Disability Risk and Alternative Work Arrangements

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DISABILITY
RESEARCH

Workplace Injury Places Workers at Risk for Permanent Disability, SSDI Entry

- Workplace injury and illness frequently leads to lost work time or permanent disability
- Injuries with lost work days double the risk of SSDI entry within 10 years (O'Leary et al., 2012)
- One in three SSDI beneficiaries aged 51-61 reported that workplace injury/illness caused their disability (Reville and Schoeni, 2004)

Alternative Work Arrangements May Affect Employment Risk after Injury

- Employer incentives, policies influence return to work after disability onset
- Alternative work arrangements are associated with health and safety risks
  (Benavides et al., 2006; Smith et al., 2010; Underhill & Quinlan, 2011)
- Plausible that job retention after injury is also lower in alternative work arrangements

Research Questions

- What is the effect of alternative work arrangements on employment after injury, *holding constant worker, job, and injury characteristics*?
- How do injury risk and employment risk contribute to risk of SSDI entry for nonstandard vs. direct-hire workers?

We Study Temporary, Contract Workers Who File Workers' Compensation Claims

- Alternative work arrangements encompass distinct types of workers
  - Temporary employees
  - Contract employees
  - On-call workers
  - Independent contractors

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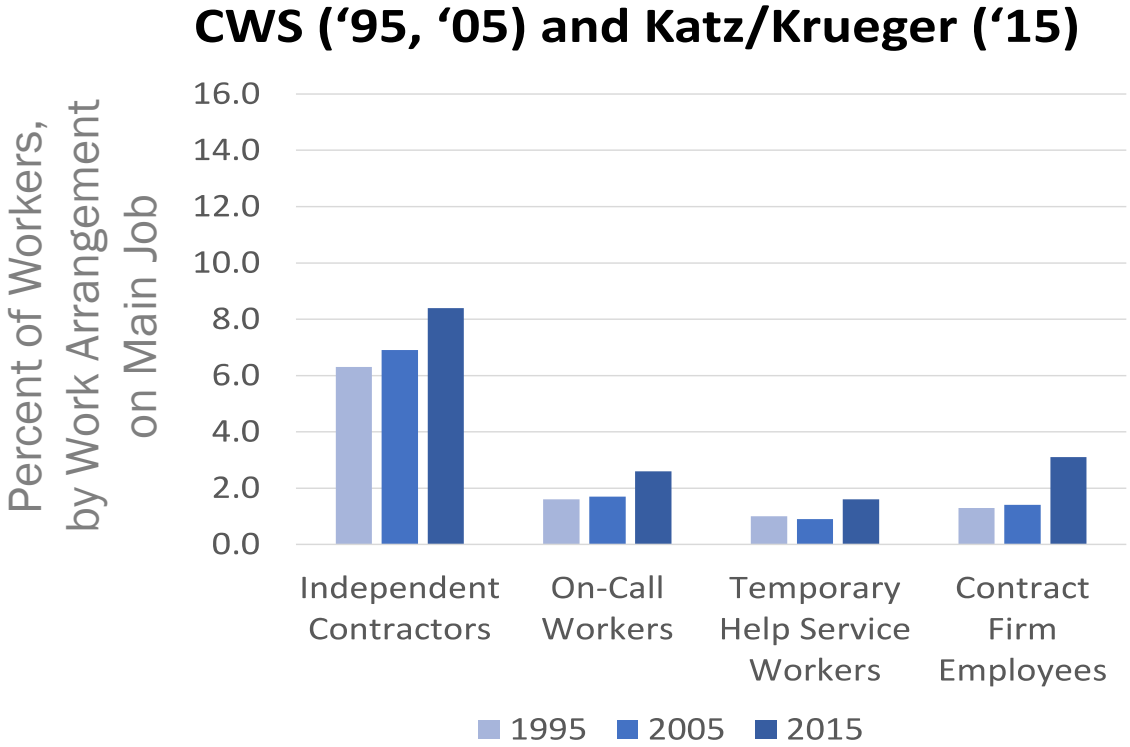
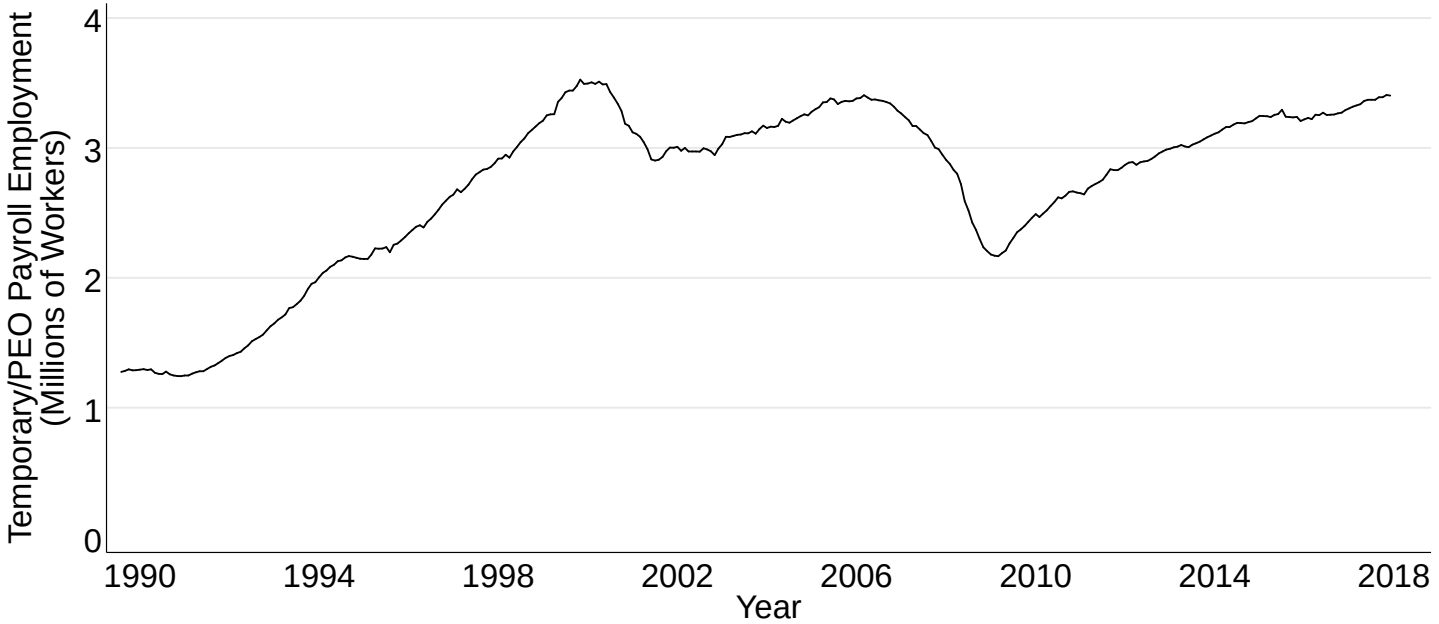
Temporary and Contract Work is Small but Growing Subset of Nonstandard Work



Source: Abraham, Katharine. 2018. "What Do We Know About Nonstandard Work?" Presented at Conference on Nonstandard Work and Social Insurance. National Academy of Social Insurance, Washington, DC. January 30.

