Exploring Worker and Firm Characteristics that Drive Use of Accommodation for Workers with Disabilities

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Disclaimer

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Introduction: relevance of accommodations

- Disability insurance programs protect against risk of work-limiting impairments
  - Social Security Disability Insurance: $145 billion in 2018
  - State workers' compensation programs: $98 billion in 2018
- Concern about lack of exit / successful return to work from DI programs
- **Employer accommodation** can have a substantial impact on return to work and other labor market outcomes (Aizawa, Mommaerts, and Rennane 2021)
  - But lots of heterogeneity in who receives accommodations
- **We ask: What are the important drivers of accommodation?**

Overview of the project

- Setting: workers' compensation program in Oregon
  - Unique program that provides wage subsidies and other benefits to firms that accommodate injured workers
- Analysis: descriptives and decomposition methods to estimate the extent to which variation in use of each program can be explained by observable and unobservable factors

Workers' Compensation

- State-based social insurance program for individuals who are injured or ill at work
  - Cash benefits while injured and recovering (60% replacement rate)
  - Medical benefits for all related health expenses
- Financing: employers required to buy insurance or self-insure
- Workers must file a claim after injury or illness to receive benefits
  - Third-party physician determines validity of claim
  - Physician treats worker, determines their ability to work
- Oregon also provides optional accommodation benefits to employers

Accommodation programs

- Accommodation: any action the employer takes to adjust the work environment to enable individuals with impairments to work
- We focus on three programs:
  - **Temporary injuries at same employer (EAIP)**:
    - 50% wage subsidy for up to 66 work days after injury
    - Various purchases: Worksite modification costs up to $5,000; tuition, books, fees for retraining up to $1,000; clothing costs up to $400
  - **Hiring workers with permanent disabilities (PWP)**:
    - 50% wage subsidy for up to 6 months
    - Purchases as above plus commuting costs, moving expenses, occupational certifications
    - Worksite modifications up to $50,000
    - Premium reductions and claim cost reimbursement
  - **Vocational assistance to workers (VR)**

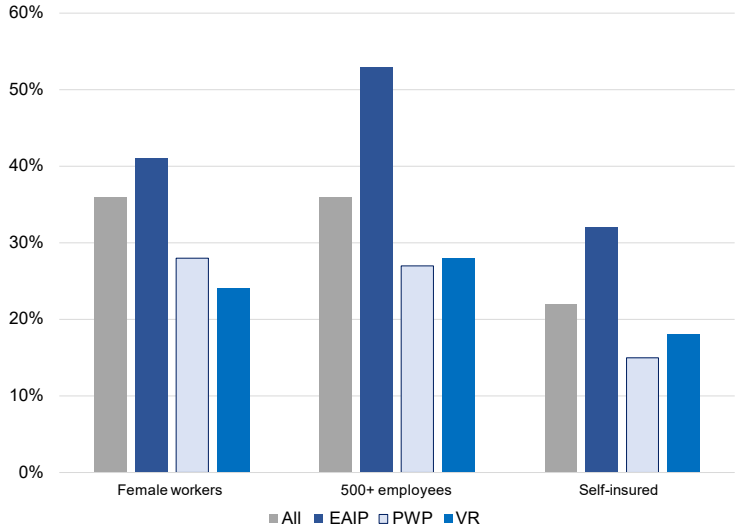
Data and sample

- Closed workers' compensation claims between 2005-2017 (~262,000 claims)
  - Worker demographics, occupation
  - Firm identifiers, firm size, insurance type, industry, county
  - Injury characteristics, WC cash and medical benefits
  - Accommodation benefits by program
- Final sample: restrict to firms with at least two claims during sample period
  - This is to estimate firm fixed effects
  - End up with ~243,000 claims
- Occupational Requirements Survey 2021
  - Matched to claims data with occupation code

