



Subjective poverty – thresholds and poverty rates in selected EU countries

Comparative analysis based on the EU-SILC data

Anna Bieñkuńska
Tomasz Piasecki

Purpose of the presentation

- a contribution to the discussion on the possibilities of much wider use of subjective approach to poverty measurement
- to present empirical results of the application of the so-called quasi Leyden Poverty Line (quasi LPL) for the comparative analysis of subjective poverty in selected countries of the European Union

A detailed description of the new method of constructing subjective poverty lines (quasi LPL) was presented by authors during the UNECE Expert meeting on measuring poverty and inequality held in Vienna in November 2018 (“Subjective poverty lines based on the EU-SILC”).

Subjective poverty assessment – methods and approaches (selected)

- Poverty defined in a fully subjective way (self-assessment)
- Subjective poverty thresholds/lines (examples of measures)
 - actual income < declared minimal income
 - „making ends meet” with difficulty or great difficulty
- So-called subjective poverty lines („objectivized” approach, poverty lines assessed with the use of statistical methods)
 - **LPL – Leyden Poverty Line** (Goedhart et al., 1977, Flik and Van Praag, 1991)
 - **SPL – Subjective Poverty Line** (Goedhart et al., 1977, Kapteyn et al., 1985)
 - CSP – *The Centre for Social Policy Poverty Line* (Deleeck, 1977)

The idea of the „objectivized” subjective poverty lines

- Poverty thresholds
 - fixed for the whole population or some subpopulations defined by objective criteria (household/family size or composition, main income source, place of living, etc.) – it makes the thresholds „objective”
 - calculated on the basis of households' subjective assessments of their actual or theoretical („imagined”) financial situation, respectively aggregated for the population or subpopulations – taking into account the individual subjective assessments justifies the term „subjective”
 - the aggregation of assessments often requires the use of quite advanced statistical methods, including regression models
- Assessment of poverty at the individual (household) level:

actual household's income $<$ poverty threshold calculated for the subpopulation, to which the household belongs

Subjective poverty assessment

– the methods and approaches used in the empirical analysis

- Subjective poverty lines („objectivized” approach)
 - Subjective Poverty Line (SPL)
 - **quasi LPL approach** – authors’ proposal (2018) based on the idea of Leyden Poverty Line (LPL)
- „Fully subjective” poverty measures (only subjective opinions, without calculating any objective poverty thresholds)
 - actual income < declared minimal income (MINQ question based) [„pure” MINQ]
 - „making ends meet” with difficulty or great difficulty (Deleeck question based) [„pure” Deleeck]

Sources of assessment of the utility of income

LPL

IEQ question:

Under my/our conditions
I would call an household
income of:

about very bad,
about bad,
about insufficient,
about sufficient,
about good,
about very good.
Please enter an answer
on each line.

**Not
included in
EU-SILC**

SPL

MINQ question:

What do you consider as
an absolute minimum
income for a household
such as yours to be able
to „make ends meet”?

quasi LPL

Deleeck question:

Can you make ends meet
with the actual income of
your household:

- ☐ with great difficulty,
- ☐ with difficulty,
- ☐ rather easily,
- ☐ easily,
- ☐ very easily?

