5.078) | (5.241) |
| Constant | 80.923*** | 86.601*** | 58.619*** | 58.783*** |
| | (9.993) | (9.716) | (13.862) | (15.322) |
| Year Fixed Effects | Yes | Yes | Yes | Yes |
| $N$ | 281 | 279 | 229 | 197 |
| Adjusted $R^2$ | 0.036 | 0.062 | 0.026 | 0.020 |

| | 363 sale | I(objection) | (objecting parties) |
|---|---|---|---|
| Never | 0.177*** | 0.161** | 0.194* |
| | (0.065) | (0.078) | (0.113) |
| Shift-Spring | 0.070 | 0.238** | 0.374** |
| | (0.088) | (0.108) | (0.156) |
| Shift-None | 0.103 | 0.028 | 0.028 |
| | (0.102) | (0.125) | (0.180) |
| Shift-Other | 0.060 | 0.027 | 0.049 |
| | (0.075) | (0.091) | (0.132) |
| Constant | 0.210 | 0.641*** | 0.751*** |
| | (0.163) | (0.196) | (0.282) |
| Year Fixed Effects | Yes | Yes | Yes |
| $N$ | 290 | 279 | 279 |
| Adjusted $R^2$ | 0.012 | 0.012 | −0.0003 |

Table 1: Bankruptcy Outcome by Covenant Structure

- The absence of general covenants (Never group) or their replacement with conditional mechanisms like springing covenants (Shift-Spring group) lead to:
  - Disproportionately lower recovery for junior and unsecured creditors
  - More fire sales in bankruptcy and more objections from other parties

## Covenant Change (Intensive) & Bankruptcy Outcome

- Q: How about the intensive value change?
- A: Look at the covenant threshold change of the Always Group

(Always had the general debt-related covenant)

$$\%\ \text{Change in Covenants} = \frac{1}{6}\sum_{i=1}^{6}\frac{\text{value}_i^{bk} - \text{value}_i^{orig}}{\text{value}_i^{orig}}$$

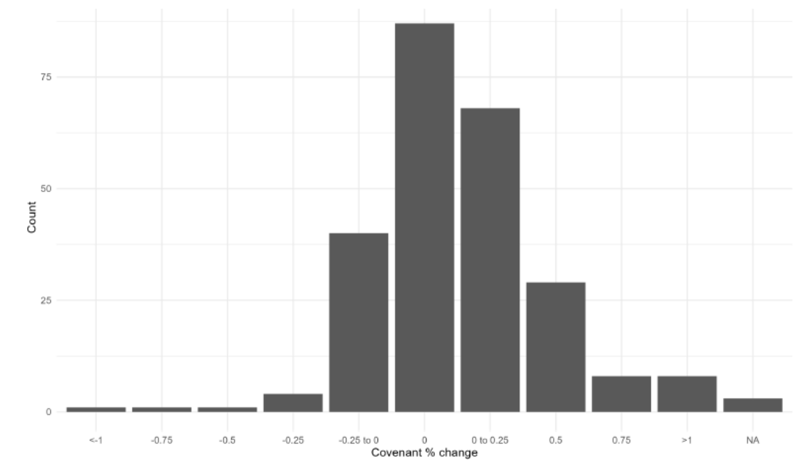

Figure 3: Covenant Value Change for Always Groups

| | Total | Secured | Junior | Unsecured |
|---|---|---|---|---|
| 2nd tercile | −10.468* | −2.103 | −13.975* | −11.965 |
| | (5.637) | (6.067) | (7.227) | (7.675) |
| 3rd tercile | −3.390 | 0.623 | −15.256** | −15.890** |
| | (5.787) | (6.229) | (7.576) | (7.813) |
| Constant | 66.221*** | 80.802*** | 42.832*** | 37.475*** |
| | (4.092) | (4.405) | (5.552) | (5.579) |
| $N$ | 109 | 109 | 90 | 79 |
| Adjusted $R^2$ | 0.015 | −0.017 | 0.033 | 0.031 |

Table 2: Bankruptcy Outcome by Covenant Value Change

- More relaxation of general debt-related covenants leads to:
  - Disproportionately lower recovery for junior and unsecured creditors

## Mechanism: Collateral vs. Debt Outstanding

**Panel A: Liquidation > Outstanding**

| | Always | Shifter | Never | Shift-Spring |
|---|---|---|---|---|
| Liquidation > Outstanding | −0.564* | 0.690** | −0.088 | 0.668 |
| | (0.297) | (0.311) | (0.350) | (0.482) |
| Constant | −1.183 | 0.142 | −1.352 | −1.686 |
| | (1.128) | (0.932) | (1.126) | (1.153) |
| $N$ | 232 | 232 | 232 | 232 |
| Log Likelihood | −145.095 | −130.654 | −113.386 | −66.031 |
| Akaike Inf. Crit. | 324.190 | 295.308 | 260.773 | 166.061 |

**Panel B: Tercile of (Liquidation/Outstanding)**

| | Always | Shifter | Never | Shift-Spring |
|---|---|---|---|---|
| High Tercile | −0.627* | 0.681* | 0.003 | 1.152* |
| | (0.360) | (0.378) | (0.408) | (0.638) |
| Mid Tercile | 0.050 | 0.200 | −0.319 | 0.674 |
| | (0.347) | (0.383) | (0.433) | (0.660) |
| Constant | −1.175 | 0.103 | −1.329 | −2.061* |
| | (1.138) | (0.943) | (1.140) | (1.222) |
| $N$ | 232 | 232 | 232 | 232 |
| Log Likelihood | −144.789 | −131.405 | −113.063 | −65.211 |
| Akaike Inf. Crit. | 325.578 | 298.809 | 262.126 | 166.422 |

- Liquidation value serves as the minimum recovery amount
- **Intuition:** "Obviously, a fully collateralized lender is immunized from borrower performance and has no incentive to monitor" (Rajan and Winton, 1995)
- **Hypothesis:** Debt amount relative to liquidation value dictates the marginal benefit of monitoring

**Result:** Fully collateralized lenders are more likely to shift away from general debt-related covenants, especially to springing covenants

## Conclusion

- Bank's monitoring behaviors change as firms get more distressed
  - Why? Monitoring and renegotiation are costly
  - How? On the extensive margin, changes in covenant types; on the intensive margin, relaxation of existing covenant thresholds
  - Exercise of conventional control rights (violation detection and renegotiation) is not valued as much
- Senior creditors are protected, junior creditors face lower recovery
  - Less information is transmitted to the market due to changes in delegated monitoring
- The bankruptcy process becomes more inefficient
- When collateral liquidation value is high, changes in monitoring behavior are more likely