

Effects of labor market tightness on job quality: Evidence from job changers

Mike Zabek¹ Brad Hershbein² Katherine Lim³ Douglas
Webber¹

¹W.E. Upjohn Institute for Employment Research

²USDA, Economic Research Service

³Federal Reserve Board of Governors

January 4, 2025

Disclaimer: The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff, the Board of Governors, USDA or U.S. Government. This research was supported in part by the USDA Economic Research Service.

How do workers benefit from tighter labor markets?

- Theory: tighter labor markets $\rightarrow$ better jobs

How do workers benefit from tighter labor markets?

- Theory: tighter labor markets $\rightarrow$ better jobs
- Up to now: wages and sometimes cash benefits:
 - Hard to measure other job amenities objectively
 - Especially alongside variation in labor market conditions

How do workers benefit from tighter labor markets?

- Theory: tighter labor markets $\rightarrow$ better jobs
- Up to now: wages and sometimes cash benefits:
 - Hard to measure other job amenities objectively
 - Especially alongside variation in labor market conditions
- But job amenities also matter! (Summers 1989; Sorkin 2018; Maestas, Mullen, Powell, von Wachter, Wenger 2023)
 - Work-life balance?
 - Interest in the work?
 - Physical demands?

Job quality

Solicit comparisons of new job with job 12 months ago in terms of:

- Overall quality
- Pay and benefits
- Interest in the work; Work-life balance; Opportunities for advancements; Physical demands

Job quality

Solicit comparisons of new job with job 12 months ago in terms of:

- Overall quality
- Pay and benefits
- Interest in the work; Work-life balance; Opportunities for advancements; Physical demands

Similar characteristics to cross-sectional studies

(Maestas, Mullen, Powell, von Wachter, Wenger 2023)

But, more concrete since two specific jobs

Job quality

Solicit comparisons of new job with job 12 months ago in terms of:

- Overall quality
- Pay and benefits
- Interest in the work; Work-life balance; Opportunities for advancements; Physical demands

Similar characteristics to cross-sectional studies

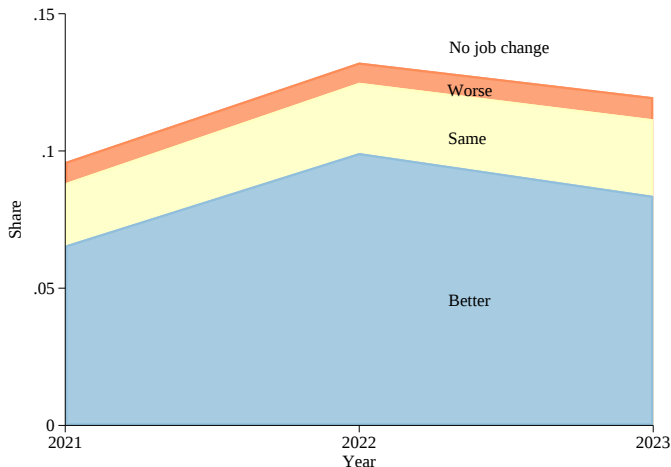
(Maestas, Mullen, Powell, von Wachter, Wenger 2023)

But, more concrete since two specific jobs

Relatively large sample from the Survey of Household Economics and Decisionmaking (SHED)

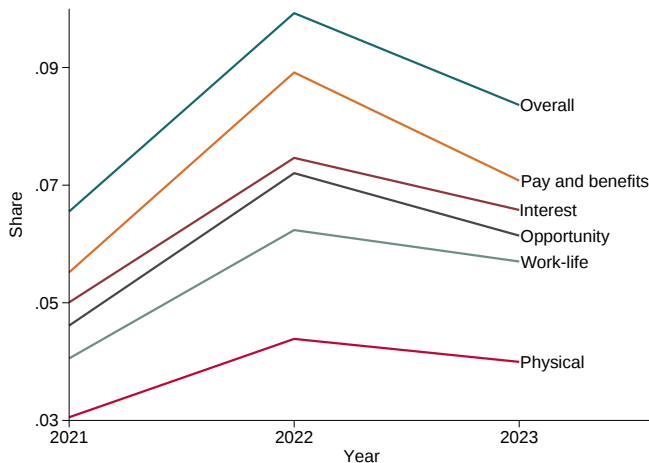
- Roughly 12,000 respondents each year from 2021 to 2024 (so far)
- 2021 to 2023 today
- Sample is adults 25 to 54