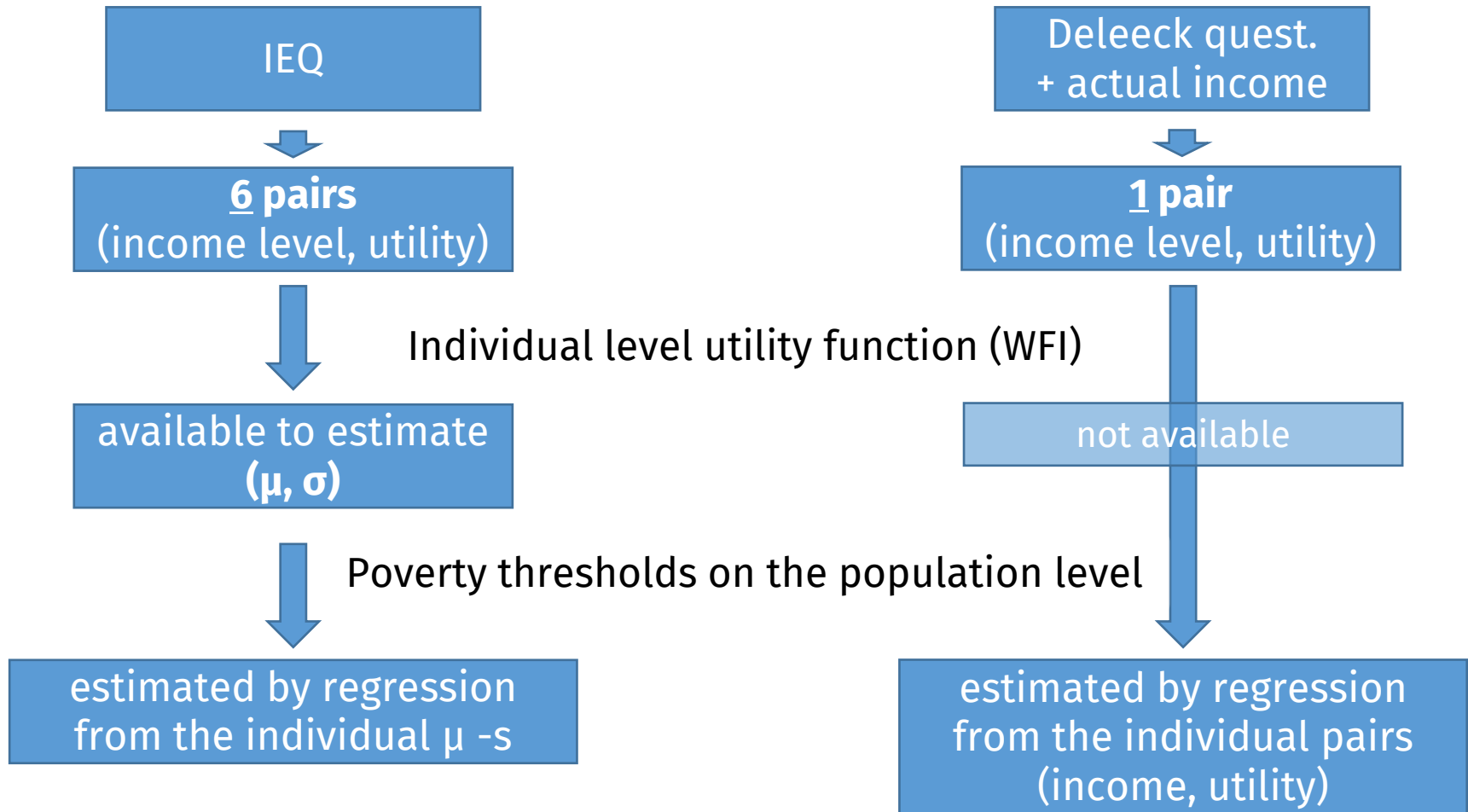
Calculation of poverty thresholds

LPL

vs

quasi LPL

Questionnaire



Subjective poverty lines

– comparison of data needs

	Survey question	Utilization in the method			Refers to:
		LPL	SPL	Quasi LPL	
	IEQ	X			imagined income level
	MINQ		X		imagined income level
Present in EU-SILC	Deleeck question			X	actual household's income
	Actual income	X	X	X	actual household's income

No need to assess the utility of imagined income levels

EU-SILC target variables:

- MINQ: **HS130** – Lowest monthly income to make ends meet
- Deleeck question: **HS120** – Ability to make ends meet
- Actual income: **HY020** – Total disposable household income

LPL vs quasi LPL – main source of discrepancies

IEQ

Income assessment:

- very bad
- bad
- insufficient
- sufficient
- good
- very good

Deeleck question

„Making ends meet”:

- with great difficulty
- with difficulty
- with some difficulty
- rather easily
- easily
- very easily

- The assessments on this two scales seem incomparable
- Quasi LPL requires using lower utility levels defining poverty thresholds than original LPL (**0.25-0.3** seem reasonable, when 0.4-0.5 commonly used in original LPL)
- Not assessing the utility of imagined income levels in quasi LPL may be another reason of discrepancies

Comparative analysis – countries

Selected EU countries included in the analysis:

- Selected „new member states” („new EU” countries):
 - Poland (PL)
 - Czech Republic (CZ)
 - Slovakia (SK)
 - Hungary (HU)
- Selected EU15 („old EU”) countries:
 - Austria (AT)
 - France (FR)
 - Spain (ES)

The analysis is based on the EU-SILC 2017 data

Comparative analysis – assumptions

- Specification of models for calculation the subjective poverty lines

- Quasi LPL

$$\ln(y_i) = \gamma_0 + \gamma_1 \ln(hhsize_i) + \gamma_2 \Phi^{-1}(u_i)$$

- SPL

$$\ln(y_{low_i}) = \delta_0 + \delta_1 \ln(y_i) + \delta_2 \ln(hhsize_i)$$

y – actual income

$hhsize$ – household's size (number of persons)

u – utility of the actual household's income (derived from Deleeck question)

y_{low} – declared household's minimal income (from MINQ)

