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journal homepage: [www.elsevier.com/locate/jfec](http://www.elsevier.com/locate/jfec)Labor unemployment risk and corporate financing decisions <sup>☆</sup>Ashwini K. Agrawal <sup>a</sup>, David A. Matsa <sup>b,\*</sup><sup>a</sup> *The Stern School, New York University, United States*<sup>b</sup> *Kellogg School of Management, Northwestern University, United States*

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## ABSTRACT

This paper presents evidence that firms choose conservative financial policies partly to mitigate workers' exposure to unemployment risk. We exploit changes in state unemployment insurance laws as a source of variation in the costs borne by workers during layoff spells. We find that higher unemployment benefits lead to increased corporate leverage, particularly for labor-intensive and financially constrained firms. We estimate the ex ante, indirect costs of financial distress due to unemployment risk to be about 60 basis points of firm value for a typical BBB-rated firm. The findings suggest that labor market frictions have a significant impact on corporate financing decisions.

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## 1. Introduction

Workers bear significant costs during unemployment. Unemployment risk is a substantial concern for workers: those

who are laid-off often endure significant reductions in consumption (Gruber, 1997), long delays before reemployment (Katz and Meyer, 1990), and significant wage cuts after returning to work (Farber, 2005; Gibbons and Katz, 1991). Displaced workers also suffer psychological and social costs (Kalil and Ziol-Guest, 2008; Kalil and DeLeire, 2010). Workers' concerns about becoming unemployed reduce their labor supply (Brown and Matsa, 2012) and affect firms' policies on layoffs and wage setting, even when they are far from bankruptcy (Topel, 1983, 1984; Li, 1986; Hamermesh and Wolfe, 1990). Despite their magnitude, however, workers' costs of unemployment are largely absent from theories in corporate finance, which typically do not emphasize labor market frictions.

This paper studies the impact of worker unemployment costs on corporate financing decisions. Building on theories by Titman (1984) and Berk, Stanton, and Zechner (2010), we develop and examine the hypothesis that firms choose conservative financial policies partly as a means of mitigating worker exposure to unemployment

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risk.<sup>1</sup> Workers require that firms provide a premium in wages or benefits as compensation for potential job loss (Topel, 1984; Abowd and Ashenfelter, 1981). Firms can choose financial policies that decrease the risk of financial distress and costly layoffs, which implicitly reduce the amount of compensation that workers require to offset unemployment risk. Diminished exposure to unemployment risk through flexible financial policy is likely to be especially important in industries that experience relatively high layoff separation rates and tight financing constraints, as workers in these industries are more likely to experience job loss caused by distress.

Empirical identification of the impact of workers' exposure to unemployment risk on corporate financing decisions is challenging for two reasons. The first obstacle is the precise measurement of workers' exposure to unemployment risk. The second difficulty is distinguishing the impact of worker unemployment costs from other factors that otherwise impact financial policy, such as unobservable investment opportunities. Correlations between leverage and proxies for unemployment risk, such as firm size, capital intensity, and wages, are suggestive but open to many interpretations (Verwijmeren and Derwall, 2010; Chemmanur, Cheng, and Zhang, 2009).

To overcome these challenges, we exploit changes in state unemployment insurance (UI) benefit laws and examine their relation with the corporate financial policies of US firms from 1950 to 2008. Increases in UI benefits impact corporate financing through their impact on workers' exposure to unemployment risk. More generous state unemployment benefits make layoffs less costly and reduce workers' demands that they be compensated by their employers for facing high unemployment risk (Topel, 1984). Because firms have less incentive to use conservative financial policy to reduce worker exposure to job loss, they are able to raise leverage and profit from increased debt tax shields and other benefits associated with debt financing.

Our approach enables us to identify the impact of shocks to unemployment risk on corporate financial policies without requiring explicit measures of worker risk aversion to unemployment. Legally mandated increases in unemployment insurance payments reduce the costs workers face when unemployed. Indeed, UI compensation has economically meaningful effects on workers' behavior and on aggregate labor supply (e.g., Topel and Welch, 1980; Topel, 1984; Meyer, 1990, 1995; Meyer and Mok, 2007; Gormley, Liu, and Zhou, 2010). We verify that increases in state UI benefit generosity are associated with greater state UI payouts and thus provide meaningful shocks to workers' exposure to unemployment risk.

Increases in the generosity of state unemployment insurance benefits are associated with higher firm leverage and lower interest coverage ratios. A 100 log point increase in the maximum total UI benefit is associated with firms

maintaining 4.5 percentage points greater average ratios of debt to assets and 15% lower interest coverage. These relations are empirically robust. The inclusion of controls for firm fixed effects implies that the results reflect average, within-firm changes in capital structure when states increase the generosity of their UI systems. Controls for year fixed effects account for concomitant national trends. We also include a variety of controls for firm financial characteristics and state economic conditions to ensure that the results are not driven by firm-level variation in performance or macroeconomic factors. The results are also robust to various alternate measures of UI benefit generosity. The relation between UI benefits and leverage becomes even stronger when we exclude firms that have a geographically dispersed workforce for which we are likely to measure eligible UI benefits with error.

The identification assumption central to the causal interpretation of these findings is that residual variation in UI benefits—after controlling for a number of factors, such as local economic conditions and firm characteristics—is uncorrelated with unobservable covariates that affect corporate leverage. An important concern that we evaluate in great detail is the possibility that unobserved variation in investment opportunities, or other factors that are not captured by our control variables, could explain changes in both UI benefits and firm leverage decisions. To evaluate the extent to which our estimates are biased by such unobserved heterogeneity, we perform a number of analyses. Collectively, the results of these analyses indicate that our findings are best explained through the channel of unemployment risk on corporate financing choices.

First, we show that the relation between UI generosity and leverage is particularly stark for subsamples of firms whose workers face greater expected unemployment costs. The relation is especially pronounced for firms in industries in which workers face greater risk of unemployment, such as industries with production technologies characterized by greater labor intensity and industries that experience frequent layoffs. Consistent with UI benefits being most beneficial for liquidity constrained workers (Browning and Crossley, 2001; Bloemen and Stancaelli, 2005; Chetty, 2008; Berk and Walden, 2010), the relation is also stronger for firms in industries that employ more low-wage workers and employees who do not own a home. Workers also vary in the speed with which they are able to secure reemployment after job loss because of either heterogeneous search costs or firm-specific human capital; workers who can quickly find employment after job loss often do not take any UI benefits (Anderson and Meyer, 1997). Consistent with employers of frequent UI recipients being more apt to consider UI law changes when making capital structure decisions, financing decisions in industries with many low-wage workers and frequent UI recipients are especially sensitive to changes in UI benefit laws.

Second, we find a stronger relation between UI generosity and leverage among firms that face tighter financing constraints, as measured by firm size, the absence of dividend payments, and low operating cash flows. Tight financing constraints make it difficult for firms to raise capital if they experience a negative shock, which raises the probability that such firms must resort to cost cutting through layoffs

<sup>1</sup> As put by Stewart Myers, "To succeed a corporation requires a co-investment of financial capital from the outside and human capital that is built up inside the business.... When you ask people to make an investment of human capital in your firm, you do not then do things—like raising the leverage ratio too high—that would needlessly put that investment at risk" (Myers, McConnell, Peterson, Soter, and Stern, 1998, pp. 18–19).

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