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Intergenerational transmission of socioeconomic conditions in Austria in the context of European welfare regimes

Matthias Schnetzer und Wilfried Altzinger***

Abstract

This paper uses data from the European Union Statistics on Income and Living Conditions (EU-SILC) 2005 to analyze intergenerational income mobility in Austria compared to other European Union members. Applying various methodological approaches, the data reveal substantial differences in intergenerational income persistence across European welfare regimes. The results show that income class rigidities are much less evident in Nordic countries compared to other European countries including Austria.

Keywords: Intergenerational Income Distribution, Intergenerational Mobility

Intergenerationelle Einkommensmobilität in Österreich im Kontext europäischer Wohlfahrtsregime

Zusammenfassung

Dieser Artikel befasst sich mithilfe von Daten aus dem EU-SILC 2005 mit intergenerationeller (Einkommens-)Mobilität in Österreich und ausgewählten Mitgliedsstaaten der Europäischen Union. Anhand einer ökonometrischen Untersuchung wird der Zusammenhang zwischen der finanziellen Situation der Elterngeneration und dem Einkommen der Kindergeneration erörtert. Die Daten legen substantielle Unterschiede in Bezug auf intergenerationelle Persistenzen in verschiedenen Europäischen Wohlfahrtsregime offen und zeigen, dass vor allem in den nordeuropäischen Ländern eine ausgeprägtere Mobilität als in den kontinentaleuropäischen Vergleichsstaaten (inkl. Österreich) zu beobachten ist.

Schlagwörter: Intergenerationelle Einkommensverteilung, Intergenerationelle Mobilität

** AK Wien – Abteilung Wirtschaftswissenschaft und Statistik, Prinz Eugen Straße 20-22, 1040 Wien, Matthias.Schnetzer@akwien.at*
*** WU Wien, Institut für Geld- und Finanzpolitik, Augasse 2-6, 1090 Wien, altzing@wu.ac.at*
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1. Introduction

The transmission of economic and social characteristics from parents to their descendants has recently been calling the attention of numerous articles. The parental influence on the living standard of their children can unfold through many channels, frequently mentioned are social, cultural, and institutional conditions, genetic inheritability[1] or monetary benefits. Beyond question, there exists considerable interaction between all of these factors and the influence of one single channel may hardly be isolated. However, most articles concentrate on a single dimension like educational attainments or income levels for the sake of simplicity and feasibility of research.

The transfer of advantages or disadvantages from parents to their children has been discussed controversially, whereas the OECD (2008: 204) states that "many OECD countries are rightly concerned about intergenerational mobility - the extent of transmission of advantages or disadvantages across generations. When children 'inherit' a substantial degree of their economic status or other important social characteristics from their parents, this generates widespread perceptions of unfairness and lack of opportunity. Societies characterized by a high transmission of social and economic status from generation to generation are mostly perceived as unfair". It is therefore of great interest to reveal the nature and extent of economic transfers across generations. The independence of income levels between two generations would support the view of equality of economic opportunities for everyone. However, the predetermination of the economic status by parental income would signal a loss of efficiency, since children from socially disadvantaged families have limited access to the market of so-called high potentials even though they might have specialized skills. Resources would therefore not be deployed adequately which called for social and political consequences.

This article concentrates on the monetary dimension of intergenerational transfers in Austria, therefore making the suitable denomination of the object of investigation the intergenerational transmission of income rather than social mobility. Based on data from the European Union Statistics on Income and Living Conditions (EU-SILC), we are able to analyze intergenerational income mobility in Austria for the first time and embed the results in a European context. Although there have been a number of international studies on intergenerational mobility, empirical research with standardized data for the European Union is rare. With the exception of articles by Causa et al. (2009), Esping-Andersen/Wagner (2010) and Franzini/Raitano (2009), no cross-country comparison for the European Union with EU-SILC data exists to our knowledge, neither does a detailed analysis for Austria. The latter is the major motivation for this contribution.

The content of the paper is structured as follows. In section 2 we provide a short literature overview and explore particularly the studies on the European Union. Hereafter, we analyze the data used in this paper in section 3 and discuss some potential difficulties concerning the interpretation of the information at hand. In section 4 we examine the common methods of measurement of intergenerational mobility and present the results of the calculations in section 5. Finally, section 6 concludes and presents some policy suggestions.

2. Theoretical framework and literature review

The standard theoretical model for the analysis of intergenerational mobility was developed by Becker/Tomes (1979) and is based on the assumption of utility maximizing households. The current generation of a family chooses the optimal human (and non-human) capital investment for their children, however, the market rewards for inherited endowments also depend on luck. The family endowments that are transferred are partly non-financial and comprise genetic, cultural, or religious elements. Due to imperfect capital markets and consequently given restrictions for the access to financial means for poor families in order to invest into their children, offspring of wealthier families have a comparative advantage[2]. Solon (2004: 5) modifies the Becker-Tomes model and derives several intuitive implications for the optimal human capital investment into children (under ceteris-paribus conditions). First, higher-income parents invest more in their offspring's human capital; second, public investments in a child's human capital may partly crowd out parental private investments; third, parental investments in their

1 The contribution of genetic factors is still rather unclear and very controversial. This ongoing debate is famously entitled "Nature versus Nurture".

2 See Franzini/Raitano (2009, p.347), who mention resources like time and money, e.g. books, good food, and medical treatment, as well as social networks and better schools.

descendant's human capital increase with their level of altruism; and fourth, parental investments increase with rising earnings returns to human capital investment.

Although investments in human capital may be a decisive factor for intergenerational mobility, this is not the whole story from our point of view. Vilfredo Pareto's circulation of elites, Pierre Bourdieu's notion of the habitus, and Thorstein Veblen's theory of the leisure class are important contributions to an interdisciplinary approach to intergenerational mobility. In this regard, another perspective focuses on the intergenerational aspect of inequality of opportunities rather than mere financial inequality: "Opportunity sets begin taking form in utero. Who one's parents are, what country they live in, and how rich they are make a great deal of difference for a person's opportunities. The opportunity to life itself turns out to depend on such pre-determined circumstances as the education and wealth of parents, whether their house has access to clean water and sanitation, and how close it is to medical treatment" (Ferreira/Walton 2006: 5).

Progressive public investments into human capital could be a driving force behind intergenerational mobility. The most common approach to take the influence of government policies on income inequality (i.e. redistribution) into consideration is the welfare regime theory. According to Esping-Andersen (1990: 26), European countries may be clustered with regard to their welfare state institutions together with the degree of stratification and de-commodification of basic needs. In his classification, three main types of welfare regimes are identified: liberal states (Anglo Saxon countries), corporatist-conservative states (primarily continental Europe), and social democratic states (Nordic countries)[3]. Eventually, an additional welfare regime for Southern European countries was developed (cf. Ferrera 1996). Following the approach of Franzini/Raitano (2009), we will discuss intergenerational mobility in Austria in the context of European welfare regimes.

While the current state of research on intergenerational mobility for most European countries is rather scarce, there has been considerable research on an international scale. In the 1990s, Mulligan (1999: 187) provided a detailed list of 16 articles concerning intergenerational income mobility based on the calculation of intergenerational income elasticities[4]. Solon (2002) listed another 12 articles concerning intergenerational mobility in countries other than the United States. He referred to studies in Canada, Finland, Germany, Malaysia, South Africa, Sweden and the United Kingdom, which derive mobility measures between fathers and sons with elasticity values ranging from 0.11 (Germany) to 0.57 (United Kingdom). These values imply that if the income of one father is 100% higher than the income of another father, the son of the affluent father will on average earn 11 to 57% more than the son of the poorer father. Most of these elasticity coefficients were calculated by least square estimates of a log-linear regression with age controls for both generations. Zimmerman (1992) cited several studies for income elasticity in the United States that compute intergenerational elasticity coefficients between 0.15 and 0.45. Zimmerman himself calculated a value of 0.4. However, Mazumder (2005) argues that due to persistent transitory fluctuations these estimates have been biased down by approximately 30% and instead calculates a value of around 0.6 for the United States. These ambiguous and varying results show the importance of the data choice.

