A meta-regression analysis of intergenerational transmission of income and the Great Gatsby curve

Ernesto Amaral
Francisco Perez-Arce

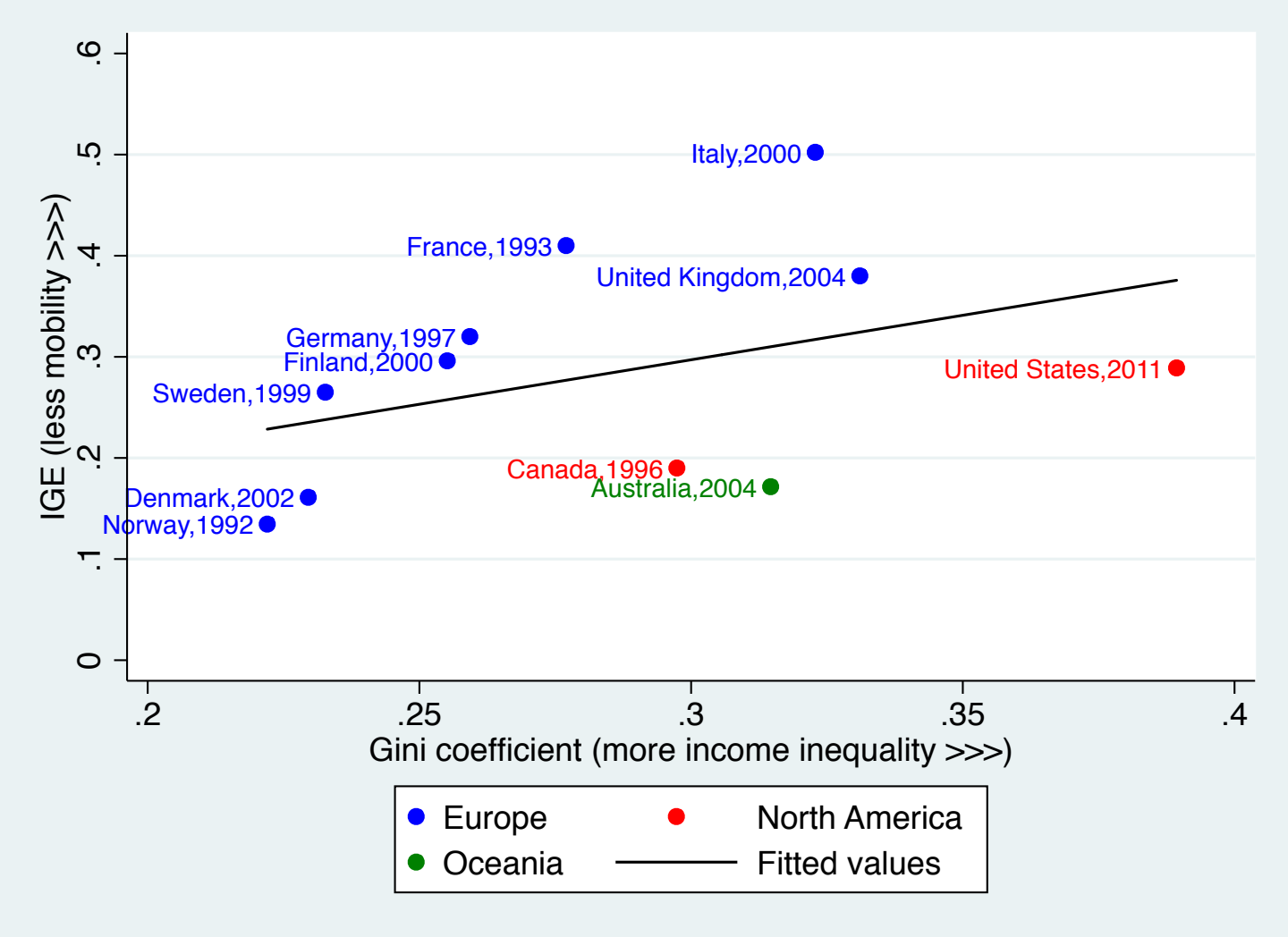
Main question

- Is there a relationship between inequality of income and inequality of opportunity?
- Income inequality: rising since the 1980s
  - Driven mostly by increased wages for highly educated workers and top earners
- Inequality of opportunity: less mobility for children of low-income parents
  - Degree to which conditions at birth and childhood determine situation later in life (Roemer et al. 2003)

