The Intergenerational Dynamics of Social Inequality – Empirical Evidence from Europe and the United States

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Abstract

Based on nationally representative data from the German Socio-Economic Panel (GSOEP), the Panel Study of Income Dynamics (PSID), and the British Household Panel Survey (BHPS) we analyze the intergenerational transmission of economic and social (dis-)advantages in Germany, the United States and Great Britain. We test with the hypotheses that extent and determinants of intergenerational income mobility and the relative risk of poverty differ with respect to the existing welfare state regime, family role patterns, and social policy design. The empirical results indicate a higher intergenerational income elasticity in the United States than in Germany and Great Britain, and country differences concerning the influence of individual and parental socio-economic characteristics, family disruption and health dissatisfaction on intergenerational income mobility and the relative risk of poverty.

Key words: Social and economic inequality;
Intergenerational income mobility;
poverty, social exclusion;

JEL-Classifications: D31 Personal Income, wealth, and their distribution;
J24 Human capital;
J62 Job, Occupational, and Intergenerational Mobility;

1. Introduction

Most of the industrialized countries are confronted by changing social and economic structure, increasing economic and social inequalities, low income and social isolation. The negative relation between income inequality and intergenerational income mobility suggests that children growing up in low-income households can only escape the poverty trap if intergenerational income mobility compensates economic and social inequality (Mayer and Lopoo 2005). From the socio-political point of view, the research of the determinants of intergenerational income mobility and poverty persistence is essential to design effective social policy measures. Though focused on alleviating social and economic inequalities, the social policy of a country reproduces "stratification" in terms of power, class and other forms of inequality. The policy instruments and transfer packages tell a great deal about the working of a country's welfare state regime. The welfare state regime defines a complex of legal and organizational properties, and defines the role of the state, interacting alongside the market, the civil society, and the family in the provision of welfare (Therborn 1995, de Swaan 1988, Arts and Gelissen 2002). The existing topologies of welfare state regimes are based on various dimensions, as social insurance and poverty policy (Leibfried 1992, Korpi and Palme 1998), welfare expenditures, benefit equality, and taxes (Castles and Mitchell 1993, Bonoli 1997, Kauto 2002), female work desirability (Siaroff 1994), political tradition (Navarro and Shi 2001), or decommodification and stratification (Esping-Andersen 1990, Esping-Andersen 1994, Esping-Andersen 1999).

The Esping-Anderson welfare state regime typology clusters democratic industrial societies into liberal, conservative, and social democratic welfare state regimes. The liberal welfare state regime (United States, Great Britain, Canada, Australia, New Zealand) is characterized by low decommodification and strong individualistic self-relianceThe public philosophy is grounded on the idea of opportunity reflecting individual efforts, which indicates an open, liberal and dynamic social system. The distributional consequences of the market forces are accepted. A relatively unregulated labor market fosters the creation of low-skill, and low-paid jobs, large wage dispersions, and small differences in the jobs performed by women and men. Labor market policies offer less protection for workers and do little to ameliorate

market-based risks. The market rather than the state is promoted in guaranteeing the welfare needs of the citizens. These countries are characterized in terms of minimal assistance to allow the worker the opportunity to gain entry back into the market should circumstances dictate a temporary departure. The state reacts only in case of social failures and limits the help to special groups. The transfers are modest and the rules for entitlement are very strict. The principle of stratification leads to low-income state dependents, and people able to afford social insurance plans and the privately financed higher education. The education systems are less stratified and standardized which may induce a higher social mobility. At the other hand higher education is privately financed, which suggests intergenerational social immobility (Couch and Dunn 1997, Mortimer and Krüger 2000, Charles et al. 2001, Hall and Soskice 2001, Dustmann 2004, Gornick and Meyers 2003).

The conservative-corporatist welfare state regime (Germany, Austria, France, Italy) is typified by a modest level of decommodification. Government policies ensure against market-based risks and protect those who are unable to succeed in the market place. The direct influence of the state is restricted to the provision of income maintenance benefits. The labor market institutions and labor market policies ensure employment stability. Health care, welfare, social insurance, national assistance, and old age pensions are provided at government expense. Social policy is designed to guarantee income equality. Family policies facilitate the incorporation of women into the labor force (e.g. child care, paid maternity leave, job return guarantees) and support the transition from the traditional male bread-winner model to the adult worker model. At the other hand tax policy (e.g. tax splitting) favor men as breadwinner and women foremost as mothers, which reinforce the preservation of traditional family role patterns concerning the allocation of time into paid work (Charles et al. 2001, Lewis 2006). The education system is formal and coordinated, and higher education is publicly provided. In Germany, the vocation-oriented educational "dual system" relies on occupation-specific credentials, and results in socially stratified and sex segregated outcomes. The federal states have the primary responsibility for organizing the educational system, which results in a high level of standardization, and constitutes the mechanisms for perpetuating social inequalities (Mortimer and Krüger 2000, OECD 2012).

