



Increasing Educational Inequalities?

Francesco Scervini

University of Milan – DEMM

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Outline

- 1 A New Dataset of Educational Inequality
- 2 Increasing Educational Inequalities?
 - Expansion and inequality
 - Gender inequality
 - Intergenerational inequality
- 3 From Education to Income
- 4 Conclusions



References

Elena Meschi and Francesco Scervini,
A New Dataset of Educational Inequality
GINI Discussion Paper 3, AIAS, Amsterdam, December 2010

Gabriele Ballarino, Massimiliano Bratti, Antonio Filippin, Carlo Fiorio, Marco Leonardi and Francesco Scervini,
Increasing Educational Inequalities?
Chapter 5 in: Wiemer Salverda et al., Editors
Changing Inequalities in Rich Countries: A Comparative Analysis,
Oxford University Press, forthcoming



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Existing datasets

The **benchmark**:

- Barro-Lee dataset

QJE (1991), JME (1993), AER (1996), OEP (2001), JDE (in press)

provides data on

- Attainment rates for seven educational levels
- Average years of schooling

using

- 146 countries
- 12 five-year intervals (1950-2010)
- **Estimated** years of schooling
- **Heterogeneous** country-specific sources



Existing datasets

Other existing datasets:

- Cohen and Soto
Journal of Economic Growth (2007)
- De Gregorio and Lee
Review of Income and Wealth (2002)

- Very similar in spirit to Barro-Lee dataset
- Different surveys, years, countries



Meschi and Scervini dataset

Our dataset is innovative from several perspectives:

- Three different measures of education:
 - years of schooling
 - attainment rates (4 levels for cross-country consistency)
 - competences
- Data organised by **cohorts of birth** instead of **years**
- Several indicators of educational **inequality**
- Longer time interval: 1920-1984 (13 five-year cohorts)
- Survey data for years of schooling (**not estimated**)
- Data from **different surveys** (ESS, EU-SILC, IALS, ISSP)
- Positive **consistency checks** across surveys



Meschi and Scervini dataset

However:

- No data on the whole population, only for cohorts
- “Only” 31 countries
- No data on developing countries

In general:

- Barro-Lee: stock of education, as an **input**
- Meschi-Scervini: inflows of education, as an **output**
(Braga, Checchi and Meschi, GINI DP 22, and Economic Policy, 2012)
- Meschi-Scervini: dispersion of education

[More info](#)



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Expansion of schooling and inequality

Three dimensions of inequality:

- **Distribution of education**
measured with Gini coefficient
- **Gender inequality in education**
measured with attainment rates by gender
- **Intergenerational transmission of competences**
very difficult to be measured!

