“Minimum Wage Increases and Vacancies”
Kudlyak, Tasci and Tuzemen

Discussant: John Grigsby

November 17, 2022
This Paper: A Brief Summary

- Literature largely finds small/zero effects of minimum wage on employment
- Theory: minimum wage should reduce quantity of labor demanded
- This paper: study vacancies as a more direct measure of labor demand
- Triple-difference specification

\[
\ln V_{i,o,t} = \alpha_{i,o} + \mu_{o,t} + \gamma_{i,t} + \beta \ln(MW_{i,t}) \times AtRisk_o + \epsilon_{i,o,t}
\]

Compare:
- Occupations that are vs are not exposed to minimum wage
- In states that do vs do not change minimum wage
- At different times

- Fixed effects absorb lots of identification concerns
Large negative effect on vacancies

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(MW_t)*At-Risk</td>
<td>-0.241***</td>
<td>0.642***</td>
<td>0.226*</td>
<td>-0.103</td>
</tr>
<tr>
<td></td>
<td>(0.083)</td>
<td>(0.073)</td>
<td>(0.120)</td>
<td>(0.212)</td>
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<tr>
<td>Fixed Effects:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>County x Time</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
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<tr>
<td>County x Occupation</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Occupation x Time</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Clusters</td>
<td>51</td>
<td>51</td>
<td>51</td>
<td>51</td>
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<tr>
<td>Observations</td>
<td>2,930,908</td>
<td>2,930,908</td>
<td>2,931,708</td>
<td>2,932,275</td>
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<tr>
<td>R-squared</td>
<td>0.921</td>
<td>0.913</td>
<td>0.840</td>
<td>0.898</td>
</tr>
</tbody>
</table>

Small comment: column (4) could also have ln(MW) included without interaction
Discussion Outline

1. Lay out simple theory to think about employment vs vacancies
2. Implications for separations
3. Mechanisms: is the control also treated?
4. Estimation quibbles
   - Anticipation effects
   - State vs county level regressions
   - Real vs nominal
Theory: Employment vs Vacancies and Separations
An embarrassingly simple model of employment

Notation

- Employment: $E_t$
- Separation rate: $s_t$
- Vacancies: $v_t$
- Hire rate: $h(v_t)$

Law of Motion

$$E_{t+1} = (1 - s_t)E_t + h(v_t)E_t$$

or, letting $g_t \equiv E_{t+1}/E_t - 1$ denote employment growth,

$$g_t = h(v_t) - s_t$$
Effect of policy

Have LOM

\[ g_t = h(v_t) - s_t \]

Totally differentiate and

\[ dg = h'(v)dv - ds \]

After some algebra

\[ d\ln g = \frac{h}{g} \epsilon_{h,v} d\ln v - \frac{s}{g} d\ln s \]

Change in employment growth is equal to weighted difference between

1. Change in hires, governed by elasticity of hire rate and \( d\ln v \)
2. Change in separations
Some simple math using some minimum wage estimates

\[
d \ln g = \frac{h}{g} \epsilon_{h,v} d \ln v - \frac{s}{g} d \ln s
\]
\[= 0\]

- Previous research: no employment effects of minimum wage
Some simple math using some minimum wage estimates

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- Assume \( h(v) = \psi u^\alpha v^{1-\alpha} \) so elasticity of hires w.r.t. \( v \approx 0.3 \)
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0

0.3

8

8

Previous research: no employment effects of minimum wage
Assume \( h(v) = \psi u^\alpha v^{1-\alpha} \) so elasticity of hires w.r.t. \( v \approx 0.3 \)
Quarterly employment growth around 0.5% on average
Quarterly hire and separation rate both around 4% on average
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\[
d \ln g = -0.24
d \ln v - \frac{s}{g} d \ln s
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Some simple math using some minimum wage estimates

\[
d\ln g = \frac{h}{g} \left( \epsilon_{h,v} d\ln v - \frac{s}{g} d\ln s \right) = 0 \quad \Rightarrow \quad \epsilon_{h,v} = 0.3 \quad \Rightarrow \quad d\ln v = -0.24.
\]

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Solving LOM, this implies minimum wage generates

\[
d\ln s = \frac{d\ln v}{\epsilon_{h,v}} \approx -0.07
\]
Is this reasonable?

To rationalize result, separation rate must fall by around 7%. Reasonable?

- Any chance of using JOLTS to get a handle on magnitude of separations effect?
  - Note difference between “separations” and “separations into non-employment”

- Maybe $d \ln g \neq 0$ for this group of jobs?
  - Could you use OES to estimate employment effect using your triple-diff specification?
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- Minimum wage increases job retention?

- Search effort falls as offered wage distribution compresses?
Separations and vacancy posting

- Commonly assume free entry to vacancy posting so that $v$ satisfies
  \[
  \kappa = q(v/u) J(w, s, \cdot)
  \]

- Value of filled job falls as separation rate rises

- Should be some interdependence between separations and vacancy posting in eqm
  - Vacancies not a “pure” labor demand measurement

- My hypothesis: canonical model would struggle to rationalize joint movement of $v$ and $s$

- Could be fruitful to think which models may be successful? Labor supply? Job-Ladder?
Estimation suggestions and mechanisms
Are high-wage jobs “untreated?”

- Could it be that firms substitute away from minimum wage workers towards capital?
  - Self-checkout stations, order boards in fast food, etc.
- If so, then could labor demand for skilled workers rise with minimum wage?
- In which case, occupations “not at risk” in fact get positive shock

Two suggestions

1. Could estimate, occupation-by-occupation
   \[
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   and see if “not-at-risk” occupations significantly respond to MW

2. Placebo check: re-assign “at-risk” indicator randomly
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Anticipation Effects

- Theory for long anticipation effects?
- What is average lag between announcement and implementation of minimum wage?
- What is average separation rate among at-risk jobs? Prior: these are high turnover jobs
How do I think about these results in light of Berger et al. (2022) or Hurst et al (2022)?
- Monopsony power is small? Coincident labor supply shock?

Why “at-risk?” Why not “exposed?” No notion of risk in the paper...

County doesn’t buy you much because treatment is at state level
- May increase precision and reduce ln(0) problem by running state-level regressions

Real vs nominal
- Should we see something different in high vs low inflation periods?

Cyclicality of vacancies in high vs low minimum wage states: maybe a different paper?
Conclusion

- Nice paper looking at effect of minimum wage on vacancies
- Find large negative effect on vacancy posting
- Implies substantial movement in separations if zero employment effect
- Would be nice to see placebo: do non-exposed occupations have no vacancy effect?