Positive Welfare State Dynamics?

Sickness benefits and sickness absence in Europe 1997-2011

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This study focuses on the relationship between **sickness benefits** (proving cash benefits in case of sickness) and short-term **sickness absence** in 20 European countries 1997-2011.

- Two approaches to the relationship sickness benefits - sickness absence

1. **The economic approach.** Sickness absence a result of workers’ labour supply decisions

- Direct effect: generous sickness benefit $\rightarrow$ higher absence

- Long-term effect: The welfare state erodes social norms, and the disincentive effects of sickness benefits will materialize with a time lag (“hazardous welfare state dynamics”)

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2. The epidemiological approach. Sickness absence a result of poor health

- Nothing explicitly to say about sickness benefits

- I here propose to combine the epidemiological approach with a welfare resource perspective
The epidemiological/welfare resource perspective

- Access to various resources (economic and other) have both direct and long-term effects on health and socio-economic differences in health.

- There may be **protective effects of income during sickness** – such as enabling participation social life, affording to buy nutritious food and medicine - which may be beneficial for recovery from illness.

- Access to **collective resources** providing economic support during times of ill-health may therefore be important for individual health trajectories, not least amongst more disadvantaged groups in society who often lack individual resources.
Economic perspective

- **H1.** There is a positive and direct relationship between the generosity of sickness benefits (at t1) and sickness absence (at t1).
- **H2.** There is a positive long-term positive relationship between the generosity of sickness benefits (at t1) and sickness absence (at t2).

Epidemiological/welfare resource perspective

- **H3.** There is a negative long-term relationship between the generosity of sickness benefits (at t1) and sickness absence (at t2).
- **H4:** The negative long-term relationship between the generosity of sickness benefits (at t1) and sickness absence (at t2) is stronger for social groups with poor health (=high levels of sickness absence) at t1.

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Method

- Data for 20 countries from EU-LFS for the period 1992-2011 combined with yearly data on sickness benefits from the Welfare State Entitlements Dataset

- Synthetic cohort approach - individuals sharing some common characteristics are grouped into cohorts, after which the averages within these cohorts are treated as observations in a pseudo panel

- $8 \times 3 \times 2$ classification of cohort year of birth (five year intervals), education and gender
● 48 socio-economics groups over a period of 20 years will theoretically result in 960 observations per country

● We need at least two observations per group, and we are interested in the lagged effect of sickness benefits (we loose one observation/cohort)

● On average 464 observations/country
Dependent variables:

1. The number of persons who worked less than usual in the reference week due to illness (TRWA)

2. The number of persons who did not work at all in the reference week (TIW) plus the number of persons who worked less than usual due to illness (TRWA + TIW)

Independent variable

Additive index of (i) replacement rate (percent of previous wage), (ii) qualification period (weeks), (iii) duration (weeks), and (iv) coverage (percent of lab. force)

Standardized, index can vary 0-4.

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• Fixed effect approach (fixed effects at country- and cohort level)

• Count data – negative binomial model (variant of Poisson model)

• Incidence rate ratios (percent change in dependent variable from a one-unit change in the independent variable)

**Basic model**

\[ S_{ijt} = \alpha + x_{ijt}\beta_1 + z_{jt}\beta_2 + SB_{jt} \beta_3 + SB_{j,t-1}\beta_4 + SB_{j,t-1} * S_{ij,t-1}\beta_5 + c_j + \delta_{ij} + \varepsilon_{ijt} \]

where \( S_{ijt} \) is sickness absence in socioeconomic group \( i \) (i=1,..., N) in country \( j \) (j=1,..., 20) in at time \( t \) (1997, ..., 2011).

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Negative Binomial Models with Robust Standard Errors. Incidence Rate Ratios with 95 Percent Confidence Intervals within Parenthesis (significant coefficients in bold)

