

Do financial innovations benefit society?

"Thomas Cook's Collapse Shows Perils of Debt Derivatives"



"Thomas Cook's collapse is unpleasant for just about everyone involved: the UK travel agent's more than 20,000 employees, the 150,000 holidaymakers stranded abroad, and the shareholders and lenders facing severe losses.

It was decidedly better, however, for those who bought credit default swaps...a group of bondholders threaten to block the deal...to ensure they got paid on their swaps"

Source: FT, September 27, 2019

ABSTRACT

Employees are concerned about human capital risk when there is an increase in default risk for credit default swap (CDS) firms. We find that CDSs improve employee treatment ex ante, including employee compensation and employee welfare. The increase in employee welfare is mainly derived from firms' proactive cash profit-sharing programs. The results are robust to the endogeneity of CDS introduction. The positive effect of CDSs on employee treatment increases with employees' expected exposure to unemployment risk and employees' bargaining power. These findings suggest that credit derivatives can have real effects on employees by intensifying their concerns on human capital risk.

PRIOR STUDIES

Real effects of CDSs:

- Affects creditor-borrower relationship ("empty creditors")
- Increases corporate bankruptcy risk
- Allows to increase debt capacities
- Allows to invest more

Theory: Bolton & Oehmke (2011), Danis & Gamba (2018)

Empirical evidence: Subrahmanyam, Tang and Wang (2014), Saretto & Tookes, Chang, Chen Wang, Zhang and Zhang (2017), etc

Compensating wage premiums / Employee Relations:

- Corporate distress impose significant costs for workers
- Employees are unable to fully insure human capital risk
- High default risk firms pay higher wages ex ante

Theory: Titman (1984), Berk, Stanton and Zechner (2010)

Empirical evidence: Agrawal and Matsa (2013), Chemmanur, Cheng, Zhang (2013), Brown and Matsa (2016), Graham, Kim, Li, Qiu (2019)

DATA

- **CDS data:** CreditTrade, GFI Group, Markit, 1997-2013
- **Employee pay:** Compustat (total labor expenses / # of employees)
- **Employee welfare:** 5 positive performance indicators of employee relations based on MSCI ESG STATS
 - Union relations
 - Cash profit sharing
 - Employee involvement
 - Retirement benefits strength
 - Health and safety strength
- **Others:** Compustat & CRSP, Annual Significant Provision of State UI Laws, etc.

Richmond

VARIABLES AND METHODOLOGY

$$Employee\ Treatment_{i,t} = \beta_0 + \beta_1 CDS\ Trading_{i,t} + \beta_2 CDS\ Firm_i + \beta_3 X_{i,t} + \beta_4 Industry_{i,t} + \beta_5 Year_t + \epsilon_{i,t}$$

- **Employee Treatment:**
 - Average employee pay
 - Employee welfare score
- **CDS Trading:** = 1 (during and after CDS introduction)
- **CDS Firm:** = 1 (CDS trading at any time)
- **Controls X:** size, leverage, market-to-book ratio, etc.
- **Fixed Effects:** Industry, Year
- **Standard Errors:** Clustered by firm level

EMPIRICAL CHALLENGES AND SOLUTIONS

Potential Endogeneity in CDS Trading:

- Propensity score matching
- Reverse causality test
- Instrumental variable estimation:
 - IV: Lender FX Hedging
 - Following: Subrahmanyam, Tang, Wang (2014)

Selection bias of the employee pay sample:

- Heckman two-step analysis
 - Firm-level probability of reporting labor expenses
 - Dummies of the listing exchange
 - Following: Chemmanur, Cheng, Zhang (2013)

MAIN RESULTS

Variables	(1) Employee Pay	(2) Employee Welfare
CDS Trading	0.110*** (0.043)	0.227*** (0.081)
CDS Firm	0.088 (0.057)	0.050 (0.097)
Firm size	0.056*** (0.008)	0.437*** (0.026)
Leverage	0.115** (0.056)	-0.008 (0.194)
MB	-0.011 (0.009)	-0.045** (0.021)
Sales/employee	0.001*** (0.000)	0.000*** (0.000)
PCI	-0.038 (0.046)	0.588*** (0.097)
Estimation	OLS	GLM
CDS Marginal Effect (dy/dx)		0.012***
Observations	14,638	25,506
R-squared/Pseudo R-squared	0.51	0.19
Year FE	YES	YES
Industry FE	YES	YES
Clustered SE	YES	YES

- CDS improves both measures of employee treatment

- Statistically & Economically significant positive effect:

- 11% increase in the average employee pay (or by \$5.44 thousands)
- Increase in EW score by 0.012 points (or an extra spending of \$3.2 mln in SG&A expenses)

