

CROSS-COUNTRY DIFFERENCES IN
INTERGENERATIONAL TRANSMISSION OF
POVERTY IN EUROPE

MACRO-ECONOMIC AND INSTITUTIONAL DETERMINANTS

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Research question

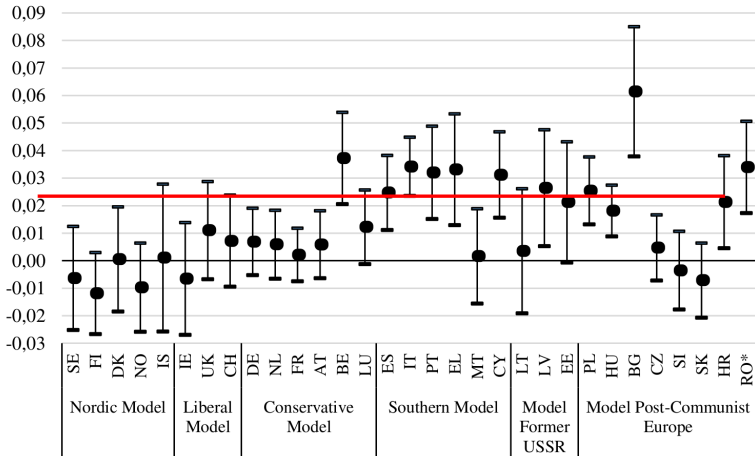
What is the role of macroeconomic and institutional features on the intensity of the intergenerational transmission of poverty?

Motivation and contribution

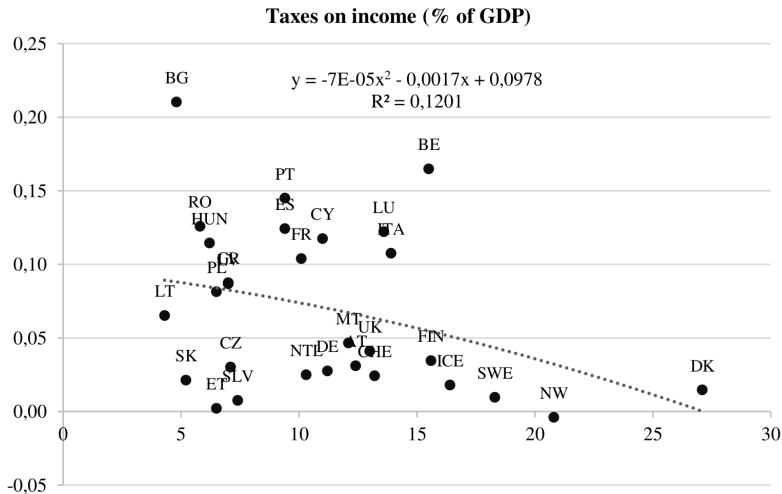
- ▶ While the intergenerational transmission of *inequality* (ITI) is a widely studied phenomenon, there is much less research on the transmission of *poverty* (ITP) from parents to their offspring.
- ▶ Most transmission channels are on the *individual level* but a well-established result is that the ITI and the associated income elasticities vary across countries or welfare regimes.
- ▶ This study uses a large sample of 30 European countries to study how redistributive policies, education and health investments shape the ITP across countries.
- ▶ The authors show that redistributive states have lower ITPs.

Cross-national in ITP

Marginal increase in the risk of poverty when poor family background, obtained in country-specific logit models



ITP versus tax take



Extant literature

Mobility regimes (Raitano and Vona 2015a,b, Raitano 2015):

- ▶ zero transmission of inequalities in Nordic European countries,
- ▶ education fully explains transmission in Continental countries,
- ▶ persistent effect of parental background in Anglo-Saxon, Southern, and Mediterranean countries.

Closely related studies:

- ▶ Whelan et al. (2013) provide a comparable analysis of ITP using the EU-SILC 2005 wave but do not study macro factors.
- ▶ Holter (2015) studies how tax progressiveness affects the ITI in the US and Norway.
- ▶ Jerrim and Macmillan (2015) investigate if educational attainment drives the Great Gatsby Curve.

Theoretical background

Goes back to model of the family and human capital investments by Becker and Tomes (1979, 1986). Solon (2004) presents a version that is useful in the cross-country context.

Mobility is higher if . . .

- ▶ heritability of income-related traits is lower,
- ▶ the efficacy of investments in human capital is lower,
- ▶ the returns to human capital are lower, and
- ▶ gov't investments in human capital are more progressive

But health status, social capital, values, non-cognitive skills and even employers may matter.