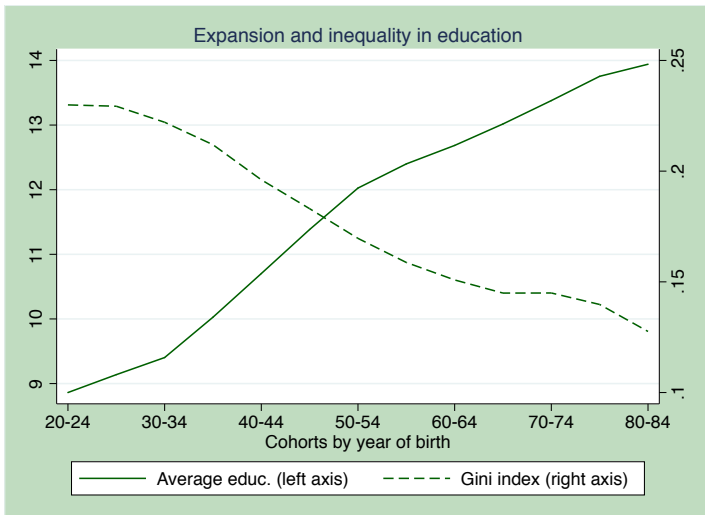


Outline

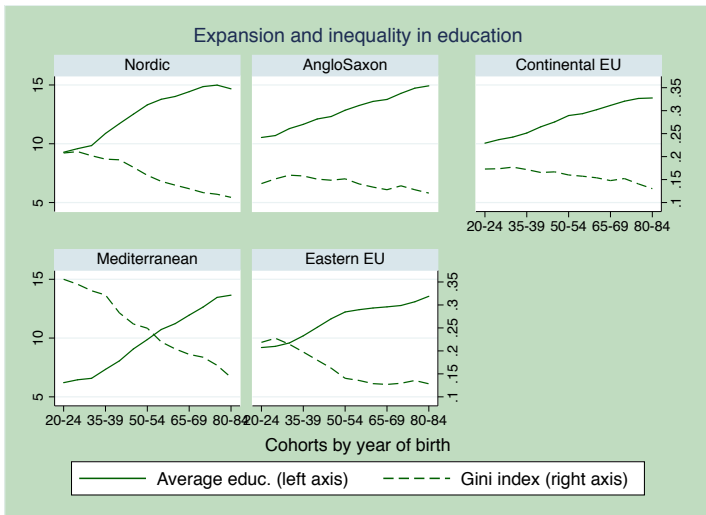
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Expansion and inequality



Expansion and inequality



Expansion and inequality

Clear trends:

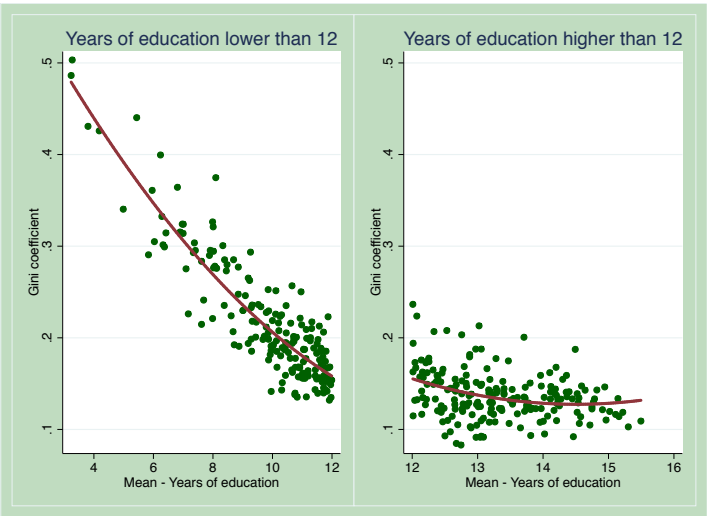
- Fast expansion in the **levels** of education
- Fast **reduction** of dispersion by cohort
- **Convergence** across countries

However...





Expansion and inequality



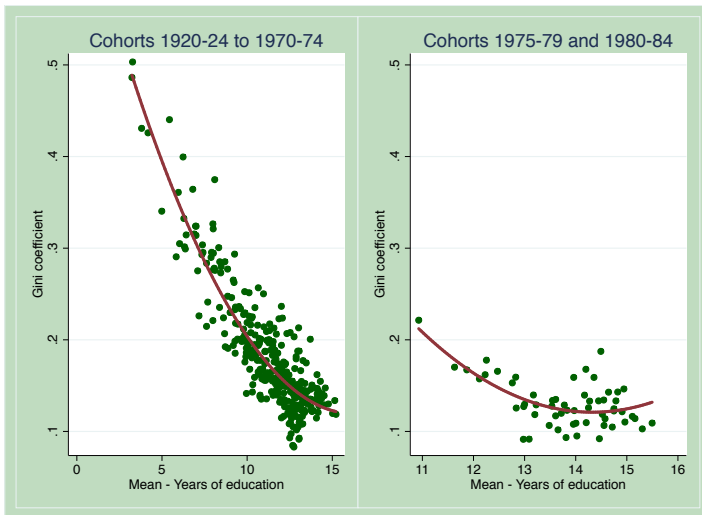
Expansion and inequality

However:

- Clear negative correlation **only up to a threshold**
- Once controlling for country and cohort fixed effects:
⇒ evidence of a **U-shaped relationship** between expansion and inequality
- Increasing inequality driven by **expansion of higher levels**



Expansion and inequality



Expansion and inequality

Summing up:

- Long term convergence among EU countries both in terms of:
 - higher levels
 - lower inequality
- Concerns for younger cohorts:
 - further expansion through higher level may increase inequality

