The Short-Term Consequences of Unemployment Revisited

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Outline

1 Estimating the Causal Effect of Unemployment

2 Data and Methodology

3 Results

4 Summary
1 Estimating the Causal Effect of Unemployment

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most sociological studies use job loss and unemployment as synonyms

- to identify the effect of unemployment one would have to control for job loss
- using panel regression one could interact unemployment and reason for job termination
- using matching methods one could match exactly on the reason for job termination or require that control observations change jobs
Choice of Control Group in Matching Studies

- **A** → continuously employed without job change
- **B** → continuously employed with job change
- **T** → job changers, becoming unemployed

Most studies use **A** and **B** as a control group for **T**.

I will use **A** as well as **B** (controlling for the exact reason for job termination).
once we take into account the reason for job termination other questions emerge:

- what is the risk of becoming unemployed given a specific reason for job termination?
- in what ways differ persons that lost or left their job from the rest of the economically active population?
- in what ways differ persons that became unemployed (the treated) from the non-treated given the same reason for job termination?
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Data

- German Socio-Economic Panel (v28), waves P to BB (years 1999-2011)
  - spell data (activity calendar)
  - panel data (unbalanced panel)
- contextual data at the lower regional level (Raumordnungsregionen)
Dependent and Independent Variable

- dependent variable for matching: difference in the logarithm of gross hourly wages
  - treated ($T=1$): $Y_{1i} = \ln(wage_{t+X}) - \ln(wage_t)$, with $X \leq 3$
  - control ($T=0$): $Y_{0j} = \ln(wage_{t+V}) - \ln(wage_t)$, with $V \leq 2$

- treatment is defined as *relevant unemployment* between $t$ and $t + 1$

- control observations change employer but are not supposed to be affected by unemployment

- sample restricted to persons that are (in $t$)
  - between 21 and 60 years old and
  - in dependent part time or full time employment
Methodology / Statistical Modelling

- comparison of three different balancing methods with two different control groups
- matching methods
  1. Entropy-Balancing (presented here)
  2. Propensity-Score-Matching
  3. Mahalanobis-Matching
- control groups
  1. exact matching on reason for job termination → effect of unemployment only
  2. without job change → total effect of job termination
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# Reason for Job Termination and Job Perspective

<table>
<thead>
<tr>
<th>Reason for Job Termination</th>
<th>Employment Prospects</th>
<th>Perspective when Last Job Ended</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>New Contract</td>
<td>No</td>
</tr>
<tr>
<td>Resignation</td>
<td>35%</td>
<td>55%</td>
<td>10%</td>
</tr>
<tr>
<td>Layoff/Dismissal</td>
<td>17%</td>
<td>11%</td>
<td>69%</td>
</tr>
<tr>
<td>Temporary Employment</td>
<td>24%</td>
<td>17%</td>
<td>56%</td>
</tr>
<tr>
<td>Total</td>
<td>26%</td>
<td>32%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Row percentages; not weighted

Category ‘compromise agreement’ is dropped (375 obs)
T (1) and B (0) Compared to A (the Reference Group)

Standardized Bias = \( \frac{\bar{x}_j - \bar{x}_k}{s_k} \times 100 \)

No. Resignation: 87; No. Layoff/Dismissal: 631; No. Temporary Empl.: 217
## Estimated Treatment Effects for Different Control Groups

*Entropy Balancing (means only) for: age, migration background, education, region, sex, region#sex, past unemployment exp. (and square), past fulltime exp. (and square), hourly wages, seniority (and square), contracted hours, public sector, size of company, job satisfaction, chance of similar employment, perceived job security, gdp, ue-rate (and square)*

<table>
<thead>
<tr>
<th>Reason for Job T.</th>
<th># Treated</th>
<th>FD Treated</th>
<th>ATT 1 (B)</th>
<th>ATT 2 (A)</th>
<th>Diff (2-1, pp.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resignation</td>
<td>87</td>
<td>-14%</td>
<td>-24%</td>
<td>-20%</td>
<td>3,3</td>
</tr>
<tr>
<td>Layoff/Dismissal</td>
<td>631</td>
<td>-4%</td>
<td>-10%</td>
<td>-10%</td>
<td>0,6</td>
</tr>
<tr>
<td>Temporary Empl.</td>
<td>217</td>
<td>-1%</td>
<td>-8%</td>
<td>-9%</td>
<td>-0,9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>935</strong></td>
<td><strong>-6%</strong></td>
<td><strong>-14%</strong></td>
<td><strong>-13%</strong></td>
<td><strong>1,0</strong></td>
</tr>
</tbody>
</table>
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Summary

- when operationalizing unemployment one should make use of all available information
- estimation of scar effect should take differences between groups defined by reason for job termination into account
- the choice of the control group matters (and even other control group compositions are plausible)
- unemployment has substantial negative effects on hourly (and even more on monthly) wages
Thank You for Your Attention

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