Optimal Taxation Under Different Concepts of Justness

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Research Question

- What optimal social weights (Saez, 2002) are implied by different concepts of "fair taxation" for singles in Germany?
  - Welfarist
  - Minimum Sacrifice (Mill, 1921)
  - Justness: Subjective Measure based on SOEP question

- Findings:
  - Welfarist approach: lowest weights for working poor
  - Minimum Sacrifice: highest weights for working poor
  - Justness:
    - Absolute deviations: lowest weight for working poor
    - Relative deviations: lowest weight for working poor, highest weight for poor and highest income earners
Motivation

- Standard approach in optimal taxation objective of social planner is welfarist (e.g., Mirrlees, 1971; Saez, 2002).
- In practice other considerations play a role
  - Mankiw and Weinzierl (2010)
  - Weinzierl (2014)
- Which concepts of justness can explain current tax practice?
  - Do the concepts of justness imply "reasonable" weights?
- Positive approach
  - Examples with welfarist approach: Blundell, Brewer, Haan, and Shephard (2009); Haan and Wrohlich (2010); Bourguignon and Spadaro (2012)
Optimal Tax Formulas I/II

▶ Generalization of Saez (2002)
▶ \( i = 0, \ldots, I \) income groups defined through gross income \( y_i \)
▶ Social planer optimizes:

\[
L = \sum_{i=0}^{I} \mu_i h_i f_i \quad \text{s.t.} \quad \sum_{i=0}^{I} h_i T_i = G
\]  

(1)

\( h_i \): share of group  
\( e_i \equiv \frac{\mu_i}{\lambda} \): weight of group  
\( f_i \): function based on a justness concept  
\( T_i \): total tax paid by group

▶ Intensive and extensive mobility elasticities

\[
\zeta_i = \frac{c_i - c_{i-1}}{h_i} \frac{\partial h_i}{\partial(c_i - c_{i-1})}, \quad \eta_i = \frac{c_i - c_0}{h_i} \frac{\partial h_i}{\partial(c_i - c_0)}
\]  

(2)
Weights $e_1, ..., e_l$ implicitly defined by:

\[
\frac{T_i - T_{i-1}}{c_i - c_{i-1}} = \frac{1}{\zeta_i h_i} \left\{ \sum_{j=i}^{l} \left[ \left( 1 - e_j \frac{\partial f_j}{\partial c_j} \right) - \eta_j \frac{T_j - T_0}{c_j - c_0} \right] h_j \right\}
\]

\[-(e_i f_i - e_{i-1} f_{i-1}) \zeta_i \frac{h_j}{c_i - c_{i-1}} - \sum_{j=i}^{l} (e_j f_j - e_0 f_0) \eta_j \frac{h_j}{c_j - c_0} \}
\]

\[
\sum_{i=0}^{l} h_i e_i \frac{\partial f_j}{\partial c_j} = 1
\]
Operationalization of Justness Concepts

▶ Welfarist:

\[ f_i = u(i) + b \times c_i \]  \hspace{1cm} (5)

▶ Minimum Sacrifice:

▶ Absolute

\[ f_i = \begin{cases} 
-(y_i - c_i)^2 & \text{if } y_i \geq c_i \\
-0.01(y_i - c_i)^1 & \text{if } y_i < c_i 
\end{cases} \]  \hspace{1cm} (6)

▶ Relative

\[ f_i = \begin{cases} 
-(\frac{y_i-c_i}{c_i})^2 & \text{if } y_i \geq c_i \\
-0.01(\frac{y_i-c_i}{c_i})^1 & \text{if } y_i < c_i 
\end{cases} \]  \hspace{1cm} (7)

▶ Subjective Justness

▶ Absolute

\[ f_i = \begin{cases} 
-(c_i^{\text{just}} - c_i)^2 & \text{if } c_i^{\text{just}} \geq c_i \\
-0.01(c_i^{\text{just}} - c_i)^1 & \text{if } c_i^{\text{just}} < c_i 
\end{cases} \]  \hspace{1cm} (8)