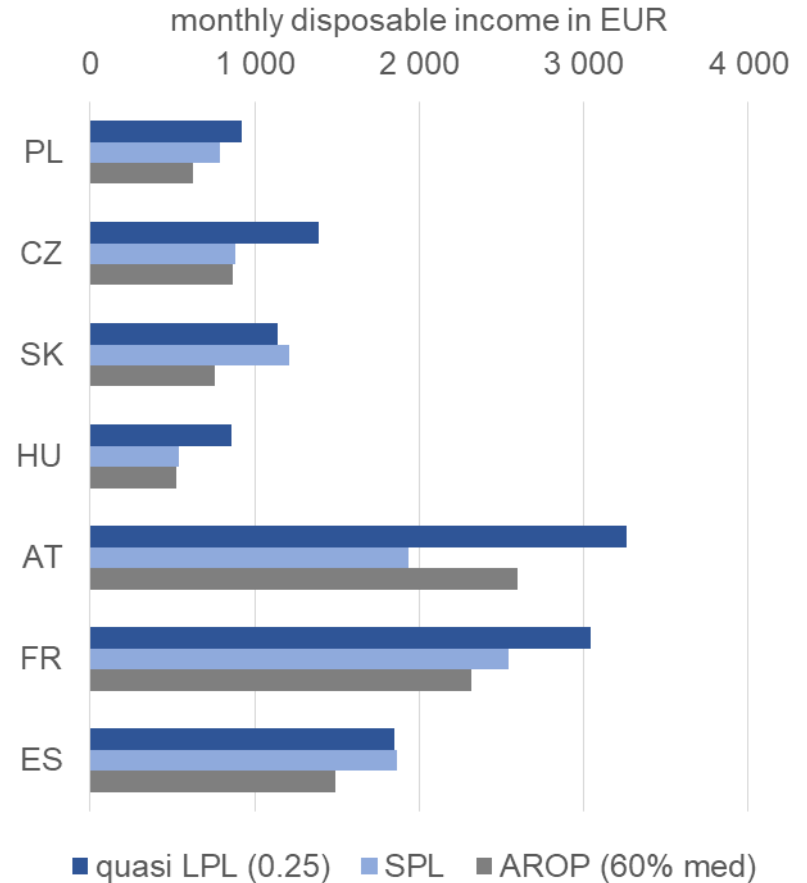
- The basic utility threshold for quasi LPL analysis is 0.25

Comparison of poverty thresholds (EUR)

1-pers. household



4-pers. household
(2 adults + 2 children)

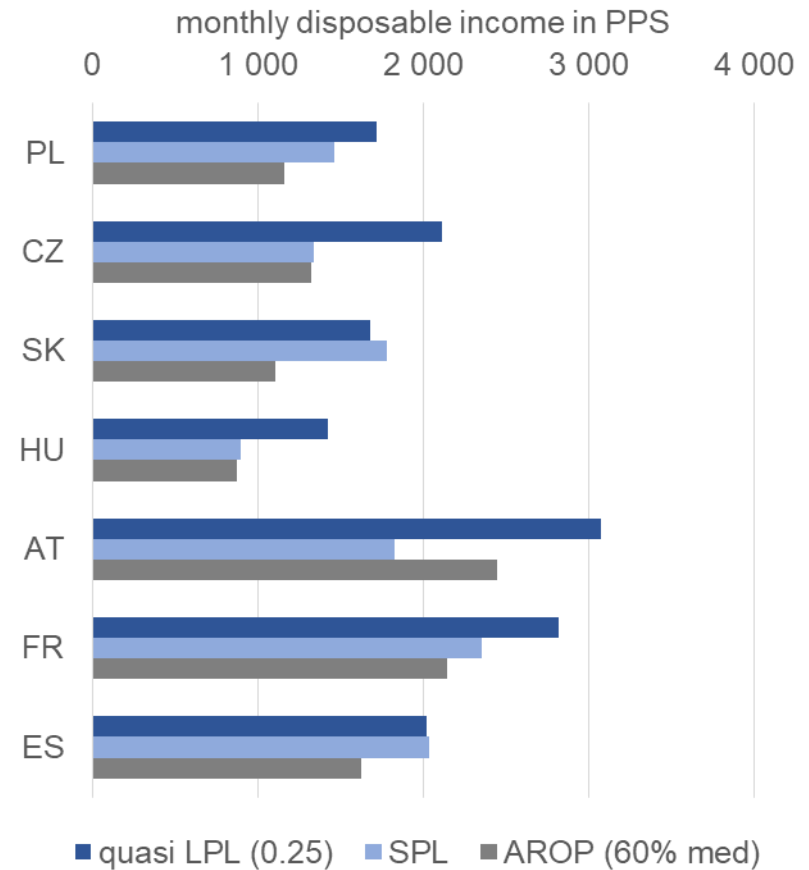


Comparison of poverty thresholds (PPS)