Job changes and overall job quality over time



- Peaks in 2022, decline since 2023
- When 13 percent change jobs
- And 10 percent move to better jobs

Improvements in specific characteristics



- Peaks in 2022
- Overall is the highest
- Followed by pay, interest

Tightness: Job vacancies per capita

Online job postings from Lightcast

- CBSA level

Tightness: Job vacancies per capita

Online job postings from Lightcast

- CBSA level
- Average over the previous year (matching SHED change)
- JOLTS implies about 8 hires for one vacancy posting over the year
 $((\text{Monthly Hires})/(\text{Monthly Vacancies})*12)$

Tightness: Job vacancies per capita

Online job postings from Lightcast

- CBSA level
- Average over the previous year (matching SHED change)
- JOLTS implies about 8 hires for one vacancy posting over the year $((\text{Monthly Hires})/(\text{Monthly Vacancies})*12)$
- Can separate by requiring a BA or not
- Potentially many other variables

Tightness: Job vacancies per capita

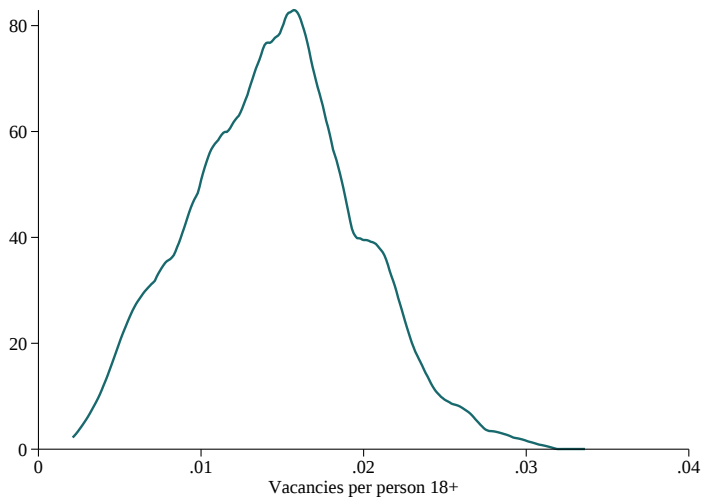
Online job postings from Lightcast

- CBSA level
- Average over the previous year (matching SHED change)
- JOLTS implies about 8 hires for one vacancy posting over the year $((\text{Monthly Hires})/(\text{Monthly Vacancies})*12)$
- Can separate by requiring a BA or not
- Potentially many other variables

Dividing by population 18+

- Data from the National Cancer Institute SEER
- Also divide by local unemployment (LAUS)

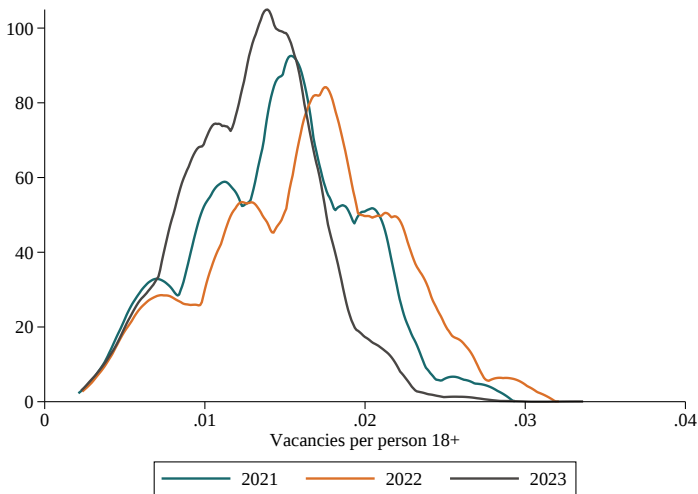
Kernel density of vacancies per capita (CBSA-year)