▶ Relative

\[ f_i = \begin{cases} 
-(\frac{c_i^{\text{just}}-c_i}{c_i})^2 & \text{if } c_i^{\text{just}} \geq c_i \\
-0.01(\frac{c_i^{\text{just}}-c_i}{c_i})^1 & \text{if } c_i^{\text{just}} < c_i 
\end{cases} \]  \hspace{1cm} (9)
Subjective just taxes

▶ SOEP questions:
   ▶ "How high would your gross income have to be in order to be just?"
   ▶ "How high would your net income have to be in order to be just?"

\[ T_{i}^{\text{just}} = y_{i}^{\text{just}} - c_{i}^{\text{just}} \]

▶ Advantages:
   ▶ Interviewees are not prepossessed with a theory of just taxation by the questionnaire.
   ▶ Interviewees do not need a thorough understanding of tax schedules.
Estimation of elasticities

- Net incomes calculated with microsimulation model STSM (Steiner, Wrohlich, Haan, and Geyer, 2012)
- Estimate random utility discrete choice labor supply model (van Soest, 1995; McFadden, 1974)
- Each hours-person combination is assigned to an income group $i = 1, \ldots, I$.
- Predict changes in relative employment shares of income groups due to changes in relative net incomes $c_i - c_{i-1}$ and $c_i - c_0$
<table>
<thead>
<tr>
<th>Group</th>
<th>Gross income</th>
<th>Net income</th>
<th>Just Net income</th>
<th>Share</th>
<th>η</th>
<th>ζ</th>
<th>Welfarist</th>
<th>Minimum Sacrifice</th>
<th>Subjective</th>
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*Note: German single households; own calculations based on the SOEP and the STSM (see Jessen et al. (2016))
Simulation results
Table 2: Just net incomes by party affiliations

<table>
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Note: German single households; own calculations based on the SOEP.
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<th>Left</th>
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<th>CDU</th>
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<th>Left</th>
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</table>

Note: German single households; own calculations based on the SOEP.
Welfarist weights according to supporters of different parties

We set the tax burden for the six income groups by subtracting net incomes perceived as just by supporters of the four parties from actual gross incomes.
Summary and Conclusion

- We calculate social weights implied by the current tax schedule taking into account labor supply reactions.
- German tax and transfer system is only optimal if social weights are non-decreasing (or other justness concerns play a role).
- Welfarist and subjective justness imply low (negative) weights for the working poor.
- With regard to our four different parties, welfarist and subjective justness imply high weights for the non-working.
  - Justness weights are negative for working poor and for SPD or the Left voters.
  - Welfare weights are negative for working poor for all party affiliations
  - Welfare weights are negative for the middle class for the Left voters.
Thanks for your attention!


Question for justness

67. Is the gross income that you earn at your current job just, from your point of view?
   No .............................................. [ ]
   Yes .............................. [ ] → Question 69!

68. How high would your gross income have to be in order to be just?
   Gross: ___________________ euros per month    Don't know .......... [ ]

69. Is the net income that you earn at your current job just, from your point of view?
   No .............................................. [ ]
   Yes .............................. [ ] → Question 71!

70. How high would your net income have to be in order to be just?
   Net: ___________________ euros per month    Don't know .......... [ ]
How high would your just net income be?
How high would your just net income be?
Frequency of justness

Is the gross (net) income that you earn at your current job just, from your view?

<table>
<thead>
<tr>
<th></th>
<th>Net income is just</th>
<th>Net income is unjust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross income is just</td>
<td>55 percent</td>
<td>7 percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>62 percent</td>
</tr>
<tr>
<td>Gross income is unjust</td>
<td>1 percent</td>
<td>37 percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38 percent</td>
</tr>
<tr>
<td></td>
<td>56 percent</td>
<td>44 percent</td>
</tr>
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</table>

The table contains information on singles only.