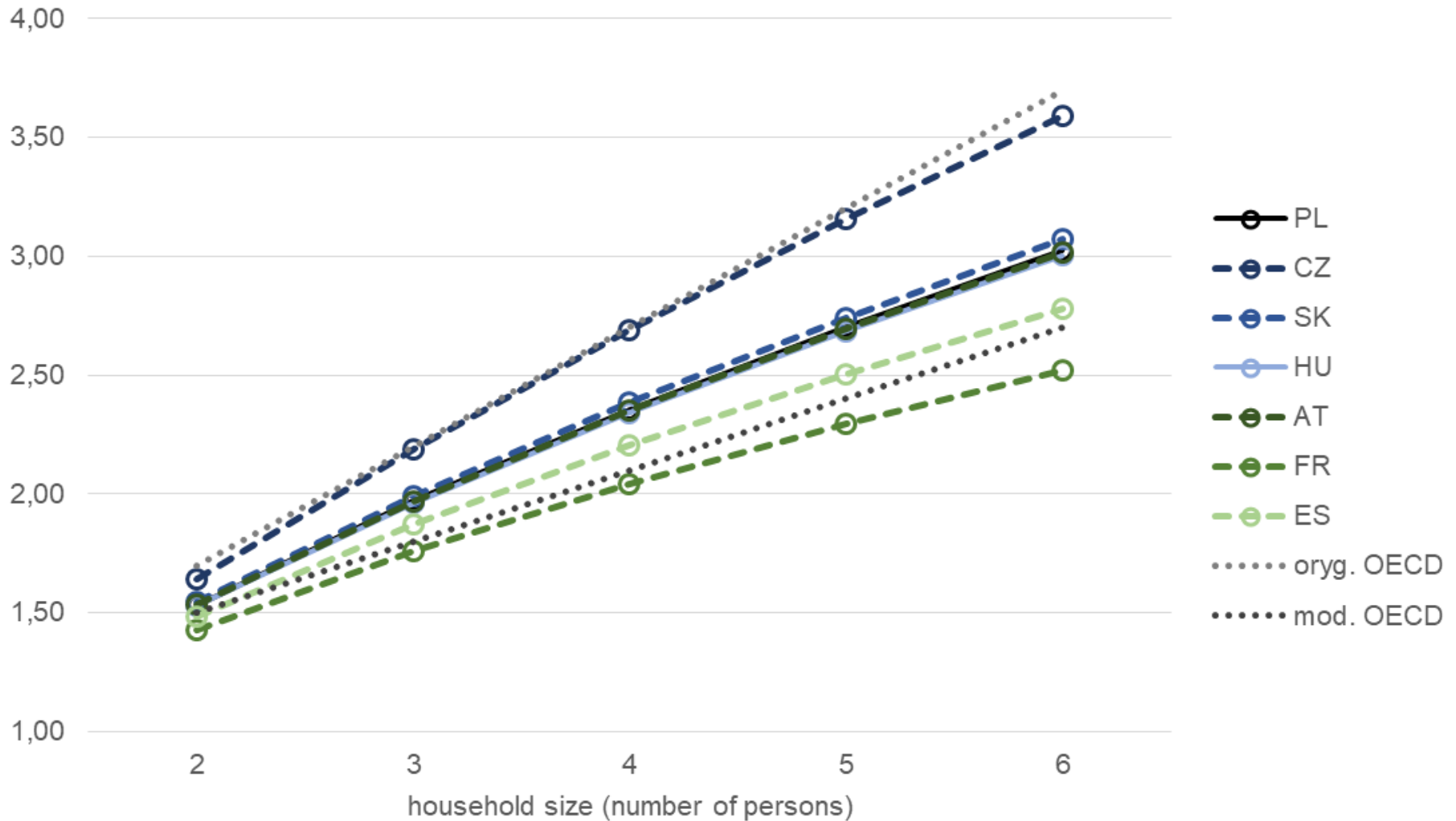
1-pers. household



4-pers. household
(2 adults + 2 children)

