

# Income measurement in EU-SILC

## Part II: welfare measurement and complex income components

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# The papers

- Once you have the data, what can you do?
  - Van Kerm: extreme values at top and bottom
  - Papers on weighting, imputation, design effects, etc. (not here)
- Aspects of the data per se
  - Törmälehto: income from property (rents, interest)
  - Frick, Göbel, Grabka: imputed rent, company cars
  - Di Marco: self-employment income (Italy)
  - Rodrigues: net-gross conversion

# Analysis accounting for extreme values

- Extreme values can occur at top or bottom; may be ‘dirt’ or valid but outliers (but you can’t usually tell which)
- Theoretical literature on non-robustness, and whether even a single rogue observation can make results unreliable (Cowell & collaborators)
- Many commonly-used inequality measures not robust (in this sense); poverty measures more robust
- PVK paper illustrates these lessons in glorious and salutary detail (and witness skilful use of graphs as compact summary devices)



# Analysis accounting for extreme values (2)

- Clear evidence of prevalence of extreme values
- Multiple variations on each of: trimming, Winsorizing, parametric models fit to tails, dropping dodgy sources/obs
- Reassuring results:
  - Rankings of countries fairly insensitive to choices (but cardinal differences across countries much more sensitive)
  - Many of the Laeken indicators relatively robust (but not S80/S20)
- More problematic:
  - Non-robustness of many measures that academic researchers like (problems with higher order moments)
  - Trimming most commonly used, but apparently not the best strategy
  - Model fitting + OBRE works well ... but hard to explain and implement routinely
- Measures of income mobility and poverty dynamics raise similar issues; standard errors are another issue

# Property income

- Helpful setting out of the issues concerning what property income should actually comprise (cf. SNA93/ESA94, Canberra Group, ILO)
  - What are V-MT's own views?
- Large cross-country differences in prevalence of non-zero property income, and fraction of that made up of rents rather than interest and distributed profits
- Data collection via registers versus surveys: mode effects?
- But even among register data countries (Nordics), there are noticeable differences, e.g.:
  - DK: large spike  $< 0$ , but because net interest not gross
  - FIN: large spike at €7

## Property income (2)

- Large variation in item non-response rates is worrying: up to 70%, and countries implement own imputation methods
- Unit non-response rate varies hugely (10% to 50%!), so returns to investing in weighting including calibration weighting ('raking')?
- V-MT asks whether gains from over-sample of high income households to improve coverage, but not argues really feasible in SILC context (SPJ agrees)
- Gains from more standardization (SPJ agrees)

# Imputed rental income

- Clear explanation of the 3 methods of deriving gross IR estimates
  - ‘rental equivalent’ by hedonic regression or cell-based matching/imputation;
  - ‘user cost’/ return on capital;
  - direct question to respondent),
- And how to estimate associated costs to convert gross to net
- Nice illustrations:
  - 3 countries using 3 different methods!
    - DK (gross only), mixture of 2 methods
    - FIN (gross only), cell-based matching *but* social tenants’ subsidized housing treated as social transfer income
    - FR (net), hedonic regression
  - Germany (SOEP), comparing all 3 methods

## Imputed rental income (2)

- 3 country/method analysis underlines problems: “degree of harmonization achieved is in no way acceptable”!
- Germany comparisons relatively reassuring in sense that (a) feasible) and (b) no huge differences in results across methods (equalization), though some small difference with capital market approach
- How to achieve greater cross-national harmonisation, taking account of national contexts (e.g. size of unsubsidized private rental market) and data availability?
- Should the proposed SILC 2007 implementation go ahead? (Practical problems versus principle)

# Non-cash employee income (company car benefits)

- Focus on individuals in work (not households)
- Large variations in prevalence of such benefits (up to 20%–25% in N, S ... but never accounts for > 2% of total compensation)
- Effects on the distribution small (slightly more unequal), and country inequality rankings unchanged
  - Similarly small effect in UK

# Self-employment income (Italy)

- Interesting illustration of a country-specific approach to measuring a complex (the most complex?) data source
- Combine data from tax administration records and survey data (and if obs appears in both, use maximum of the two reported)
  - Administrative data link increases number of recipients (up 15.6%), and average value (up 11.9%)
  - Greatest divergences between survey and admin arise with employees, “co.co.co”, and “other inactive” (Tables 1–3)
    - Explain definitions more, and elaborate why

# Self-employment income (Italy)

- More clarification concerning the relative qualities of the different data sets and their ‘comparability’
- To what extent can the lessons be generalized beyond Italy?

# Net/gross conversion

- ??

# Learn from these papers

- The papers should be compulsory reading for anyone who wishes to do any form of income distribution analysis (especially many academics?)
  - NB GiGo principle: data quality matters
  - Difficulty of implementing conceptual definitions in practice, especially in cross-national context
  - Practical issues of data collection e.g. mode effects
  - Missing data (unit and item non-response), imputation and weighting
  - Extreme values and other outliers; measurement errors
- Beware of painting a picture of total disaster: clarify what can be said reliably (and note progress made)
- NB similar issues for measures based on ‘consumption’
  - Data collection modes, lumpiness of purchases, durables, credit cards, etc.

And non-income measures such as ‘deprivation’

# Comparability for whom and of what?

- For whom: **Eurostat / national statistical agencies** versus research community more generally?
- Of what: **income as a LHS variable**, RHS variable, or inputs e.g. to tax-benefit microsimulation?
  - The data sets are a major new contribution to the resources available to study income distribution and related issues from a cross-national comparative perspective
  - Applaud the spirit of openness of access demonstrated so far, and support every effort to extend this further in future
  - Release data sets containing as much ‘raw’ information as possible, with harmonised variables as subset
    - Maximize scope for researchers to explore alternative assumptions
  - Document!

# Comparability, from SILC perspective

- Clear that best comparability standards not achieved yet in several respects with current EU-SILC-2004 release
  - Examples from the papers in this session
  - Unclear to this outsider what steps are in train to improve things
- Is full output harmonization an unattainable Holy Grail in any case (and is full input harmonization too – cf. ECHP?)
  - If so, what can be done given the decisions already taken?
- Improvements via ...
  - Enforcement of standards e.g. production of gross or net etc., and
  - Coordination in development of post-survey adjustment procedures e.g. weighting and imputation methods
  - Other things?
- See VJ Verma's paper for more extensive discussion