Empirical method I

The canonical ITP model translated to poverty outcomes observed across individuals (i) and countries (c)

$$\ln \left(\frac{p_{ic}}{1 - p_{ic}} \right) = \lambda_c p_{ic,t-1} + \mathbf{x}'_{ic} \boldsymbol{\beta} + \mathbf{z}'_c \boldsymbol{\gamma} + (\mathbf{z}_c \times p_{ic,t-1})' \boldsymbol{\theta} + u_c + e_{ic}$$

where

- ▶ $p_{ic,t-1}$ is the poverty status of the parents, $\lambda_c = \lambda + v_c$,
- ▶ \mathbf{x}'_{ic} are individual determinants of ITP,
- ▶ \mathbf{z}'_c are country-level variables,
- ▶ u_c is a country-level random effect uncorrelated with everything else and $\text{var}(u_c) = \pi^2/3$, and
- ▶ e_{ic} is an idiosyncratic error.

Empirical method II

The object of interest:

- ▶ Authors investigate $2k$ models where k is the number of country-level indicators. All interactions are investigated separately.
- ▶ The expectation is that some country-level indicators may cancel the effect of the parental poverty status variable.

Variance shares:

- ▶ How much is explained by country versus individual level effects? Use the intra-class correlation $\rho = \sigma_u^2 / (\sigma_u^2 + \sigma_e^2)$.

Data: EU-SILC

The European Union Statistics of Income and Living Conditions (EU-SILC) 2011 wave includes a module on inter-generational transmission of disadvantages.

- ▶ Adults aged 25 to 59 were asked about their living conditions in their parental households at age 14.
- ▶ No data on parental income. Instead, use “financial situation of the household”, y , with values ranking from 1 (“very bad”) to 6 (“very good”). Code $Poorback = p_{ic,t-1} = \mathbb{I}(y \leq 3)$.
- ▶ Poverty today is having an equivalized disposable income less than 60% of the country median.

Combine this with macro data from Eurostat and OECD. Total sample has 216,159 observations from 30 countries in 2011.

Descriptives of macro data

Variable	Min.	Country	Mean	Max.	Country
S80S20	3.30	IS/NO	4.69	7.10	ES
Gini coefficient(p.p.)	22.90	NO	29.18	35.10	LV
Poverty rate (p.p.)	9.20	IS	15.64	22.2	BG/RO
Income taxes as % of GDP	4.30	LT	10.92	27.10	DK
Social Protection as % of GDP	15.10	LV	24.81	34.20	DK
Households' income redistribution via taxes and social transfers (share of total gross household income).	0.08	SK	0.21	0.37	NL
Reduction in Gini coeff. via taxes and social transfers (in p.p.)	-11.8	DK	-5.95	-2.10	EL/IT
Reduction in Poverty rates. via taxes and social transfers (in p.p.)	-19.2	NO	-10.13	-3.50	EL
Self-computed measure of inequality of opportunities in higher education (in p.p.)	5.70	NL	13.80	21.20	CY
Public expenditure on tertiary education as a % of GDP	0.66	BG	1.36	2.25	DK
Expenditure on passive labour market policies as a % of GDP	0.24	RO	0.90	2.82	ES
Net replacement ratio of unemployment benefits (as % of previous gross earnings)	22	EL	51	74	IE

Main results, Part I

Macro indicator	Specification 1 Without cross-level interaction		Specification 2 With cross-level interaction			
	Coefficient <i>poorback</i>	Coeff. <i>macro indicator</i>	Coefficient <i>poorback</i>	Coeff. <i>macro indicator</i>	Coeff. <i>cross-level interact.</i>	rho = ICC
S80S20	0.121*** (0.0424)	0.0340*** (0.00990)	-0.0430 (0.0847)	0.0253** (0.0101)	0.0146** (0.00660)	0.0299
Gini coefficient	0.121*** (0.0426)	0.0259*** (0.00841)	-0.0565 (0.0949)	0.0198** (0.00853)	0.0120** (0.00574)	0.0308
Poverty Rate	0.120*** (0.0439)	0.0749*** (0.0163)	-0.347* (0.196)	0.0558*** (0.0170)	0.0284** (0.0116)	0.0268
Income taxes as % of GDP	0.120*** (0.0432)	0.00827 (0.00805)	-0.0255 (0.0824)	0.00439 (0.00783)	0.00907** (0.00442)	0.0360
Social Protection as % of GDP	0.120*** (0.0433)	-0.0179** (0.00744)	0.211** (0.0847)	-0.0154** (0.00757)	-0.00621 (0.00507)	0.0319
HHs' income redistribution	0.120*** (0.0451)	-1.233 (1.056)	0.148 (0.162)	-1.194 (1.077)	-0.140 (0.778)	0.0363

