Comparing Poverty and Deprivation Dynamics: Issues of Reliability and Validity

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Introduction

- Direct and indirect measures of poverty
- Issue of validity
- Longitudinal and multi-dimensional strategies
- Continuing problem of mismatch
- Taking error into account.
- Could differential reliability be the source of the mismatch?
- Latent Dynamic Models for Income Poverty and Deprivation

Measurement

- ✶Take reference point of 70% median in 1993
- ✶Using CLSD measure define corresponding deprivation threshold in terms of percntage above in 1994
- ✶Construct income poverty and deprivation threholds

The Data and Variables

ECHP 5 Wave UDB, 1994 to 1996

- ✶9 countries
- ✶Total disposable Household income equivalised for 1993 to 1997
- ✶Modified OECD scale (1st adult:1,add adult : 0.5, child : 0.3)
- ✶Median Equivalised Income below 70 %)

Deprivation Items

- Car
- Colour TV
- Video
- Micro wave
- Dish washer
- Telephone

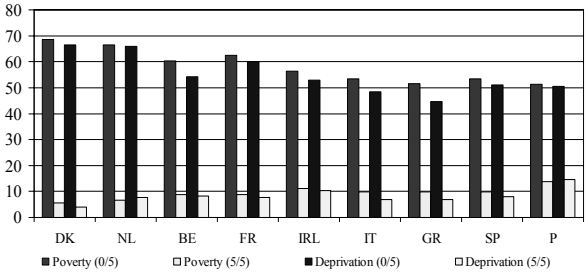
- Keeping your home adequately warm
- Week annual holiday away from home
- Replacing any worn-out furniture
- Buying new not second-hand clothes
- Meat, chicken, fish every second day
- Having friends in once a month
- In arrears on mortgage/rent, utility bills, HP

•Weighted CLSD=∑13 items

Observed Income Poverty Rates in each Wave, ECHP 1994-1998

	1994	1995	1996	1997	1998
Denmark	14.5	14.7	15.2	16.8	18.5
Netherlands	19.7	18.7	18.3	17.5	16.5
Belgium	23.1	22.8	21.7	21.0	21.9
France	22.1	21.0	21.3	20.7	21.3
Ireland	24.4	27.2	28.9	26.7	27.6
Italy	26.8	25.9	27.0	26.8	24.7
Greece	27.4	27.3	27.0	27.9	27.5
Spain	28.8	26.4	25.2	26.9	25.9
Portugal	29.2	30.2	30.4	29.9	28.1
Average	24.0	23.8	23.9	23.8	23.6

Proportion classified as poor and deprived N times out of five , ECHP 1994-1998



Modelling Income Poverty Deprivation and Dynamics

- Mixed Markov Model

$$F_{ijklm} = N\sum_{s=1}^{S}\pi_s\delta_{si}\tau_{s,j|i}\tau_{s,k|j}\tau_{s,l|k}\tau_{s,m|l}$$

- Latent Markov Model

$$F_{ijklm} = N\sum_{a=1}^{A}\sum_{b=1}^{B}\sum_{c=1}^{C}\sum_{d=1}^{D}\sum_{e=1}^{E}\delta_a\rho_{i|a}\delta_b\rho_{j|b}\delta_c\rho_{k|c}\delta_d\rho_{l|d}\delta_e\rho_{m|e}$$

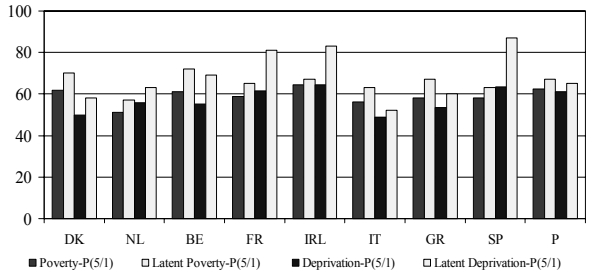
- Time-Heterogeneous Mover-stayer Model

$$F_{ijklm} = N\sum_{s=1}^{S}\sum_{a=1}^{A}\sum_{b=1}^{B}\sum_{c=1}^{C}\sum_{d=1}^{D}\sum_{e=1}^{E}\pi_s\delta_{sa}\tau_{s,b|a}\tau_{s,c|b}\tau_{s,d|c}\tau_{s,e|d}\rho_{s,j|a}\rho_{s,j|b}\rho_{s,k|c}\rho_{s,l|d}\rho_{s,m|e}$$

Reliability rates for movers for income and deprivation

		Not poor	Poor	Not Deprived	Deprived
Netherlands	Not poor/deprived	0.91	0.09	0.88	0.12
	Poor/deprived	0.14	0.86	0.20	0.80
France	Not poor/deprived	0.91	0.09	0.89	0.11
	Poor/deprived	0.12	0.88	0.26	0.74
Ireland	Not poor/deprived	0.91	0.09	0.90	0.10
	Poor/deprived	0.08	0.92	0.29	0.71
Italy	Not poor/deprived	0.86	0.14	0.85	0.15
	Poor/deprived	0.14	0.86	0.11	0.89
Greece	Not poor/deprived	0.94	0.06	0.85	0.15
	Poor/deprived	0.23	0.77	0.21	0.79

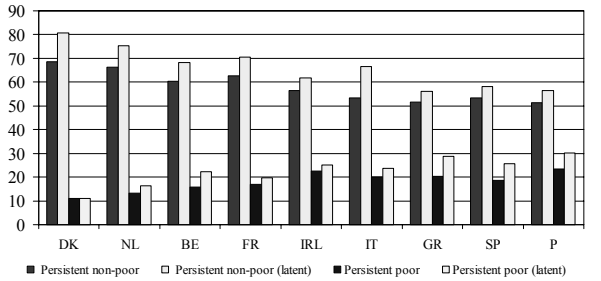
(Latent)Risk of poverty and deprivation in wave 5 after being poor/deprived in wave 1 , ECHP 1994-1998



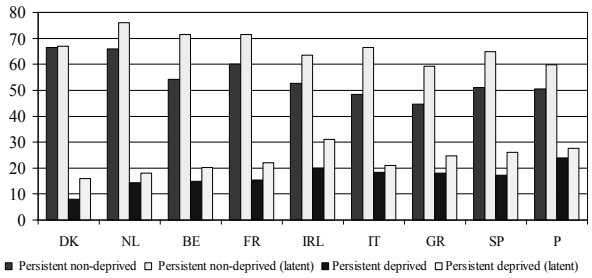
Poverty Profiles

- Never Poor (in a Five Year Period)
- Intermittently Poor: Poor Only Once
- Recurrent Poor : Poor more than once but never longer than for two years
- Persistent Poor (Poor for at least three consecutive years).

Latent and Observed Income Poverty Profiles , ECHP 1994-1998



Latent and Observed Deprivation Profiles , ECHP 1994-1998



Conclusion

- General similarity between error corrected poverty and deprivation dynamics
- Overestimating exits
- Poverty and deprivation both more persistent at the latent level.
- Adjusting for measurement error more likely to accentuate rather than diminish contrasts