In most articles, Sweden serves as a role model for high mobility compared to other European countries. Österberg (2000) analyzed Swedish tax-data files to examine intergenerational transmissions of earnings status. The scholar used data from the Swedish Income Panel which consists of a representative 1% sample drawn from the register of the total population. The information on income was gathered in two different periods, each lasting three years (1978 to 1980 for parents and 1990 to 1992 for offspring). The analysis concentrated on regression results as well as on transition matrices with respect to gender and compared the results with the work of Björklund/Jäntti (1997). Österberg reported high intergenerational income mobility in Sweden compared to estimates from most other countries. The author derived correlation values

3 Note, that as Esping-Andersen (1990: 28) points out, Scandinavia may be predominantly social democratic, but it is not free of crucial liberal elements. Neither are the other welfare regimes pure types.

4 Most empirical analyses are based on simple regression equations, denoted by $\ln Y_{i,t} = \alpha + \beta \cdot \ln Y_{i,s} + \varepsilon_{i,t}$

where $\ln Y_{i,t}$ is the logarithmic lifetime income of a descendant of family i. This is determined by the average income of his generation α, a noise term $\varepsilon_{i,t}$ and the influence of the logarithmic income of the parents $\ln Y_{i,s}$. The coefficient β measures the income elasticity between two generations (see Corak 2004, p. 10).

varying between 0.11 and 0.18, depending on different restrictions. A similar result was given by Jäntti et al. (2006) who calculated a intergenerational income correlation of 0.14 for Sweden.

In the 21st century, studies on intergenerational income mobility gained in recognition. Recent contributions have been provided by Vogel (2006), Schnitzlein (2008) and Schäfer/Schmidt (2009) for Germany, Kopczuk et al. (2010) for the United States, and OECD (2010) and Causa et al. (2009) for European OECD countries. Examples of earlier research are Atkinson (1981) and Dearden et al. (1997) for the United Kingdom as well as Corak/Heisz (1999) for the case of Canada. Extensive work on North America and Europe has been published in a volume edited by Corak (2004). Black/Devereux (2011) contributed the most recent literature survey on intergenerational income mobility and its causal mechanisms. Lately, the exploitation of EU-SILC data for intergenerational mobility issues put forth various articles. Esping-Andersen/Wagner (2010) take father-son EU-SILC data for five countries (Denmark, Norway, Italy, Spain and France) and find substantially higher mobility in Nordic countries than in Italy and Spain in particular. The difference is mostly explained by a "bottom-up" process of equalization. The scholars show that the advantages associated with descending from well-off origins are persistent, however, such advantages also exist in the two Nordic countries. Causa et al. (2009) provide comparable estimates of intergenerational wage and education persistence across 14 European OECD countries with EU-SILC data. Income persistence for sons is particularly strong in Southern European countries as well as in the United Kingdom, whereas Nordic countries show lower persistence, which is also true for Austria. However, income persistence is measured as the percentage increase in wages of an offspring having a father with tertiary education relative to an offspring having a father with below-upper secondary education. Further, the results suggest nonlinear effects and a higher persistence in the tails and in particular at the top. Finally, Franzini/Raitano (2009) exploit EU-SILC data and measure the effects of parental financial distress on the educational attainments and wages of the offspring. The scholars embed their results into a framework of welfare regimes and reveal substantial differences with regard to regime clusters. Again, Nordic countries perform best concerning intergenerational mobility.

Aside from the analysis of linear effects in the intergenerational transmission of income, another strand of literature deals with differences in elasticities across the income distribution of offspring. Since transmission mechanisms and policy conclusions may be entirely different for either tail of the distribution, it is necessary to analyze nonlinear trends in intergenerational mobility. The issue of nonlinearities in intergenerational earnings mobility was raised by Atkinson et al. (1983: 114) thirty years ago: "The proportion of upwardly mobile sons from the bottom 20 percent appears to be considerably higher and the proportion of downwardly mobile sons from the top 20 percent appears to be lower." Most of the earlier studies, which consider the issue of nonlinearity, have done so in order to test the conjecture of Becker/Tomes (1986) who imply a concave relationship between the earnings of parents and their descendants. This assumption has been affirmed for instance by Eide/Showalter (1999). However, several scholars (e.g. Björklund/Jäntti 1997, Corak/ Heisz 1999, Bratsberg et al. 2007, Björklund et al. 2010) provided evidence for more convex patterns. Corak/Heisz (1999) carried out a significant empirical analysis with a very large data sample for Canada. They analyzed intergenerational income elasticities with a sample drawn from tax records of 400,000 father-son pairs. The scholars revealed evidence for high mobility in the middle of the distribution but low mobility in the tails.

Mazumder (2005) finds strong evidence that the richer half of his sample from the United States is more mobile than the poorer one. Although he is rather cautious with the interpretation of his results, he concludes that an obvious policy suggestion is the promotion of higher educational attainments among poorer households. Jäntti et al. (2006) examine transition matrices to estimate mobility by quintiles for the United Kingdom, the United States, Denmark, Norway and Finland. They find that persistence is most pronounced at the tails of the distribution whilst mobility in the middle three quintiles is fairly similar across all five countries. Persistence at the top is strong in all five countries, however, mobility in the lowest quintile is found to be much higher in Norway and Denmark. Interestingly, the much larger intergenerational elasticity coefficients in the US and the UK compared to the Nordic countries are almost entirely due to differences in the tails. For instance, contrary to the Nordic countries, the United States exhibit strong persistence at the bottom of the income distribution.

Hertz (2005) illustrates income mobility between diverse income groups in the United States. The overall intergenerational income correlation is rather high

(0.42), and the differences in the life trajectories of the children of the poor and the rich are substantial. In particular those at the tails of the income distribution, i.e. those stuck in either poverty or affluence, exhibit much stronger persistence. For example, a child born in the top decile has a 43.3 percent chance of staying in the top quintile. In contrast, an offspring from the poorest decile has only a 4.3 percent chance to end up in the top quintile[5]. In a similar vein, Bowles/Gintis (2002) argued that the main explanation for strong persistence at the top is related to the fact that children of well-off parents obtain more and higher quality schooling. Additionally, wealth inheritance makes an important contribution for the persistence at the top.

3. Data analysis and sample definition

For the moment, we briefly focus on methodological problems of data generation and then we turn towards technical issues of data acquisition. The most evident challenge concerning the measurement of intergenerational income mobility is the lack of appropriate data. The analysis of income spillover effects between two generations requires proper income measures of the parents and the offspring. To begin with the offspring generation, one major problem is the association between current and lifetime earnings.

According to Wilkinson/Pickett (2010: 157), studies of intergenerational mobility require longitudinal data of as much as thirty years, "in order for the offspring to establish their position in the income hierarchy". Since single observations of wages are more easily available than long-term data, the most decisive problem is the particular time of the data acquisition. According to Haider/Solon (2006), there are potential life–cycle biases caused by the arbitrary date of observation (cf. Zimmerman 1992:411; Schnitzlein 2008:12). It is not possible to reveal whether a descendant, aged 20, receives a low salary due to a low life–span income or due to little labor market experience. If the latter is true, asked 15 years later, the person would almost certainly be at another position in the income distribution. Ideally, income data would be available over the entire working lives of parents and descendants respectively but such data hardly exists. However, the accessible short–term proxies for lifetime earnings could be influenced by transitory fluctuations. To minimize these distortions, Haider/Solon (2006) suggest reducing the data set to observations between the early thirties and the mid–forties[6]. We will take these considerations into account in our calculations.