Employment Through Temporary Agencies and Contract Firms Has Grown Substantially in Recent Decades



Sum of seasonally adjusted employment in NAICS 56132 and 56133
Source: BLS Current Employment Statistics

Temporary Workers Have More Injuries, Higher Injury Severity than Direct-Hires

- Temporary workers have higher workers' compensation injury rates than direct-hires in same industry (Smith et al., 2010; Zaidman; 2017)
- Disability duration higher for temporary workers (Park and Butler, 2002; Smith et al., 2010)
- No evidence on employment outcomes

We Use Data from California on Workers' Compensation Claims and Employment

- Combine rich data on claims with panel data on employment and employers
  - Workers' compensation claims from WCIS (state all-payer database, 2005-2012 injury years)
  - Link to EDD (UI) tax data on wage/salary employment
- Focus on lost-time injuries (3+ days)

(20,241 Temporary/Contract Worker Injuries; 479,743 Direct-Hire Injuries)

We Compare Temporary, Direct-Hire Workers Injured Doing the Same Jobs

- Necessary to combine WC, UI data to select temporary workers, comparable direct-hires
- WC class codes on WC claim identify type of work at host employer for temporary workers
- NAICS industry codes in UI data identify temporary agencies (56132) and professional employer organizations (56133)

Temporary Workers Account for Large Share of Injuries in Certain Risk Classifications

Class Code Title	Share of Injuries Involving Temporary/PEO Workers
WAREHOUSES - GENERAL MERCHANDISE	27.6%
STORES - CLOTHING, DRY GOODS - WHOLESALE	25.9%
FRUIT - DRIED FRUIT PACKING	21.4%
PALLET MFG, REPAIR, RECONDITION - WOOD	20.2%
CARPENTRY - NOC - LOW WAGE	20.2%
INSPECTION FOR INSURANCE OR VALUATION	18.7%
PRINTED CIRCUIT BOARD ASSEMBLING	18.1%
GARBAGE, ASHES OR REFUSE DUMP OPERATIONS	17.8%
WAREHOUSES - SELF STORAGE	14.9%
FRUIT - CITRUS FRUIT PACKING	13.6%

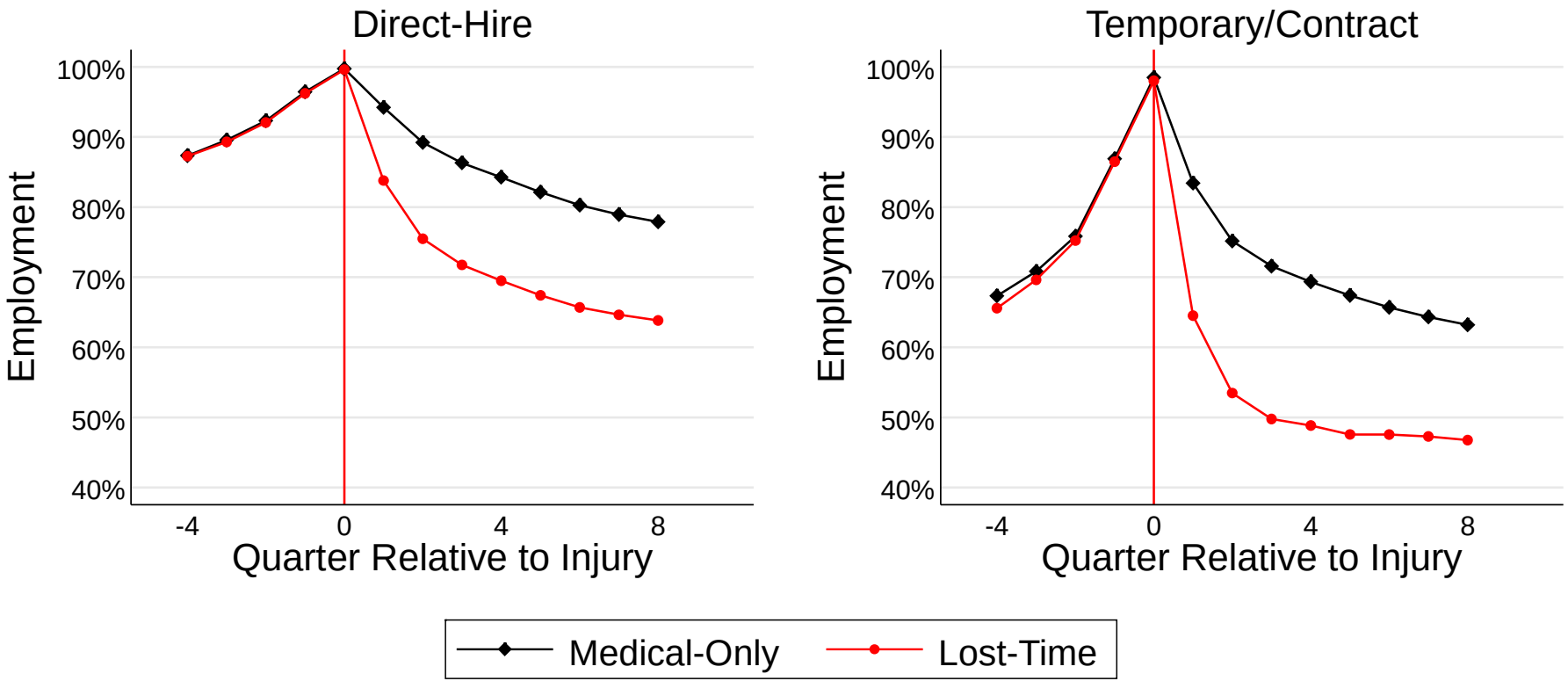
Table lists top 10 California class codes by proportion of injuries occurring among temp workers. Source: WCIS-EDD.