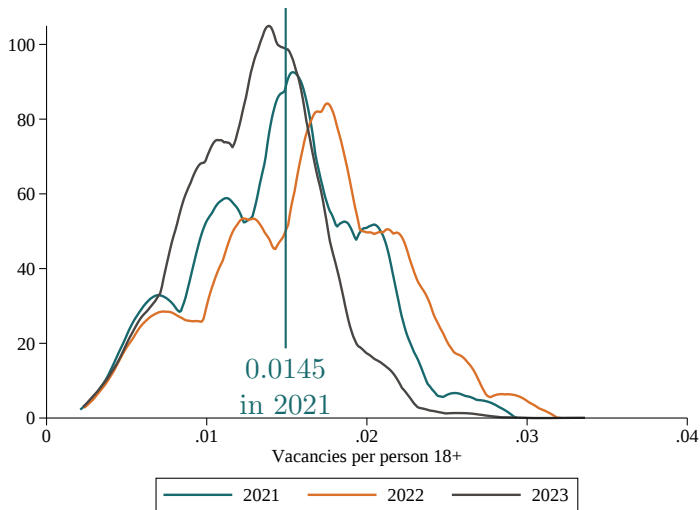
● Mean: 0.015

● Standard deviation: 0.005

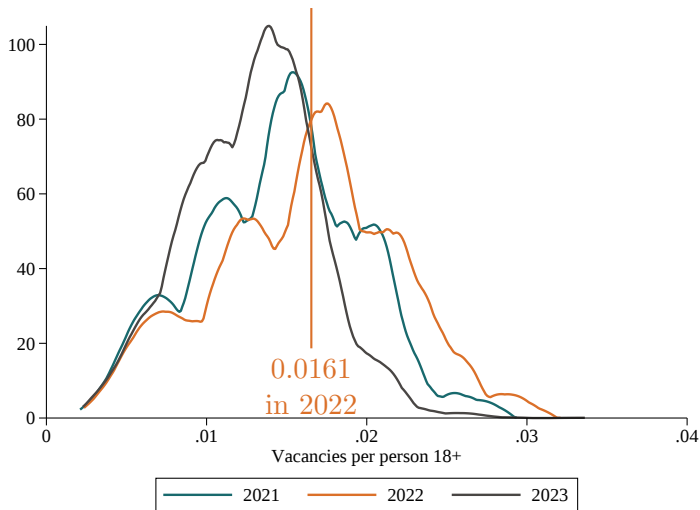
Kernel density, by year, of vacancies per capita



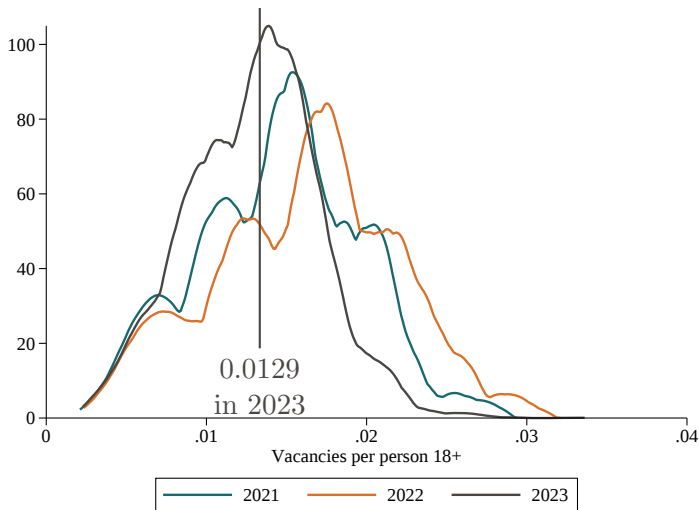
Kernel density, by year, of vacancies per capita



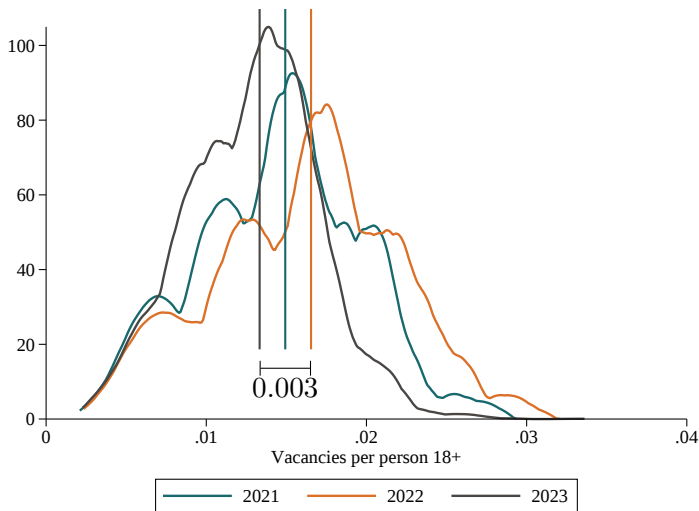
Kernel density, by year, of vacancies per capita