With the methodological restrictions in mind, we employ the wage data from EU– SILC 2005. The survey is carried out in private households with a focus on income, employment, living, health and financial conditions. The sample population consists of households with at least one household member aged 16 or older. There are several variables regarding an individual's income collected in this survey (cf. European Parliament 2003: 3). The reference period for the declaration of all income components was the calendar year 2004, the data was collected on an annual or (partly) on a monthly basis. If respondents could not or were not willing to reveal their exact wages, they were asked to point to a certain level on an income range chart[7]. However, several values were missing in the raw data. Missing net income values were imputed in EU–SILC and missing gross income values were computed using net–gross–conversion.

The dependent variable in this analysis is the gross hourly wages of full–year employees. Self employed are excluded from the sample, due to well–known difficulties of properly reporting and measuring their income[8]. Most respondents declared their working time per week, enabling us to calculate the annualized wages on an hourly level. These calculations are based on wages and salaries paid in cash for the time worked

5 The predetermination at the lower tail is even larger. Children of the poorest decile have a 51.3 percent probability to remain in the lowest quintile, while those from the richest decile have only a 3.5 percent risk of ending up poor.

6 Couch/Dunn (1997: 220) show that potential downward biases in the correlation between offspring and parental income may be reduced by raising the cutoff age to 25.

7 The gross monthly income was categorized into 15 classes ranging from "1-600" to "8,001 and more" euros. For instance, 47 percent seized the possibility to declare their income out of investments (dividends, savings book, building loan contract, stocks and bonds, etc.) by the classification in categories. The alternative to such charts would probably be an increase in the rate of non–responses, resulting in a loss of important information on income.

8 According to Causa/Dantan/Johansson (2009: 10), the use of wages instead of all sorts of income "may potentially exaggerate the degree of intergenerational wage mobility, to the extent that the offspring of higher–educated families are less likely to be inactive than the offspring of low–educated families." This argument is shared and extended by Franzini/Raitano (2009: 365) who state that descendants with a wealthy parental background could more easily start working as self-employed.

including holiday pay and any additional payments during the year preceding the interview. While other studies (e.g. Österberg 2000) lack data for working time, the EU–SILC is equipped with such data, and we are therefore able to correct for potential working time biases. Finally, we derive logarithmic hourly wages for 2,795 individuals in the Austrian data who represent 1.8 million inhabitants in the EU-SILC (See Table A.1).

Contrary to official data from tax or social security authorities, information on income in questionnaires cannot be verified. Statisticians have to assume that respondents declare at least an approximation to their real incomes, which potentially could lead to distortions if the assumption is violated. Especially at both tails of the income distribution, there could be a tendency to over– or understate the incomes in survey data. However, we assume that these distortions are equally distributed in cross–country comparisons, since we do not suspect that the biases are systematically different by country. Descriptive statistics of the variables of interest in this paper are given in the appendix in Table A.2.

Concerning the measurement of parental earnings, one obvious problem is the lack of data. Facing the scarcity of information, numerous scholars chose roundabout routes for the analysis of intergenerational mobility. Björklund/Jäntti (1997), for instance, estimate intergenerational income correlations for independent samples of fathers and sons, since income data for two related generations were not available in Sweden. The method based on predictions of the parental earnings given their education and occupational status (cf. Österberg 2000: 422). The same procedure was applied by Andrews/Leigh (2009) due to the lack of data. The authors estimate hourly wages via dummies for occupation and age. The earnings of fathers in a certain occupation are then believed to be the same as those of a 40–year–old man in this profession. Schnitzlein (2008: 7) approximates lifetime income via time series of annual observations in Germany. Problems and potential biases of such approximations are well-known and documented by Becker/Tomes (1986), Solon (1992) and Zimmerman (1992).

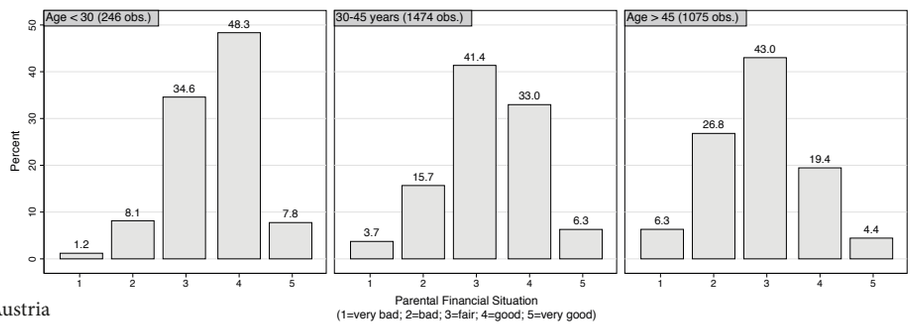
Due to the lack of data on wages for two related generations, the only practicable method to investigate intergenerational income mobility is the use of survey data that includes questions concerning the financial situation of a respondent's parents. The EU–SILC provides such data in its 2005 questionnaire and again in the 2011 panel wave. One component of both waves was a module on intergenerational transmission of poverty that included several questions concerning socio–economic characteristics of the respondents' parents. The most favorable question for the analysis of intergenerational income mobility was about the former financial situation of the parental household, which we will use as a proxy for parental income. Before we turn towards a critique of this variable, one has to emphasize the unique chance of analyzing data for two related generations: For the first time, we have such standardized information on more than one European country. However, comparisons between countries should be drawn carefully due to slight differences in the wording of the questions, the response items and the reference periods.

As is pointed out by Rojas Gonzalez (2010: 16), there were at least five different questions regarding the exact wording. The majority of countries asked for "financial problems" while two countries (AT, MT) requested the "financial situation" of the parental household. Consequently, also the five response categories varied. Even though the variations are only marginal and some of these may be simply due to language differences or the translation process, phrases like "most of time", "very often", "always" etc. were synonymous for the same response item. Moreover, there were differences in the reference period of the respondents. Most countries used a reference period when the interviewee was a young teenager[9], between the age of 12 and 16. If the respondent hesitated or asked for a specific age, the age of 14 was used. This ambiguous definition of the reference period has produced differences in implementation across the member states.

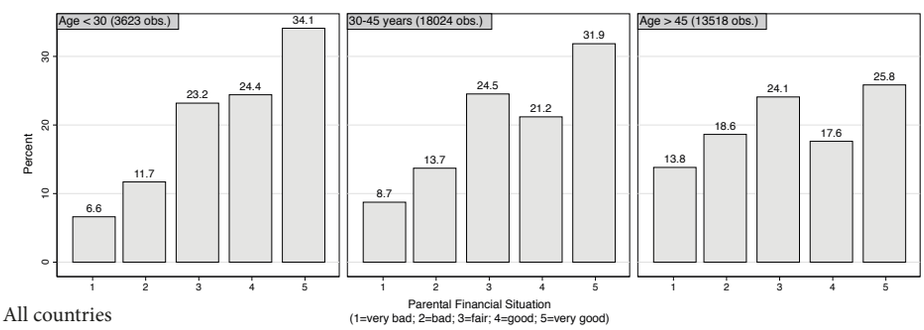
Two characteristics of this variable have to be mentioned. First, the retrospective nature of the question and second, the possibility of reference–dependent answers. Retrospective questioning of descendants lacks accuracy in determining parental income, since the reference period in the questionnaire varies widely for different age groups. In general, parental income estimations that date back a long time are less valid than estimations for recent time periods (cf. Statistik Austria 2007a: 59). As a consequence, the assessments of aged respondents may be less solid than those of younger

9 A large number of member states chose the period of age 12 to 16 (CY, CZ, EE, FI, HU, IE, IS, IT, LU, LV, NO, SE, UK), some countries refer to the notion of young teenager (DK, EE, ES, FR, LT, UK). In two member states (AT, BE) the question refers to the age of 14. Further information and quality validation of the module are provided by Rojas Gonzalez (2010), EQUALSOC (2009: 14) and Statistik Austria (2007b).