Great Gatsby curve

- Intergenerational transmission of income (IGTI) or intergenerational mobility
  - Refers to how much income of children (when adults) is determined by income of parents
- Intergenerational elasticity (IGE)
  - Indicator of IGTI, estimated from regression of child income to parental income (in logs)
- Great Gatsby curve
  - Cross-country correlation between income inequality and IGE (Krueger 2012, Corak 2013)

Great Gatsby curve, one observation per country



Correlation=0.395 (p=0.230; p=0.197 when clustering standard errors by study)

Further questions

- Do different measures of income inequality and intergenerational transmission of income yield different results?
- Does within country (across time) changes in inequality also relate to changes in IGTI?
  - This can be seen as a panel data version of the Great Gatsby curve
- Does the methodology used in estimating IGTI influence these relationships?

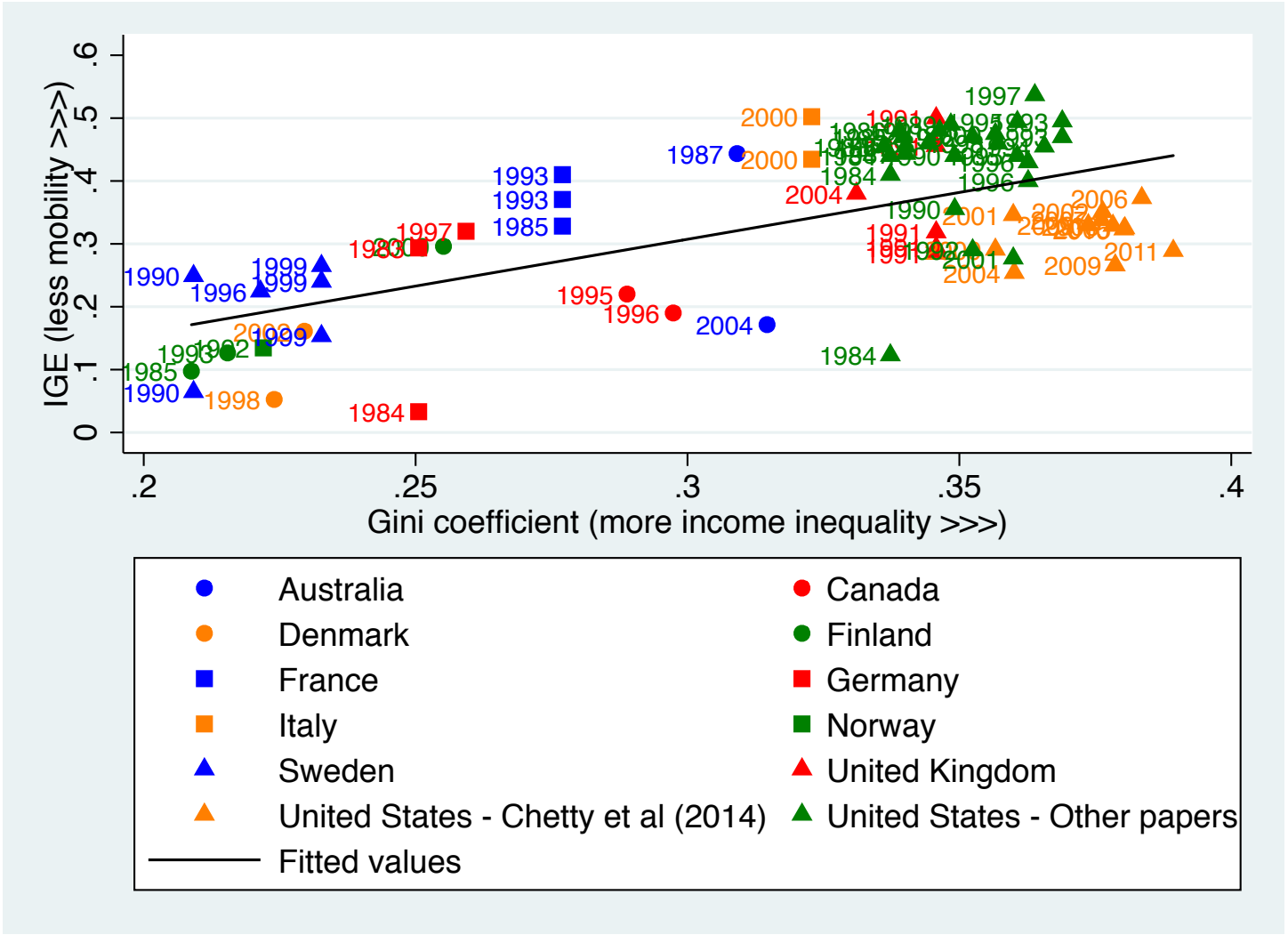
Why a meta-regression analysis?