We Use Workers with Minor Injuries to Control for Employment Dynamics

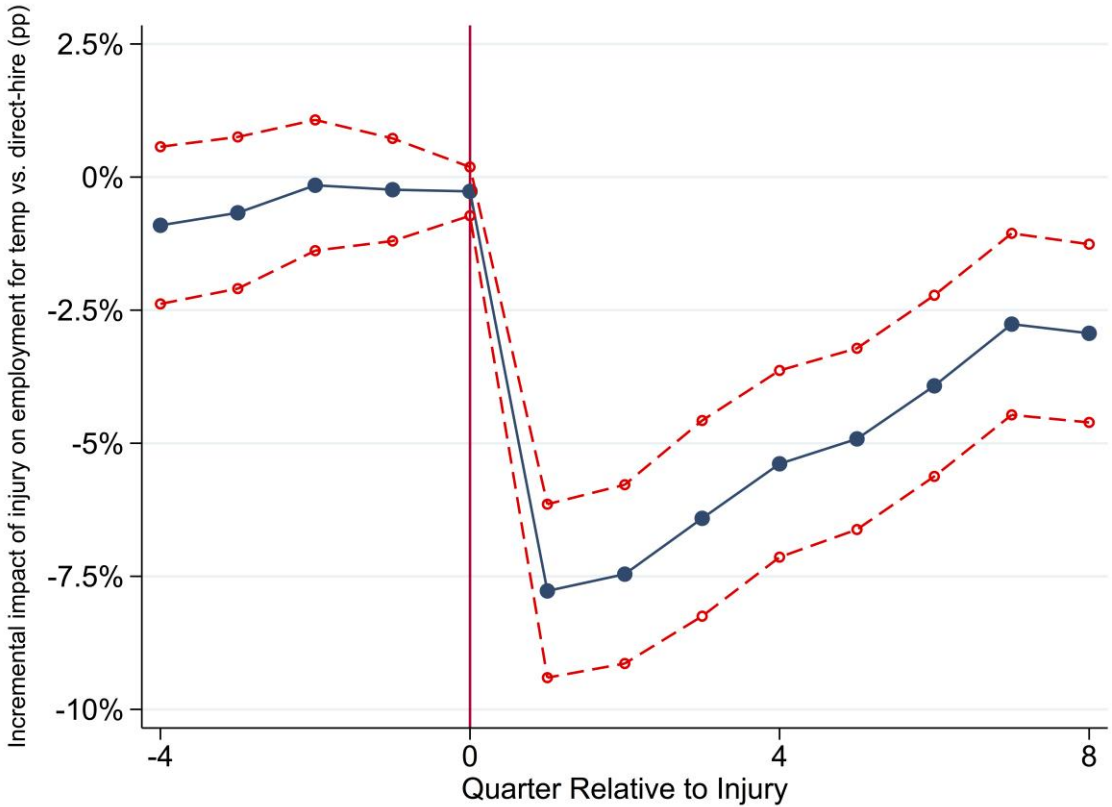
- We use a triple-difference identification strategy comparing employment outcomes for workers with same class code on claim
  - before vs. after injury
  - lost-time vs. medical-only (minor) injuries
  - temporary vs. direct-hire
- Assume minor injuries do not reduce employment

