

Outsourcing Workplace Safety

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Abstract

I study if firms deliberately sacrifice workplace safety for profits by using contract workers, for whom they are not legally liable. I exploit a regression discontinuity design around the amendment to the Occupational Health and Safety Act in Korea, 2017, which expanded the legal accountability of firms to cover contract workers. The number of contract workers decreased by 18.1% in affected establishments compared to unaffected establishments. This change was not compensated by direct hiring, causing overall employment to fall by 1.3%. Working hours and wage costs paid to directly hired employees increased to make up for the resulting losses in work hours from the contract workers. Workplace safety improved at affected establishments at the cost of higher safety investment. Profitability dropped in affected firms, and those firms reacted by shrinking investments. The results are consistent with firms strategically outsourcing risky jobs to contract workers to offload their duties on workplace safety.

Research question

Do firms deliberately sacrifice worker's safety for profits by using contract workers?

I answer to the question:

- Yes, firms choose to hire via third party intermediaries, rather than directly hire them, to reduce the safety related costs since they are **legally not liable** for contract workers' safety
- Firms could have saved some lives if they chose to give up a portion of profits

What I do and find

Estimating the results of regulation change that puts an exogenous variation of some firms' legal liability to be extended to cover contract workers' safety

- **Subcontracting decisions:** Affected establishments reduce using contract workers without compensating them with direct hiring
- **Workplace safety:** Number of injured / deaths of workers reduces as a consequence of firms making more investment on safety
- **Financial implication:** Profitability reduces by 3% and firms react by reducing investments

Motivation

Unlike to the case when directly hired employees get injured, firms have limited legal liability when contract workers get injured.

Examples of contract workers in risky working environments :

- The number of fatal accidents among contract workers increased by 50% from 2011 to 2017 while the total number of fatal accidents increased by only 10% over the same time
- 45% of total death tolls are for contract workers although contract workers constitute only 18% in Korea in 2018 in manufacturing industry

Mechanism

How can firms **sacrifice safety for profits** by using contract workers?

Answer: **Safety-related costs are cheaper** for contract workers rather than directly hired employees since firms are not legally liable for contract workers' safety.

- Legal risk
 - Third-party intermediaries are shallow-pocketed than firms
 - Difficult to prove legal responsibility of firms on contract workers' safety
- Reputational risk
 - Third-party intermediaries have a smaller number of stakeholders
 - Information not available regarding risky working environments for contract workers

Empirical setting

- The 2017 amendment of Occupational Health and Safety law which extended firms' legal liability to cover contract workers if their establishments have more than 500 total workers (both directly hired employees and contract workers) in 2016
- **Regression Discontinuity Design:** Compare establishments just above the cutoff and below the cutoff before the law amendment

Control vs Treated

500
total employees
in December 2016

Empirical specification

$$\Delta \text{Contract workers}_{i,s} = \alpha + f(S_i - c)_s + \beta_1 \text{Treated}_{i,s} + X_i \beta_2 + \epsilon_{i,s}$$

for $s \in bw$

- Bandwidths (bw) are estimated MSE-optimal bandwidth using a triangular weighting kernel with establishment-level clustering

Data

- Workers' compensation data – Define the firm with contract workers if more than one establishments share the exactly same address
- Workplace Panel Survey from Korea Labor Institute

Main results

1. Subcontracting decisions
 - The number of contract workers by 18.1%
 - Without compensating them with direct hiring
 - Instead, existing directly hired employees worked 2.8% hours more
 - Total wage costs increased by 3 percentage points
 - Consequently, total employment drops by 1.3%

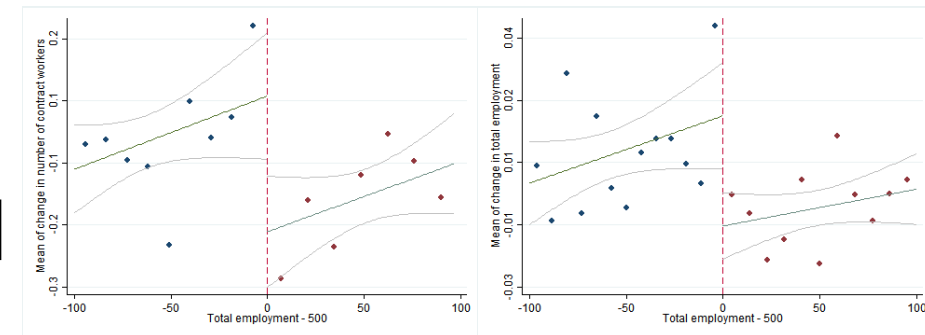


Figure 1: Regression discontinuity plots for Δ Contract worker and Δ Total workers

2. Workplace safety
 - Safety improves both for directly hired employees and contract workers
 - Number of injured (deaths of) contract workers reduce by 0.54 (0.25) bp
 - Investment on safety increases by 0.1 percentage point over total assets
3. Financial implication
 - ROA reduces by 3%
 - Investment reduces both for intangible and tangible assets