Figure 1: Relationship between parental income status and age of respondents



(a) Austria



(b) All countries

interviewees. Figure 1 shows that respondents older than 45 years tend to declare their parental household significantly more often in a bad or very bad financial situation than younger interviewees. One peculiarity in figure 1(a) is the trend towards the middle category in Austria which is not evident in our overall sample. The Spearman rank correlation coefficients between age and the parental financial status indicate a negative relationship between age and parental income status. This correlation is revealed to be more manifest in Austria than in the total sample (Spearman's rho of −.243 vs. −.122). However, this relationship could reflect the actual growth in wealth and living standard in Austria and the European countries in the last decades. Second, proxy information on income of third parties (i.e. family members) could underly substantial distortions. Even the self–assessment of the financial status entails difficulties which has been shown in recent studies[10]. In the literature, one problem of self–evaluation is referred to as reference–dependent answers in surveys. Hence, even presumed that the respondents are aware of the financial capabilities of their parents, a correct classification can not be taken for granted. Despite the limits of this variable, the fact that parental financial information is available on a European scale for the first time justifies the exploitation of the data for an intergenerational analysis of income. However, the interpretation of the results should be drawn carefully.

4. The measurement of intergenerational income mobility

The common approach to assess intergenerational income transitions are regressions of the parental income on the corresponding offspring income (cf. Fields/Ok 1996; Zimmerman 1992). We follow this traditional approach and formulate

$$\ln Y_{i,t} = \alpha + \beta_1 \cdot \ln Y_{i,s} + \epsilon_{i,t} \qquad (1)$$

where $Y_{i,t}$ are the (approximated lifetime) earnings of a descendant, $Y_{i,s}$ is the (lifetime) wage of the parents and ϵ_i is a white-noise error term. The coefficient β_1 is commonly denoted as the intergenerational income

10 See BMASK (2012: 249): New data on the self–assessment with regard to household wealth in Austria revealed that there is a trend that households see themselves as the "middle class". On average, a household from the top 10% believes to be in the 6th decile. Especially the self–perception of wealthy households is much below their real position in the distribution.

elasticity. Perfect income mobility between generations would be obtained with a value of zero, whereas a coefficient of one would report perfect immobility[11]. Values close to unity are indicative of limited intergenerational mobility, however zero intergenerational correlation is not necessarily the socially optimal level, as Black/Devereux (2011: 3f) point out. Offspring of wealthy parents may earn higher incomes due to the higher investments in education. Consequently, zero intergenerational correlation would neglect differences in returns to human capital investments.

We subdivide the analysis into two topics: a first equation should measure wage mobility; hereafter we will analyze more generally the influence of parental social status on wages. Since EU-SILC does not provide parental earnings $Y_{i,s}$, we first introduce the parental income variable that has been discussed in chapter 3. The variable contains five response items that denote the financial situation of the parental household. We convert this attribute into five so-called parental income dummies (PID), where 1 is the lowest income level and 5 captures the highest income level.

$$PID_i = \begin{cases} 1, & \text{if parental income status is } i \\ 0, & \text{otherwise,} \end{cases}$$

An adaption of equation (1) including the parental income dummies yields

$$\ln Y = \beta_0 + \beta_1 X + \beta_2 PID_2 + \beta_3 PID_3 + \beta_4 PID_4 + \beta_5 PID_5 + \epsilon \qquad (2)$$

where X consists of the sex and age of the respondent and PID_1 is the nummeraire. The coefficients β_2 to β_5 indicate a change in the logarithmic hourly wages given a certain parental income status, compared to the initial situation of a very bad financial level. The interpretation therefore is always in relation to the worst financial situation and consequently the coefficients are expected to be positive.

In a second step, equation (2) is enhanced by socio-economic characteristics of parents that could determine the wage level of the offspring as well, i.e. parental education and occupation. The subject matter changes from intergenerational wage mobility to the influence of the social status of parents on the wages of their offspring. Including the parental characteristics matrix P, the equation writes

$$\ln Y = \beta_0 + \beta_1 X + \beta_2 PID_2 + \beta_3 PID_3 + \beta_4 PID_4 + \beta_5 PID_5 + \beta_6 P + \epsilon \qquad (3)$$

Although ordinary least squares (OLS) estimations are the common approach to assess intergenerational mobility, some restrictions are mentioned in the literature. In chapter 3, the possibility of an income bias caused by the difference of actual and lifetime incomes of descendants has already been discussed.

Another caution is given by Corak (2004: 11), who emphasizes the difference between income elasticity and income advantage when the earnings distribution for the parental generation is very unequal. Corak argues that even small elasticity coefficients may indicate substantial income advantages for children, depending on the degree of inequality in the parental earnings distribution. Björklund/Jäntti (2009: 497) give weight to this issue as well. They point out that the OLS coefficient depends on income dispersion in two generations. Thus, if income inequality rises from one generation to another, a larger coefficient will be needed to account for the increased income variation in the second generation[12]. However, all of the mentioned critiques would lead to an underestimation of intergenerational persistence, hence the results of

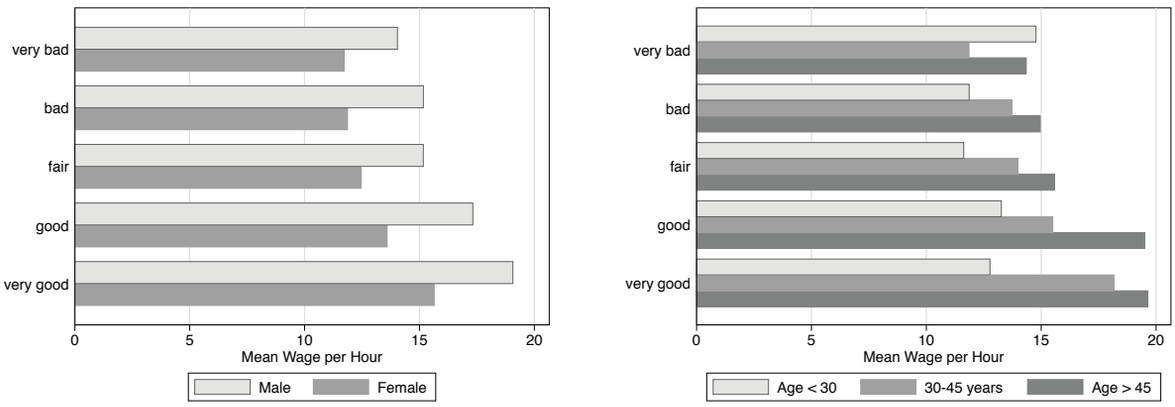
11 An important constraint to this approach is given by Anderson/Leo (2009). The authors refer to the implicit assumption that y and x are homogeneously linear across all socioeconomic strata. If they were not, one could incorrectly interpret zero correlation as perfect mobility: "Imagine a deterministic world (perfectly immobile) where below a certain parental income there is an exact negative relationship between parent and child outcomes, whereas above that income there is an exact positive relationship between parent and child outcomes; an appropriately balanced sample would yield 0 correlation with an inferred perfect mobility for what is a completely deterministic and immobile state." (Anderson/Leo 2009: 621)

12 The properties of the intergenerational correlation are also mentioned by Black/Devereux (2011: 6). Consequently, an elasticity coefficient multiplied by the ratio of the standard deviations of parental and descendant income should be preferred:

$$\varphi = \beta(\sigma_i/\sigma_s)$$

This correlation coefficient provides information about how many standard deviations the offspring's wage would change by a modification in the standard deviation of the parental income. Since we are not in possession of metric variables for the wage of both generations, we have to abandon this approach.

Figure 2: Mean Wage with Respect to Parental Income Class in Austria for Sex and Age



(a) Sex (b) Age

OLS estimations should be considered as rather conservative[13].