Direct-Hire, Temporary Workers Look Different Prior to Injury

Medical-Only Injuries Needed to Adjust for Different Employment Dynamics



Event-Study Estimates Suggest Workers with Minor Injuries are Valid Control Group



Estimates Isolate Employment Loss Associated with Temporary Status

	Time Relative to Injury		
	4 Quarters Before	4 Quarters After	8 Quarters After
Employment Effect, Indemnity vs. Medical-Only, Temporary vs. Direct-Hire	-0.0091 (0.0075)	-0.0539*** (0.0089)	-0.0294*** (0.0085)
N (person-quarter records)	5.87 million	5.87 million	5.87 million

***Significance .1%, ** Significance 1%, * Significance 5%. Standard errors in parentheses clustered on class code and quarter of injury (e.g., citrus fruit packers injured in 2005Q1). Controls include class codes; worker, job, injury characteristics; and 2-way interactions.

Temp/Contract Status Predicts 26% Increase in Probability of Non-Employment after Injury

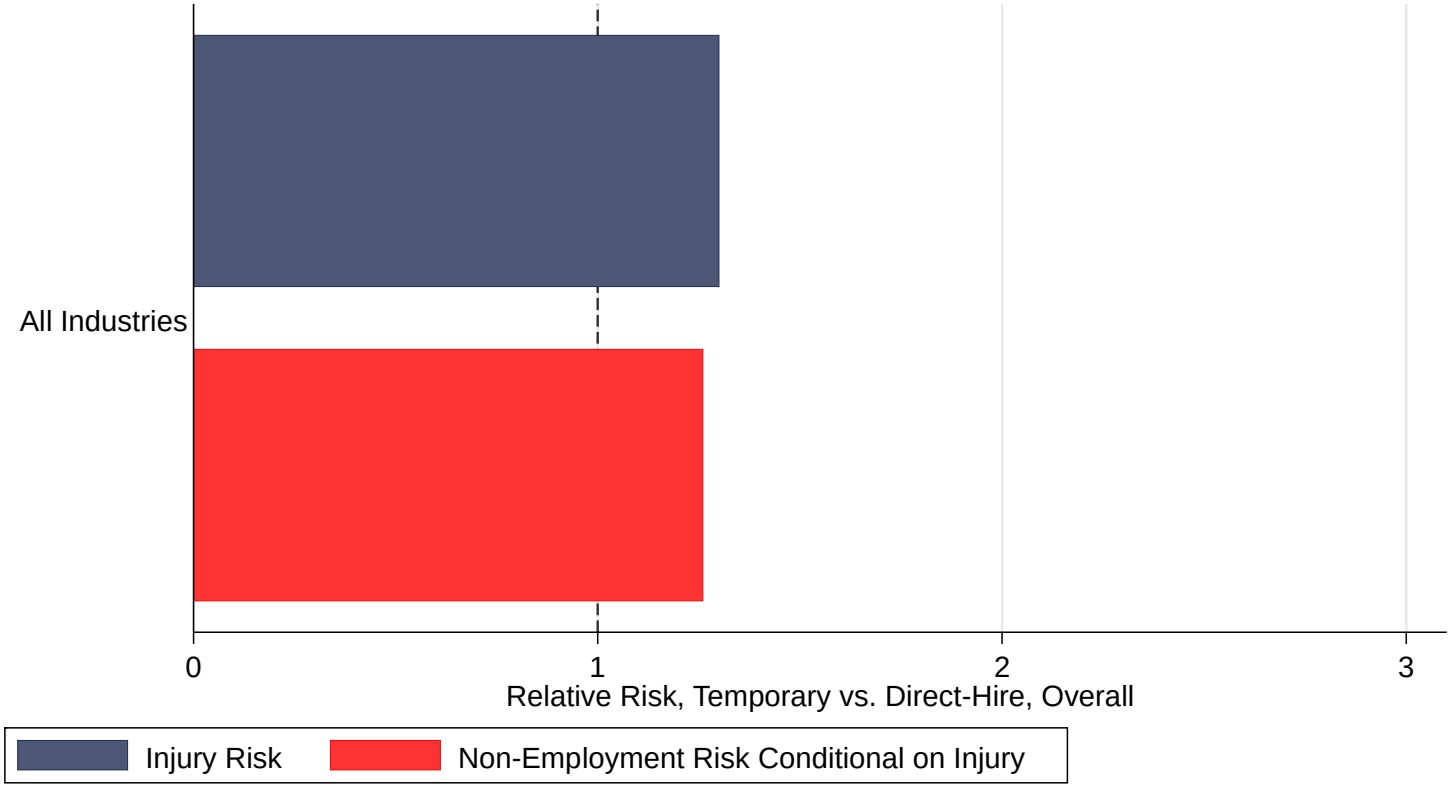
- Temporary workers 2.9 percentage points less likely to be employed 2 years after lost-time injury
- Lost-time injuries in California reduce employment by 11.4 percentage points (RAND RR-2572, in press)

