UNIVERSITA' CATTOLICA DEL SACRO CUORE

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- Milano -

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ECONOMIA DELL'IMPRESA E DEL LAVORO

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n. 55 – dicembre 2009

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Family influence on early career outcomes in seven European countries [1]

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December 2009

Abstract

This paper studies how much family characteristics affect early career outcomes (earnings) of children in seven European countries: Germany, France, Italy, Greece, Spain, Portugal and Austria using ECHP. To asses the overall importance of family influence an indicator of family effect on earnings, the siblings' earnings correlations is computed, using the eight waves of ECHP data on siblings. Portugal is the country with the highest siblings' correlation in earnings followed by Italy, Greece, Spain and France. Germany and Austria turned out to have a very low siblings' correlation in earnings. The correlation increases when the same gender siblings samples are used in almost all countries. These findings may suggest that the earnings correlation of siblings of different gender is lower because of labor market discrimination against female.
Keywords: Siblings correlation, intergenerational mobility.

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1. Introduction

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

It has been well established that an individual socio-economic success in the labor market depends by her family background. Recent studies suggest the existence of strong intergenerational link in earnings driven by a high persistence in education within each family 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 as regards other Mediterranean countries (Portugal, Spain and Greece).

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

Siblings correlation in earnings measures how much of the observed earnings can be attributed to factors that siblings share, observed and unobserved family and community characteristics, and thus can 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 parents characteristic. Solon (1999) reviewed the empirical literature on siblings' 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 fro the US and has found a correlations around .5. The only other countries for which this statistic is available are the Nordic countries[2] covered by Bjorklund et al. (2002); in these countries the correlations are lower than the US and are between .2 and .3.

Exploiting the longitudinal design of ECHP, each individual could be matched with her siblings and observed while moving the first steps in the labour market. In this case the estimated correlations may be interpreted as correlations in the early career earnings.

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[2] Denmark, Finland, Sweden, Norway.

Family influence may be stronger in the early career steps, a period in life in which families ties are stronger and can provide children with a better and easier way to enter in the labour market. The role of networks in the 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 mean to find a job are quite common in Europe, as it is documented by Pellizzari (2004). It turns out that about one third[3] of the jobs in 1996 in Europe have been found through informal network. This percentage ranges from 25 percent in Italy to 45 percent in Spain.

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2. The estimation strategy

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

$$y_{ijt} = \beta X_{ijt} + \varepsilon_{ijt} \tag{1}$$

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

$$\varepsilon_{ijt} = a_i + u_{ij} + v_{ijt} \tag{2}$$

where the first term a_i is the component common to all siblings in the family i; u_{ij} is the component that is individual specific and v_{ijt} is the transitory component. In line with previous studies, these three components are assumed to be "orthogonal by construction" and thus the variance of ε_{ijt} could be written as:

$$\sigma^2_\varepsilon = \sigma^2_a + \sigma^2_u + \sigma^2_v \tag{3}$$

Where σ^2_a is the variance in permanent earnings due to differences between families, σ^2_u is the variance due to differences within families. These two components could be used to compute the correlation of permanent earnings between siblings:

$$\rho = \frac{\sigma^2_a}{\sigma^2_a + \sigma^2_u} \tag{4}$$

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[3] Author elaboration on the percentage reported in table 3, pag 31 of Pellizzari (2004). This figure is the average computed on the countries I use in this paper.

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 are estimated using a restricted maximum likelihood estimation method which is more suitable for unbalanced panel than the classical ANOVA formulas and produces consistent estimations (For a discussion see Mazumder, 2008).

Mazumder (2008) presents some sensitivity tests of singletons inclusion versus their exclusion and concludes that the inclusion of singletons does not change the estimation of sibling's correlations. Thus singletons are included in my the estimation samples, and I will present results also separately for sisters pairs and only brothers pair. In this case, siblings of different sex are split and included in the right 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 in the European Union. Rather than trying to harmonize output from national surveys, the European statistical agency (Eurostat) adopts an input oriented approach and uses the same community questionnaire as the base for the national versions of the survey. Thus a desirable feature of ECHP is that the definitions of and questions on earnings, the reference period and the survey methods are common across countries. Furthermore individuals of the original sample are followed over time even when they leave the original family. This sample design allow me to match them with their siblings.

Exploiting the longitudinal design of the survey and using the personal link file, each individual could be matched with her siblings if she lived in the same household at least for a wave. Lone children are also in included in the sample as singletons.

Only individuals aged between 22 and 39 with a positive earnings in at least a year and which declare themselves to be working with an employer in paid employment (more than 15 hours a week), in paid apprenticeship or training (more than 15 hours a week) (i.e individuals must not be in formal education or self-employed) are selected. The earnings variable I use is the monthly (gross) earnings of the month prior to the interview, and I exclude individuals belonging to the first and last percentile of the specific country-wage distribution. I end up with about 2 thousand individuals for each country, ranging from 1267 in Austria to 3600 in Spain.

Good data containing information for many brothers in many years are scarce and so estimations of siblings correlations have almost been done using small sample. Solon

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[4] ECHP UDB – version of December 2003.

(1999) in reviewing the literature on siblings correlations, shows that the vast majority of these studies have used few hundreds of family. More recently some bigger samples have been used to this purpose, as for example in Bijorklund et alii (2002) in which the authors use registry files of Scandinavian countries with data from several thousand of families. Their results are compared with estimation obtained from the PSID (US panel) in which they use about 9 hundreds of families. Mazumder (2008) extend the estimation sample of Solon and is able to use around 5 thousands individuals observed for more than ten years. My samples are bigger than those used in the oldest papers, but smaller than those used in more recent papers.

Table 1 contains the samples means. As it can be seen, the average age is almost similar across countries, 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 leads to similar samples. The average monthly gross wage (converted in 2000 euro) reflects the young age of my samples. In the middle and bottom panels I reports averages of the relevant variables also for only sisters and brothers samples. On average female wages are lower than males ones.

TABLE 1 AROUND HERE

4. Results

Table 2 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, because more observations per family are used and thus better measures of the within family variance and a more precise estimation of the correlation are obtained. France and Spain have a correlation around .3, while Italy and Greece have a correlation around .4. Austria has a correlation of .2 and Germany has a correlation of .1. Finally Portugal has the higher siblings' correlation which is near to .6

TABLE 2 AROUND HERE

In order to get a better comparison picture, in figure 1 I plot the estimated siblings correlations and the confidence interval for each countries. Germany and Austria have a

greater degree of intergenerational mobility (lower correlations) that is statistically different from the degree of mobility of Mediterranean countries (Italy, Spain and Greece). France is somewhere in the middle, but its estimated correlation differs significantly only from Germany's. The high correlation found in Portugal is finally statically different from all the other countries.

The ranking in the degree of mobility is quite similar to that obtained in other studies. For instance, Couch and Dunn (1997) find that Germany is a more mobile society than 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.

The set of countries considered in this study belongs to corporatist-type welfare state. This means that the welfare state is family oriented, young people tend to cohabit longer with their parents because it can be difficult to leave parents' house and the state does not protect them, for example with unemployment benefit if they loose their jobs. Furthermore these countries typically tend to have stricter employment protection laws to protect the breadwinner and disregard young people. In such a context, families react creating a network to protect their offspring and siblings correlations in earnings are higher and the effect of family characteristics on returns to education may be stronger.

Among the corporatist countries we need to further consider the role of the Church and distinguish between Continental countries and Mediterranean ones. Algan and Cahuc (2004) deeply analyze the positive link between traditional family values and job protection legislation. Studying the interaction between religions, preferences and institutions they find that Mediterranean Catholic countries are more likely to support "macho values" than Protestant. This social status gives rise to a greater degree of job protection and families oriented policies. My findings that Portugal, Italy, Greece and Spain, where the (Catholic) Religion has shaped the societies upon the family, are the those with the higher siblings earnings correlations and are 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 thought 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 female, as the differences in average wages between sisters and brothers pairs documented in table 1 suggests, or to differences in family investment in children when they are of different gender. The scarce empirical literature existing 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 and al., 1986), suggesting that a lower correlation in earnings between siblings of different gender may be due mainly to labour market gender discrimination.