As mentioned above, a growing number of articles on intergenerational transmission of income have recently shown evidence of nonlinear effects along the earnings distribution of the offspring. To obtain a more detailed picture of intergenerational wage mobility, we therefore calculate income elasticities conditional to the descendants income distribution. The common approach is to derive quantile regressions at different percentiles of the distribution (cf. Koenker/Hallock 2001; Koenker 2010). The elasticity values at arbitrary percentiles θ can be derived by

$$\min_{\beta \in R^k} \left[\sum_{i \in \{i: Y_{i,t} \geq x_{i,t}\beta\}} \theta |Y_{i,t} - X_{i,t}\beta| + \sum_{i \in \{i: Y_{i,t} < x_{i,t}\beta\}} (1-\theta) |Y_{i,t} - X_{i,t}\beta| \right] \quad (4)$$

where $Y_{i,t}$ is the offspring wage, $X_{i,t}$ is the vector of explanatory characteristics and β is the vector of estimated coefficients including intergenerational income mobility. Using the methodic framework of quantile regressions should reveal nonlinear characteristics of intergenerational transmissions of income.

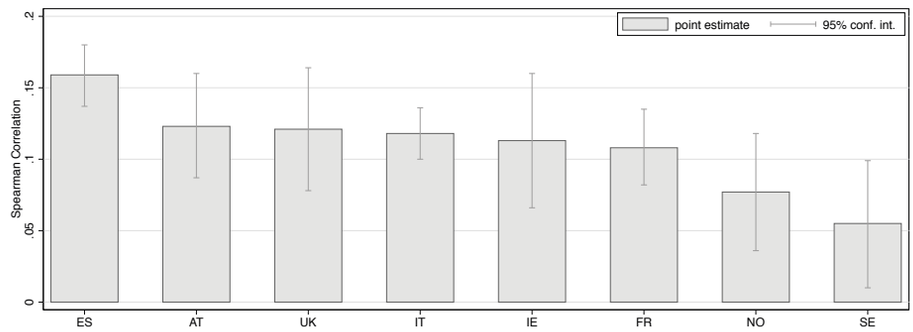
5. Key findings with EU-SILC data

A first intuition of intergenerational mobility is given by descriptive statistics. Figure 2 shows the (weighted) mean hourly gross wages for Austria by sex and age, given the particular parental income status from very bad to very good. The mean wage is clearly increasing with the financial situation of the parental household. The only counter–intuitive bar is the average wage for young descendants of very bad financial family conditions. However, Figure 1(a) reveals that the number of observations is infinitesimal, in fact only three individuals are found in this category. With this exception, the increasing trend is true for both, age and sex. Remarkably, the income gaps between men and women as well as between young and old respondents at both tails of the distribution vary significantly. Thus, the first impression of the data shows that there is obviously a relationship between the financial situation of parents and the actual income for women and men of all age groups.

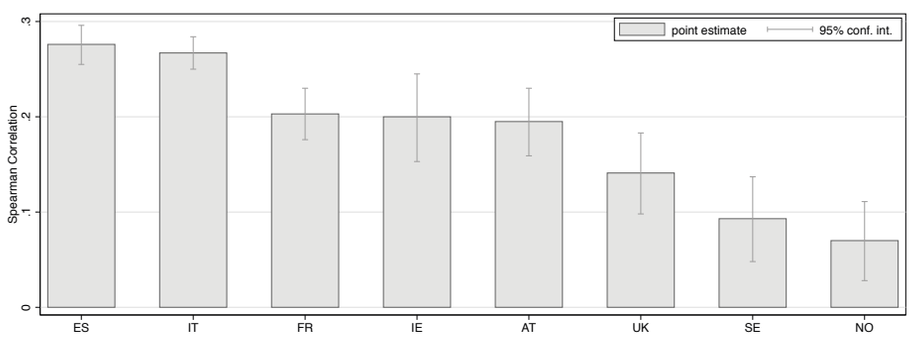
In Figure 3(a) the Spearman rank correlation coefficients for actual (logarithmic) income of descendants and the parental income status are illustrated. All values are significant at a 5%-level and, again, imply a positive relationship between economic family background and wages of children. The Northern European countries display the smallest intergenerational income correlation which is in accordance with

13 Nevertheless, according to O'Neill/Sweetman/Van de Gaer (2007: 160), there could also be a counteractive upward-bias of the OLS coefficients due to omitted variable bias: "Omitted variable bias [...] occurs when unobserved characteristics that are inherited from parents, such as ability, are also correlated with earnings. The OLS estimator mistakenly attributes the variation in earnings due to inherited endowments directly to parental earnings, leading us to overestimate the causal effect of parental earnings on children's earnings. While the simple linear regression model provides a useful summary of the conditional mean function, it is only a partial description of the joint distribution of earnings. When considering intergenerational mobility patterns throughout the distribution, researchers have traditionally moved away from regression based models and relied instead upon transition matrices."

Figure 3: Spearman correlation coefficients for two consecutive generations



(a) Personal income and parental financial status



(b) Educational attainment and parental financial status

the results of an OECD (2010: 185) study. The OECD sums up various studies on intergenerational income mobility and shows substantially stronger links between individual and parental earnings in the United Kingdom, Italy, France and Spain than in Denmark or Norway. Our results support the OECD conclusions with the remark that intergenerational income mobility is remarkably lower in Spain than in Italy or France based on our calculations.

As mentioned above, most articles on intergenerational mobility identify education as a key driver of persistence in wages. According to the OECD (2010: 187), the influence of the socio-economic family background on the educational attainments and wages of descendants reflects social norms or work ethics transmitted to offspring and highlights the role of social networks. Austria is among those countries for which the OECD attests a large impact of the family background on students' performance measured by PISA student test scores. In Figure 3(b), we examine the relationship between the financial situation of parents and the offspring's educational attainment. Again, the Nordic countries show significantly lower correlation coefficients than all other countries. Southern European countries, however, exhibit the strongest links between the financial family background and educational attainments. In the European context, Austria and France show very similar results regarding the Spearman rank correlation coefficients.

If these results are embedded into the welfare regime theory of Esping-Andersen (1990), we may draw the following picture. Countries that are characterized as the social-democratic welfare regime (i.e. Nordic countries) show the weakest relationship between parental financial status and offspring educational attainments or wages. The strongest evidence of intergenerational persistence is found in Southern European countries. The liberal (UK, IE) and the corporatist-conservative welfare regimes (AT, FR) appear to be very similar with regard to intergenerational income mobility. However, we find a weaker link between parental financial status and offspring education in the United Kingdom, yet not as weak as in the social-democratic welfare regime. In the next step, the implementation of an econometric approach should reveal these relationships in a more detailed way, especially due to the possibility to control for other influences.

Table 1: Regression Results for welfare regime clusters

	(1) Continental	*(2) Nordic*	*(3) Southern*	*(4) Anglo-Saxon*
Age	0.010***	0.008***	0.012***	-0,002*
	(0.001)	(0.001)	(0.000)	(0.001)
Female	-0.133***	-0.190***	-0.115***	-0.180***
	(0.012)	(0.019)	(0.009)	(0.023)
PID2	0.025	0.025	0.099***	-0.007
	(0.031)	(0.058)	(0.015)	(0.053)
PID3	0.124***	0.063	0.156***	0.090**
	(0.030)	(0.051)	(0.014)	(0.045)
PID4	0.146***	0.130***	0.154***	0.067
	(0.029)	(0.048)	(0.016)	(0.047)
PID5	0.181***	0.120***	0.162***	0.155***
	(0.029)	(0.047)	(0.015)	(0.043)
Constant	2.025***	2.364***	1.663***	2.783***
	(0.038)	(0.063)	(0.024)	(0.068)
Observations	8,153	4,137	19,125	3,750
R^2	0.062	0.054	0.083	0.037

Standard errors in parentheses
Source: EU-SILC 2005, own calculations, weighted results.
*** p<0.01, ** p<0.05, * p<0.1

We calculate the OLS model described in chapter 4 for the welfare regime clusters as well as for each single country. First, the results of the wage mobility concept as formulated in equation (2) are illustrated in Table 1 and Appendix A.3. The inclusion of the parental income dummies (PID) is backed up by an F-test of significance. The null hypothesis $H_0 : \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ for equation (2) may be rejected on all reasonable significance levels, thus indicating the influence of at least one dummy variable in the model to be conclusive.