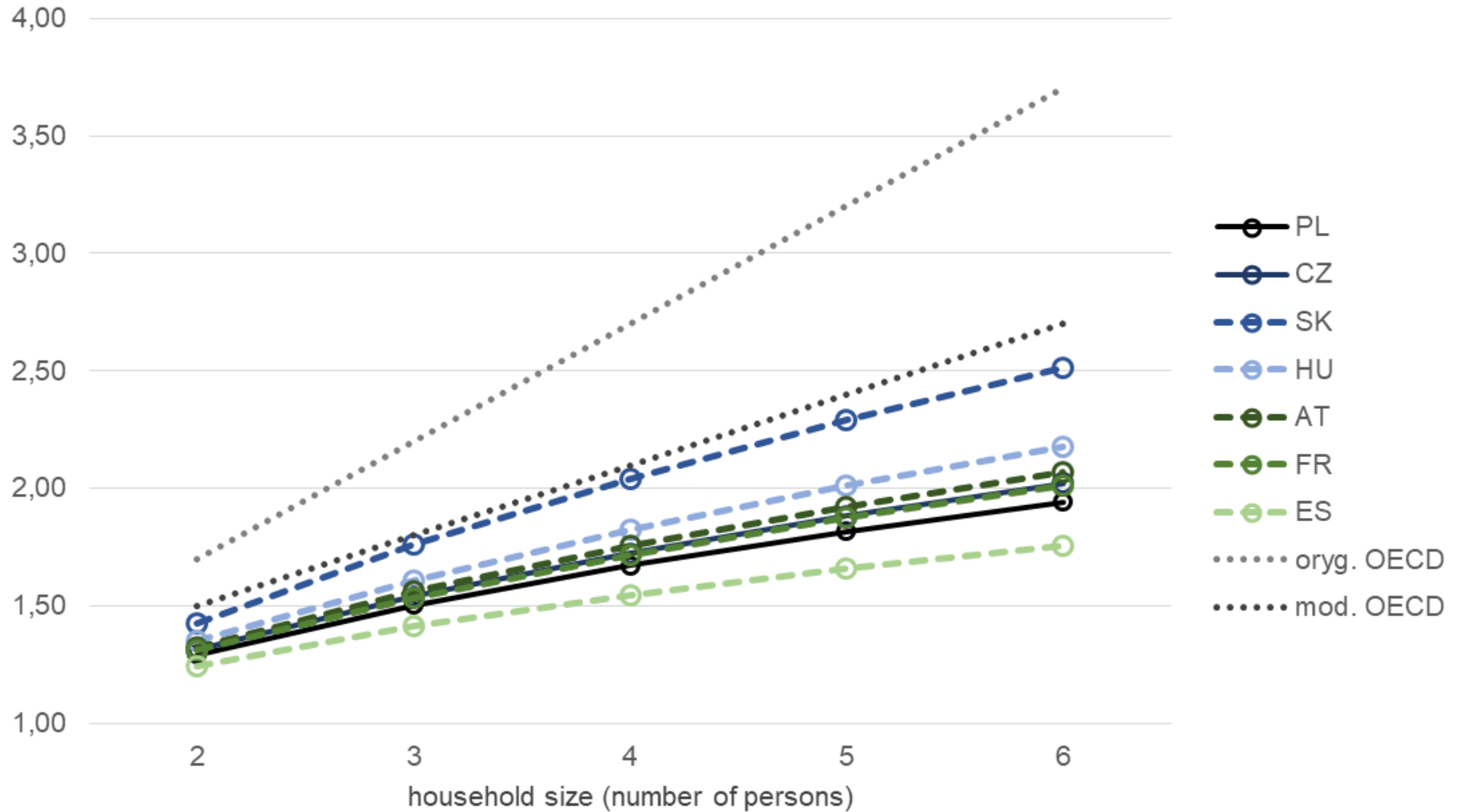


Quasi LPL empirical equivalence scales



(for OECD equiv. scales 2 adults assumed in more than 1-pers. households)

SPL empirical equivalence scales



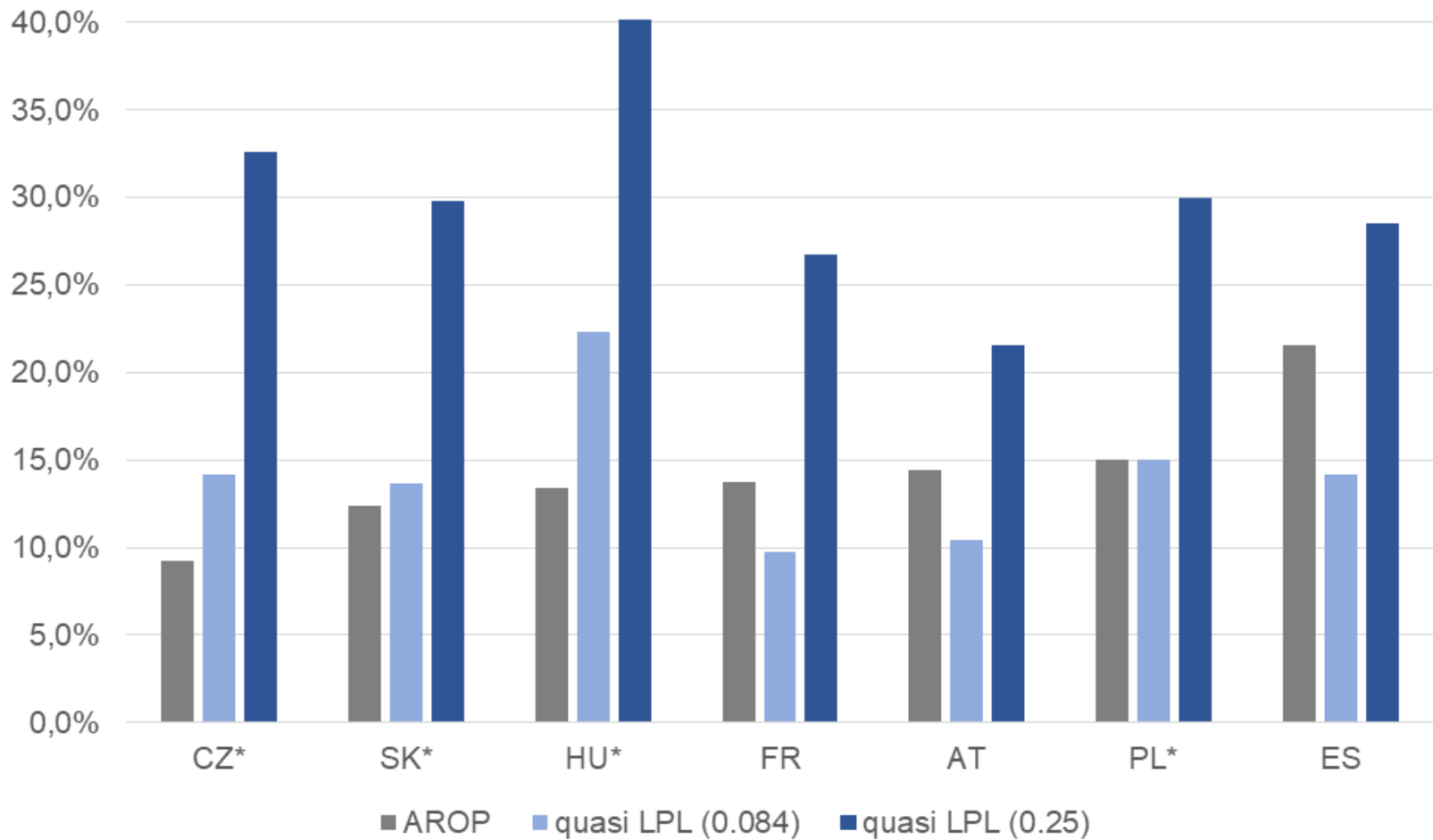
(for OECD equiv. scales 2 adults assumed in more than 1-pers. households)