5. Concluding remarks

This paper is a comparative study of how much family characteristics affect early career outcomes (wages) of children in seven European countries: Germany, France, Italy, Greece, Spain, Portugal and Austria. To asses the overall importance of family influence I compute a broad indicator of family effect on earnings, the siblings earnings correlations, 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 observed and unobserved characteristics. I find that Portugal is the country with the highest correlation, followed by Italy, Spain and Greece. In these countries the Religious traditions as well as culture and traditional habits shaped the societies upon the family, and moreover, they are characterized by very strict employment protection laws, and so family influence in the early career period is greater.

The correlation increases when the same gender siblings samples are used in almost all countries. These findings may suggest that the earnings correlation of siblings of different gender is lower because of labor market discrimination against female.

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<p align="center">**Table 1. Summary statistics.**</p>

|	Germany	France	Italy	Greece	Spain	Portugal	Austria
All siblings 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
Sisters 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
Brothers 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 euro in 2000 prices.

Table 2: Siblings correlations and components of earnings inequality

All siblings pairs							
	Germany	France	Italy	Greece	Spain	Portugal	Austria
Siblings 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
Sisters pairs							
Sisters 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
Brothers pairs							
Brothers 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 parenthesis in italics. All the variance components estimates are statistically significant at the 1%. **5**% CI and 95% CI mean Lowe rand upper bounds of the confidence intervals.

Figure 1: Siblings correlations and confidence intervals. By country

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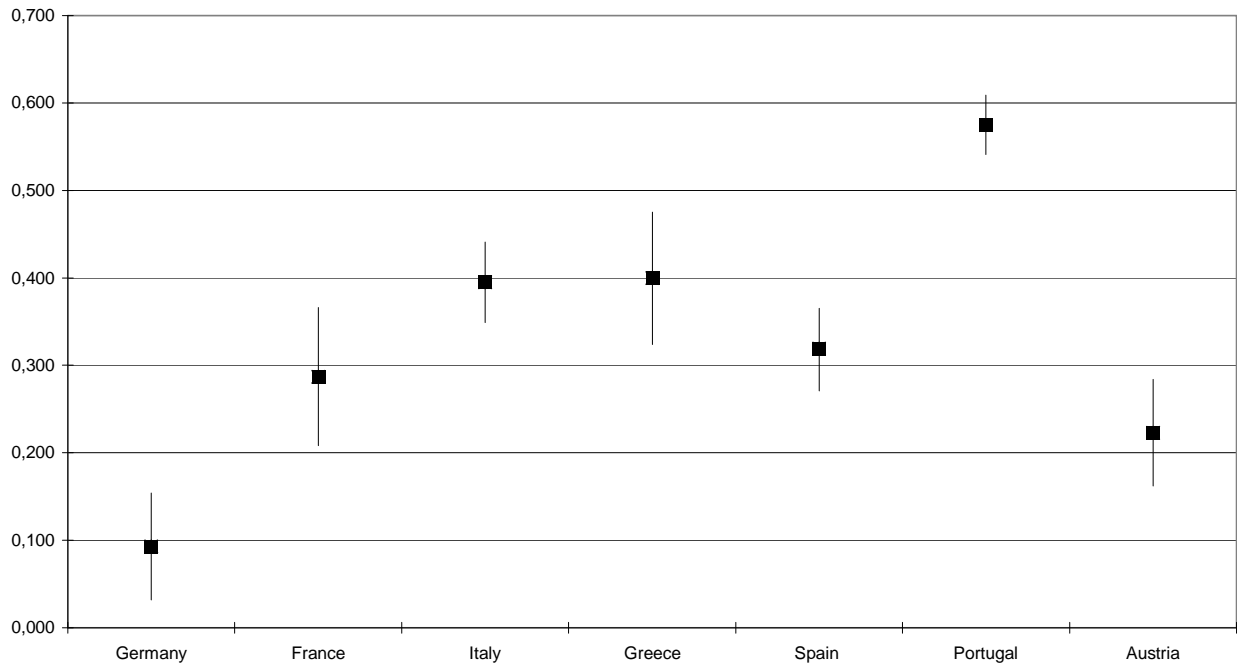
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