- IGE and other measures of IGTI are derived from research studies
  - No official and comparable statistics
- This approach allows us to control for differences in methodology and context
- Causality is hard to establish
  - Indicators are results of complex social and economic outcomes
- We analyze correlations across countries and time, as well as within countries

Data for OLS models

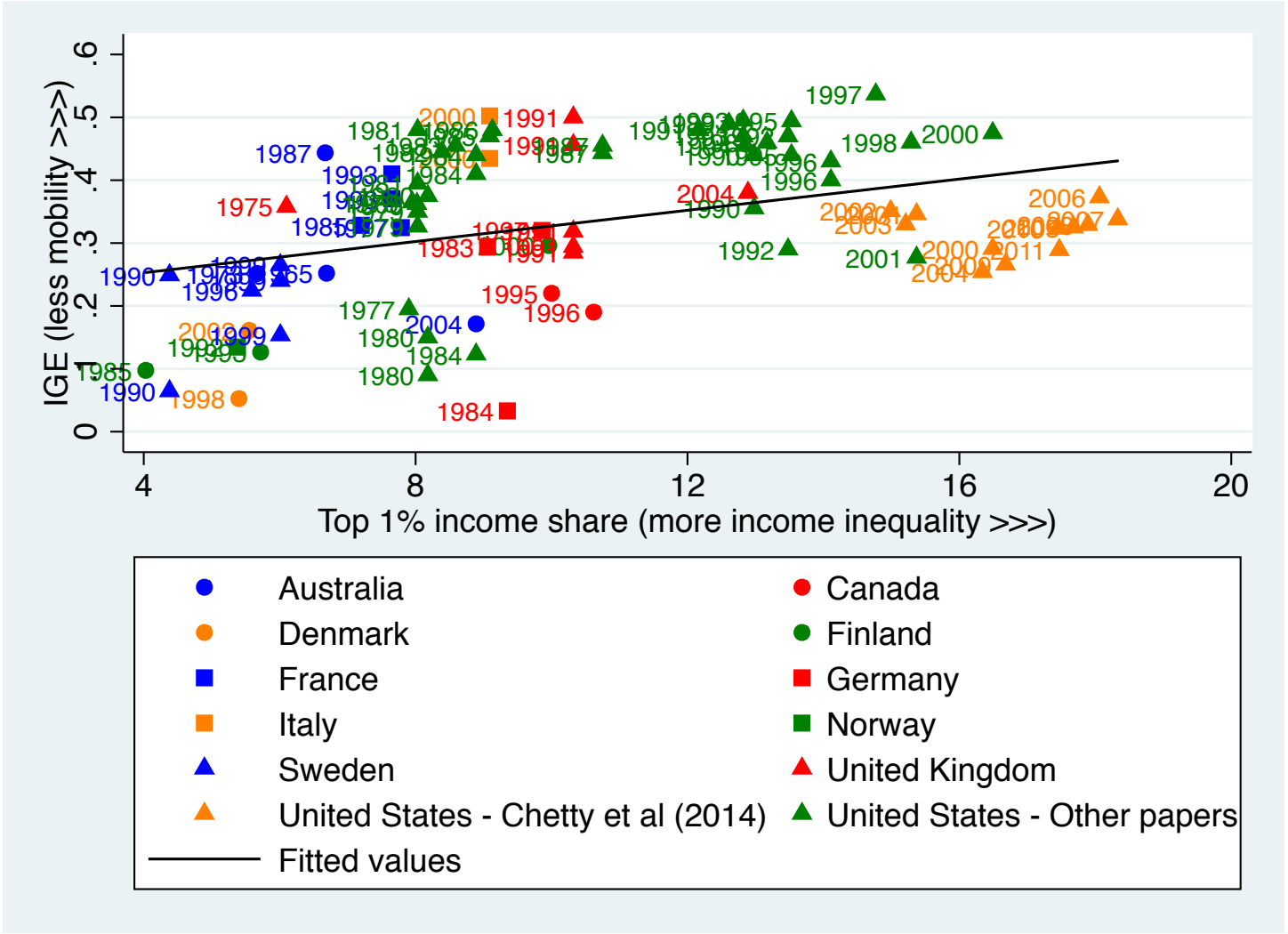
- IGTI from studies on developed countries
  - IGE, parent-child correlations, income transition matrices, rank-rank correlations
- Independent variable of interest
  - Income inequality data from OECD (Gini) and World Top Income Database (Top 1%)
- Control variables
  - Gender and age of children and parents
  - Number of years of parental income
  - Type of income (family or individual)
  - Country and research studies