The social democratic approach to welfare and social policy (Scandinavian countries) is especially committed to create equal opportunity, to reduce social risks, and to diminish social divisions. The level of decommodification is high, and stratification is directed to achieve a system of highly distributive benefits. These countries advocate full employment and promote equality including the provision of a safety net that no one should be allowed to fall through. Social policy aims at maximizing the capacities of individual independence. Women are encouraged to participate in the labor market.

The paper aims to analyze the influence of the individual and parental socio-economic mapping, and social exclusion characteristics on the intergenerational income mobility and the relative risk of poverty in countries with different welfare state regimes, labor market institutions, family role patterns, and social policy design. The paper focuses on the situation in Germany, the United States, and Great Britain. We test the hypotheses that the link between social stratification, intergenerational income mobility, and poverty persistence works differently according to the existing welfare state regime, family role patterns, and the social policy:

- In the United States and Great Britain we expect a higher income inequality which is associated with a lower intergenerational income mobility than in Germany. Due to the high self-relience and mobile society we expect that the impact of family background characteristics on intergenerational income mobility and the relative poverty risk is more expressed than in Germany.
- Due to the social policy design, focusing on a higher social permeability of the society, we expect a higher intergenerational income mobility at the bottom of the income distribution in Germany than in the United States and Great Britain.
- In all the countries, we suppose that instable family structures, non-employment, and disability boost the relative risk of poverty.

To analyze the determinants of the intergenerational income mobility we employ a regression approach on the permanent post-government income variables of children and parents including a set of individual and family background controls (Solon 1999, Björklund and Jäntti 2000, Hertz 2004, Couch and Lillard 2004, Grawe 2004). We apply quintile transition matrices and the Bartholomew mobility index (Bartholomew 1982, Dearden et al. 1997) to evaluate the intergenerational mobility for different

income positions. To analyze the determinants of the relative poverty risk we employ a binomial logit model (Mc Fadden 1973, Maddala 1983, Heckman 1981). The explanatory variables contain a set of individual and family background socio-economic resources, and social exclusion attributes.

The paper is organized in 5 sections: section 2 focuses on the theoretical background of the intergenerational transmission of social and economic disadvantages, section 3 reports the data and sample organization, section 4 outlines the methodology to analyse the intergenerational income mobility and the relative risk of poverty conditional to individual and family background characteristics, and social exclusion attributes. Section 5 presents the empirical results and section 6 concludes with a summary of findings and discussion of some stylized facts about the intergenerational heritage of economic and social disadvantages to derive policy implications and directions for further research.

2. Theoretical Background

Poverty and social exclusion are dynamic processes limiting a person's future prospects (Atkinson 1998). Social exclusion is a multi-dimensional phenomenon, affecting both the quality of life of individuals and the equity and cohesion of society as a whole (Levitas et al. 2007). Social exclusion reflects a combination of inter-related factors resulting from a lack of capabilities (Sen 1985, Sen 1992) required to participate in economic and social life (poor skills, labor market exclusion, living in a jobless household), service exclusion (public transport, gas, electricity, water, telephone), exclusion from social relations (common activities, social networks), exclusion from support available in normal times and in times of crisis, exclusion from engagement in political and civic activity, poor housing, high crime environment, disability, health problems, or family breakdown (Social Exclusion Unit 1997, Saunders et al. 2007, Saunders 2008). Poverty is either discussed as a dimension of social exclusion (Marlier and Atkinson 2010) or a concept very close to social exclusion. If poverty is understood as encompassing low income situations implying a lack of participation in the key activities in social, political, and cultural life (Townsend 1979, United Nations 1995, Duffy 1995, Walker and Walker 1997,

Burchard et al. 2002) or the inability to do things, that are in some sense considered normal by society as a whole (Howarth et al. 1998), or the insufficiency of different attributes of well-being (e.g. housing, literacy, health, provision of public good, income, etc.), then both the concepts become very close (Bourguignon and Chakravarty 2003).

There are two major theories concerning the mechanisms of the intergenerational transmission of advantages and disadvantages. According to the family resource model it is not a lack of economic resources, but other characteristics of the parents that are correlated with the economic status that influence the parental abilities to provide stimulating environments for their children to have economic success. Low-income parents more likely possess disadvantageous characteristics, and therefore they fail to provide stimulating environments for the better-off of their children (Mayer 1997).

According to the neoclassical human capital approach (Becker 1964, Mincer 1974) the economic status of the parents is transmitted to their children. The structural hypothesis of intergenerational economic and social mobility emphasizes the view that limited parental resources during childhood restrict the social and economic status of the children as adults (Blanden et al. 2005, Mayer and Lopoo 2005). The parental investments increase the children´s human capital, which in turn positively affects their earnings capacity (Becker and Tomes 1986, Solon 1992, Solon 1999, Solon 2002, Chadwick and Solon 2002, Mazumdar 2005) or their ability to gain non-labor income, and even their success in the marriage market (Pencavel 1998). Among the endowment conditions parental education, employment behaviour, occupational choice, the family role patterns, as well as the social capital environment are of importance (Stevens 1999, Finnie and Sweetman 2003). The increasing social and economic inequalities in most of the industrialized countries suggest increasing gaps in the parents' investment abilities which impede the economic success of the offspring (Acemoglu and Pischke 2000).

The first generation of the studies on intergenerational income mobility (Becker and Tomes 1986) found an intergenerational correlation of income or earnings of about .2 for the United States, implying that the parental status does not strongly affect the children's. The second generation of studies (Solon 1992, Solon 1999, Solon 2002)

found a higher intergenerational elasticity, using multi-year income measures and correcting for measurement errors. The analysis of the dynamics of the intergenerational income mobility (Corcoran 2001, Mayer and Lopoo 2002) reveals a decreasing effect of the parental income status on the income and social position of the children.

3. Data Base and Sample Organization

The empirical analysis is based on data from the German Socio-Economic Panel (SOEP), the British Household Panel Survey (BHPS), and the US Panel Study of Income Dynamics (PSID), which were made available to us by the Cross-National Equivalent File (CNEF) project at the College of Human Ecology at Cornell University, Ithaca, N.Y..[1] The PSID started in 1980 and contains a nationally representative unbalanced panel of about 40,000 individuals in the United States. From 1997 on the PSID data are available bi-yearly. The GSOEP started in 1984 and contains a representative sample of about 29,000 German individuals that includes households in the former East Germany since 1990. The BHSP started in 1991. The first wave consists of some 5,500 households and 10,300 individuals drawn from 250 areas of Great Britain. Additional samples of 1,500 households in each of Scotland and Wales were added in 1999, and in 2001 a sample of 2,000 households was added in Northern Ireland, making the panel suitable for UK-wide research. The surveys track the socioeconomic variables of a given household, and each household member is asked detailed questions about age, gender, marital status, educational level, labor market participation, working hours, employment status, occupational position, economic situation of the members of a given family over time, as well as household size and composition. The income variables are measured on an annual basis and refer to the prior calendar year. The data allow monitoring the employment and occupational status, the earnings situation, and the socio-economic characteristics of the individuals.

The data do not provide a sufficiently long time horizon to observe parents and children at identical life cycle situations, but cover an adequately long period to allow monitoring socioeconomic characteristics, employment and occupational status, and earnings situation of children living in the parental household and when becoming

[1] For a detailed description of the data bases see Frick et al. (2007).

members of other family units. In this way the data allow to draw inferences about the effects of being exposed to different life situations in the parental household on the economic and social situation as young adults. The sample is restricted to persons aged 14 to 20 years, and co-resident with their parents in four consecutive years (United States (1987-1991), Germany (1988-1992), and Great Britain (1991-1995). The data base does not allow identifying parents - children relations exactly, therefore we define 'parents' as adults, whose marital status is 'married', or 'living with partner' and who are living in households with persons indicated as 'children'. We use family (household) identifiers and relationship codes to match sons and daughters to their fathers and mothers within each data set. We allow families to contribute as many parent-child pairs to each data set as meet our screening rules: the number of the parent-child pairs equals the number of the children in the parental households. The young adults are at least 24 years old when we observe the economic and social status in 2005-2009 (Germany) or 2003-2007 (USA), and in 2004-2008 (GB) when living in their own households. We focus on persons participating in the labor market, and exclude persons in full-time education. We do not consider the former East Germans, for they are not included in the GSOEP sampling frame before 1990. We analyze the intergenerational economic and social mobility of persons in Great Britain because other regions are not included in the first waves of the British Household Panel Survey. The selection process leads to a sample of 2,128 German women and men, the US sample covers 2,585 persons, and the British sample includes 1,840 women and men.

We follow the standard conventions and assume that income is shared within families and thus household income is arguably a better measure of the economic and social status than individual income variables (Mazumdar 2005). The study is based on the equivalent post-government household income, which equals the pre-government household income plus household public transfers (social benefits: dwellings, child or family allowances, unemployment compensation, assistance, and other welfare benefits), plus household social security pensions (age, disability, widowhood), deducting household total family taxes (mandatory social security contributions, income taxes, or mandatory employee contributions). We use the referred income variables from the data base, thus the results make not allowance for the bias of imputed values on income inequality and income mobility (Frick and

Grabka 2005). To consider the family structure we calculate the permanent household income per adult equivalent. Instead of the 'modified' OECD-equivalence scale (Hagenaars et al. 1994) we employ the 'old' OECD-equivalence scale (OECD 1982) made available by the data base, which assigns a value of one to the first adult household member, a value of 0.7 to each additional adult, and a value of 0.5 to each child. The household income variables are deflated with the national CPI (2001=100) to reflect constant prices. To exclude transitory income shocks and cross-section measurement errors we use 5-year moving averages of the real equivalent post-government household income variables. The parental household socio-economic mapping is captured either by the characteristics of the father or the mother. In "double"-parent families the characteristics of the father are employed, in "single"-parents families the characteristics of the mother or the father are introduced in the analysis.

