

Intergenerational Links and Upper Secondary Track Choice: Pattern and Consequences

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- Intergenerational mobility is a key topic in education economics as it raises concerns about equity and fairness
- It has often been investigated by computing educational attainment correlation between parents and children
- We study intergenerational links with respect to upper secondary school choices, because
 - parental variables may have a greater impact at earlier age
 - intergenerational links may shape the choice between vocational and academic education
- We also estimate the impact of intergenerational links on income inequality

- This research tries to answer these questions:
 - Have parental background variables become more or less important over time?
 - Do transitions to upper secondary education really matter for education inequality?
 - What are the labour market consequences of parental background effects?
- We make use of the Swiss household panel

Swiss household panel

- Representative household survey, spanning from 1999 to 2004
- Variable of interest: "First degree completed after secondary education"
- We build five educational categories: compulsory, general knowledge school, full-time vocational education, dual apprenticeship education and college bound education
- We construct five cohorts spanning from 1920 to 1979
- We restrict our sample to individuals who have completed all their education in Switzerland
- Sample size: 11123 observations

Trend decomposition

Methodology

We decompose the probability of choosing school track i at time t ($P_t(SC_i)$) as follows:

$$P_t(SC_i) = \sum_{j=1}^J P_t(SC_i, PE_j) = \sum_{j=1}^J P_t(SC_i|PE_j)P_t(PE_j) \quad (1)$$

where PE_j refers to the highest educational attainment j achieved by the parents

Trend decomposition

Methodology

To decompose the contribution of each of these two factors in explaining the trend in school track choices between time $t - 1$ and t , we pose:

$$\begin{aligned}\Delta P(SC_i) &= \sum_{j=1}^J P_t(SC_i|PE_j)P_t(PE_j) - \sum_{j=1}^J P_{t-1}(SC_i|PE_j)P_{t-1}(PE_j) \\ &= \underbrace{\sum_{j=1}^J \Delta P(SC_i|PE_j)P_t(PE_j)}_{\gamma} + \underbrace{\sum_{j=1}^J \Delta P(PE_j)P_{t-1}(SC_i|PE_j)}_{\delta}\end{aligned}$$

where γ is the expansion effect due to changes in conditional probabilities while δ is a composition effect due to increasing parents educational attainment through time

Trend decomposition

Results

Trend decomposition 40's-70's: upper secondary school choice

	Exp. (γ)	Comp. (δ)	Total
Women			
Compulsory	-0.0736	-0.0530	-0.1266
Vocational (dual)	0.0364	0.0036	0.0401
Vocational (full-time)	-0.0431	0.0145	-0.0285
General training school	-0.0493	-0.0041	-0.0534
High school	0.1296	0.0389	0.1685
Men			
Compulsory	-0.0098	-0.0205	-0.0304
Vocational (dual)	0.0071	-0.0394	-0.0323
Vocational (full-time)	-0.0007	-0.0008	-0.0015
General training school	-0.0087	0.0015	-0.0072
High school	0.0125	0.0591	0.0716

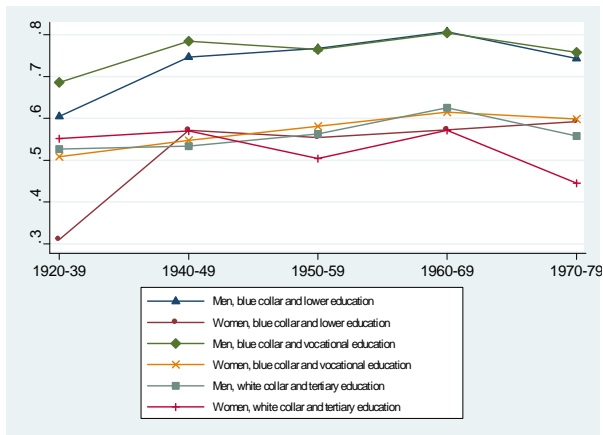
Determinants of upper secondary education

- Multivariate analysis by means of an ordered probit model
- 3 categories: lower education, vocational and college bound
- Estimation by cohorts
- Inclusion of a limited set of control variables: parental education at age 15, parental work status at age 15, Swiss citizenship, self-reported financial difficulties, both parents in the household, time trend

Determinants of upper secondary education

Results

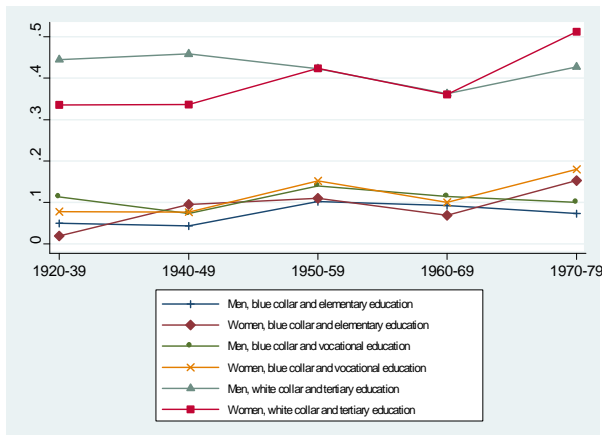
Figure: Vocational education probability, by parental background