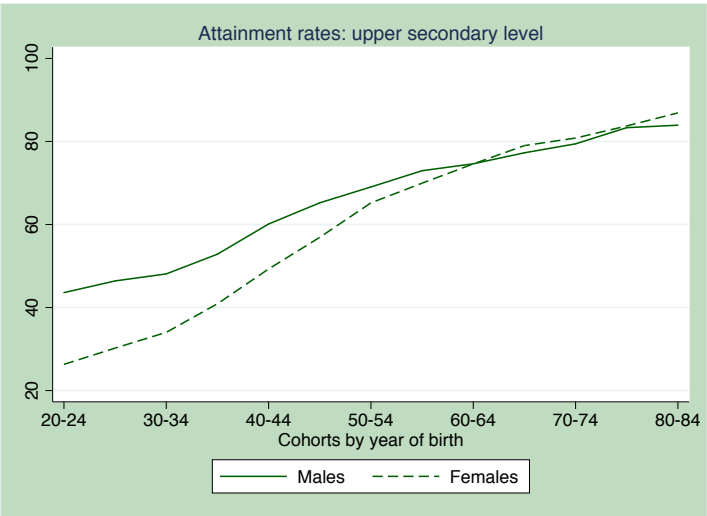


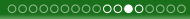
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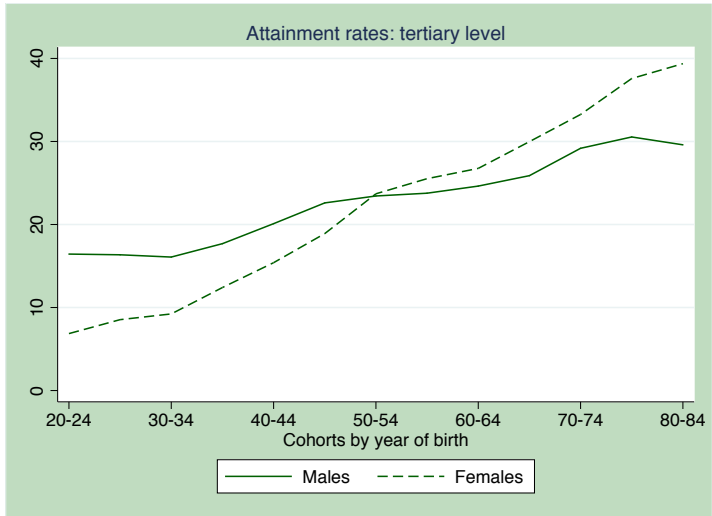


Gender inequality in education





Gender inequality in education



Gender inequality in education

Common trends for all geographic areas:

- Convergence between genders in secondary and upper secondary levels
 - Divergence in tertiary education, in favour of women
- ⇒ Gender discrimination against women **does not** seem to arise from formal education



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Intergenerational transmission of competences

Focus on Italy:

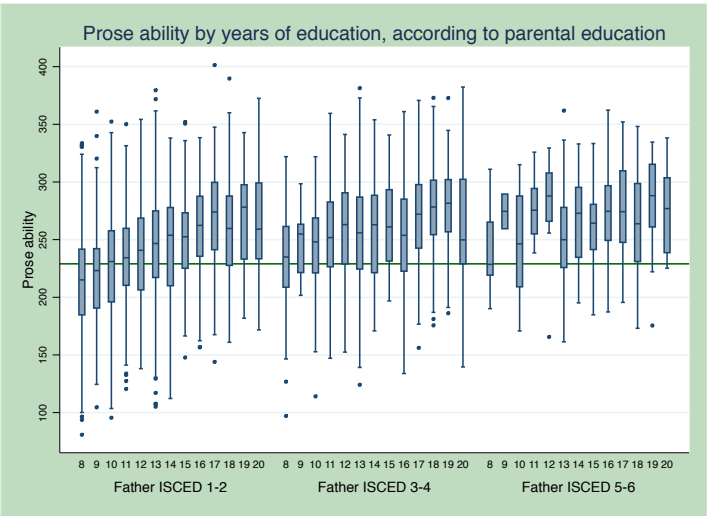
- In general, difficult cross-country comparison
- Italy is the only EU country in ALL (Adult Literacy and Lifeskills Survey, run by OECD in 2002)
- “Upper-bound” of inequality of opportunities in Europe

Analysis of average competences

- by years of education
- by parental education



Intergenerational transmission of competences



Intergenerational transmission of competences

- Parental education affects only individuals with **low** levels of education
 - No differences in competences among individuals with higher education, **irrespective of parental education**
 - Virtually no differences in competences among individuals with higher parental education, **irrespective of educational level**
- ⇒ School can compensate for disadvantages in parental background



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Educational and income inequality