Comparison of poverty rates

Country	Relative	Subjective („objectivised”)			„Fully” subjective	
	AROP	quasi LPL (0.25)	quasi LPL (0.084)	SPL	„pure” Deleeck	„pure” MINQ
PL	15,0%	30,0%	15,0%	23,5%	22,3%	27,0%
CZ	9,2%	32,6%	14,2%	12,7%	22,0%	19,3%
SK	12,4%	29,8%	13,6%	38,0%	26,2%	42,3%
HU	13,4%	40,1%	22,3%	14,3%	41,1%	17,6%
AT	14,5%	21,5%	10,5%	8,0%	11,6%	8,4%
FR	13,7%	26,8%	9,7%	19,2%	18,1%	28,3%
ES	21,6%	28,5%	14,2%	33,6%	25,2%	36,3%

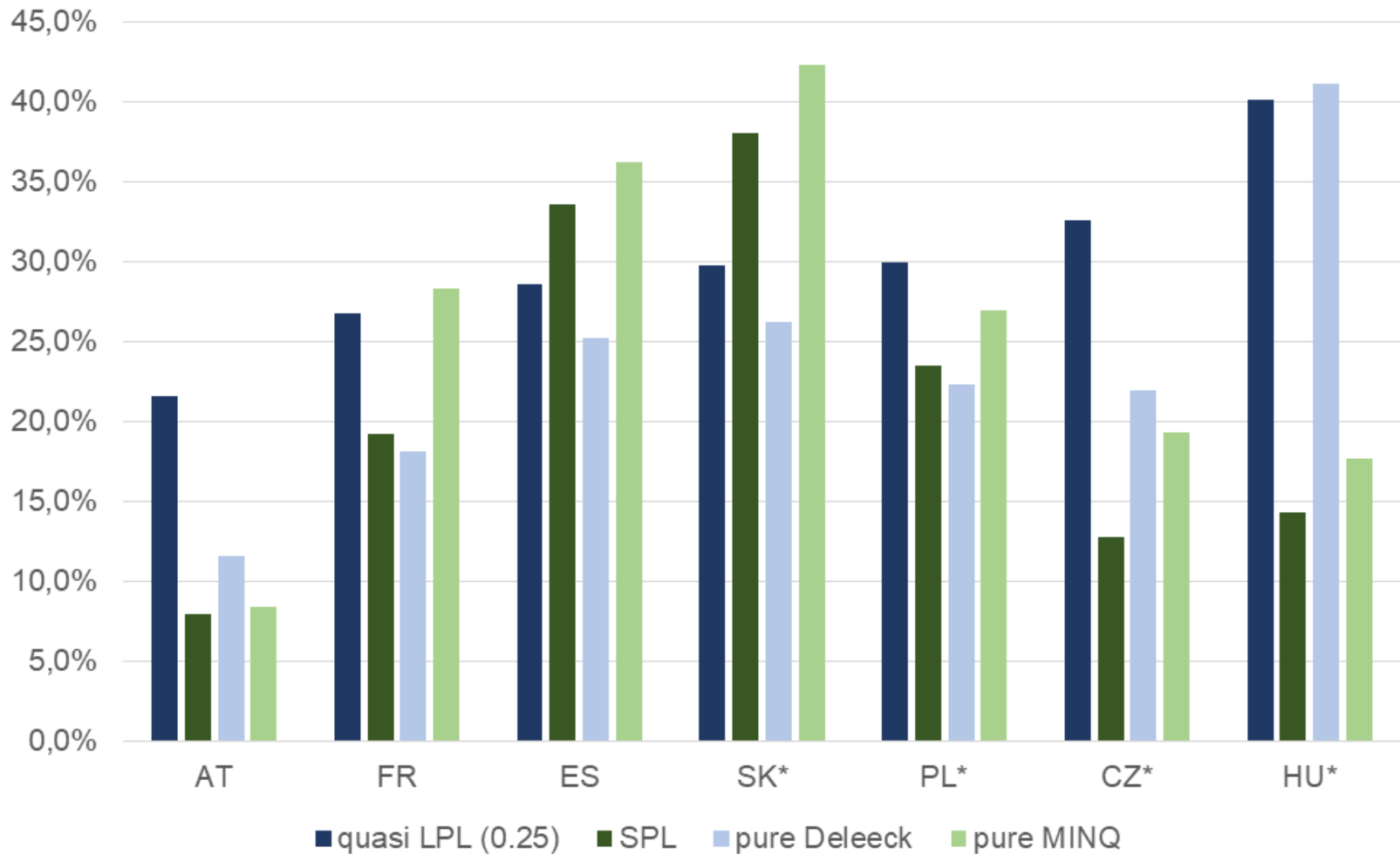
Comparison of poverty rates

AROP vs quasi LPL (ordered by AROP)