Kernel density, by year, of vacancies per capita



Kernel density, by year, of vacancies per capita



Empirical Design

$$\Delta y_{ijt} = \beta \text{VacancyRate}_{jt} + \alpha_j + \phi \text{division}_j * \text{year}_t + \gamma X_{ijt} + \epsilon_{ijt}$$

- Δy_{ijt} – individual i in CBSA j in year t moving to a better job in terms of a given characteristic
- β – effect of a one additional vacancy per capita on the likelihood of moving to a better job in terms of the characteristic

Empirical Design

$$\Delta y_{ijt} = \beta \text{VacancyRate}_{jt} + \alpha_j + \phi \text{division}_j * \text{year}_t + \gamma X_{ijt} + \epsilon_{ijt}$$

- Δy_{ijt} – individual i in CBSA j in year t moving to a better job in terms of a given characteristic
- β – effect of a one additional vacancy per capita on the likelihood of moving to a better job in terms of the characteristic
- Controls:
 - CBSA fixed effects (variation within areas)
 - Division by year fixed effects (excluding aggregate trend)
 - Time-varying individual controls

Effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

- 4.1 pp increase in likelihood of moving to a better job for one vacancy per hundred people

Effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

- 4.1 pp increase in likelihood of moving to a better job for one vacancy per hundred people
- 4.3 pp for pay and benefits

Effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

- 4.1 pp increase in likelihood of moving to a better job for one vacancy per hundred people
- 4.3 pp for pay and benefits
- Insignificantly (1.5 pp) more likely to move to a job with better work-life balance

Effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

- 4.1 pp increase in likelihood of moving to a better job for one vacancy per hundred people
- 4.3 pp for pay and benefits
- Insignificantly (1.5 pp) more likely to move to a job with better work-life balance
- Insignificant, though similar, effect on measured job changes

Magnitudes of effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

Standard deviation of 0.005:

- 2.1 pp change in likelihood of moving to a better job

Magnitudes of effects of vacancies on job characteristics

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect	0.021	0.022	0.011	0.008	0.014	0.011	0.017
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

Standard deviation of 0.005:

- 2.1 pp change in likelihood of moving to a better job

Year to year change of 0.003 from 2022 to 2023

- 1.2 pp decrease in the likelihood of moving to a better job

Magnitudes of effects of vacancies on job characteristics: Sanity check

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per person 18+	4.13 (1.91)	4.34 (1.76)	2.05 (1.88)	1.51 (1.58)	2.78 (1.83)	2.19 (1.40)	3.32 (2.19)
One standard deviation effect Mean of the dependent variable	0.021 0.084	0.022 0.073	0.011 0.065	0.008 0.054	0.014 0.062	0.011 0.038	0.017 0.119
Observations	15,079	15,079	15,079	15,079	15,079	15,079	15,079
Number of CBSAs	670	670	670	670	670	670	670

Assuming only one job change per person

- 4.1 movements to better jobs from one additional posting, on average in each month through a year
- JOLTS implies about 8 hires for one vacancy posting over the year $((\text{Monthly Hires})/(\text{Monthly Vacancies})*12)$

Heterogeneity by education

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
BA or more: Vacancies (standardized)	0.028 (0.016)	0.040 (0.013)	0.024 (0.016)	0.015 (0.013)	0.023 (0.014)	0.010 (0.009)	0.031 (0.018)
High school or less: Vacancies (standardized)	0.036 (0.016)	0.028 (0.016)	0.021 (0.014)	0.009 (0.011)	0.029 (0.016)	0.024 (0.012)	0.039 (0.019)
Difference	-0.008	0.012	0.003	0.006	-0.006	-0.014	-0.008
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119

- A one standard deviation increase in vacancies has similar effects for most characteristics

Heterogeneity by education

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
BA or more: Vacancies (standardized)	0.028 (0.016)	0.040 (0.013)	0.024 (0.016)	0.015 (0.013)	0.023 (0.014)	0.010 (0.009)	0.031 (0.018)
High school or less: Vacancies (standardized)	0.036 (0.016)	0.028 (0.016)	0.021 (0.014)	0.009 (0.011)	0.029 (0.016)	0.024 (0.012)	0.039 (0.019)
Difference	-0.008	0.012	0.003	0.006	-0.006	-0.014	-0.008
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119