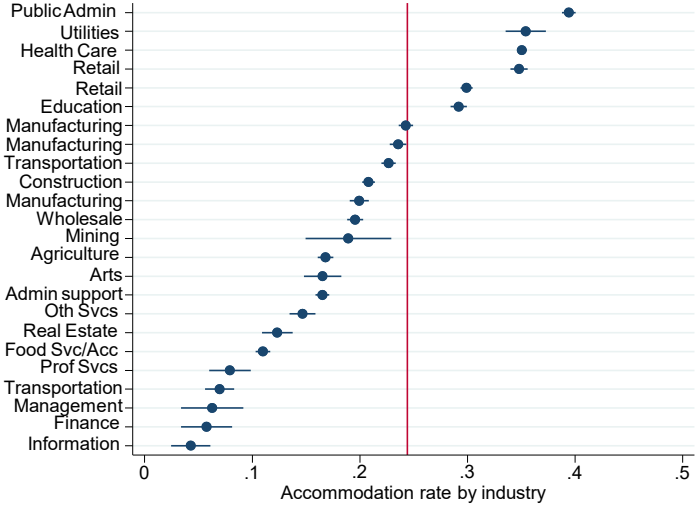
PWP and VR accommodate more severe disabilities

	All	EAIP	PWP	VR
Prior weekly earnings	$652	$726	$722	$794
Claim medical costs	$8,616	$9,890	$34,807	$40,019
Claim days w/ time loss paid	63	69	275	391
Total accommodation payment		$2,667	$19,045	$10,464
Percent with wage subsidy		90%	69%	
Observations	242,862	59,372	3,060	4,519

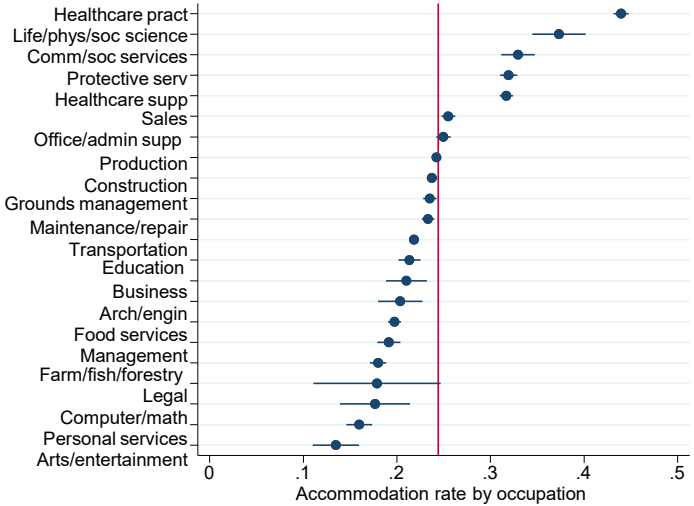
EAIP claims disproportionately in large, self-insured firms



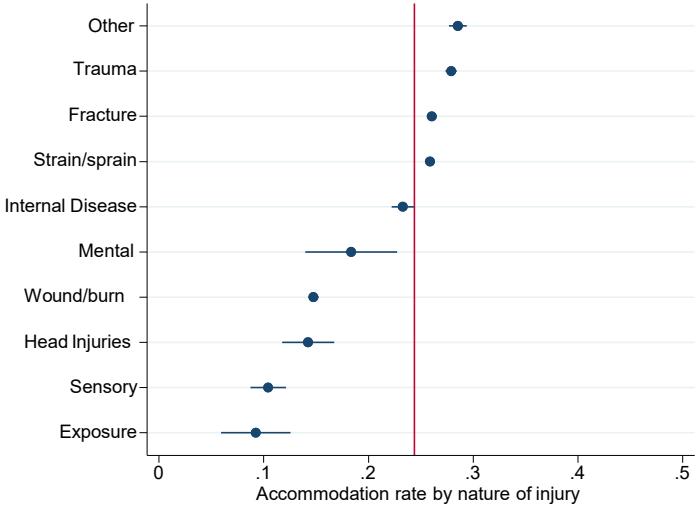
Large variation in average EAIP accommodation rates by **industry**



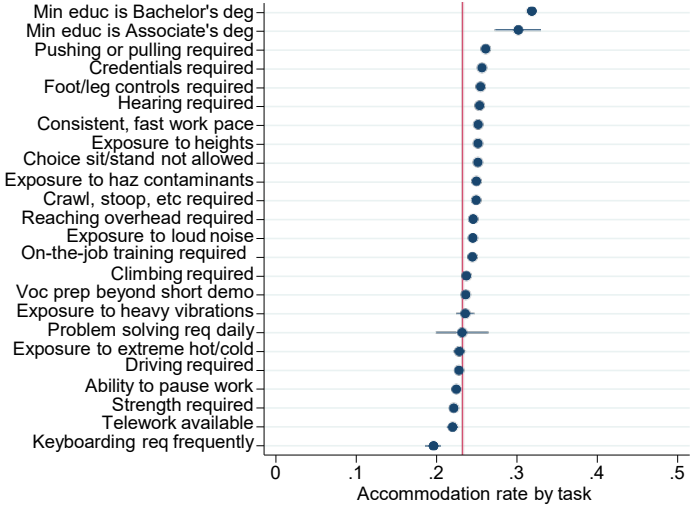
Large variation in average EAIP accommodation rates by **occupation**



Less variation in average EAIP accommodation rates by **nature of injury**



Little variation in average EAIP accommodation rates by **job tasks**

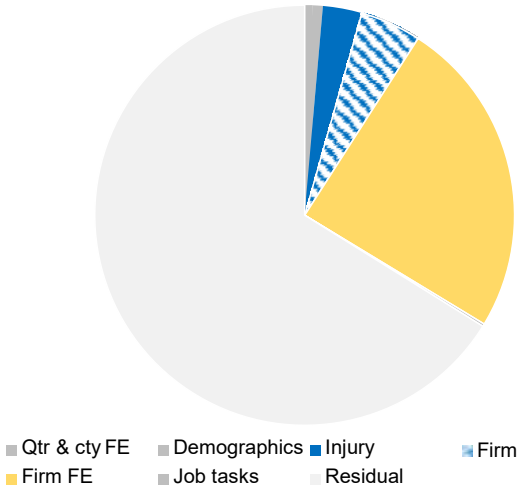


Estimating drivers of accommodation

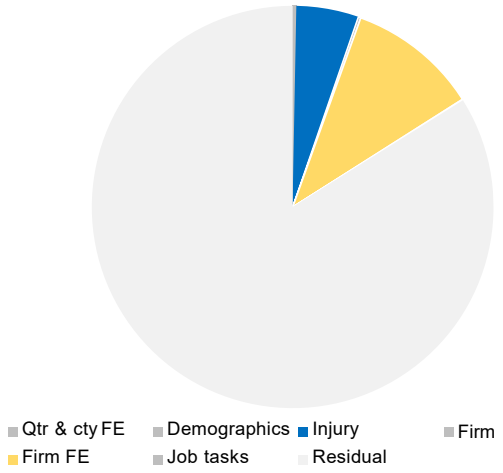
1. **Variance Decomposition**
   - How much of the variation in accommodation is driven by worker, injury, firm characteristics?

2. **Oaxaca-Blinder Decomposition**
   - To what extent can we explain differences in accommodation rates between subgroups of workers?

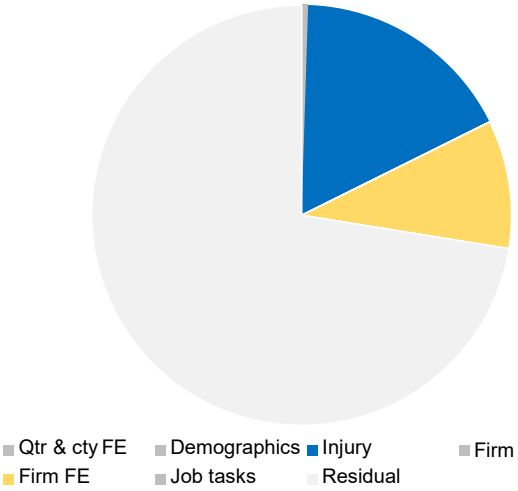
One-quarter of variance in EAIP use is driven by identify of the firm



Injury characteristics and firm identify are most important drivers for PWP use



Injury characteristics are largest driver in VR use



Decompose variation in accommodation by self insurance status

	EAIP	PWP	VR
Mean - Third Party Insured	20%	1.4%	2.0%
Mean - Self Insured	36.5%	0.9%	1.5%
Difference	-16.5%	0.5%	0.5%
Difference due to characteristics	-11.1%	0.3%	0.4%
Difference due to coefficients	-5.4%	0.2%	0.1%
Interaction	0.0%	0.0%	0.0%

→ **Differences in characteristics explain the majority of variation in accommodation between self-insured and third-party insured claims**

Conclusion

- We show that the identity of the firm is the most influential observable factor in determining workplace accommodation after temporary disability
- Injury characteristics are important factors for accommodations for permanent disabilities and VR
- Informative for disability policy by identifying targets for incentives or reducing barriers to providing accommodation
- To think about: dive into the black box of the “identity of the firm”:
  - Is it workplace culture?
  - Is it related to the extent to which firms invest in their workers?

Thank you!

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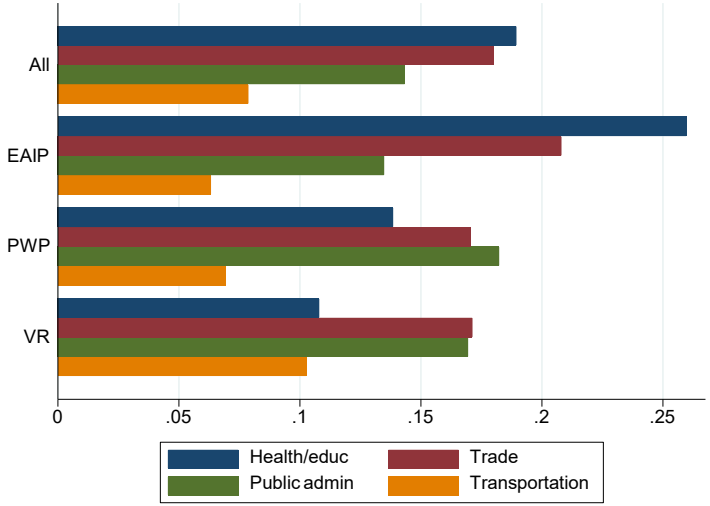
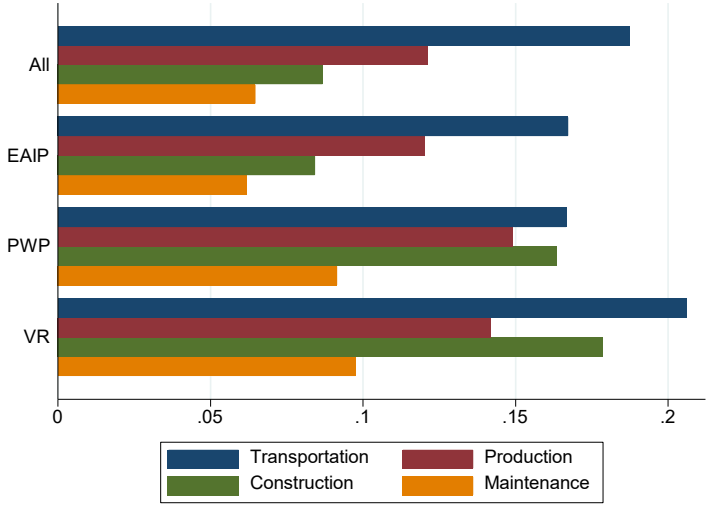
Extra slides

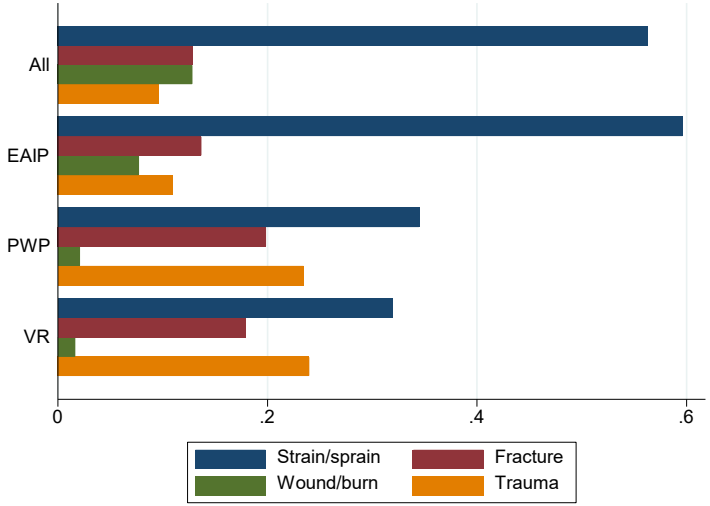
Top four industries, by accommodation program



Top four occupations, by accommodation program



Top four injuries, by accommodation program



	County + time FE	+ worker char	+ injury char	+ firm char	+ firm FE
Age at injury		-0.000***	-0.000**	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)
Female		0.056***	0.054***	0.031***	0.021***
		(0.008)	(0.008)	(0.005)	(0.003)
Log wage		0.086***	0.083***	0.062***	0.040***
		(0.008)	(0.008)	(0.006)	(0.003)
Log medical spending		0.039***	0.036***	0.041***	0.042***
		(0.002)	(0.002)	(0.001)	(0.001)
Temporary disability days		-0.000***	-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)	(0.000)
Injury in PM		0.006**	0.007**	0.003	0.001
		(0.003)	(0.003)	(0.003)	(0.002)
Private insurance				-0.154***	-0.124***
				(0.029)	(0.016)
SAIF insurance				0.038	0.031**
				(0.024)	(0.015)
Firm size 11-49				0.016***	0.012
				(0.005)	(0.037)
Firm size 50-99				0.046***	0.017
				(0.007)	(0.054)
Firm size 100-499				0.088***	0.051
				(0.008)	(0.041)
Firm size 500+				0.183***	-0.039
				(0.018)	(0.038)
Observations	242858	242858	242858	242858	242858
R-squared	0.0117	0.0606	0.0693	0.147	0.275

Estimating drivers of accommodation (from our P&P)

1. Estimate regression:

$$a_{ijt} = \gamma^1 x_{ijt} + \delta^1 d_{ijt} + \beta^1 f_{jt} + \lambda_j + \theta_t + \varepsilon_{ijt}$$

- a_{ijt} is whether individual i at firm j in quarter t is accommodated by EAIP
- x_{ijt}, d_{ijt}, and f_{jt}: worker, injury, and firm characteristics
- λ_j and θ_t: firm and quarter fixed effects

2. Decompose accommodation variation into groupings of characteristics:

$$\text{Var}(a) = \text{Cov}(a, \gamma^1 x) + \text{Cov}(a, \delta^1 d) + \text{Cov}(a, \beta^1 f) + \text{Cov}(a, \lambda) + \text{Cov}(a, \theta) + \text{Cov}(a, \varepsilon)$$

Oaxaca-Blinder Decomposition

- Differential labor market outcomes by gender and age have been the focus of a long literature (Blau and Kahn, 2017)
- We will conduct a Oaxaca-Blinder decomposition:

$$a_{Aijt} = X_{Aijt}\beta_A + \varepsilon_{Aijt}$$
$$a_{Bijt} = X_{Bijt}\beta_B + \varepsilon_{Bijt}$$

- We can decompose differences in accommodation rates into:
  1. Differences in observables $\beta_A(X_{Aijt} - X_{Bijt})$
  2. Differences in unexplained components $X_{Bijt}(\beta_A - \beta_B)$
- We will also incorporate ML tools (eg random forests) to provide a data-driven method to discipline the selection of variables for the decomposition

Does accommodation matter?

