Labor Unemployment Risk and Corporate Financing Decisions

Agrawal and Matsa JFE 2013

February 11, 2019

Introduction

Unemployment Risk

- Workers face adverse consequences from unemployment
- Workers require a higher premium to take on more unemployment risk
- Firms can factor in this cost and manage it
- Hard to measure
- Hard to disentangle from other financial policy considerations

Introduction

Background Theory

- Workers facing unemployment risk require higher wages, additional benefits, improved working conditions
- Firms must compensate ex ante for workers to bear these risks
- Compensation increases with risks

Introduction

Background Theory

- Compensation demanded by workers facing unemployment risk should affect firms' financing policy
- More debt gives greater probability of financial distress
- Higher financial distress expands worker's exposure to unemployment risk
- Then, raising leverage will raise worker's "premium"

$NPV[\text{Debt Issue}] = NPV[\text{Tax Shield}] + NPV[\text{Cost of Financial Distress}] + \Delta\ \text{Labor Expense}$

Introduction

Contribution and Hypothesis

- Because of labor frictions, the cost of debt becomes higher. *Because debt financing increases the probability of layoffs in distress, it raises the compensation that workers require today to bear increased unemployment risk*.
- Provides novel empirical evidence that worker unemployment risk significantly impacts firms' corporate financial policies

Contribution and Hypothesis

Hypothesis:

Firms choose conservative financial policies partly as a means of mitigating worker exposure to unemployment risk

Design

- Overcome challenge of measuring unemployment risk by exploiting changes in unemployment laws
- More generous state unemployment benefits make layoffs less costly and reduce workers' demand for compensation

Prediction

Increasing generosity of state unemployment benefits lead to higher firm leverage and lower interest coverage ratios

Design

Unemployment Benefits

- Use state unemployment benfits to identify impact of shock to unemployment risk on financial policy
- Must assume that residual variation of UI benefits, after sufficient controls, is uncorrelated with unobservable covariates affecting corporate leverage.

Design

Tests

1. Show relation between UI generosity and leverage is strong for firms whose workers face greater expected unemployment costs
2. Show relation between UI generosity and firms with tight financing
3. Examine timing of leverage changes to pin a causal link
4. Look at bordering states to test economic conditions
5. Look at other mechanisms: firm UI cost and unions

Institutional Background

- Each state has autonomy in UI benefits
  - Can select eligibility, wage benefit amounts, duration
- Variation stems largely from maximum bounds and duration
- Economic conditions also contribute to variation
- Political forces also contribute
- Managers may be more willing to layoff worers in times of generous UI

Institutional Background

Meaningful Shock

Then, changes in unemployment benefits make for a meaningful shock to the cost of layoff of workers. Heterogeneity across states helps. Additionally, variation in unemployment insurance laws helps to make a clean setting to look at relation between financial policy and workers exposure to risk.

