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Family influence on early career outcomes in seven European countries

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Abstract

This note uses ECHP data to study the extent to which family characteristics affect the early career outcomes (earnings) of children in seven European countries: Germany, France, Italy, Greece, Spain, Portugal and Austria. The overall importance of family influence on earnings is assessed by computing earnings correlations between siblings using the eight waves of European Community Household Panel (ECHP) data on siblings. Portugal is the country with the highest sibling correlation in earnings, followed by Italy, Greece, Spain and France. Germany and Austria prove to have very low sibling correlations in earnings. The correlation increases when the same–gender sibling samples are used in almost all countries. These findings suggest that the earnings correlation of siblings of different genders is lower because of labor-market discrimination against females.

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1. Introduction

The economic literature on intergenerational mobility has grown in recent decades because intergenerationally transmitted inequality has become an important issue in those countries where income inequality is increasing. The OECD (2008) has recently recorded a widening of income distributions between the mid-1980s and the mid-2000s in Germany, Italy and Portugal, and a decline in France and Greece.

It is well established that the socio-economic success of individuals in the labor market depends on their family backgrounds. Recent studies suggest the existence of strong intergenerational links in earnings driven by the high persistence of education within families in many different countries (Corak, 2006 and Bjorklund et al., 2002). While cross-country comparable estimates of intergenerational income elasticity are available for some European countries (Germany, France and Italy) (Corak, 2006), there is a lack of comparative studies on other Mediterranean countries (Portugal, Spain and Greece).

The aim of this note is to measure the extent to which family characteristics affect the early career outcomes of children in seven European countries: Germany, France, Italy, Greece, Spain, Portugal and Austria. Cross-country comparisons of countries with differences in social habits and labor-market characteristics yield better understanding of the effect of specific national institutions on the relative importance of family background in the early career.

The sibling correlation in earnings measures the extent to which observed earnings can be attributed to features shared between siblings, and observed and unobserved family and community characteristics. It can thus be considered a good measure of the overall importance of family background. It is a broader measure than parent-child earnings elasticity because it captures both observable and unobservable parent characteristics. Solon (1999) reviewed the empirical literature on sibling correlations in earnings and showed that very heterogeneous studies produce estimations in the range of .15 and .42 for the United States. Recently, Mazumder (2008) has updated results for the US, finding a correlation of around .5. The only other countries for which this statistic is available are the Nordic ones,[2] which have been covered by Bjorklund et al. (2002): in these countries the correlations are lower than in the US, ranging between .2 and .3.

The longitudinal design of the European Community Household Panel (ECHP hereafter) can be exploited to match each individual with his/her siblings and observe his/her first steps in the labour market. In this case the estimated correlations may be interpreted as correlations in early career earnings.

Family influence may be stronger in the early career, which is a period in life when family ties are stronger and can provide children with better and easier entry into the labour market. The role of networks in school-to-work transition has been well documented (for a review see Margolis and Simonnet, 2003 or Bentolilla et al., 2004). Indeed, informal contacts as a means to find a job are quite common in Europe, as documented by Pellizzari (2004). It turns out that in 1996 about one third[3] of the new jobs in Europe were found through informal networks. This percentage ranges from 25 percent in Italy to 45 percent in Spain.

[2] Denmark, Finland, Sweden, Norway.

[3] Author‘s calculation on the percentages reported in table 3, p. 31 of Pellizzari (2004). This figure is the average computed on the countries considered in this paper.

2. The estimation strategy

Following previous literature (see Solon, 1999), I model the economic outcome as:

$$y_{ijt} = \beta X_{ijt} + \varepsilon_{ijt} \quad (1)$$

where yijt is the logarithm of the outcome in year t (t=1,...,Tij) for the j-th (j=1..J) sibling in family i (i=1,...N); Xijt is a vector that contains (a polynomium in) age to account for the lifecycle effect and years dummies to account for the business cycle. The variables in X can be treated as fixed effects (Mazumder, 2008). The residual purged of these effects captures permanent components of earnings and can be decomposed into three random effects terms:

$$\varepsilon_{ijt} = a_i + u_{ij} + v_{ijt} \quad (2)$$

where the first term ai is the component common to all siblings in the family i; uij is the component that is individual–specific; and vijt is the transitory component. In line with previous studies, these three components are assumed to be "orthogonal by construction", so that the variance of εijt can be written as:

$$\sigma^2_{\varepsilon} = \sigma^2_a + \sigma^2_u + \sigma^2_v \quad (3)$$

where σ2a is the variance in permanent earnings due to differences between families, and σ2u is the variance due to differences within families. These two components can be used to compute the correlation of permanent earnings between siblings:

$$\rho = \frac{\sigma_a^2}{\sigma_a^2 + \sigma_u^2} \quad (4)$$

This correlation can be interpreted as the proportion of the population variance in long-run earnings due to what is shared by siblings.