Great Gatsby curve, multiple observations per country



Correlation=0.640 (p=0.000; p=0.001 when clustering standard errors by study)

Top 1% income share, multiple observations per country



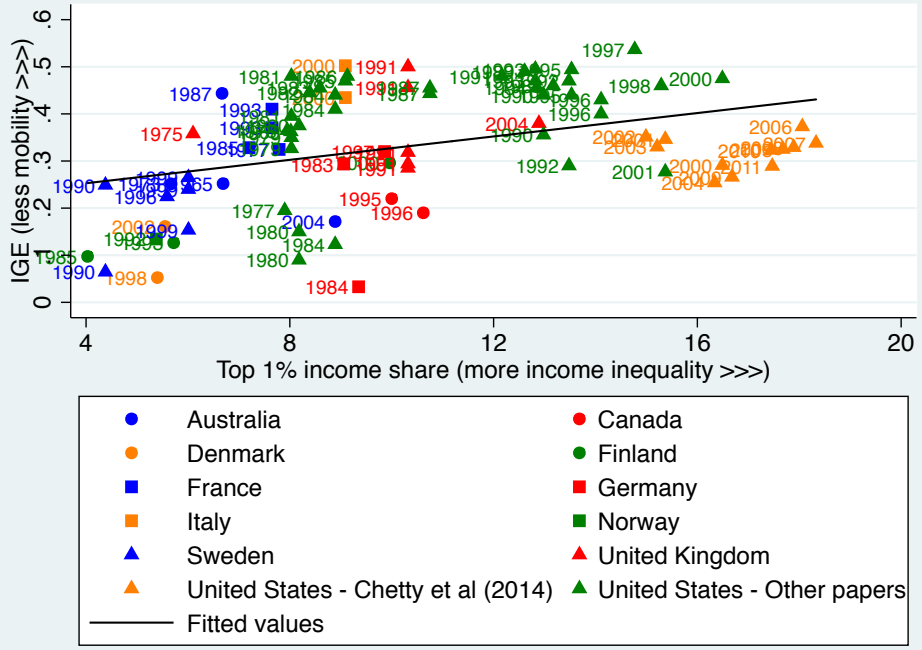
Correlation=0.384 (p=0.000; p=0.085 when clustering standard errors by study)