Relative Risk of SSDI Entry Depends on Injury Risk and Employment Risk after Injury

- SSDI entry requires workers to be disabled and earn below SGA threshold
- Relative risk of SSDI in temp vs. direct-hire work:

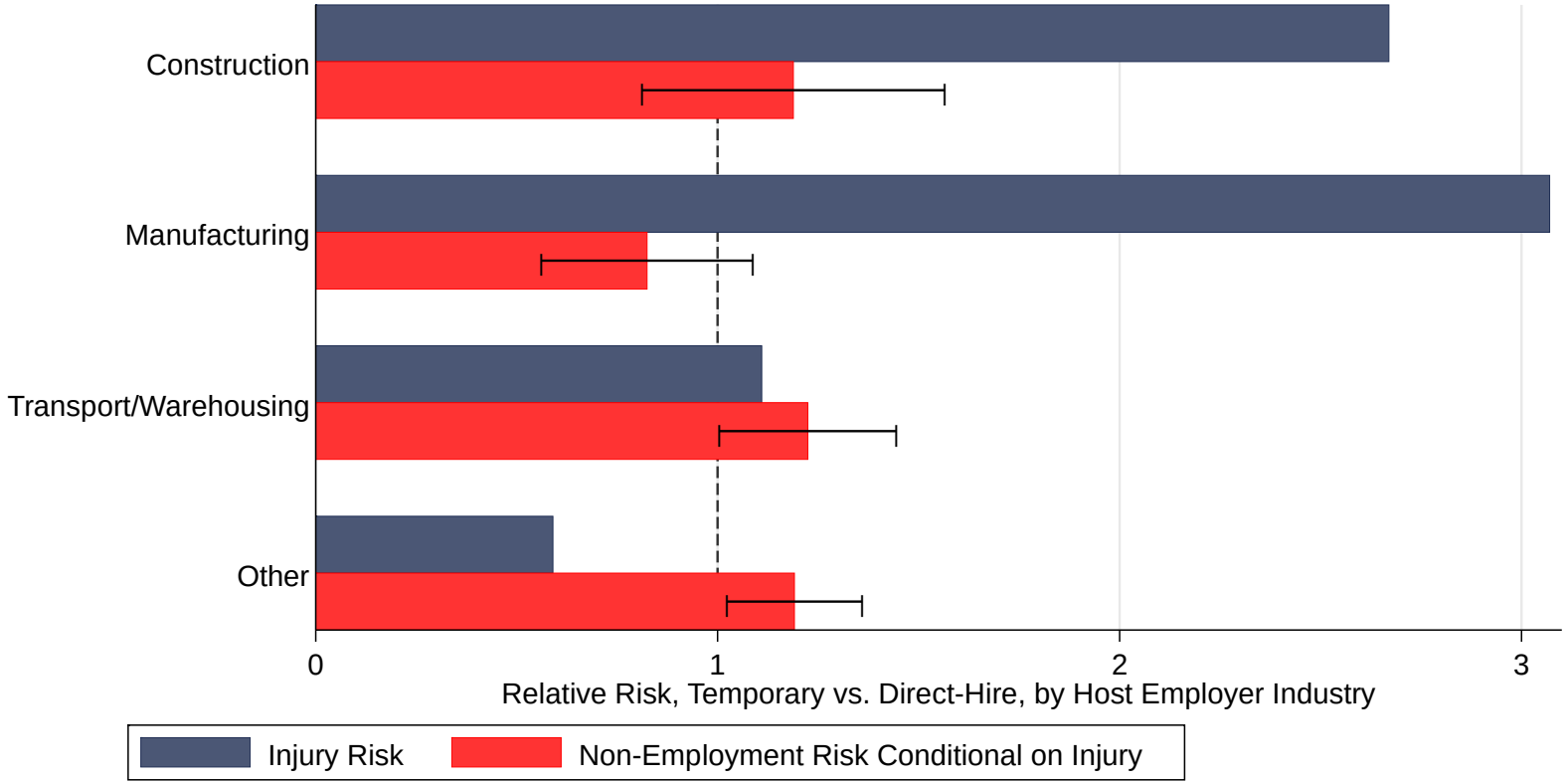
$$\overbrace{\frac{P(DI=1|T=1)}{P(DI=1|T=0)}}^{\text{RR of SSDI Entry Temp Relative to Direct-Hire}} = \overbrace{\frac{P(D=1|T=1)}{P(D=1|T=0)}}^{\text{RR of Injury}} \overbrace{\frac{P(E=0|D=1,T=1)}{P(E=0|D=1,T=0)}}^{\text{RR of Non-Employment Conditional on Injury}} \overbrace{\frac{P(DI=1|D=1,E=0,T=1)}{P(DI=1|D=1,E=0,T=0)}}^{\text{RR of SSDI Entry Conditional on Injury and Non-Employment}}$$

Relative Risk of Non-Employment Similar to Relative Risk of Injury for Temporary Workers



Injury risk calculated using data reported in Smith et al. (2010)

Relative Risks of Injury, Non-Employment for Temporary Workers Vary Across Industries



Injury risk calculated using data reported in Smith et al. (2010)

Conclusion: Temporary and Contract Workers Face Greater Employment Risk than Direct-Hires after Workplace Injury

- Our results do not pinpoint the mechanism
- Conjecture: high turnover, weak attachment to employer contribute to worse employment outcomes after injury
- Similar mechanisms may affect other types of alternative work arrangements