A major factor that will lead to changes in the quality of mobility data is that response rates tend to decline over time and so the representativeness of mobility tables derived from survey data may worsen. As the income variables highly determine survey-attrition we follow Fitzgerald et. al. (1998a; 1998b) to construct a set of sample specific weights to address to the non-random sample attrition bias, that do not account for attrition in general, but for attrition among the particular groups under study We estimate a probit equation that predicts retention in the sample (i.e being observed as an adult) as a function of pre-determined variables measured during childhood. Presuming that the samples are representative when the children are still children we construct a set of weights

$$w(z,x) = \left[\frac{\Pr(A=0 \vdots z,x)}{\Pr(A=0 \vdots x)} \right]^{-1} \qquad (1)$$

where x denotes the parental income as primary regressor, and z is a vector of covariates to predict attrition, indicated by A=1. Thus w(z,x) will take higher values for people whose characteristics z make them more likely to exit the panel before their adult income can be measured. The variables considered in z are the gender, and the parental age and educational attainment as well as their squares. We suppose these variables to affect the attrition propensities, to be endogenous to the

outcome, that is to have an effect on the children's income as adults conditional on the parental income. The weights w(x,z) are multiplied with the parental household weights, which yields a set of weights that apply to the household of the children as adults. The parental household weights are assumed to capture the attrition effects and the weights, w(z,x), compensate for subsequent non-random attrition.

4. Methodology

4.1 Intergenerational Income Mobility

The most common approach to quantify how economic (dis)advantages are transmitted across generations is to estimate the intergenerational income elasticity applying ordinary least squares (OLS) to the regression of a logarithmic measure of the children's income variable (y_c) on a logarithmic measure of the income variable of the parental household (y_p), and a set of control variables (X_c)

$$y_c = ß_0 + ß_1 y_p + \sum_{c=2}^{n} ß_c X_c + \varepsilon_c . \qquad (2)$$

In model specification (a) we regress the logarithm of the average equivalent post-government income (2001=100) of the children's generation on the logarithm of the average equivalent post-government income (2001=100) of the parental household. The constant term $ß_0$ represents the change in the economic status common to the children's generation. The slope coefficient, β_1, is used as a measure of intergenerational mobility and expresses the elasticity of the children's income variable with respect to the parents' income situation. The larger β_1 the more likely a person will inhabit the same income position as her parents, which implies a greater persistence of the intergenerational economic status. A β_1 close to zero bears evidence of an open society in which the economic situation of the parents has no impact on the economic success of the children. The random error component ε_c is usually assumed to be distributed $N(0,\sigma^2)$.

The model specification (b) introduces a set of individual and family background characteristics (X_c) to account for the indirect effects of the parental income on the

children's income. To the extent that these variables lower the coefficient $ß_1$ these other effects "account for" the raw intergenerational income elasticity. The gender dummy (GEN) takes the value 1 for men and the value 0 for women and controls for gender differences on intergenerational income elasticity. We include the years of education of the individual (EDUC) to capture the human capital level. In the case of missing values the educational attainment is set equal to the amount reported in the previous year. The educational attainment of the parents ($EDUC_P$) is included with the average schooling years of the parents to capture the human capital hypothesis that the higher the income of the parents the higher their investment in the education of the children, which in turn causes a higher income of the children. The number of children (CHILD) in the household considers the effects of care requirements on the disposable household income. The effect of unemployment phases in the parental household ($UNEMP_P$) takes the value 1 if one of the parents is employed less than half the observation period, and 0 else. We include four occupational dummies to capture the social status of one of the individual's parents (OCC_p). To avoid multicollinearity with the individual and parental income variables we do not employ the ISEI (International Socio-Economic Index of Occupational Status) classification of occupations, based on income, education and occupations (Ganzeboom et al. 1992, Ganzeboom and Treimann 1996, Ganzeboom and Treimann 2003). The empirical specification of the occupational status is oriented at the ISCO-88 (International Standard Classification of Occupations). ISCO-88 aggregates the occupations into broadly similar categories in an hierarchical framework according to the degree of complexity of constituent tasks and skill specialization, and essentially the field of knowledge required for competent performance of these tasks. ISCO-88 uses four skill levels, which are partly operationalized in terms of the International Standard Classification of Education (ISCED) and partly in terms of the job-related formal training which may be used to develop the skill level by persons who will carry out such jobs (ILO 1990). This classification rather than one based more closely on the years of education is motivated by the concept of Roy (1951), that occupations require different types of or combinations of abilities and skills, and educational attainment (Goldthorpe 1987, Erikson and Goldthorpe 1992a, Erikson and Goldthorpe 1992b, Goldthorpe 2000). We rearrange the 2-digit occupational categories provided by the database into 7 categories. In the analysis we consider the occupational groups "1 academic/scientific professions/managers", "2 professionals/technicians/

associate professionals", "3 trade/personal services", and "7 elementary occupations". There is a distinctive ranking of the occupational dimensions: lower-numbered categories offer a higher prestige and a higher social status. This is particularly true for countries, where economic and social hierarchies are salient.