The results of Table 1, where we now control for age and sex, draw a similar picture like the Spearman correlation coefficients. Again, the Nordic countries exhibit the lowest coefficients for the parental income dummies indicating the highest income mobility in the social-democratic welfare regime. If the Nordic countries are analyzed separately, most of the parental income dummies are insignificant (Appendix A.3). A significant, though comparatively small, influence of the financial situation of parents is only found for Swedish individuals with a very good financial family background. The coefficients for the other welfare regimes in Table 1 vary conditional on the parental finances. The effects resulting from the highest PID are similar for the corporatist-conservative welfare regime and the Southern European countries, whereas the liberal welfare regime shows a little lower estimates. On a disaggregated level, however, France exhibits considerable lower coefficients than Austria. Austria displays the highest coefficients of all countries in this analysis and features even lower intergenerational wage mobility than the Southern European countries.

Since the effect of a certain parental income dummy on the logarithmic hourly wages of descendants cannot be isolated in OLS regressions, the exact effects on predicted wages are derived in Table 2. The exact percentage difference for the predicted values can be measured[14] by

$$\exp(\beta_i) - 1 \qquad \forall\, i \in \{2,\ldots,5\}$$

14 We may calculate the influence of the ranks in the parental income distribution on their offspring' earnings as a percentage, since the dependent variable is logarithmic. Omitting the parental income dummies and simply regressing on $\beta_o + \beta_1 X$ would yield an income of $e^{\beta o+\beta 1 X}$. Introducing the first of the dummy variables would lead to an income of $e^{\beta o+\beta 1 X+\beta 2}$. β_o captures the effects where the financial situation of the parental household was very bad, however, we are interested in the effects on a child from a better-off family background. Hence, the percentage difference can be shown to be

$$\frac{e^{\beta_0+\beta_1 X+\beta_2} - e^{\beta_0+\beta_1 X}}{e^{\beta_0+\beta_1 X}} = \frac{e^{\beta_0+\beta_1 X} \cdot e^{\beta_2} - e^{\beta_0+\beta_1 X}}{e^{\beta_0+\beta_1 X}} = e^{\beta_2} - 1$$

Consequently, the percentage influence of all dummies based on the original Equation (2) can be measured by

$$e^{\beta i} - 1 \quad \forall\, i \in \{2,\ldots,5\}$$

Table 2: Income effects by parental status movement

	Austria	*Spain*	*France*	*Ireland*	*Italy*	*Norway*	*Sweden*	*UK*
1 → 2	0.071	0.067***	0.014	-0.123*	0.092***	0.005	0.008	-0.002
1 → 3	0.130**	0.115***	0.125***	-0.026	0.207***	0.016	0.004	0.101**
1 → 4	0.285***	0.161***	0.126***	0.081	0.256***	0.049	0.077	0.062
1 → 5	0.439***	0.284***	0.198***	0.123*	0.323***	0.066	0.088*	0.166***

Source: EU-SILC 2005, own calculations. Coefficients are based on frequency weights.
*** p<0.01, ** p<0.05, * p<0.1

The table shows the income effects of a movement in the parental income situation based on the initial situation to have a very bad financial background. We employ the term of "parental status movement" to express the effect on wages of descendants, if their parents are located in any financial situation but the worst one. Most of the numbers, with exception of those for the UK, show the expected evolution from small contributions by small parental status movements (i.e. the difference between bad and very bad financial background) to large contributions by large parental status movements. The results show that - controlled for age and sex - the income advantage for Austrian children with a very good financial family background is more than 40 percent compared to a counterpart with very bad financial conditions. While there seems to be only little influence of the parental financial situation in Nordic countries, the income gap in the Southern European countries is considerable.

The picture drawn in Table 2 is consistent with the descriptive approach. The high values for the intergenerational income transmissions indicate low mobility in Austria, Spain and Italy. In contrast, the coefficients are predominantly insignificant in countries of the social-democratic welfare regime and imply higher intergenerational mobility in Sweden and Norway. Again, the results for the United Kingdom are ambiguous. The regression detects no significant differences in wages, if the parental financial situation was good compared to very bad. However, a very good financial background leads to a substantial income advantage.

The OLS regressions have examined the average effects of the parental financial situation on the wage of descendants. However, we assume that the effects of the financial family background may have a nonlinear impact across the earnings distribution of offspring. Therefore, we consider a quantile regression approach described in equation (4). To keep enough observations for each of the selected quantiles, we analyze the effects for combined parental financial situations "bad" (i.e. PID_1 and PID_2) and "good" (i.e. PID_4 and PID_5). Table 3 shows the percentage effects of a parental status movement from bad to good on offspring wages conditional to their position in the earnings distribution. In most of the countries, the coefficients are considerably higher at the upper than at the lower tail of the distribution. Even in Sweden a comparatively small nonlinear effect is evident, whereas the coefficients for Norway are insignificant once more. All in all, the transmission of income advantages by well-off parents seem to be higher for descendants in the high wage segment.

We have shown significant differences regarding the effects of parental financial situation on the wages of descendants for European welfare regimes as well as for single countries so far. For the Austrian sample, we extend equation (2) first with additional parental characteristics (i.e. equation 3) and finally with further individual properties of the offspring generation. Equation (3) does not deal with income mobility, since the introduction of the educational attainments and skill levels of parents[15] could rather be defined as parental social status. The results for both concepts are given in Appendix A.4, subdivided for the age group proposed by Haider/Solon (2006). In the constrained sample, obviously the significance of age is diminishing, which is consistent with the assumption that the returns to seniority decrease within this age group. By contrast, the gender specific wage gap is considerable in all estimations. Even when controlling for differences in

15 A graduation in secondary school is synonymous for ISCED-97 levels 3 and 4, a university degree refers to ISCED-97 levels 5 and 6. The availability of information on the occupation of parents allows us to construct a social class position. According to EQUALSOC (2009: 7), the 2-digit ISCO-88 codes can be transformed into four categories of social classes (ISCO-88 codes in parenthesis): elementary occupation (91 to 93), skilled manual (61 to 83), lower skilled non-manual (41 to 52) and highly skilled non-manual (11 to 34). We include the non-manual occupation dummies into our regression to compare between blue-collar and white-collar family backgrounds. Since there are some missing values for the parental variables, the Austrian sample decreases from 2,795 to 2,556 observations.

Table 3: Quantile regression results for good parental financial status

	Austria	*Spain*	*France*	*Ireland*	*Italy*	*Norway*	*Sweden*	*UK*
q10	0.103***	0.145***	0.100***	0.077**	0.133***	0.036	0.057	0.020
q25	0.141***	0.179***	0.095***	0.163***	0.118***	0.050	0.063	0.115***
q50	0.180***	0.228***	0.127***	0.218***	0.131***	0.025	0.067***	0.165***
q75	0.239***	0.304***	0.154***	0.188***	0.173***	0.049*	0.087***	0.197***
q90	0.226***	0.274***	0.192***	0.209***	0.215***	0.066	0.095	0.147*

Source: EU-SILC 2005, own calculations. Coefficients are based on frequency weights.
*** p<0.01, ** p<0.05, * p<0.1

working time, educational attainments and occupation there remains a gap of roughly 20%.