- A one standard deviation increase in vacancies has similar effects for most characteristics
- Physical demands are significant for high school but not college workers

Heterogeneity by gender

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Men: Vacancies (standardized)	0.021 (0.013)	0.016 (0.012)	0.008 (0.010)	0.008 (0.010)	0.009 (0.010)	-0.001 (0.009)	0.021 (0.014)
Women: Vacancies (standardized)	0.011 (0.010)	0.020 (0.009)	0.015 (0.009)	0.007 (0.008)	0.011 (0.009)	0.008 (0.008)	0.013 (0.013)
Difference	0.010	-0.004	-0.007	0.001	-0.002	-0.009	0.008
Mean of the dependent variable	0.084	0.073	0.065	0.054	0.062	0.038	0.119

- Similar effects for men and women

Vacancies per unemployed

	Overall	Pay	Interest	Work-Life	Opportunities	Physical	Change
Vacancies per capita (standardized)	0.021 (0.010)	0.022 (0.009)	0.010 (0.010)	0.008 (0.008)	0.014 (0.009)	0.011 (0.007)	0.017 (0.011)
Vacancies per unemployed (standardized)	0.018 (0.008)	0.019 (0.007)	0.015 (0.007)	0.010 (0.006)	0.015 (0.006)	0.008 (0.006)	0.019 (0.009)
Difference	0.003	0.003	-0.005	-0.002	-0.001	0.003	-0.002
Mean of the dependent variable	0.038	0.033	0.030	0.024	0.027	0.018	0.074

- Similar effects when we use vacancies per unemployed worker

Theory: wages and amenities

Think of a jobs as combinations of wages w and amenities A

- Workers have b outside option and p job switching cost

If someone is employed, then

- For the current job, $w + A \geq b$

Theory: wages and amenities

Think of a jobs as combinations of wages w and amenities A

- Workers have b outside option and p job switching cost

If someone is employed, then

- For the current job, $w + A \geq b$

Think of a tighter labor market as the arrival of more, better combinations of w' and A'

- The expected sum of w' and A' is larger, *but not necessarily each component*

What happens with improved w' and A' ?

① Case 1: Nonemployed workers

- If new $w' + A' \geq b$, worker becomes employed
Wages of new hires w' may be higher or lower than w

What happens with improved w' and A' ?

① Case 1: Nonemployed workers

- If new $w' + A' \geq b$, worker becomes employed
Wages of new hires w' may be higher or lower than w

② Case 2a: Incumbent workers change jobs

- New $w' + A' \geq w + A - p$ needed to change jobs
- If A' is large enough, possible that if $w' < w$

What happens with improved w' and A' ?

① Case 1: Nonemployed workers

- If new $w' + A' \geq b$, worker becomes employed
Wages of new hires w' may be higher or lower than w

② Case 2a: Incumbent workers change jobs

- New $w' + A' \geq w + A - p$ needed to change jobs
- If A' is large enough, possible that if $w' < w$

③ Case 2b: Incumbent workers stay at current job

- Incumbent employer can also raise w , A , or both to keep worker
- Could happen with or without a new offer of w' or A'
- Depends on employer's knowledge and beliefs

What happens with improved w' and A' ?

① Case 1: Nonemployed workers

- If new $w' + A' \geq b$, worker becomes employed
Wages of new hires w' may be higher or lower than w

② Case 2a: Incumbent workers change jobs

- New $w' + A' \geq w + A - p$ needed to change jobs
- If A' is large enough, possible that if $w' < w$

③ Case 2b: Incumbent workers stay at current job

- Incumbent employer can also raise w , A , or both to keep worker
- Could happen with or without a new offer of w' or A'
- Depends on employer's knowledge and beliefs

We observe 2a, but not 1 or 2b.

Lower bound on the overall effect.

Conclusions and Next Steps

More vacancies correlated with movements into better jobs

- Also, higher paying jobs
- Small, insignificant increases for non-pecuniary attributes
 - Work-life balance
 - Interest in the job

Next steps

- Adding 2024 data to strengthen power
- Using a shift-share design to instrument for vacancies
- Comparing with JOLTS at the state level
- Studying variation between areas?
- Voluntary and involuntary, different employers?