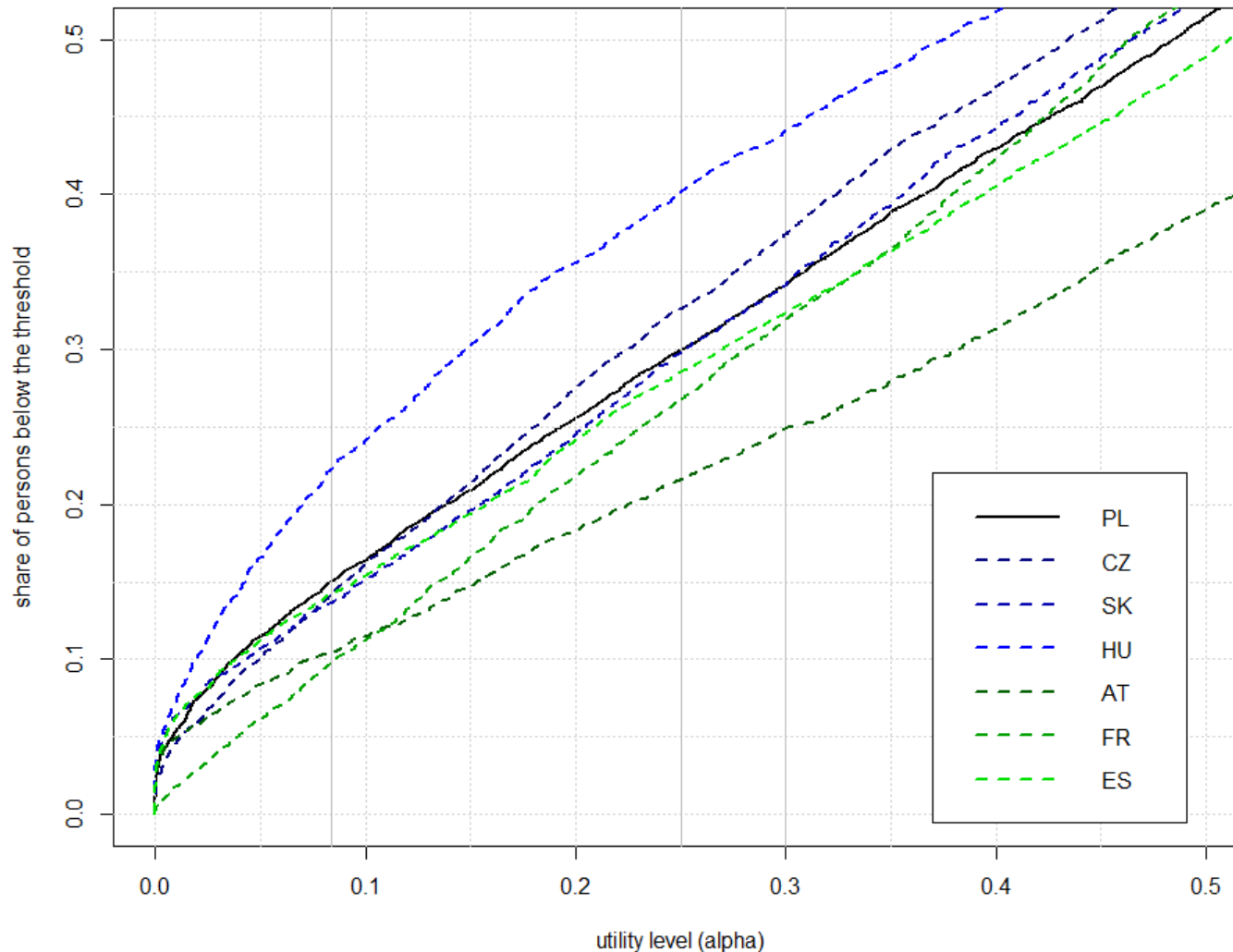
Comparison of poverty rates

Subjective poverty measures (ordered by quasi LPL)

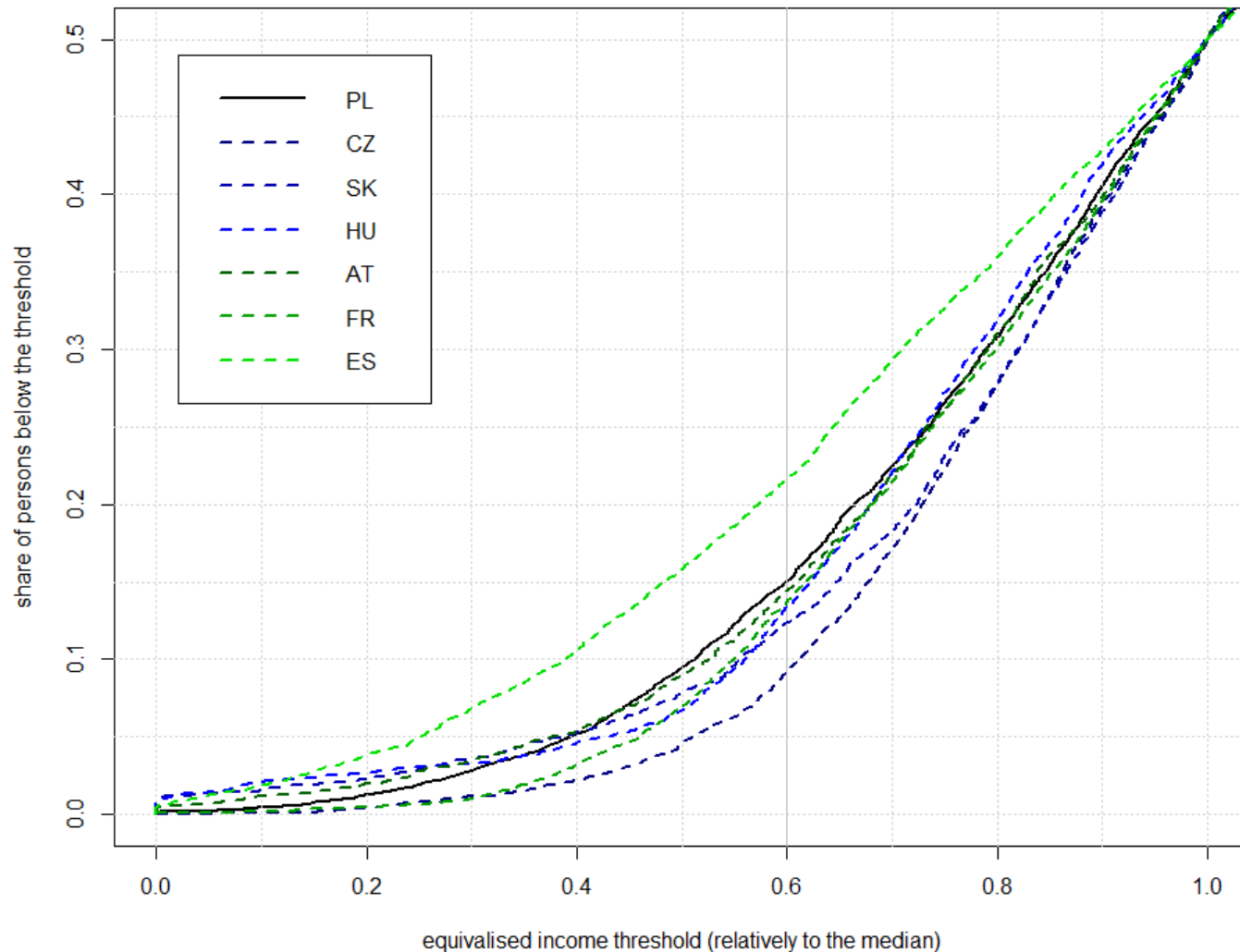


Subjective poverty (quasi LPL)

by the definition of poverty threshold (minimum utility level)



Relative poverty (equivalised income median based) by the definition of poverty threshold (as a particular part of the median)



Utility threshold (according to quasi LPL) corresponding with the values of another poverty rates

Country	The utility threshold (alpha) level which gives the same value of quasi LPL subjective poverty rate like:	
	AROP (60% med)	SPL
PL	0,084	0,176
CZ	0,042	0,073
SK	0,067	0,336
HU	0,034	0,039
AT	0,145	0,045
FR	0,124	0,176
ES	0,178	0,316

Conclusions and remarks

- It can be concluded that in the analysed countries the level of subjective poverty thresholds estimated using the quasi-LPL method reflects the standard of living in these countries measured by income. In the „old EU” countries, these thresholds are generally higher than in the „new EU” countries.
- Quasi LPL subjective thresholds on the utility level 0.25 and corresponding poverty rates are higher than in case of relative poverty (measured by AROP with the threshold 60% of median equivalised income). If we consider much lower utility level 0.084 (giving the subjective poverty equal to the relative one in case of Poland) the subjective rates are higher than the relative ones in another analysed „new EU” countries and lower than the relative ones in „old EU” countries
- Relative poverty (which in fact represent inequalities) is usually lower in the „new EU” countries (with exception of Poland) than in the „old EU” countries. Analysing the poverty by quasi LPL completely changes the picture – in all analysed „new EU” countries the poverty is higher than in „old EU” countries
- In the „old EU” countries the thresholds of relative poverty corresponds with much higher utility level than in the „new EU” countries

Conclusions and remarks

- According to quasi LPL the best situation we have in Austria, the worst in Hungary (however very deep poverty in France is even lower than in Austria)
- The comparison of poverty at different utility levels shows the advantage of quasi LPL (it refers also to the original LPL, which however is impossible to apply on EU-SILC) over SPL (which does not allow it). It shows that the result of comparison may differ for different utility levels (referring to deeper or rather moderate poverty)
- Quasi LPL gives the empirical equivalence scales which are quite close to OECD scales – the original and the modified OECD scales state the range for their variability. Empirical scales derived from SPL subjective poverty lines are less progressive than the original OECD scale (outside the range)

Thank you for your attention

Anna Bieńkuńska

Statistics Poland, Warsaw
a.bienkunska@stat.gov.pl

Tomasz Piasecki

Statistical Office in Łódź
t.piasecki@stat.gov.pl