The effects of a privileged parental financial status (PID_4 or PID_5) are large and significant in the wage concept as well as in the social status concept. In fact, a very good financial family background has the largest positive effect on offspring wages in both concepts for both samples. Moreover, the educational attainments and skills of parents can explain part of the variability in the social status concept. Unsurprisingly, occupation and education of parents correlate and each shows significant and large effects if let alone, however, we decided to show results for both included. In the extension of equation (3), we introduce several characteristics for the offspring generation. We include educational attainments, skill levels and management positions into the calculations to control for these factors and increase the explanatory power of the model. Since there are reasonable arguments that several variables in use could correlate with the parental income status, we check for problems of multicollinearity. The relatively low coefficients in Figure 3(b) show no suspicion of severe multicollinearity, neither did additional pairwise correlation analyses. Moreover, we could not find any grave effects of multicollinearity by calculating the variance inflation factors (VIF). To a great extent, the variability in wages can now be explained by the characteristics of the descendants. The parental variables mostly turn insignificant with exception of a very good financial background which is large and significant in both samples. Hence, the educational attainments and the occupation, which both may be influenced by the financial, social and cultural background of the parental household, are decisive vehicles of intergenerational persistence. However, even if we control for the educational attainments, skill levels, and manager positions of children, which all emerge to have a large impact on wages, the financial situation of parents still makes a difference in Austria.

6. Concluding remarks

This contribution tried to shed light on the intergenerational income mobility in Austria. Embedding the analysis into a framework of European welfare regimes should ensure the comparability of the results. Existing literature reveals that intergenerational earnings mobility varies significantly across countries, with Nordic countries showing higher mobility than for instance Southern European countries. Moreover, some scholars emphasize the nonlinear effects of intergenerational transmissions of income advantages along the earnings distribution. The often mentioned factors causing intergenerational income persistence range from genetic, cultural and social conditions to institutional settings which are hardly assessable in an economic analysis. Most important, higher educational attainments via private or public investments are seen as major contributor to increase mobility and dismantle intergenerational persistence. With data from EU-SILC 2005, we can confirm several assumptions postulated by the literature.

We calculated several indicators for intergenerational income (im)mobility whereof no single measure can provide a comprehensive picture. However, there are some cross-country patterns that are remarkable. In all calculations the Nordic countries (Sweden and Norway) showed substantially less intergenerational persistence than the other welfare regimes. Austria and the Southern European countries (Spain and Italy) displayed the highest transmissions of income advantages in all of the measures. The OECD (2010) mentions that Southern European countries appear to be relatively immobile whereas Nordic countries tend to be more mobile. In this regard our results are similar to those of the OECD. The main findings of our research can be summarized as follows:

• There is a considerable relationship between the financial situation of the parents and the actual wages of descendants in Austria.

• The effects of the financial family background vary across European countries and the welfare regime clusters. Austria is among the countries with very large intergenerational transmissions of income advantages. Nordic countries, by contrast, exhibit a greater extent of mobility.

• The effects of intergenerational income persistence are mostly nonlinear, except for Nordic countries. Particularly the upper tail of the offspring earnings distribution shows a higher significance of the parental financial situation in wage determination.

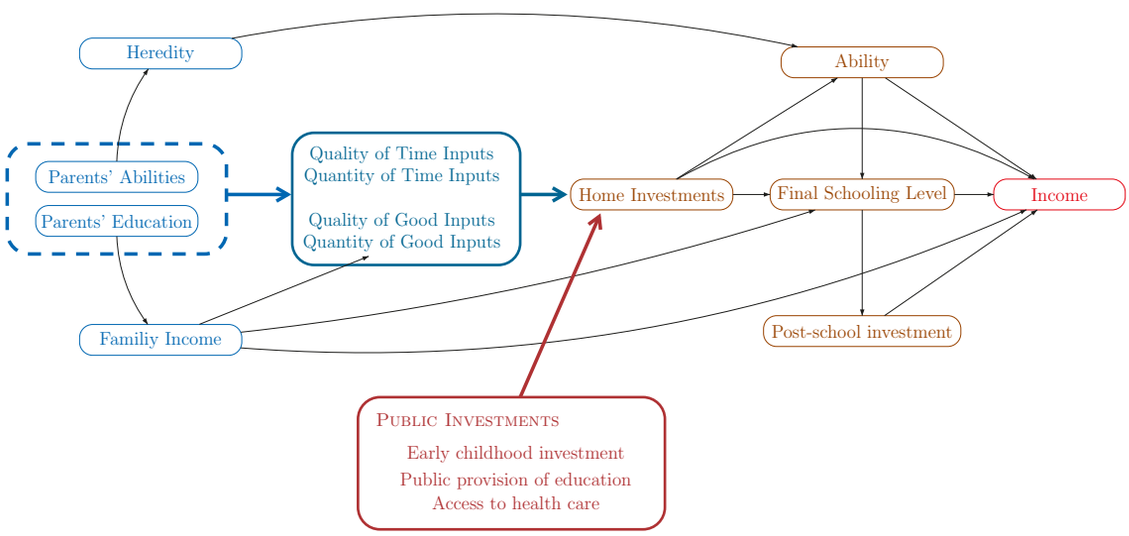
• The relevance of the financial background decreases, if educational attainments and occupation of parents are taken into consideration. Obviously, education and occupation (which may be identified with social status) are important channels for the intergenerational transmission of income advantages in Austria.

• Even when controlling for several socio-economic characteristics of the offspring generation, which can explain a large part of the variability in wages, the financial situation of the parental household still matters in Austria.

The results show that there exists an intergenerational income relationship but they cannot reveal the exact channels through which it unfolds. Franzini/Raitano (2009: 355) enumerate four channels for the impact of parental finances on the wages of their descendants. First, well-off students have access to better educational institutions which will increase their future earnings. Second, the financial background has an impact on the living standard, health status, individual behavior, relational capital, and social networks. This could be subsumed with the term of cultural capital developed by Bourdieu (1987). Third, poorer individuals tend to be satisfied with the first job they find because they cannot afford to wait for the one with the best long-term prospects. Fourth, social networks are mostly accessible only to well-off individuals, whereas persons from a poor financial background lack informal relationships for finding a good job. Regarding these various channels, the OECD (2010: 194) states that policies for higher social mobility should be accompanied by policies for more equal societies. Therefore, progressive tax systems and social transfer programs should not only help to make a society more equal but also strengthen the chances for individual social and economic advancement. Apparently, social-democratic welfare regimes could serve as a model worth studying in this respect.

Finally, the relevance of educational attainments has to be singled out. The individual positioning in social systems seems to result to a large extent from parenting and schooling in the very beginning years. In its 2006 report on "Efficiency and Equity in European education and training systems" the EU Commission stated the following: "Pre-primary education has the highest returns in terms of the social adaptation of children. Member States should invest more in pre-primary education as an effective means to esta-

Figure 4: The Determinants of Children's Attainments



Source: Haveman/Wolfe 1995, p.1833, with own amendments

blish the basis for further learning, preventing school drop-out, increasing equity of outcomes and overall skill levels." This statement is in conformity with the work of Heckman (2008), who emphasized the importance of early childhood investments with his famous Heckman Equation. Consequently, it is not only tax policies or social welfare systems that may account for intergenerational mobility, but basic modifications in the education systems and investments in the early development of cognitive and social skills of children. The quintessence of Heckman's work can be subsumed by a statement on his webpage: "The highest rate of return in early childhood development comes from investing as early as possible, from birth through age five, in disadvantaged families. Starting at age three or four is too little too late, as it fails to recognize that skills beget skills in a complimentary and dynamic way. Efforts should focus on the first years for the greatest efficiency and effectiveness. The best investment is in quality early childhood development from birth to five for disadvantaged children and their families."