Higher Employment Risk for Temporary Workers Raises Policy Questions

- Are early interventions focused on return-to-work effective in high-turnover industries?
- As nonstandard work becomes more common, what are federal budget impacts?
  - Higher injury risk, employment risk (-)
  - Offset by lower eligibility? (+)
- Implications for state WC policy also of interest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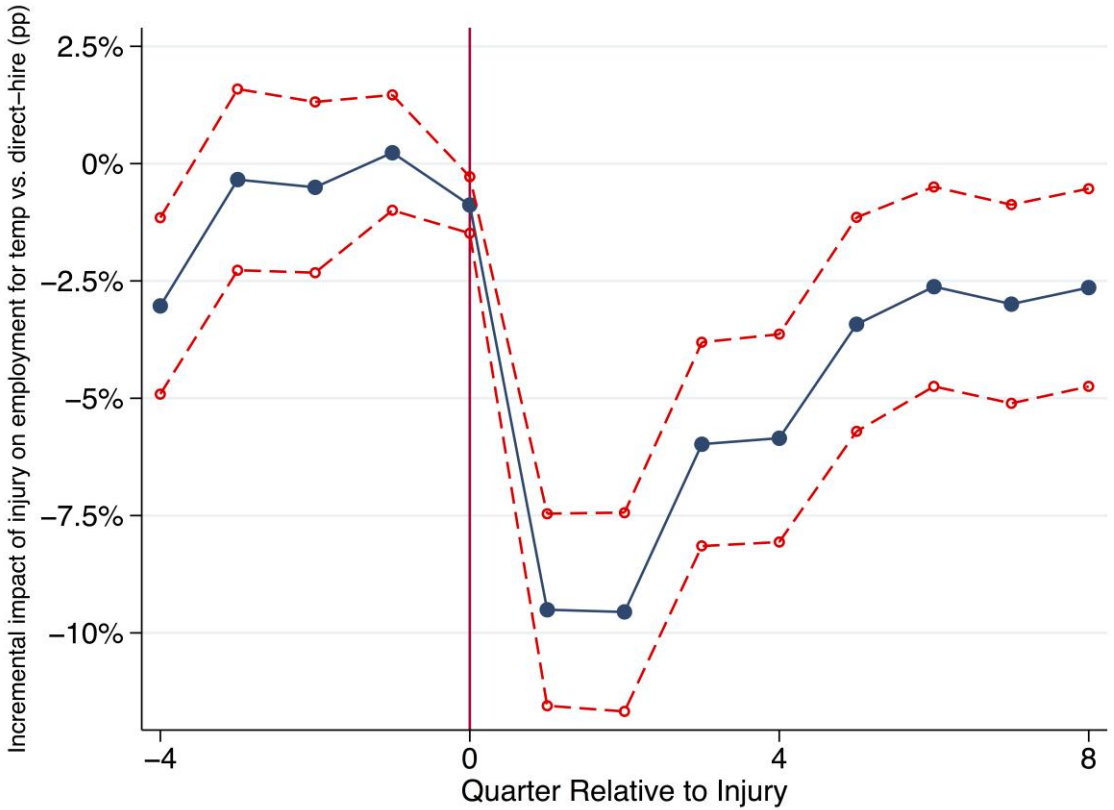
Control for Worker, Job, Injury Characteristics

- Control for separate time profile of employment for each control variable:
  - Class code
  - Age at injury X gender
  - Job tenure at injury
  - Cause, nature, body part of injury
  - Geographic region
  - Full-time/Part-time
  - Quartile of weekly wage before injury
- Include 2-way interactions of temporary status, lost-time injury, time relative to injury

Estimates for Traumatic Injuries Show Similar Dynamics for Temporary vs. Direct-Hire



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	Time Relative to Injury		
	4 Quarters Before	4 Quarters After	8 Quarters After
Employment, Temporary vs. Direct-Hire (All injuries)	-0.0091 (0.0075)	-0.0539*** (0.0089)	-0.0294*** (0.0085)
N (person-quarter records)	5.87 million	5.87 million	5.87 million
Employment, Temporary vs. Direct-Hire (Traumatic injuries)	-0.0303** (0.0096)	-0.0585*** (0.0113)	-0.0264*** (0.0108)
N (person-quarter records)	3.5 million	3.5 million	3.5 million

***Significance .1%, ** Significance 1%, * Significance 5%. Standard errors in parentheses clustered on class code and quarter of injury (e.g., citrus fruit packers injured in 2005Q1). Controls include class codes; worker, job, injury characteristics; and 2-way interactions.