The regression model in specification (c) considers social exclusion characteristics that are expected to have adverse effects on a person's social and economic status. We include two dummy variables for the own and the parental family disruption, which take the value 1 if the marital status of the person (DISRUPT) or one of her parents ($DISRUPT_P$) is "widowed", "divorced", or "separated", and 0 else. The disability status dummy variable takes the value 1 if the person (DISABIL) or on of her parents ($DISABIL_P$) is disabled, and 0 else. The health status dummy variable ($SATHEALTH_P$) takes the value 1, if one of the person's parents are in good health, and 0 else.

4.2 Intergenerational income transitions

The intergenerational income elasticity measures the average income mobility but does not shed light on the probability of the intergenerational movement from one income position to another which is one of the key issues from a welfare point of view (Heckman 1981). To evaluate the intergenerational persistence of income positions we employ a transition matrix of the logarithms of the permanent real equivalent household income [2001=100] of the parents and the children. Both the income variables are allocated to five equally populated ranked income groups indexed by i and j. The elements $p_{ij} \geq 0$ of the transition matrix indicate the probability (in percent) that a person belongs to the j^{th} quintile of the income distribution given that she belongs to the i^{th} quintile of the income distribution of the parental household with $\sum_j p_{ij} = \sum_i p_{ij} = 1$ (Formby et al. 2004). The elements on the diagonal (p_{ii}) represent the stayers and the off-diagonal terms (p_{ij}) represent the movers concerning the intergenerational income position. The difference between the subscripts represents the distance from the main diagonal, the further away from the diagonal, the greater is the intergenerational mobility of the income positions. If

the incomes of parents and children are equally distributed across the income quintiles, elements of the transition matrix are .2.

To quantify the dimension of the intergenerational income mobility we employ the Bartholomew index (Bartholomew 1982, Dearden et al. 1997), which expresses the mobility in terms of average income boundaries crossed over the observation period. The Bartholemew index sums up the moves across the income classes, i.e. outside the main diagonal

$$B = \frac{1}{m}\sum_{i=1}^{m}\sum_{j=1}^{m} p_{ij}\left|i-j\right|, \qquad (3)$$

with p_{ij} the proportion of children in income class j having parents in the income class i. The further the distance between the children's and the parents' income classes the greater the weight assigned to it. In the case of no mobility the Bartholomew index takes the value zero. The Bartholomew index is not independent from the order of the transition matrix, the index value based on a matrix of five groups will be different from that based on a matrix consisting of ten groups. Hence, the Bartholomew index is not comparable across countries based on transition matrices of different orders (Börklund and Jäntti 2000).

4.3 Relative risk of poverty

To evaluate the determinants of the probability to be poor we employ a binomial logit model (Mc Fadden 1973; Heckman 1981; Maddala 1983). The dependent variable (pov) takes the value 1 if the household income is below the poverty threshold, which is the third decile of the real (2001=100) equivalent post government household income, and zero else. The probability that a person is potentially poor then is estimated to be

$$P(pov=1) = \frac{e^{Z}}{1+e^{Z}}. \qquad (4)$$

The Z characterizes the linear combination $Z = B_0 + \sum_{c=2}^{n} B_c X_c$ with X_c the independent variables and B_c the regression coefficients. In general, a probability greater than 0.5

predicts poverty, and a probability less than 0.5 predicts that the individual is better off. The interpretation of the regression coefficients B_c is based on the odds, that is the ratio of the probability that the person is in a poverty situation and the probability that the person is well off.

$$\frac{P(pov=1)}{P(pov=0)} = e^{B_0 + \sum_{c=2}^{n} B_c X_c} . \qquad (5)$$

The exp(B_c) are the factors by which the odds change when the c-th independent variable increases by one unit, e.g. this value expresses the relative risk ratio of poverty or social exclusion with a one-unit change in the c-th independent variable. The variables in (X_c) contain a set of individual and family background characteristics and social exclusion attributes. These variables are the same for all alternatives, but their effects on the probability are allowed to differ for each alternative income quintile. (Table 1)

5. Empirical Results

Table 1 presents descriptive statistics of the non-weighted variables. The countries not significantly differ concerning the income variables and the years of education of the young adults and their parents. Country differences occur concerning the occupational distribution of the children and the parents. In the United States the proportion of professional occupations (19.2%) is significantly lower than in Germany (25.38%), and in Great Britain (28.26%). On the other hand, the proportion of trade and service occupations (22.11%) is significantly higher than in Germany (10.3%), and in Great Britain (11.0%). The parental households in the United States show a significant higher proportion of elementary occupations (23.9%) than in Germany (15.7%), and in Great Britain (18.2%). Due to the age effect, family disruption is more expressed in the parental households than in the children's. The proportion of fathers or mothers who are dissatisfied with their health is significantly higher in Germany (16.9%) and the United States (13.6%) than in Great Britain (8.0%).