Figure 4 finally gives an overview of parental determinants of children's attainments. The socio-economic background of parents sets the limits for investments into their children, be it in terms of quantity or quality. Public intervention may substantially mitigate inequality developments by complementing private investments with public investments into offspring. For instance, public institutions could provide access to health care or pre-primary education. Such interventions should have a decisive impact on future earnings and the distribution of incomes. However, even with public interventions the equality of opportunity is no foregone conclusion, as Bourdieu (1987) emphasized. According to the French sociologist, there is still the behavioral pattern of the habitus that sustains intergenerational persistence and that would have to be dismantled.

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A. Appendix

Table A.1: Sample reduction by homogenization of population

	AT	*ES*	*FR*	*IE*	*IT*	*NO*	*SE*	*UK*
Total observations	10,419	30,375	18,769	12,032	47,311	11,913	12,191	16,675
Labor Force	5,831	15,969	10,540	5,981	21,989	7,523	7,183	9,500
thereof:								
Self-employed	658	2,608	833	1,056	5,348	648	737	1,183
Employees	5,173	13,361	9,707	4,925	16,641	6,875	6,446	8,317
thereof:								
Fulltime workers	3,546	9,065	6,462	3,257	12,247	5,010	4,360	5,691
Missing wage or work time	167	1,133	330	190	1,065	165	148	3,089
Missing parental variable	584	1,225	774	1,346	1,268	2,622	2,298	555
results in:								
Available sample	2,795	7,856	5,358	1,703	11,269	2,223	1,914	2,047
Weighted sample (in 1,000s)	1,854	9,985	13,453	493	12,235	725	1,327	5,606

Source: EU-SILC 2005, own calculations.

Table A.2: Descriptive Statistics of VOI for selected countries

	AT	*ES*	*FR*	*IE*	*IT*	*NO*	*SE*	*UK*
Individual attributes:								
Sex (m=1; f=2)	1.313	1.351	1.400	1.418	1.347	1.393	1.386	1.434
	(0.464)	(0.477)	(0.490)	(0.493)	(0.476)	(0.488)	(0.487)	(0.496)
Age	41.71	40.56	42.07	41.49	41.54	43.25	43.68	42.26
	(9.094)	(9.646)	(9.541)	(10.20)	(9.310)	(10.52)	(11.04)	(10.42)
Income variables:								
Hourly gross wages	15.00	9.376	13.24	19.31	11.95	20.73	15.09	17.90
	(8.048)	(6.093)	(6.532)	(15.35)	(6.494)	(8.707)	(6.974)	(17.98)
…for persons aged 30-45	14.63	9.29	12.89	19.63	11.38	20.63	14.88	18.35
	(7.958)	(6.158)	(5.967)	(19.20)	(5.034)	(8.972)	(7.082)	(12.00)
Hours worked weekly	41.03	41.85	40.10	40.64	40.68	39.75	40.94	40.55
	(5.002)	(6.605)	(7.673)	(7.097)	(5.795)	(5.436)	(4.427)	(7.613)
Parental variables:								
Parental Fin. Situation	3.138	3.722	3.559	3.821	2.932	4.210	4.127	3.596
(1=worst; 5=best)	(0.934)	(1.343)	(1.300)	(1.239)	(1.272)	(1.013)	(1.170)	(1.321)

Mean values; Standard deviation in parentheses
Source: EU-SILC 2005, own calculations. Results are based on frequency weights.

Table A.3: Regression Results for selected countries

	(1) Austria	*(2) Spain*	*(3) France*	*(4) Ireland*	*(5) Italy*	*(6) Norway*	*(7) Sweden*	*(8) UK*
Age	0.009***	0.011***	0.010***	0.007***	0.013***	0.006***	0.009***	-0.003**
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Female	-0.210***	-0.115***	-0.119***	-0.112***	-0.126***	-0.182***	-0.201***	-0.184***
	(0.022)	(0.014)	(0.013)	(0.032)	(0.011)	(0.021)	(0.027)	(0.024)
PID2	0.068	0.064**	0.014	-0.131*	0.088***	0.005	0.008	-0.002
	(0.055)	(0.028)	(0.033)	(0.076)	(0.018)	(0.125)	(0.065)	(0.056)
PID3	0.122**	0.108***	0.118***	-0.026	0.188***	0.015	0.004	0.096**
	(0.051)	(0.025)	(0.032)	(0.062)	(0.017)	(0.118)	(0.058)	(0.047)
PID4	0.251***	0.149***	0.119***	0.078	0.228***	0.047	0.074	0.060
	(0.053)	(0.025)	(0.032)	(0.064)	(0.019)	(0.117)	(0.052)	(0.050)
PID5	0.364***	0.250***	0.181***	0.116*	0.280***	0.064	0.085*	0.153***
	(0.063)	(0.023)	(0.031)	(0.060)	(0.020)	(0.117)	(0.050)	(0.046)
Constant	2.119***	1.539***	2.008***	2.507***	1.718***	2.704***	2.239***	2.808***
	(0.068)	(0.036)	(0.041)	(0.091)	(0.031)	(0.127)	(0.074)	(0.073)
Observations	2,795	7,856	5,358	1,703	11,269	2,223	1,914	2,047
R^2	0.072	0.080	0.065	0.050	0.136	0.055	0.063	0.039

Standard errors in parentheses
Source: EU-SILC 2005, own calculations. Coefficients are based on frequency weights.
*** p<0.01, ** p<0.05, * p<0.1

Table A.4: Estimation output for log. hourly wages: Two concepts of intergenerational mobility in Austria

	Equation (2)				*Equation (3)*				*Extended (3)*			
	Total		Age 30-45		Total		Age 30-45		Total		Age 30-45	
Age	0.010***	(0.001)	0.007***	(0.003)	0.011***	(0.001)	0.008**	(0.003)	0.009***	(0.001)	0.005	(0.003)
Female	-0.211***	(0.024)	-0.201***	(0.034)	-0.219***	(0.023)	-0.212***	(0.034)	-0.197***	(0.024)	-0.182***	(0.036)
PID2	0.056	(0.059)	0.083	(0.094)	0.045	(0.060)	0.063	(0.095)	0.053	(0.055)	0.075	(0.093)
PID3	0.119**	(0.055)	0.167**	(0.085)	0.079	(0.056)	0.124	(0.087)	0.053	(0.052)	0.113	(0.085)
PID4	0.250***	(0.057)	0.257***	(0.086)	0.168***	(0.057)	0.182**	(0.088)	0.119**	(0.054)	0.143	(0.087)
PID5	0.353***	(0.066)	0.398***	(0.098)	0.227***	(0.067)	0.288***	(0.100)	0.148**	(0.061)	0.204**	(0.097)
Low skill non-manual parents					0.095***	(0.024)	0.074**	(0.033)	0.043*	(0.023)	0.019	(0.033)
High skill non-manual parents					0.147***	(0.030)	0.147***	(0.042)	0.056*	(0.028)	0.051	(0.039)
Secondary school parents					0.064***	(0.025)	0.054	(0.034)	0.030	(0.023)	0.035	(0.033)
University degree parents					0.133**	(0.060)	0.109	(0.087)	0.051	(0.057)	0.052	(0.082)
Secondary school child									0.182***	(0.040)	0.136**	(0.055)
University degree child									0.357***	(0.048)	0.269***	(0.064)
Low skill non-manual child									0.100***	(0.027)	0.093**	(0.039)
High skill non-manual child									0.199***	(0.033)	0.223***	(0.040)
Small firm manager child									0.088***	(0.024)	0.068*	(0.035)
Big firm manager child									0.202***	(0.025)	0.178***	(0.035)
Constant	2.086***	(0.074)	2.154***	(0.153)	2.017***	(0.075)	2.082***	(0.153)	1.807***	(0.078)	1.968***	(0.148)
Observations	2,556		1,360		2,556		1,360		2,556		1,360	
R^2	0.073		0.052		0.106		0.080		0.220		0.169	

Standard errors in parentheses
Source: EU-SILC 2005, own calculations. Coefficients are based on frequency weights.
*** p<0.01, ** p<0.05, * p<0.1