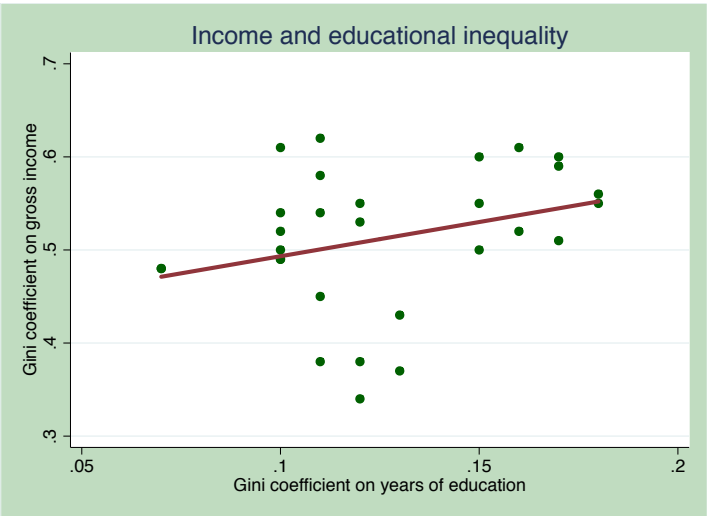
Link between inequality of education and inequality of income?

Debated topic, contrasting evidence:

- **Yes**
(Becker and Chiswick, 1966; De Gregorio and Lee, 2002)
- **No** (Ram, 1984; 1989)
- **Depends** on the stage of development
(Knight and Sabot, 1983; Földvári and van Leeuwen, 2011)



Educational and income inequality



Educational and income inequality

Regressions based on EU-SILC 2009 suggest that

- Income inequality is **significantly correlated** to educational inequality
 - Reduction of **educational** Gini of 1 point leads to a reduction of **income** Gini of about .55 points
 - Stated differently, on average a 10% reduction of **educational** Gini leads to a 2% reduction of **income** Gini
- ⇒ Positive and significant correlation, but not very sizeable



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Increasing educational inequalities?

The picture is overall positive:

- Dispersion decreased in the last century
- but there are signals of an increase for the last cohorts
- Women caught up men, and exceeded them in tertiary education
- Some evidence of a positive effect of formal schooling on equality of opportunity
- Positive correlation between educational and gross income inequality



Building a dataset

- Download all waves of each survey
ESS, EU-SILC, IALS, ISSP
- Check data consistency over waves for each variable
- (For consistent variables) Merge all the waves of each survey:
 - ⇒ Increase sample size
 - ⇒ Loose the cross section dimension
- Select individuals
 - ⇒ Older than 25
 - ⇒ With less than 30 years of education
- Partition the sample by 13 five-year cohorts
- Divide the sample by gender



(Keep on) Building a dataset

- Compute for each cohort, each variable, each survey:
 - Sample size
 - Mean
 - Standard Deviation
 - Gini coefficient
 - Generalised Entropy indices
 - Atkinson indices
 - Deciles and quartiles
- For each variable/cohort, check consistency over surveys



Countries, datasets, cohorts

Countries covered in different surveys

Countries	ESS	EU-SILC	IALS	ISSP	Countries	ESS	EU-SILC	IALS	ISSP
Australia				x	Japan				x
Austria	x	x		x	Latvia	x	x		x
Belgium	x	x			Lithuania		x		
(Flanders)			x	x	Luxembourg	x	x		
Bulgaria	x	x		x	Netherlands	x	x	x	x
Canada				x	Norway	x	x	x	x
Czech Republic	x	x	x	x	Poland	x	x	x	x
Denmark	x	x	x	x	Portugal	x	x		x
Estonia	x	x			Romania	x	x		
Finland	x	x	x	x	Slovak Republic	x	x		x
France	x	x		x	Slovenia	x	x	x	x
Germany	x	x	x	x	Spain	x	x		x
Greece	x	x			Sweden	x	x	x	x
Hungary	x	x	x	x	Switzerland	x		x	x
Ireland	x	x	x	x	United Kingdom	x	x	x	
Italy	x	x	x	x	United States			x	



Countries, datasets, cohorts

Number of countries covered by surveys and cohorts

Cohorts	ESS	EU-SILC	IALS	ISSP
20-24	22		2	23
25-29	26		2	24
30-34	26	25	16	24
35-39	26	25	16	24
40-44	26	25	16	24
45-49	26	25	16	24
50-54	26	25	16	24
55-59	26	25	16	24
60-64	26	25	16	24
65-69	26	25	16	24
70-74	26	25	10	24
75-79	26	25		23
80-84	24	25		21



Countries, datasets, cohorts

Variables by survey

Variable	ESS	EU-SILC	IALS	ISSP
Years of education	X		X	X
Attainment rates	X	X	X	
Competences			X	

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