Data

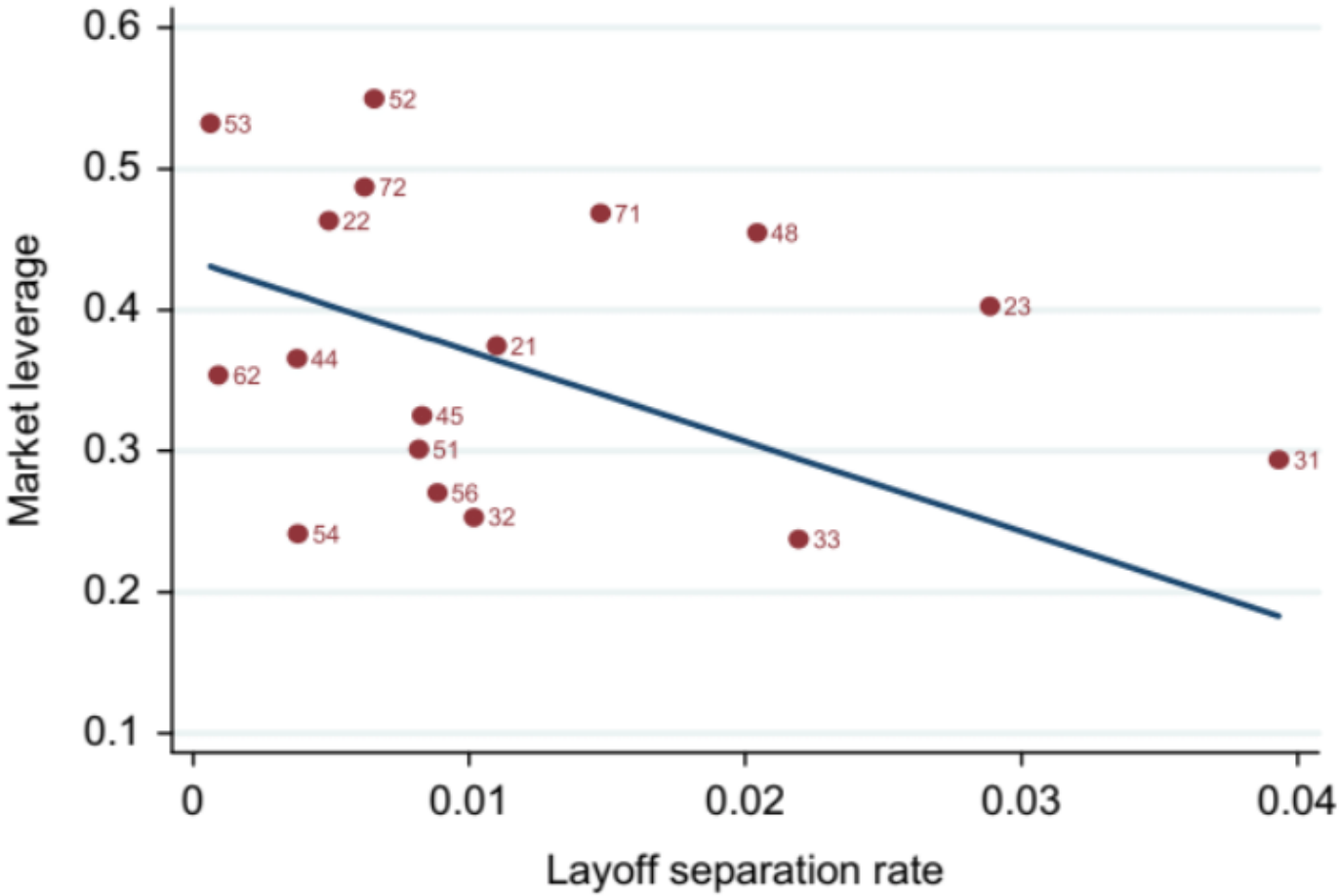

Figure 1: Correlation of layoff separation rate and market leverage

Data

- Collect data on stat UI benefit laws and firm balance sheet characterisitcs
- UI benefits from Dept of Labor 1950 - 2008
- Generosity is measured as maximum benefit amount and duration alllowed

Data

- Variation between max benefits is high ($6000 in MS to $28,000 in MA)
- At some point all states experience changes in state UI benefits over sample period
- States typically increase benefits from 25% to 75%
- No indication that states change laws affecting corporate debt capacity with UI laws
- Correlation between tax rate and log max total benefit is not significant.

Data

- All firms (except financial and utilities) from 1950 -2008
- Non-missing Observations
- 14,000 firms and 140,000 firm years
- Winsorized at 1% tails

Method

- Use a Panel Regression

$$\frac{DEBT_{ist}}{VALUE_{ist}} = \alpha_1 LN(MAX\_UI\_BENEFIT)_{st-1} + X_{ist}\beta + \nu_i + \omega_t + \varepsilon_{ist}$$

where i is firm in state j at time t.

Variables

- X_{it} is set of controls
- ν_i is firm fixed effects
- ω_t is year fixed effects

Controls include proportion of fixed assets, M/B ratio, log of sales, probability of banktrupcy, ROA, state unemployment rate, state GDP.

- Standard errors corrected for clustering at state level

Results

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Table 3
Unemployment insurance laws and firms' capital structures.

This table summarizes the results from firm-panel regressions of total debt divided by assets (market value in Panel A, book value in Panel B) and *log interest coverage* (Panel C) on the natural log of the maximum total potential benefit available under the state's unemployment insurance system in the previous year, and a set of controls. Controls in all regressions include year fixed effects. Where shown, controls also include firm fixed effects, state economic indicators (state unemployment rate and state gross domestic product growth rate), and firm financial controls (proportion of fixed assets market-to-book ratio, natural log of sales, modified Altman *Z*-score, and return on assets). Where indicated, industries are excluded in which a large percentage of the workforce is likely to be geographically dispersed, namely, retail, wholesale, and transport. Standard errors, adjusted for clustering at the state level, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively. OLS=ordinary least squares.

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Total debt/market value						
Log max total benefit$_{t-1}$	0.045***	0.046***	0.057***	0.048***	0.030**	0.045***
	(0.015)	(0.016)	(0.016)	(0.017)	(0.012)	(0.010)
Number of observations	127,233	106,059	87,160	87,160	77,446	1,588
R^2	0.61	0.63	0.62	0.65	0.11	0.64
Panel B: Total debt/book value						
Log max total benefit$_{t-1}$	0.024***	0.031***	0.040***	0.025***	0.012*	0.031***
	(0.009)	(0.011)	(0.010)	(0.009)	(0.006)	(0.007)
Number of observations	127,233	106,059	87,160	87,160	77,446	1,588
R^2	0.58	0.59	0.59	0.68	0.16	0.50
Panel C: Log interest coverage						
Log max total benefit$_{t-1}$	−0.154**	−0.124*	−0.150*	−0.131*	−0.042	−0.381***
	(0.060)	(0.067)	(0.085)	(0.068)	(0.068)	(0.052)
Number of observations	127,233	106,059	87,160	87,160	77,446	1,588
R^2	0.58	0.59	0.58	0.64	0.12	0.54
Sample						
Level of aggregation	Firm-year	Firm-year	Firm-year	Firm-year	Firm-year	State-year
Exclude dispersed industries	No	No	Yes	Yes	Yes	Yes
Control variables						
State economic indicators	No	Yes	Yes	Yes	Yes	Yes
Firm financial controls	No	No	No	Yes	Yes	No
Firm fixed effects	Yes	Yes	Yes	Yes	No	No
State fixed effects	No	No	No	No	No	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Estimation method	OLS	OLS	OLS	OLS	First-differences	Median regression

Figure 2: