



Nowcasting at-risk-of-poverty (AROP)

What's new?

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Introduction

Problem: Income distribution indicators available with delay

Aim: Predict EU-SILC indicators for the current year

Nowcasting: Estimates indicators using data on the past income distribution combined with other information (LFS, macroeconomic statistics).

Importance: Monitor changes, raise awareness, promote discussion

Methodology: Simulate employment transitions (regressions) and income dynamics (EUROMOD)

Poster: Shows selection of results to illustrate how the methodology is being improved

Conclusion

Nowcasting using EUROMOD is a *promising method* that works well for many EU countries

AROP is a very *sensitive indicator* → consider different target indicators

There is a big *scope for improving methodology*

Nowcasts for 2016 are coming soon! 😊

Improved simulation of transitions

Based on estimated **probability to change status** (between income reference period & interview) + **random error**

3 binomial logit models:

- Y1 = 1 if employed → non-employed
sample: employed in the income ref. period
- Y2 = 1 if non-employed → employed
sample: non-employed
- Y3 = 1 if unemployed → unemployed
sample: unemployed

Accuracy and consistency measures

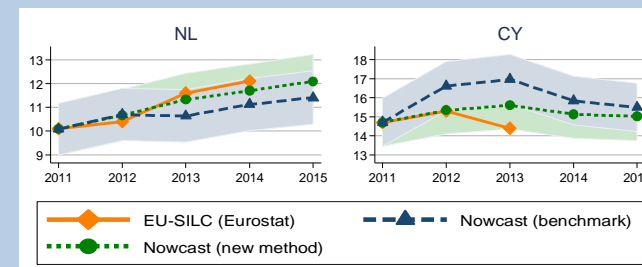
The accuracy and consistency measures proposed by Eurostat (see Leulescu et al., 2016):

- Precision of point estimates
 $accuracy = 1 - MAPE = 1 - average_{i=1}^n \left(abs \left(\frac{EST_i}{REF_i} - 1 \right) \right)$
- Precision of estimated trends
 $consistency = 1 - average_{i=1}^n \left(abs \left(\frac{EST_i}{EST_{i-1}} - \frac{REF_i}{REF_{i-1}} \right) \right)$

The measures are between 0 (low precision) and 100 (high precision).

They are useful to summarise precision of numerous estimates for different countries and indicators.

AROP: new method vs. benchmark

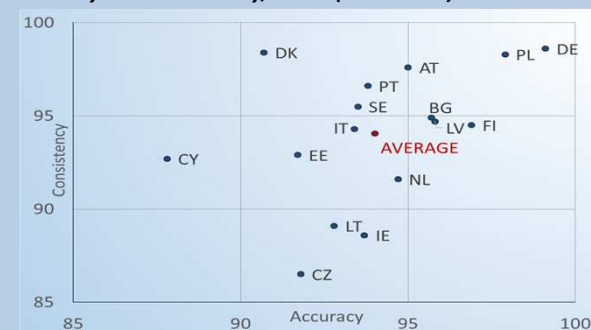


Note: the benchmark is estimated based on probability to be employed at the moment of interview

Accuracy and consistency, 16 country average (2012-2013)

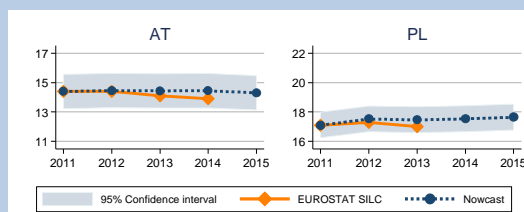
Indicators	Accuracy	Consistency
Median income	97.9	98.3
AROP	95.0	95.2
S80/S20	93.5	95.5
Gini	96.5	97.3
Quintile cut-off points	97.7	98.2

Accuracy and consistency, AROP (2012-2013)



Results: Nowcasts for 2013-2015

AROP: Nowcasts vs. EU-SILC



Nowcasted changes (2013-2015)

	Household income : Median (change in %)	At risk of poverty (change in ppts)
Denmark (in DKK)	0.5†	-0.4
Germany	3.8***	0.3**
Latvia	16.1***	1.3***
Netherlands	3.4***	0.7**
Austria	2.6***	-0.2
Poland (in PLN)	5.6***	0.1
Portugal	4.8***	-0.8*
Finland	4.0***	0.3†

Note: † p<0.1; * p<0.05; ** p<0.01; *** p<0.001