Coherence Assessment of EU-SILC in Austria

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www.statistik.at
Is coherent income data more credible?

For policy:
- Income data inform economic and social policies
- Consistent policies require consistent data
- Conflicting information provokes doubt (but also thought !)

For data producers:
- Indication of the validity of results
- Understanding for data deficiencies
- Increases 'trust' in the data
- Demand for improved harmonisation in the future

⇒ Coherence assessment is important exercise
   (consistency is secondary !)
Coherence of main sources in Austria

- EU-SILC – current wave
- Previous waves of EU SILC (from 2003)
- Population Census
- Labour Force Survey (Microcensus sample)
- Household Budget Survey (sample survey)
- Tax Register Statistics (4 mio employees)
- National Accounts
Causes for inconsistencies?

1. Conceptual:
   - Different concepts of income measurement
   - Reference period

2. Data collection:
   - Coverage problems in the sampling frame
   - Measurement errors
   - Unit Non-Response
   - Item Non-Response
   - Errors in the data editing process (weighting, imputation, programmes)

3. Sampling variability
Selected parameters for coherence assessment

**Basic:**
- Education
- Main activity
- Tenure Status
- Household Size

**Income data:**
- Number of income recipients
- Distribution of income
- Total amount of income

To follow: illustrative example for coherence of assessment of employee’s income and total income in tax register and national accounts
### Employee Income Recipients (absolute numbers in 1.000)

<table>
<thead>
<tr>
<th></th>
<th>total</th>
<th>women</th>
<th>men</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-SILC 2004 (py010g)</td>
<td>3.457</td>
<td>1.563</td>
<td>1.894</td>
</tr>
<tr>
<td>Tax Register 2003</td>
<td>3.572</td>
<td>1.635</td>
<td>1.937</td>
</tr>
<tr>
<td>EU-SILC 2005 (py010g)</td>
<td>3.528</td>
<td>1.592</td>
<td>1.936</td>
</tr>
<tr>
<td>Tax register 2004</td>
<td>3.604</td>
<td>1.657</td>
<td>1.948</td>
</tr>
<tr>
<td>Tax register 2004 (22 days+)</td>
<td>3.531</td>
<td>1.624</td>
<td>1.907</td>
</tr>
</tbody>
</table>

Note: Statistics of Wage Tax, without apprentices

Lack of comparability:

- Wage statistics may include „fake employees“
- EU-SILC „small amounts“ difficult to remember

2005 introduction of show cards to activate the memory, more employee incomes in SILC were registered.

73,000 persons in tax register received less than 22 days

=> excluding „low incomes“ produces equivalent numbers!

(still missing 32,000 women, excess 31,000 men)
Distribution of annual gross employee income 2004

Annual Gross Employee Income 2004

EURO
60.000
50.000
40.000
30.000
20.000
10.000
0
10% 20% 25% 30% 40% 50% 60% 70% 75% 80% 90%

- WTS 2004 total
- SILC 2005 total

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Ursula Till-Tentschert, Statistics Austria
Distribution of annual gross employee income 2004

Annual Gross Employee Income 2004

EURO

percentiles

WTS 2004 total
WTS 2004 women
WTS 2004 men
SILC 2005 total
SILC 2005 women
SILC 2005 men
Coherence assessment of employee incomes

- High coherence for number of recipients

- Overestimation of incomes below median in EU_SILC
  - underreported low incomes (lack of memory),
  - artificial overreporting in the Tax Register;
  - Proxy information

- Underestimation of incomes above the median in EU-SILC, in particular for men
  - Possible gender bias in proxy information
  - Underreporting of lump-sums in EU-SILC

- Good overall representation of employee’s incomes
**Total EU-SILC income coverage of National Accounts**

<table>
<thead>
<tr>
<th></th>
<th>Gross incomes of private households (in million Euro)</th>
<th>Disposable income (in million Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>without property income</td>
</tr>
<tr>
<td>Estimate from national accounts</td>
<td>167.148</td>
<td>149.836</td>
</tr>
<tr>
<td>Estimate from EU-SILC 2004</td>
<td>141.419</td>
<td>140.970</td>
</tr>
<tr>
<td>Difference between NA and EU-SILC 2004</td>
<td>15.4%</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Notes: SNA estimates based on non-financial private household and non-profit organisation sector (s13+s14), reduced by ad-hoc estimates for NPO incomes, institutionalised households, liquidation of reserves and imputed rent.

Suspected main reasons for underestimation:
- Income from property
- Income from self employment
Immediate consequences - capital income

- Revised order of appearance of hy090 in SILC 2005
- Adaptation of question wording:
  2004: Please tell me if you had any of the following incomes?
  Income from interests yes/no
  Income from dividends yes/no ....
  Please tell me how much your income from interests was? gross and net

  2005: Did you own one or several of the following assets in 2004:
  Saving book, saving contract, shares, options, licences, etc.
  If yes: All in all what was your net profit 2004?

- Results:

  **Gross income from capital (hy090+hy040)**

<table>
<thead>
<tr>
<th></th>
<th>households</th>
<th>billion euro</th>
<th>median euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILC 2004</td>
<td>981,000</td>
<td>2.2</td>
<td>250</td>
</tr>
<tr>
<td>SILC 2005</td>
<td>2,717,000</td>
<td>2.9</td>
<td>125</td>
</tr>
</tbody>
</table>

EU-SILC Austria, 2005 preliminary results
Conclusions & Challenges ahead

- coherence assessment stimulates:
  - critical quality assessment
  - improved data collection
    - Improvement of measurement, eg. question on capital income
    - assure high response rates
    - keep proxy information to a minimum
  - harmonisation
  - further research
    - Special coherence assessments for self employed income

- coherence assessment requires:
  - Robust reference sources
  - Transparent procedures (courage!)