The three variance components were estimated using a restricted maximum likelihood estimation method, which is better suited unbalanced panel data than the classic ANOVA formulas and produces consistent estimations (For a discussion see Mazumder, 2008).

Mazumder (2008) presents some sensitivity tests of the inclusion of singletons versus their exclusion and concludes that the inclusion of singletons does not change the estimation of sibling correlations. Hence singletons were included in my estimation samples, and I will also present results separately for sister pairs and brother pairs. In this case, siblings of different sexes were split and included in the relevant sample as singletons.

3. Data and descriptive statistics

The European Community Household Panel[4] is a large-scale household survey that covers most member countries of the European Union. Rather than seeking to harmonize output from national surveys, the European statistical agency (Eurostat) adopts an input-oriented approach and uses the same community questionnaire as the basis for the national

[4] ECHP UDB – version of December 2003.

versions of the survey. Thus an advantage of the ECHP is that the definitions of earnings, the reference period, and the survey methods are common across countries. Furthermore, individuals in the original sample are followed over time even when they leave the original family. This sample design enabled me to match them with their siblings.

Table I. Summary statistics.

	Germany	**France**	**Italy**	**Greece**	**Spain**	**Portugal**	**Austria**
All sibling pairs							
Age	26.9	26.6	28.4	28.1	27.9	27.4	27.1
Average Monthly Gross Wage (1)	1640.3	1173.7	1076.5	684.5	914.6	508.2	1511.5
N individuals	2011	1804	3337	1834	3677	2681	1276
N family	1582	1397	2419	1378	2489	1862	905
N obs	6826	5454	11730	5946	11109	10127	4373
Sister pairs							
Age	25.7	26.4	28.2	27.5	27.9	27.6	26.4
Average Monthly Gross Wage (1)	1341.4	1116.1	981.5	634.9	836.12	492.3	1282.9
N individuals	798	730	1317	742	1560	1117	493
N family	720	639	1129	654	1314	950	432
N obs	2559	2143	4507	2215	4533	4028	1602
Brother pairs							
Age	27.5	26.8	28.5	28.4	27.9	27.3	27.6
Average Monthly Gross Wage (1)	1824.6	1211.4	1137.3	714.6	968.5	518.7	1645.7
N individuals	1227	1073	1660	923	2116	1231	778
N family	1037	1073	2021	1091	1664	1563	618
N obs	4267	3313	7219	3726	6577	6099	2772

Notes: (1) in euros in 2000 prices.

By exploiting the longitudinal design of the survey and using the personal link file, each individual could be matched with his/her siblings if s/he lived in the same household at least for one wave. Lone children were also included in the sample as singletons.

Only individuals aged between 22 and 39 with positive earnings in at least one year and who declared themselves to be working in paid employment (more than 15 hours a week), in paid apprenticeships or training (more than 15 hours a week) (i.e. individuals not in formal education or self-employed) were selected. The earnings variable used was the monthly (gross) earnings in the month prior to the interview, and I excluded individuals belonging to the first and last percentiles of the specific country-wage distribution. I obtained about 2 thousand individuals for each country, ranging from 1267 in Austria to 3600 in Spain.

Good data containing information on many brothers in many years are scarce. Hence the estimations of sibling correlations have almost all been made using small samples. Solon (1999), in reviewing the literature on sibling correlations, showed that the vast majority of studies used few hundreds of families. More recently, some larger samples have been employed for this purpose, for example by Bjorklund et al. (2002), who used registry files of Scandinavian countries with data from several thousands of families. They compared their results with estimations obtained from the PSID (US panel), in which they studied around 9 hundred families. Mazumder (2008) extended Solon's estimation sample and was able to use around 5 thousand individuals observed for more than ten years. My samples were larger than those used in the earliest papers, but smaller than those used in more recent ones.