<table>
<thead>
<tr>
<th>Temporary reduction in working ability (TRWA)</th>
<th>Temporary inability to work (TIW) + TRWA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country-level variables</strong></td>
<td></td>
</tr>
<tr>
<td>Sickness benefits</td>
<td>1.461 (0.845 - 2.526)</td>
</tr>
<tr>
<td>Sickness benefits lagged (t-1)</td>
<td>0.692 (0.507 - 0.944)</td>
</tr>
<tr>
<td><strong>Group-level variables</strong></td>
<td></td>
</tr>
<tr>
<td>Sickness absence at t-1</td>
<td>sig</td>
</tr>
<tr>
<td>Temporary employment</td>
<td>ns</td>
</tr>
<tr>
<td>Working hours</td>
<td>ns</td>
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<tr>
<td>Inactivity</td>
<td>ns</td>
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<tr>
<td><strong>Country-level variables</strong></td>
<td></td>
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<tr>
<td>Labour force part.</td>
<td>ns</td>
</tr>
<tr>
<td>Unemployment</td>
<td>sig</td>
</tr>
</tbody>
</table>

Observations | 9284 | 9284 | 9284 | 9284 |

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No direct association of sickness benefit generosity on short-term sickness absence

A negative association between lagged sickness benefit generosity and sickness absence: A one-unit increase in the sickness benefit index at $t_{-1}$ is associated with a reduction in sickness absence of between 31-36 percent five years later ($t_{1}$).

How much is a one-unit increase in the sickness benefit generosity index? Sweden (index-value=3.7) vs. Italy (2.6). To reach the average score of Sweden, Italy would have to increase the duration of benefits (from 26 weeks to 156 weeks), increase the replacement rate somewhat (from 76.1 to 80.6 percent) and increase the coverage of sickness benefits from 66.7 percent to 88.9 percent (both Sweden and Italy have no qualification period).
Stratified analyses. The direct effect of sickness benefit generosity (t₁) and lagged sickness benefit generosity (t₋₁) on sickness absence at t₁ according to levels of sickness absence at t₋₁

Temporary reduction in working ability (TRWA)

<table>
<thead>
<tr>
<th>Levels of sickness absence at t₋₁</th>
<th>Sickness benefits t₁</th>
<th>Sickness benefits t₋₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0.815 (0.626 - 1.061)</td>
<td>0.532 (0.287 - 0.987)</td>
</tr>
<tr>
<td>Low</td>
<td>0.694 (0.469 - 1.027)</td>
<td>0.572 (0.374 - 0.872)</td>
</tr>
<tr>
<td>Medium</td>
<td>0.669 (0.793 - 3.516)</td>
<td>1.266 (0.648 - 2.473)</td>
</tr>
<tr>
<td>High</td>
<td>2.806 (1.067 - 7.376)</td>
<td>1.266 (0.697 - 2.302)</td>
</tr>
</tbody>
</table>

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Temporary reduction in working ability (TRWA) plus temporary inability to work (TIW)

- Sickness benefits t1
- Sickness benefits t-1

No Low Medium High

<table>
<thead>
<tr>
<th></th>
<th>Sickness benefits t1</th>
<th>Sickness benefits t-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1.316 (0.396 - 4.374)</td>
<td>1.114 (0.735 - 1.690)</td>
</tr>
<tr>
<td>Low</td>
<td>0.961 (0.675 - 1.368)</td>
<td>0.926 (0.628 - 1.364)</td>
</tr>
<tr>
<td>Medium</td>
<td>0.837 (0.585 - 1.198)</td>
<td>0.718 (0.550 - 0.938)</td>
</tr>
<tr>
<td>High</td>
<td>0.579 (0.370 - 0.904)</td>
<td>0.613 (0.515 - 0.730)</td>
</tr>
</tbody>
</table>
Reform effects

- Assume that a country reduces sickness benefit generosity from the highest observed value on the sickness benefit index (3.70) at $t_1$ to the lowest observed value on this index (1.96) at $t_2$.

- The lagged value of sickness benefit generosity at $t_2$ will still be at a high level (3.70). Only a $t_3$ have also the lagged value of sickness benefit generosity reached a low level (1.96).
Effects of a reduction in sickness benefit generosity (at t2) on predicted sickness absence rates

Temporary reduction in working ability (TRWA)

Sickness absence at t₁

- No
- Low
- Medium
- High

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Temporary reduction in working ability (TRWA) plus temporary inability to work (TIW)

Sickness absence at $t_1$
- No
- Low
- Medium
- High
Conclusions

- More complex relationship between sickness benefits and sickness absence than oftentimes acknowledged

- There may be protective effects of income during sickness which may be beneficial for recovery from illness and decreases the likelihood of transitions into more long-term sickness absence