[Table 1 near here]

5. 1 Intergenerational Income Mobility

The regression of the logarithm of the real equivalent post-government household income of the children's generation on the logarithm of the real equivalent post-government household income of the parents' generation reveal a higher intergenerational income elasticity in the United States (.678) than in Great Britain (.504), and in Germany (.484). The results corroborate the findings of various studies reporting a range of intergenerational income elasticity of 0.4 or even higher according to the analyzed countries, sample designs, time windows, age cohorts, or income variables (Becker and Tomes 1986, Solon 1992, Solon 1999, Solon 2002, Solon 2004, Mayer and Lopoo 2005, Mayer and Lopoo 2008, Aaronson and Mazumdar 2008, Lee and Solon 2009). The results do not confirm the hypothesis of a higher social mobility in the United States. The influence of the factors guaranteeing a high intergenerational income mobility obviously is compensated and outperformed by deteminants inducing a higher intergenerational correlation of social and economic status.

The inclusion of a set of individual and family background characteristics accentuates the country differences of intergenerational income mobility patterns. In all countries, individual and family background variables considerably affect the intergenerational income mobility. In Germany, these variables lower the intergenerational income elasticity by about 10 percentage points to .377. In the United States, the individual and family background characteristics contribute more than 21 percentage points to the "raw" intergenerational income elasticity, the $ß_1$ coefficient decreases from .678 to .465. In Great Britain, the individual and family background attributes increase intergenerational income mobility by about 8 percentage points. In the United States, the results confirm the hypothesis that economic success relates to a higher extent on individual and family background resources than in Germany. In Germany and Great-Britain, social and family policy is more successful to alleviate individual and family based social mobility barriers than in the United States.

In all countries, living with children in the household significantly reduces intergenerational income mobility. In Germany and the United States, women experience a lower the intergenerational income mobility, and higher education significantly increases the intergenerational income mobility which corroborates the human capital hypothesis. At the other hand, the parents' educational attainment does not significantly contribute to the children's economic wellbeing. In Germany and Great Britain social origin significantly matters: to have parents with academic or professional occupations significantly improves the chances to get better off in adulthood.

The contribution of social exclusion attributes to the intergenerational income mobility is of little account. The results show country differences concerning the effectiveness of welfare policy to guarantee social and economic mobility. In the United States, social exclusion characteristics have a signicant higher impact on intergenerational income mobility than in Germany and Great Britain, and lower the $ß_1$ coefficient by 8 percentage points. In Germany, social exclusion attributes contribute to the intergenerational income mobility by .3 percentage points indicating that individual and family disadvantages are effectively alleviated by policy measures. In Great Britain the included variables lower the 'raw' intergenerational income elasticity by 2.6 percentage points. In Germany and the United States, family disruption has a significant negative effect on the intergenerational income mobility. To live with disabled parents in childhood (Germany) or to be disabled as adult (United States) significantly increases the intergenerational income elasticity. The parents' satisfaction with health not significantly affects the children's economic status. (Table 2)

[Table 2 near here]

5.2 Intergenerational Income Transitions

The Bartholomew index documents a higher intergenerational income mobility in Germany compared with Great Britain and the United States. The higher intergenerational income mobility at the lower end of the income distribution in

Germany than in Great Britain and the United States might indicate that social policy, institutional labor market settings, and the public financed educational system in Germany succeed to contribute to a higher economic mobility and social permeability in the society. In the United States, the intergenerational immobility on the top of the income distribution is more pronounced than in Germany and Great Britain, which indicates a positive correlation between the children's economic success and the parental economic resources: high income parents are able to invest in the human capital of their children, which guarantees their economic and social advancement. However, the degree of immobility at the top and at the bottom of the income distribution might be exaggerated, for upward mobility is not possible for those performing the highest income category, and downward mobility is not possible for persons in the lowest income category (Lentz et al. 1989, Mazumdar 2005) (Table 3).

[Table 3 near here]

5.3 Relative Risk of Poverty

Table 4 presents the relative risk ratios ($\exp(B_c)$) and the significance level for each of the explanatory variables X_c of the binomial logit model. In Germany and the United States women experience a significant higher probability to count among the poor than men. In all the countries, each additional child living in the household significantly increases the relative risk of poverty. In the United States, the own and parental educational attainment significantly reduces the relative risk of poverty. In Germany and Great Britain, to hold an academic or a professional occupation significantly lowers one's relative risk of poverty. Persons engaged in trade and service occupations experience a significantly higher probability to count among the poor. The significant effect of the parental occupational status on the relative poverty risk underlines the intergenerational class persistence (Lentz and Laband 1989, Hellerstein and Sandler Morill 2011). In Germany and the United States persons whose parents are engaged in professional occupations have a significantly lower relative risk to be poor and persons with parents in elementary professions experience a significantly higher relative risk of poverty. In Germany, parental unemployment and

health dissatisfaction significantly increase the relative poverty risk. In the United States and Great Britain marital status matters: divorce and separation increase the relative poverty risk.

[Table 4 near here]

6. Conclusions

We analyzed the extent of and the determinants of intergenerational income mobility and the relative risk of poverty in Germany, the United States and Great Britain. We tested from the hypothesis that the country differences concerning the welfare-state regimes, the family role patterns, the institutional settings of the labor markets, and the social policy design induce a different working of the individual and parental socio-economic resources and social exclusion attributes on the intergenerational income mobility and the relative risk of poverty. The empirical findings partly support these hypotheses:

- Though similar in their welfare state regime, the United States and Great Britain differ concerning the average intergenerational income elasticity, the intergenerational transition of income positions, the impact of individual and family background characteristics and social exclusion attributes on the intergenerational income mobility, and the relative risk of poverty.