Table I sets out the sample means. As will be seen, the average age is almost similar across countries. It is slightly higher in Italy, probably reflecting the same cohabitation with parents habits (Iacovou, 2001) and indicating that, in all the countries considered, the sample selection produced similar samples. The average monthly gross wage (converted into 2000 euros) reflects the young age of my samples. The middle and bottom panels report the averages of the relevant variables also for the only-sisters and only-brothers samples. On average female wages are lower than male ones.

4. Results

Table II shows the estimated correlations for all siblings, and separately for sisters and brothers, the bootstrapped standard errors and the confidence intervals. All the estimated correlations are statistically significant. The main results are those obtained with all siblings together. This is because more observations per family were used, so that better measures of the within-family variance and more precise estimations of the correlation were obtained. France and Spain have a correlation of around .3, while Italy and Greece have correlations of around .4. Austria has a correlation of .2 and Germany of .1. Finally, Portugal has the highest sibling correlation, which is close to .6

In order to furnish a better comparative picture, figure 1 plots the estimated sibling correlations and the confidence intervals for all countries. Germany and Austria have a greater degree of intergenerational mobility (lower correlations), which is statistically different from the degrees of mobility of the Mediterranean countries (Italy, Spain and Greece). France stands somewhere in the middle, but its estimated correlation differs significantly only from Germany's. Finally, the high correlation found for Portugal is statistically different from those of all the other countries.

The ranking by degree of mobility is quite similar to those obtained by other studies. For instance, Couch and Dunn (1997) find that Germany is a more mobile society than the US, which was considered more mobile than Italy by Checchi et al.(2001) Finally, Corak (2006) reviews intergenerational income elasticity estimates and concludes that Germany is more mobile than France.

Table II: Sibling correlations and components of earnings inequality

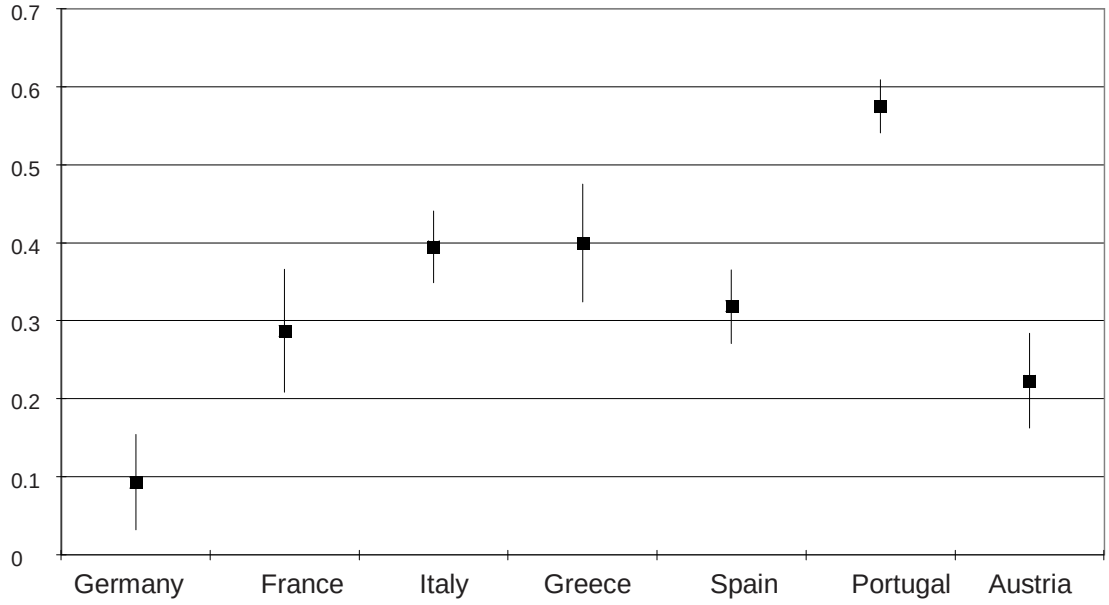
All sibling pairs							
	German y	France	Italy	Greece	Spain	Portugal	Austria
Sibling correlation (SE) 5% CI 95%CI	**.093 (.030) .032 .154**	**.287 (.040) .208 .366**	**.395 (.023) .349 .441**	**.400 (.038) .324 .475**	**.319 (.024) .271 .365**	**.575 (.017) .541 .609**	**.223 (.031) .162 .284**
σ^2_a	.017	.030	.027	.028	.037	.064	.019
σ^2_u	.166	.074	.042	.042	.080	.047	.066
σ^2_v	.072	.045	.030	.034	.052	.025	.027
Sister pairs							
Sister correlation (SE) 5% CI 95%CI	**.218 (.109) .004 .430**	**.251 (.054) .143 .358**	**.488 (.038) .412 .563**	**.387 (.097) .196 .579**	**545 (.033) .480 .610**	**.653 (.040) .574 .732**	**.502 (.075) .355 .649**
σ^2_a	.035	.028	.040	.026	.082	.088	.043
σ^2_u	.127	.084	.042	.041	.070	.046	.043
σ^2_v	.082	.053	.034	.035	.053	.019	.028
Brother pairs							
Brother correlation (SE) 5% CI 95%CI	**.269 *(.070)* *.130* *.408***	**.286 *(.085)* .118 .454**	**.505 (.037) .432 .578**	**.578 (.049) .482 .674**	**.444 (.035) .374 .514**	**.639 (.026) .588 .691**	**.334 (.065) .205 .463**
σ^2_a	.046	.027	.027	.038 (.005)	.035 (.004)	.058 (.004)	.018 (.005)
σ^2_u	.126	.067	.026	.027 (.004)	.043 (.004)	.033 (.003)	.037 (.005)
σ^2_v	.066	.040	.028	.032 (.0009)	.049 (.001)	.028 (.0005)	.026 (.0008)