- Endogeneity tests support a positive & causal relation

COMPONENTS OF EMPLOYEE WELFARE

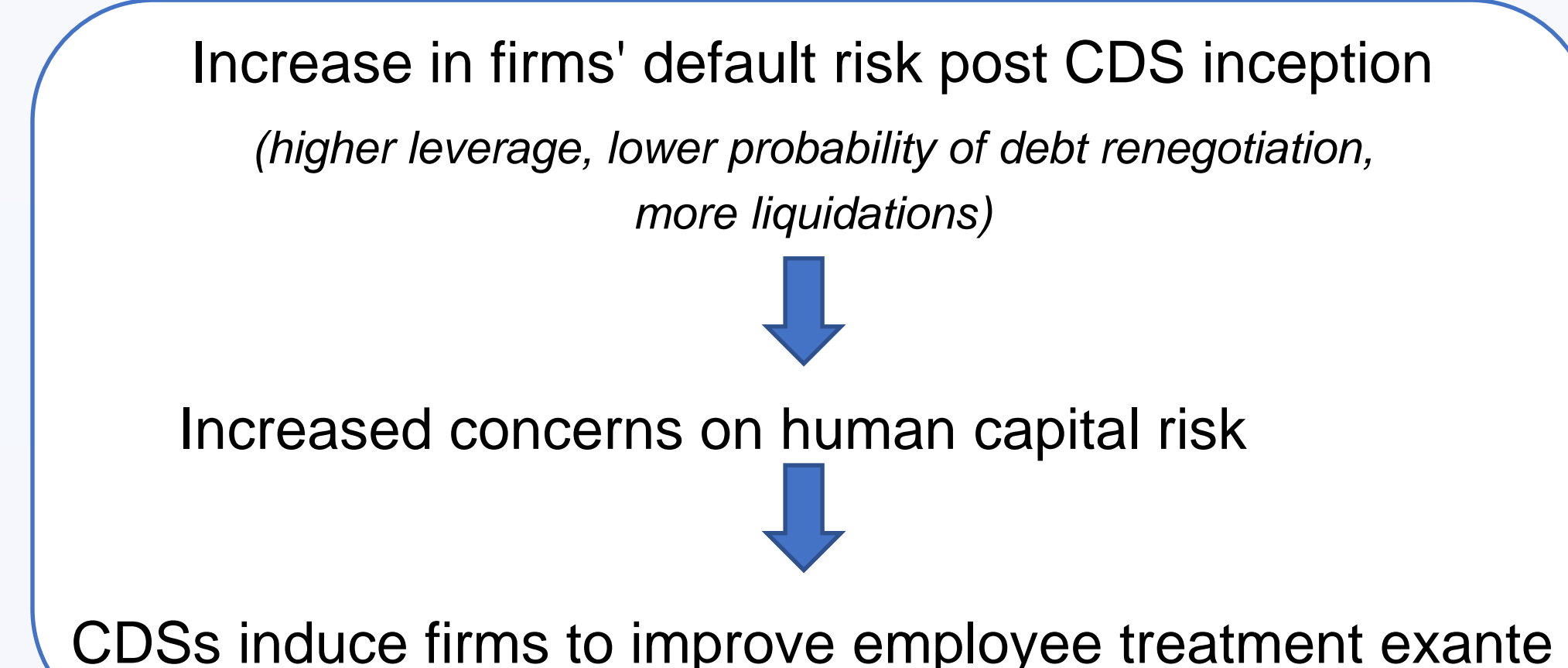
Variables	(1) Union Relations	(2) Cash Profit Sharing	(3) Employee Involvement	(4) Retirement Benefits	(5) Health & Safety
<i>Panel A: Baseline regression (Probit model)</i>					
CDS Trading	-0.142 (0.152)	0.257*** (0.094)	0.085 (0.075)	0.233** (0.099)	-0.043 (0.126)
<i>Panel B: Propensity score matching (Probit model)</i>					
CDS Trading	0.144 (0.171)	0.482*** (0.136)	0.087 (0.124)	0.249 (0.163)	-0.023 (0.188)
<i>Panel C: Instrumental variable approach (Maximum-likelihood probit model)</i>					
CDS Trading	-0.149 (0.241)	0.467*** (0.183)	0.249 (0.179)	-0.206 (0.194)	0.871* (0.523)

- Probability of obtaining a good score for each individual component of employee relations

- The improvement of employee welfare is mainly derived from firms' proactive cash profit-sharing programs

UNDERSTANDING THE CHANNELS

"Human capital risk" channel:



Tests:

- **Exposure to unemployment risk**
 - Layoff propensity: Mass layoff statistics
 - Costs during unemployment: UI benefits
 - Employment protection: WDLs (good faith)
- **Employee awareness / bargaining power**
 - Collective bargaining agreement: Union membership coverage

Results:

- Stronger effect of CDSs on employee treatment
 - In industries with high layoff propensity
 - In states with less employment protection (low UI benefits, and not adopted WDLs)
 - In highly unionized industries

FINDINGS AND CONTRIBUTIONS

Findings:

- CDSs improve employee treatment!
 - Both employee pay and employee welfare
- More pronounced effect for employees
 - with greater exposure to unemployment risk
 - with higher bargaining power

Contributions:

- Credit derivatives have real effects on employees
- Discussion about the welfare effects of CDSs
- Policy implications regarding the role of financial derivatives in promoting social welfare