OLS for IGE as dependent

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Gini coefficient	1.477***	1.826***			2.826***
	(0.116)	(0.159)			(0.304)
Top 1% income share			0.016***	0.019***	-0.018***
			(0.003)	(0.005)	(0.005)
Gender of children		X		X	X
Gender of parents		X		X	X
Age of children		X		X	X
Age of parents		X		X	X
# years of income		X		X	X
Type of income		X		X	X
Country					
Study					
Country * Study					
R^2	0.381	0.575	0.045	0.135	0.599
Adjusted R^2	0.378	0.555	0.043	0.112	0.578
Observations	267	265	473	469	265

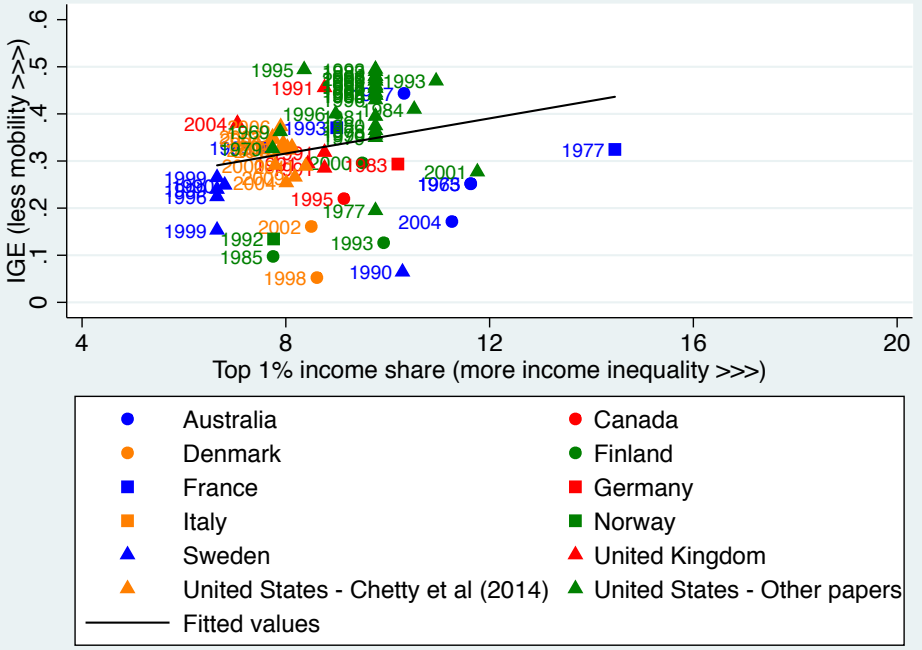
Inequality at year of income more strongly correlated than inequality at year of birth

Top 1% at year of children's income



Correlation=0.384 (p=0.000; p=0.085 when clustering standard errors by study)