Notes: Bootstrapped standard error within parentheses in italics. All the variance components estimates are statistically significant at the 1% level. 5% CI and 95% CI are the lower and upper bounds of the confidence intervals.

The set of countries considered in this study have corporatist-type welfare states. This means that the welfare state is family-oriented: young people tend to cohabit longer with their parents because it may be difficult for them to leave the parental home, and the state does not protect them, for example with unemployment benefit, if they lose their jobs. Furthermore, these countries typically tend to have stricter employment protection laws for

the breadwinner and to disregard young people. Families react by creating a network to protect their offspring. Thus sibling correlations in earnings are higher and the effect of family characteristics on returns to education may be stronger.

Figure 1: Sibling correlations and confidence intervals. By country



In regard to the corporatist countries, consideration should be made of the role of the Church, and a distinction should be drawn between Continental countries and Mediterranean ones. Algan and Cahuc (2004) analyze the positive link between traditional family values and job protection legislation. On examining the interaction among religion, preferences and institutions, they find that Mediterranean Catholic countries are more likely than Protestant countries to support "macho values". This social status gives rise to a greater degree of job protection and family-oriented policies. My finding that Portugal, Italy, Greece and Spain, where the (Catholic) religion has shaped societies upon the family, are those with the higher sibling earnings correlations is in line with this hypothesis.

The correlation increases when the same gender samples are used in almost all countries except France (and Greece for sisters), even though the precision of the estimates is lower (confidence intervals are larger). These findings may suggest that siblings of the same gender tend to have more similar patterns in earnings than siblings of different gender. This may be due to labour-market discrimination against females, as the differences in average wages between sister and brother pairs documented in table I suggest; or it may be due to differences in family investment in children when they are of different genders. The scarce empirical literature on this last issue provides evidence that gender wage differentials, like endowment differences, are mildly reinforced by the parental allocation of human capital investments (Behrman et al., 1986), suggesting that a lower correlation in earnings between siblings of different genders may be mainly due to labour-market gender discrimination.

5. Concluding remarks

This note has conducted a comparative study of the extent to which family characteristics affect early career outcomes (wages) of children in seven European countries: Germany, France, Italy, Greece, Spain, Portugal and Austria. To assess the overall importance of family influence, I computed a broad indicator of family effect on earnings – the sibling earnings correlation – using the eight waves of ECHP data on siblings. This indicator measures how much of the observed earnings can be attributed to what siblings share: family and community background, and unobserved characteristics. I found that Portugal is the country with the highest correlation, followed by Italy, Spain and Greece. In these countries religious traditions as well as culture and traditional habits have shaped society upon the family. Moreover, they are characterized by very strict employment protection laws, with the consequence that family influence in the early career period is greater.

The correlation increased in almost all countries when the same-gender siblings samples were used. This finding may suggest that the earnings correlation of siblings of different genders is lower because of labor-market discrimination against females.

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