Main results, Part II

Macro indicator	Specification 1 Without cross-level interaction		Specification 2 With cross-level interaction			
	Coefficient <i>poorback</i>	Coeff. <i>macro indicator</i>	Coefficient <i>poorback</i>	Coeff. <i>macro indicator</i>	Coeff. <i>cross- level interact.</i>	rho = ICC
Reduction in Gini coeff. via taxes and social transf	0.122*** (0.0450)	0.0371 (0.0267)	0.268** (0.108)	0.0279 (0.0267)	0.0266 (0.0181)	0.0364
Reduction in Poverty rates. via taxes & social tr	0.122*** (0.0449)	0.0322* (0.0185)	0.287** (0.127)	0.0258 (0.0186)	0.0171 (0.0125)	0.0354
Inequality of opportunities in higher education	0.121*** (0.0451)	0.00491 (0.0178)	-0.0688 (0.177)	0.000904 (0.0179)	0.0131 (0.0118)	0.0376
Public expend on tertiary edu GDP	0.103** (0.0464)	-0.103 (0.149)	0.364** (0.156)	-0.108 (0.143)	-0.206* (0.119)	0.0245
Expend. on passive LMP as % GDP	0.114*** (0.0437)	-0.130 (0.0925)	0.207*** (0.0662)	-0.128 (0.0875)	-0.102* (0.0578)	0.0270
NRR unempl. benefits (p.p.)	0.0909** (0.0430)	-0.0142*** (0.00466)	0.282* (0.161)	-0.0148*** (0.00449)	-0.00401 (0.00329)	0.0237

Conclusions

Authors conclude, that

1. the heterogeneity of ITP processes across countries is quite relevant,
2. ITP is more intensive in countries where there is a higher intra-generational income inequality or weak investments in the reduction of inequality,
3. public expenditure aimed at providing equality of opportunities in access to higher education is related with less intensive ITP, and
4. public policies aiming at reducing the impact of job losses on households' income are also correlated with a reduction in the intensity of ITP.

Discussion

Big picture points

1. Is the intergenerational transmission of poverty really all that different from that of inequality? Especially, if your measure of poverty is a measure of *relative* distribution?
2. Why run separate regressions for each macro indicator? Maybe you want to do a PCA and put all “transfer” variables together? Group by concepts and run a full model?
3. Theoretical basis of choosing indicators and thinking about their cross-causation to avoid “exploratory” label of study?
4. Why not look at specific channels? For example: education of the father (mother) times redistributive nature of the education system?
5. Effect magnitudes need to be evaluated a lot more carefully.

Marginal effects I

Coefficients tell us very little, where are the probabilities?
Interaction effects in non-linear models are problematic (e.g. see Ai and Norton, 2003).

For example, *“When interacted with poor background, the interaction term cancels its significance, meaning that the variation in the ITP across countries is due to differences in levels of inequality in the distribution of income. . .”*

Here are my results for representative values of the Gini:

$$\text{At min: } -0.0565 + 0.012 \times 22.9 = 0.2183$$

$$\text{At mean: } -0.0565 + 0.012 \times 29.2 = 0.2939$$

$$\text{At max: } -0.0565 + 0.012 \times 35.1 = 0.3647$$

Should all be significant, but these are not PEs either!

Marginal effects II

Moreover, from Bryan and Jenkins (2015)

... researchers may be interested in population-averaged ('marginal') effects or cluster-specific ('conditional') effects.

In the former case, the interest is in the impact on the outcome probability of a change in an individual- or country-level characteristic which is the average across the distribution of unobserved characteristics.

In latter case, the interest is in the impact on outcome probabilities of a change in an individual- or country-level characteristic for an individual with a specific set of characteristics, observed and unobserved.

Recommendations

- ▶ Motivate the choice of particular indicators better and take their correlations into account.
- ▶ Do not model all outcomes separately. In fact, consider simple multilevel LPMs first. For motivation: code up welfare regimes, interact with poorback and do a simple F-test?
- ▶ Rescale the macro indicators as deviation from their average! Carefully think about the marginal effects.
- ▶ Throw out the random coefficient if you don't care about cluster-specific effects. OLS consistently estimates $\mathbb{E}[\lambda_c]$, logit consistently estimates scaled coefficients.
- ▶ Rho is always very low. Yet you conclude that individual heterogeneity matters most. Motivate this conclusion better?
- ▶ Why not use 2005 survey as well (instead of going NUTS)?