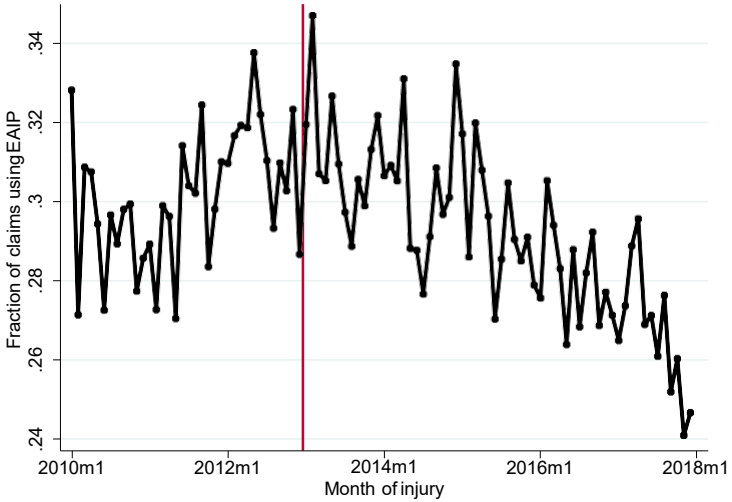
(Aizawa, Mommaerts, & Rennane 2021) Go

Estimating the effect of accommodation incentives

- Goal is to estimate the effect of accommodation subsidies on:
  1. Accommodation decisions
  2. Labor market outcomes: employment, earnings, wages
- We exploit a wage subsidy change from 50% to 45% in January 2013
- Construct "treatment" and "control" firms with high and low baseline use
  - Control: very low probability of using accommodation benefits
  - Treatment: relatively high probability of using accommodation benefits
  - Firms with low baseline use are unlikely to respond to subsidy change
- Run difference-in-difference specification (i = claim, t = quarter of injury):

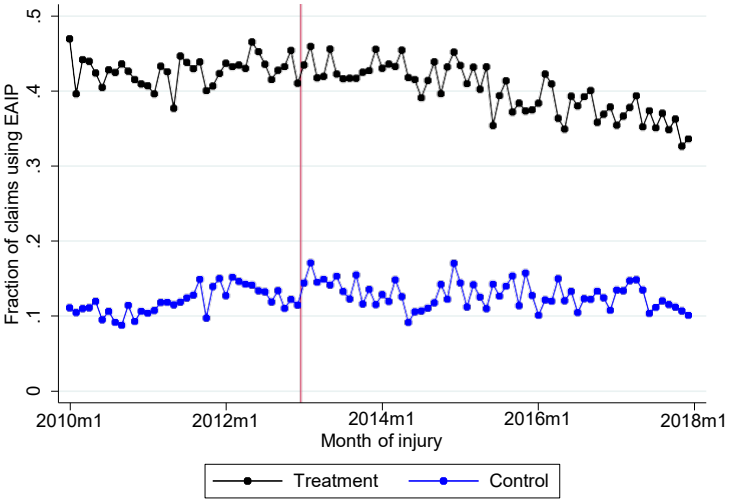
$$Y_{it} = \beta \text{Treat}_i \times \text{Post}_t + \alpha \text{Treat}_i + \delta_t + \gamma X_{it} + \varepsilon_{it}$$

Fraction of claims that use EAIP, by month of injury



Notes: Data provided by Oregon Department of Business and Consumer Services.

Fraction of claims that use EAIP, treatment vs. control



Notes: Data provided by Oregon Department of Business and Consumer Services.

Effects of wage subsidy decrease from 50% to 45%

Back

		Four quarters after injury		
	EAIP	Employment	J-to-J	Log earnings
	(1)	(2)	(3)	(4)
Treat × Post	-0.046***	-0.025***	-0.000	-0.048***
	(0.012)	(0.006)	(0.009)	(0.014)
Mean DV, treatment	0.409	0.828	0.169	8.825
Observations	109950	109950	86722	88378
R-squared	0.172	0.0634	0.157	0.290

Notes: Data provided by Oregon Department of Business and Consumer Services. Sample consists of 2010-2017 claims for which the firm also has at least one claim between 2005-2008. Dependent variable shown in column header. All regressions include the broad set of worker, firm, and injury controls. Earnings are conditional on working. Controls include industry-year-quarter fixed effects, firm size, insurance type, gender, age, county, occupation, and injury characteristics. * $p <$ 0.10, ** $p <$ 0.05, *** $p <$ 0.01