Income distribution and redistribution across Europe: using EU-SILC in two complementary approaches

R. Berthoud, F. Figari, M. Iacovou, A. Skew, H. Sutherland
ISER – University of Essex

1st European User Conference for EU-LFS and EU-SILC
Mannheim, March 5-6, 2009
Wider context: ALiCE Project

- **Analysis of Life Chances in Europe**
  - Detailed analysis of family structure, employment and income
  - Cross-national comparisons of patterns across both the ‘old’ and ‘new’ members of the European Union
  - Substantive and methodological strands
  - Use of EU-SILC, EU-LFS, ESS, EUROMOD and ECHP
  - Focus on monetary indicators of living standards
Wider context: EUROMOD

- EU-wide static tax-benefit microsimulation model
- EU-15 + EE, HU, PL, SI; microdata from 15 sources
- Direct taxes, SICs and (non-contributory) cash benefits
- Disposable income includes both simulated and non simulated components
- Indirect taxes and non-cash benefits for a selection of countries
- Modelling benefit non take up and tax evasion is complex: baseline scenario assumes full compliance

Current project (2009-2012) aims at:
- covering all EU countries
- using EU-SILC as input data
- updating policy rules to at least the EU-SILC data year
Two complementary approaches...

Analysis of income distribution based on
- **Reported incomes** in the original survey
- **Simulated incomes** by microsimulation model:
  - “Tax-benefit” models simulate cash benefits, taxes and contributions using information from the survey
  - Validation of main aggregates versus administrative statistics
  - The main output is individual income and its components
Motivations

• **Breakdown of income concept** (Atkison et al. 1995)
• Not all income components are reported properly:
  – Bottom and top of the distribution
  – Capital income and self-employment income
  – Means-tested benefits
• **Reconciliation exercise** of the two approaches

![Diagram]

- **Reported income**
- **Simulated income** (intended effects of tax-ben system)
- **True income**
Motivations

• Focus on the main reasons for differences
  (Mantovani and Sutherland 2003, Lietz and Sutherland 2005)
  – Simulation of final annual taxes
  – Income non reporting
  – Benefit non take-up
  – Tax evasion / tax avoidance

• Within country relative measures, but cross country comparison informs the analysis
Microsimulation added value

- Analysis of Income distribution
  - More detail on components of taxes/benefits
  - Annual taxes
  - Analysis at individual level (sharing assumptions)
  - Child contingent support
  - Work incentive indicators
  - Entitlement to benefits, rather than receipt

- Analysis of Income redistribution
  - (Only to some extent feasible with EU-SILC)
  - Forward projections and current policies
  - Impact of policy changes on social indicators
  - “What if” questions and impact of redistributive systems on different national populations
Data and countries

- Data: EU-SILC
- Countries: AT, BE, IT, ES, HU
- Data Years: 2004-1 (AT); 2004-2 (BE, IT); 2005-2 (ES, HU)
- Policy years: 2003 (AT, BE, IT); 2004 (ES); 2005 (HU)
- Equivalence scale: Modified OECD (generally, using “non adjusted” information from the survey)

- Preliminary results!
Gini coefficients by country and approach
(net household equivalent income)
Quintile points by country and approach
(net household equivalent income)
Quintile shares by country and approach
(net household equivalent income)

Austria
EU-SILC
EUROMOD

Belgium
EU-SILC
EUROMOD

Italy
EU-SILC
EUROMOD

Spain
EU-SILC
EUROMOD

Hungary
EU-SILC
EUROMOD
Poverty rates by country and approach

Poverty line: 50% of the median income

Poverty line: 60% of the median income
Explaining the differences

• **Country specific reasons:**
  - **ES:** underreporting of Unemployment Benefits and Child benefit (Levy and Mercader-Prats 2003)
  - **AT:** benefit non take up (50/60%, Fuchs 2007)
  - **BE:** Income support, Withholding / Annual taxes
  - **HU:** Concentration of people (elderly) near the poverty line; updating to 2005 policy year
Reduction in Gini coefficients by country

Source: EUROMOD
### Changes in quintile shares by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Original</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hungary</strong></td>
<td><img src="image1" alt="Original" /></td>
<td><img src="image2" alt="Net" /></td>
</tr>
<tr>
<td><strong>Spain</strong></td>
<td><img src="image3" alt="Original" /></td>
<td><img src="image4" alt="Net" /></td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td><img src="image5" alt="Original" /></td>
<td><img src="image6" alt="Net" /></td>
</tr>
<tr>
<td><strong>Belgium</strong></td>
<td><img src="image7" alt="Original" /></td>
<td><img src="image8" alt="Net" /></td>
</tr>
<tr>
<td><strong>Austria</strong></td>
<td><img src="image9" alt="Original" /></td>
<td><img src="image10" alt="Net" /></td>
</tr>
</tbody>
</table>

*Note: The diagrams show the distribution of quintile shares before and after a certain change.*

*Legend:*
- Bottom
- 2nd
- 3rd
- 4th
- Top
Income composition

Whole population

Bottom decile group

Top decile group

Original
SICs
Public Pensions
Means Tested Benefits
Non Means Tested Benefits

SOURCE: EUROMOD
Child support

Source: EUROMOD
Conclusions

• Results from the two approaches are broadly consistent

• Ranking of countries does not change

• Measures sensitive to low incomes differ in countries where benefits subject to non-take up are prevalent

• Microsimulation added value to analyse income distribution and composition
Further developments

- More detailed comparison of the two approaches:
  - Distinguishing between underreporting and non take up
  - Child contingent support vs “family allowances”
- More countries
- Analysis of household characteristics when reported and simulated income is very different:
  - Labour market participation
  - Household composition
  - Deprivation indicators