- In the United States the results show a higher intergenerational correlation of social and economic status than in Germany and Great Britain, which contradicts the hypothesis of a mobile society, and a high permeability of the social system. The intergenerational income immobility is higher than in Great Britain and in Germany, especially at the top of the income distribution. The inclusion of individual and family background variables lower the 'raw' intergenerational income elasticity by about one third, compared to about one fourth in Germany, and about 15 percent in Great Britain. The inclusion of social exclusion attributes (family disruption, disability and health dissatisfaction) lower the "raw

intergenerational income elasticity to a higher extent than in Germany and Great Britain.

- In Germany, the results reflect two opposing effects: the hypothesized higher intergenerational social cohesion due to tax policy incentives for traditional family role patterns may be partly set off by the redistribution effects of social policy. The German social policy obviously more effectively alleviates the negative impact of social exclusion attributes on the intergenerational transmission of social and economic disadvantages than in the United States and in Great Britain.

- The highest intergenerational income persistence is evident in the tails of the income distribution which corroborates the results of previous studies (Atkinson et. al. 1983, Dearden et. al. 1997, Corcoran 2001). These results indicate a high class persistence, an increasing intergenerational transmission of poverty and social exclusion, a deepening of economic and social inequality across generations which produces economic inefficiencies imposing economic and social costs.

In general, growing up in poverty or in a social exclusion environment negatively affects a person's future social and economic position and life chances. The social and welfare policies of a country are forced to design efficient policy measures to break the intergenerational transmission of disadvantages, and to prevent the development of a self-replicating underclass. Regardless of a country's welfare state regime, it is necessary to recognize the potential of education, and to encourage human capital accumulation to be means to advance the social ladder. However, the results call for broader analysis of the mechanisms how families, labor markets and social policy interact in determining the intergenerational transmission of economic and social (dis-)advantages in further research.

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Tables

Table 1: Descriptive statistics

Variables	Description	Germany		United States		Great Britain	
		Mean / % in 1	SD	Mean/ % in 1	SD	Mean/ % in 1	SD
y	ln(permanent real equivalent post-government income (2001=100, OECD equivalence scale, 5-year average)	9.564	.491	9.835	.930	9.311	.466
y_P	ln(permanent real equivalent post-government income (2001=100, OECD equivalence scale, 5-year average), parental household	9.380	.388	9.445	.659	8.984	.447
GEN	1 male, 0 female	.5202		.4887		.5136	
EDUC	Educational attainment, school years	12.442	2.916	12.807	2.030	n.a.	
$EDUC_P$	Educational attainment parents, average years of education	10.521	1.971	12.446	1.851	n.a.	
CHILD	Number of children in the household	1.128	1.052	1.412	1.278	1.246	1.211
EMP_P	1 father/mother is employed less than half the observation period, 0 else	.2093		.2830		.2335	
OCC	Occupational categories						
	1 "1 academic/scientific professions/managers", 0 else	.4632		.3405		.3933	
	1 "2 professionals/technicians/ associate professionals", 0 else	.2538		.1916		.2826	
	1 "3 trade/personal service", 0 else	.1028		.2211		.1101	
	1 "7 elementary occupations", 0 else	.1802		.1562		.1334	
OCC_p	Occupational categories (father/mother)						
	1 "1 academic/scientific professions/managers", 0 else	.3144		.3721		.3211	
	1 "2 professionals/technicians/ associate professionals", 0 else	.2085		.1878		.2473	
	1 "3 trade/personal service", 0 else	.1070		.1259		.1634	
	1 "7 elementary occupations", 0 else	.1572		.2387		.1820	
DISRUPT	Family disruption : 1 widowed, divorced, separated, 0 else	.0903		.0952		.0678	
$DISRUPT_P$	Family disruption, father/mother: 1 widowed, divorced, separated, 0 else	.1775		.2669		.2103	
DISABIL	Disability status: 1 disabled, 0 else	.0862		.0712		.0272	
$DISABIL_P$	Disability status, father/ mother: 1 disabled, 0 else	.0519		.0809		.0804	
$SATHEALTH_P$	Dissatisfaction with health, father/mother: 1 poor, very poor , 0 else	.1693		.1358		.0801	
N	Number of observations	2,128		2,585		1,840	

Source: Source: GSOEP-BHPS-PSID 1980-2010, author's calculations. Note: The subscripts indicates the parental household characteristics in double parents' families the variable refers to the father, in single parents households to the father or the mother.