Determinants of upper secondary education

Results

Figure: High school probability, by parental background



We pursue two goals:

- 1 investigating the impact of upper secondary schooling on wages
 - 2 measuring how intergenerational links translates into wages and how changes in intergenerational correlations have affected income inequality
- The first goal is achieved by estimating the following wage equation:

$$\ln(w_i) = \alpha + \beta_1 \text{voc}_i + \beta_2 \text{aca}_i + \gamma \text{EA}_i + \delta_1 P_i(\text{age}) + \delta_2 \text{coh}_i + u_i \quad (2)$$

where $\ln(w)$ is the hourly wage rate, voc and aca are dummy variables for vocational education and academic track, EA is a vector for further educational achievements, $P(\text{age})$ is a polynomial in age of degree 3 and coh are cohort dummies

Intergenerational links and wages

Wage regressions, Swiss household panel

	Men		Women	
	I	II	III	IV
Constant	1.230 (0.460)	0.650 (0.467)	1.216 (0.545)	0.953 (0.548)
Vocational	0.120 (0.029)	0.140 (0.030)	0.067 (0.022)	0.072 (0.022)
High school	0.212 (0.035)	0.360 (0.033)	0.198 (0.030)	0.290 (0.027)
Higher vocational	0.139 (0.017)	-	0.120 (0.026)	-
University	0.270 (0.026)	-	0.218 (0.033)	-
R ²	0.1861	0.1557	0.0942	0.0780
Number of obs.	3061		2946	

Notes: robust standard errors between brackets.

Not reported: cohort dummies, age profile, nationality.

- In a second step, we simulate how changing intergenerational links translate into wages through their effect on secondary school choice.
- We use the estimated coefficients from the wage equation to predict log wages conditional on parental background (PB):

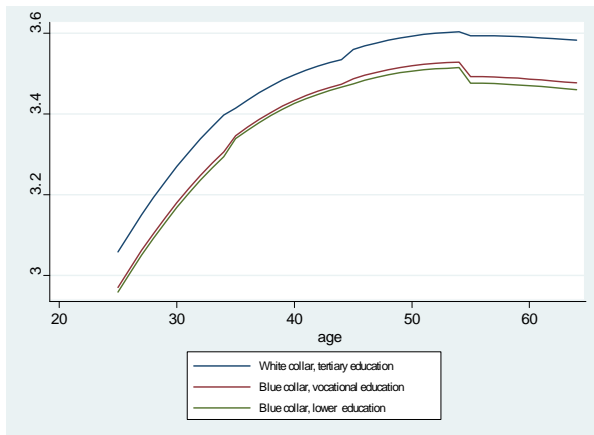
$$\begin{aligned} E(\ln(w)|PB) &= \tilde{\alpha} + \tilde{\beta}_1 E(voc|PB) + \tilde{\beta}_2 E(aca|PB) \\ &= \tilde{\alpha} + \tilde{\beta}_1 \Pr(voc|PB) + \tilde{\beta}_2 \Pr(aca|PB) \quad (3) \end{aligned}$$

- The probabilities $\Pr(voc|PB)$ and $\Pr(aca|PB)$ are obtained from our ordered probit model
- Convergence (or divergence) in the age profiles will stem from changing intergenerational correlations

Intergenerational links and wages

Results: men

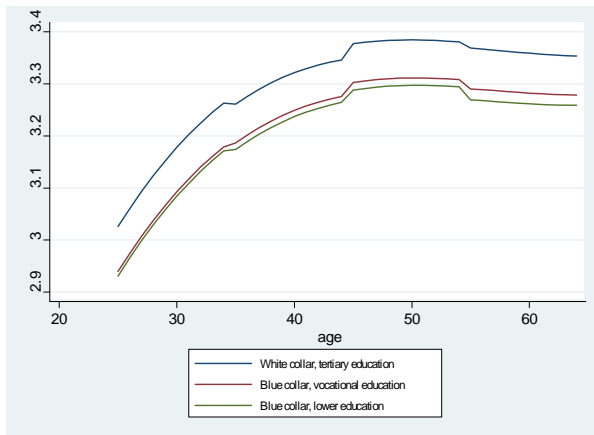
Figure: Wage profiles, men



Intergenerational links and wages

Results: women

Figure: Wage profiles, women



Intergenerational links and wages

Comments

- The size of the wage gap due to intergenerational links between an individual that has grown up in an academic family and an individual with working class background is significant (10%)
- Nevertheless, it is much lower than the gap found in Germany (about 30%, Dustman, 2004)
- The size of the gap is broadly similar for women and men
- We observe a slight convergence in the age profiles

- Propensity to choose vocational education has remained stable, but the composition of those choosing it has changed over time
- Parental background variables have an important impact on upper secondary school choices
- However, possibility to pursue further education reduces much of the impact of parental background, through upper secondary transition, on educational inequality
- This is in line with the relatively low impact of parental background variables, through upper secondary transition, on wages
- Policies providing tertiary vocational education may be the way to reduce inequalities