Top 1% at year of children's birth

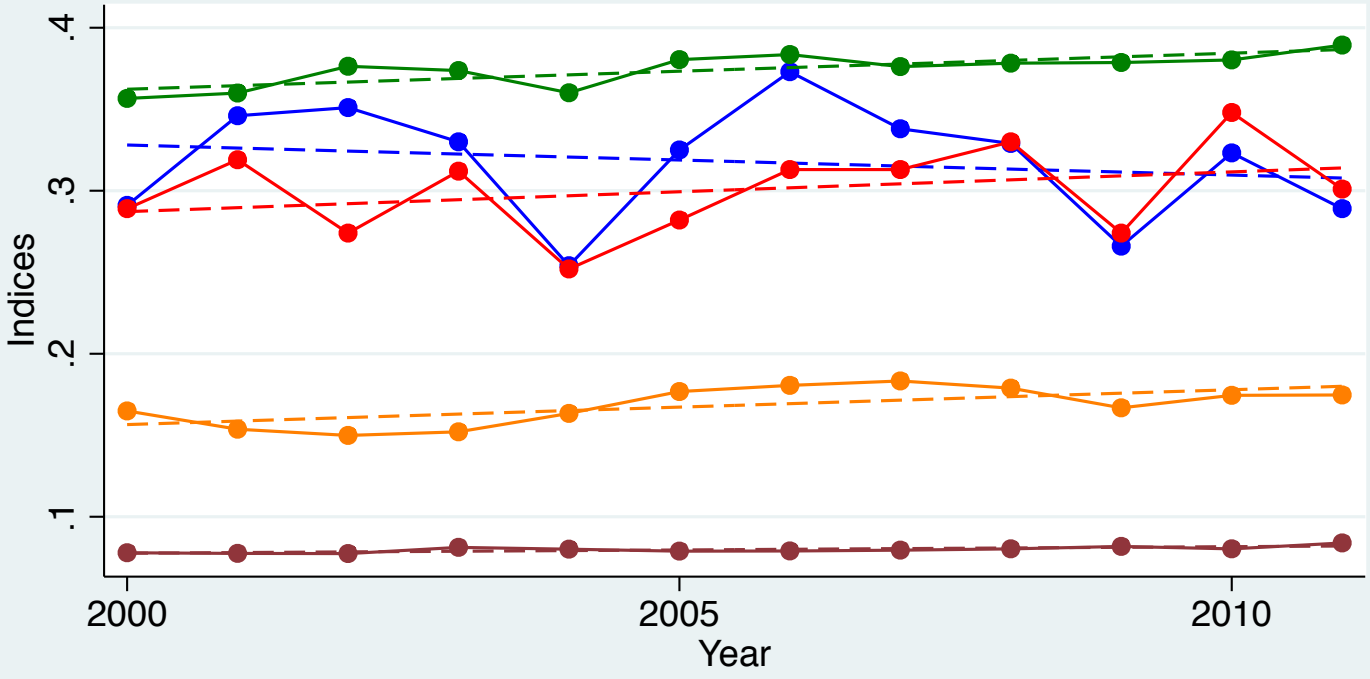


Correlation=0.233 (p=0.056; p=0.249 when clustering standard errors by study)

Different matches of top 1%

Variables	Model 1	Model 2
Top 1% income share at year of earnings	0.014***	0.019***
	(0.003)	(0.005)
Top 1% income share at birth cohort	0.023***	0.010
	(0.005)	(0.010)
Gender of children		X
Gender of parents		X
Age of children		X
Age of parents		X
# years of income		X
Type of income		X
Country		
Study		
Country * Study		
R^2	0.086	0.132
Adjusted R^2	0.082	0.106
Observations	440	436

Great Gatsby curve across time (Chetty et al. 2014)



Country and paper fixed effects

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gini coefficient	1.477*** (0.116)	1.826*** (0.159)	0.791 (0.713)	0.060 (1.095)	-0.053 (1.119)	-0.054 (1.066)
Gender of children		X				X
Gender of parents		X				X
Age of children		X				X
Age of parents		X				X
# years of income		X				X
Type of income		X				X
Country			X	X	X	X
Study				X	X	X
Country * Study					X	X
R^2	0.381	0.575	0.523	0.733	0.735	0.770
Adjusted R^2	0.378	0.555	0.504	0.693	0.691	0.721
Observations	267	265	267	267	267	265

Final considerations

- **Cross-country** correlations between income inequality and IGTI
  - Robust to methodologies
  - Robust to measures of income inequality
  - Robust to different measures of IGTI (not shown)

- **Within-country** variations do not present evidence of significant correlations with IGTI
  - Limited number of studies
  - Different drivers of income inequality
  - Corrective policies


RAND
CORPORATION