Table 2: Intergenerational income elasticities

Model specification		(a)			(b)			(c)		
Description		Germany	USA	GB	Germany	USA	GB	Germany	USA	GB
	Constant	5.002***	3.346***	4.779***	6.181***	4.647***	5.595***	6.312***	5.579***	6.021***
y_p	post-gvt income, parental hh	.484***	.678***	.504***	.377***	.465***	.426***	.374***	.385***	.400***
X_2	GEN 1 male 0 female				-.149***	-.128***	-.031	-.123***	-.120***	-.028
X_3	EDUC				.017***	.088***	n.a.	.019***	.087***	n.a.
X_4	CHILD				-.149***	-.171***	-.127***	-.162***	-.197***	-.133**
X_5	$EDUC_p$				.004	.009	n.a.	.005	.003	n.a.
X_6	OCC_p									
	1 academic/scientific/managers, 0 else				.126*	.084	.207***	.144*	.048	.212***
	1 professionals, 0 else							.099	.044	.212***
	1 trade/personal service, 0 else				.087	.069	.214***	.013	.020	.078
	1 elementary occupations, 0 else				.004	.008	.070	-.114	-.103	.111
					-.121	-.074	.019			
X_7	EMP_p 1 unemployed, 0 else							-.031	-.055	-.021
X_8	DISRUPT 1 family disruption, 0 else							-.162**	-.322***	-.019
X_9	$DISRUPT_p$ 1 family disruption, 0 else							.089	.089	.089
X_{10}	$DISABILITY_p$ 1 disabled, 0 else							-.219*	-.003	-.129
X_{11}	DISABILITY 1 disabled, 0 else							-.081	-.447***	-.068
X_{12}	$SATHEALTH_p$ 1 excellent, good, fair; 0 poor, very poor							-.119	-.190	-.138
	R^2adj	.130	.229	.219	.356	.289	.323	.394	.365	.328
	RMSE	.458	.815	.411	.347	.708	.355	.338	.651	.354
	LL	-584	-1310	-537	-120	-790	-149	-106	-686	-145
	Mean VIF	1.23	1.30	1.30	1.23	1.30	1.30	1.23	1.30	1.30
	N	919	1079	1014	347	741	400	341	702	399

Source: GSOEP-BHPS-PSID 1980-2010, author's calculations. NOTE: * p<0.05; ** p<0.01; *** p<0.001

Table 3: Intergenerational mobility of income positions

		Income position parental household				
income position		1	2	3	4	5
Germany	1	**.3370**	.2935	.1359	.1685	.0652
USA	1	**.3705**	.3125	.1339	.1295	.0536
Great Britain	1	**.4752**	.2178	.1386	.1188	.0495
Germany	2	.1522	**.2283**	.3152	.1467	.1576
USA	2	.2063	**.2332**	.2422	.1659	.1525
Great Britain	2	.2157	**.2647**	.2108	.2157	.0974
Germany	3	.1196	.1576	**.2228**	.2609	.2391
USA	3	.1222	.2262	**.1765**	.2398	.2353
Great Britain	3	.1139	.1782	**.2525**	.2475	.2079
Germany	4	.0924	.1087	.1793	**.2880**	.3315
USA	4	.0876	.1106	.2120	**.3318**	.2581
Great Britain	4	.0637	.1650	.2549	**.2647**	.2549
Germany	5	.0656	.1093	.1858	.2459	**.3934**
USA	5	.0246	.1034	.1478	.2611	**.4631**
Great Britain	5	.0446	.1634	.1634	.2723	**.3564**

Pearson Chi2(16)=163.99 (Germany), 248.63 (USA), 235.71 (GB)
Pr=0.000 (Germany, USA, GB)
Source: GSOEP-BHPS-PSID 1980-2010, author's calculations

	Bartholemew-Index	Percentage off the main diagonal
Germany	1.1828	.7062
USA	1.1252	.6875
Great Britain	1.1189	.6775

Source: GSOEP-BHPS-PSID 1980-2010, author's calculations.

Table 4: The Relative Risk of Poverty

	Germany	USA	GB
GEN 1 male 0 female	2.365*	1.863*	.879
EDUC	.989	.627*	n.a.
CHILD	2.457*	2.082*	2.499*
OCC			
1 academic/scientific/managers, 0 else	1.148*	1.811	1.396*
1 professionals, 0 else	1.249*	1.094	1.231*
1 trade/personal service, 0 else	.887	3.029**	1.716
1 elementary occupations, 0 else	.099	.106	.115
$EDUC_P$	.989	.967*	n.a.
OCC_P			
1 academic/scientific/managers, 0 else	1.115*	1.333	.499
1 professionals, 0 else	1.905	1.004	1.344*
1 trade/personal service, 0 else	.999	.996	.896
1 elementary occupations, 0 else	.364*	.996*	1.685
EMP_P 1 unemployed, 0 else	.166*	.796	.544
DISRUPT 1 family disruption, 0 else	.566	.808***	.805*
$DISRUPT_P$ 1 family disruption, 0 else	.891	.824	.972
DISABILITY 1 disabled, 0 else	.277	.865	.216
$SATHEALTH_P$ 1 excellent, good, fair; 0 poor, very poor	3.287*	.841	1.364
L	-111.262	-252.429	-148.281
χ^2	97.79	139.59	99.19
Pseudo R2	.3053	.2166	.2506
N	257	517	335

Source: GSOEP-BHPS-PSID 1980-2010, author's calculations. NOTE: * p<0.05; ** p<0.01; *** p<0.001