Social Insurance, Firms, and Workers' Sickness Absences

Evidence from Austrian Social Security Data using a Regression Discontinuity Design

René Böheim  
(JKU Linz)

Thomas Leoni  
(WIFO Vienna)

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Our research

Q: Do we observe fewer or shorter sickness absences in firms where absences costs are greater than in firms with lower costs?

M: Quasi-experimental evaluation (RDD) with Austrian social security data for 1998 and 1999

R: Sickness absences do not differ in firms* with and without a 30%-deductible

(* firms close to the threshold)
Background

Sickness absences are associated with a greater probability of receiving disability benefit (OECD 2010)

Since the 1990s: increased importance of “integration measures” for sickness and disability policies, also aimed at employers

Little evidence on how firms react to monetary incentives (Westergaard-Nielsen and Pertold 2012; Fevang, Markussen and Roed 2011)
Changing Firms’ Incentives

Experience-rating:

- Finland: no effect on DI (Kyyrä and Tuomala, 2013)
- Netherlands: not clear as confounded with other changes (Koning, 2009)

Other mechanisms:

- Legal obligations
- Deductibles (Co-payments)
Institutional Background

Continued wage payment for all sick workers, 4 to 12 weeks (depending on tenure)

Firms were insured against wage costs

An administrative threshold (based on wage bill in $t-2$) defined whether a firm had to pay a deductible (30%) or not

The quasi-experimental situation around the threshold provides causal evidence on the effect of the deductible on sickness absences for firms in this range (LATE)
Note: Density of firms in the interval -1,500 and +1,500 around the threshold. The threshold was €18,313.56 in 1998 and €18,575.16 in 1999. Local polynomial regressions using a triangle kernel for each side of the cut-off (Kovak and McCrary, 2008).
Estimated effect on sickness incidences

Note: Each dot indicates the estimated treatment effect on the number of sickness spells in a firm within €1,500 of the thresholds. The grey lines indicate the 95 percent confidence intervals. Spells are all sickness absences of blue-collar workers in a firm in a month, weighted by the blue-collar workers' wage shares. Only spells are considered during which firms continued to pay their absent workers, without imposing an upper limit on the duration of a spell.
We **fail to reject** the H0 of no effect:

<table>
<thead>
<tr>
<th>Spells</th>
<th>Interval around the threshold</th>
<th>+/− 1500</th>
<th>(SE)</th>
<th>+/− 1000</th>
<th>(SE)</th>
<th>+/− 500</th>
<th>(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal bandwidth</td>
<td>0.489</td>
<td>(0.395)</td>
<td></td>
<td>0.444</td>
<td>(0.384)</td>
<td>0.423</td>
<td>(0.381)</td>
</tr>
<tr>
<td>Optimal bandwidth/2</td>
<td>2.182</td>
<td>(1.622)</td>
<td></td>
<td>1.568</td>
<td>(1.382)</td>
<td>1.349</td>
<td>(1.263)</td>
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<tr>
<td>Optimal bandwidth*2</td>
<td>0.470*</td>
<td>(0.263)</td>
<td></td>
<td>0.510**</td>
<td>(0.253)</td>
<td>0.528</td>
<td>(0.249)</td>
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</table>

<table>
<thead>
<tr>
<th>Days</th>
<th>Interval around the threshold</th>
<th>+/− 1500</th>
<th>(SE)</th>
<th>+/− 1000</th>
<th>(SE)</th>
<th>+/− 500</th>
<th>(SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal bandwidth</td>
<td>4.877*</td>
<td>(2.522)</td>
<td></td>
<td>4.869*</td>
<td>(2.517)</td>
<td>4.865*</td>
<td>(2.515)</td>
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<tr>
<td>Optimal bandwidth/2</td>
<td>2.485</td>
<td>(3.323)</td>
<td></td>
<td>2.532</td>
<td>(3.311)</td>
<td>2.556</td>
<td>(3.304)</td>
</tr>
<tr>
<td>Optimal bandwidth*2</td>
<td>4.431**</td>
<td>(1.929)</td>
<td></td>
<td>4.433**</td>
<td>(1.917)</td>
<td>4.434**</td>
<td>(1.911)</td>
</tr>
</tbody>
</table>

| N               | 12,424                        | 8,335    | 4,174 |

*Note*: \( \tau \) indicates the estimated difference in the sickness indicator due to the change in treatment. Standard errors in parentheses. The optimal bandwidths are calculated according to Imbens (2012). The kernel is a triangle kernel.

*** p<0.01, ** p<0.05, * p<0.1.
Discussion of Results

- Medical certification?
  Probably not: Böheim and Leoni (2011)

- Deductible too moderate to induce management responses?
  Probably: Size matters (Chiappori et al., 1998)

- Deductible cheaper than alternative strategies?
  Possibly: Sick pay reciprocated by higher effort (Duersch et al., 2012)

Austria’s system: similar to other countries (Germany!)

BUT: We have to be careful when projecting our findings to other countries, particularly the US
In the US

Different institutional setting:

- lower benefit coverage, and
- lower absenteeism

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Absence rate</td>
<td>2.3</td>
<td>2.4</td>
<td>2.4</td>
<td>2.6</td>
<td>2.7</td>
<td>2.8</td>
<td>2.7</td>
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<tr>
<td>Lost worktime rate</td>
<td>2.8</td>
<td>3.1</td>
<td>2.9</td>
<td>2.9</td>
<td>3.5</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>US</strong></td>
<td></td>
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<tr>
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<td>2.3</td>
<td>2.2</td>
<td>2.2</td>
<td>2.3</td>
<td>2.2</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Lost worktime rate</td>
<td>1.2</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
<td>1.2</td>
<td>1.1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*Note:* Data for workers aged 16 years+. Data for USA: CPS, BLS calculations; data for Austria: AKE, WIFO calculations.
Potential Implications

• US firms more cost-sensitive?
  • Experience rating or similar incentives (Autor, 2011) might have stronger effects than in Austria?

• Differential treatment of small and large firms
  • Results suggest that firms did not remain small due to the preferential treatment
Additional slides
Details of Austria’s System

- **Mandatory** Social Security System

- **Continued wage** payment: by law, for all sick workers, duration varies between 4 and 12 weeks and depends on tenure

- Until 2001, firms received a **refund** of wages paid to sick blue-collar workers:
  - **Small firms**: 100% refund
  - **Large firms**: 70% refund (=30% deductible)
  - Size determined by wage bill in $t-2$
Choice of Bandwidth