

## **The Intergenerational Transmission of Economic Disadvantages and Social Exclusion – Constraints on Social Mobility**

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### **Abstract**

Based on longitudinal data from the Cross-National Equivalent File 1980–2008 (CNEF 1980–2008) the paper analyzes the extent and structure of the intergenerational transmission of economic (dis)advantages in Germany, the United States, and Great Britain – countries with different family role models, institutional labor market settings, and welfare state regimes. The empirical results show a high intergenerational income immobility in the United States: the contribution of individual and family background characteristics, and social exclusion features to the intergenerational income elasticity is more pronounced than in Germany, and in Great Britain. The results do not validate the hypothesis of a higher influence of individual and family background characteristics in Germany due to traditional family role patterns. The significant impact of educational attainment on the intergenerational transmission of economic chances emphasizes the importance of a human capital oriented economic and social policy design.

*JEL Classifications: D90, J24, D3*

### **1. Introduction**

In view of the increasing economic and social inequalities in many industrialized countries the reduction of poverty and the achievement of a greater social inclusion are important social policy imperatives. Poverty and social exclusion are discussed as analytically and politically separated, but related phenomena. The European Community's policy discourse emphasizes the multidimensional nature of social exclusion (Commission of the European Communities, 1997). Poverty either counts as one of the dimensions of social exclusion (Marlier/

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Atkinson, 2010), or it is discussed as conceptually very close to social exclusion (Bourguignon/Chakravarty, 2003). If poverty is understood to reflect the combination of inter-related factors resulting from the lack of adequate education and job opportunities, of deteriorating health conditions, the loss of family support, or the lack of capabilities to participate in the key activities in social, political, and cultural life (Sen, 1985; Sen, 1992; Burchard et al., 2002; Saunders, 2008), or the inability to have attributes that are considered normal by the society as a whole (Levitas et al., 2007), then the concept of poverty becomes very close to the concept of social exclusion.

To implement effective social policy measures to combat poverty and to guarantee a greater social inclusion it is necessary to develop leading indicators that cover the key dimensions of poverty and social exclusion and consider their intergenerational correlation. Educated from the logic of the neoclassical human capital approach (Becker, 1964; Mincer, 1974) the structural hypothesis of intergenerational economic and social mobility emphasizes the view that parental investments increase the children's human capital which in turn affects their earnings capacity as adults. The studies of intergenerational income mobility considered in Becker/Tomes (1986) report an intergenerational elasticity of log income or log earnings of about 0.2 in various industrialized countries. Using better quality data, more representative samples and appropriate methods reduces this bias and the intergenerational elasticity rose at around 0.4 or even higher (Solon, 1999; Chadwick/Solon, 2002). Among the endowment conditions are the parental education, their employment behavior, and their occupational status. Additionally, the institutional settings in the labor market, and the family role patterns in a country affect the intergenerational economic and social mobility (Couch/Dunn, 1997; Dunn/Couch, 1999; Mayer/Lopoo, 2005; Mazumder, 2005). In more traditional societies family background characteristics are more important for the economic and social status of an individual and exert differential effects on social skills, and on human capital investment through sex-typing (Dustmann, 2004). Finally, the ways in which the state, the market and households interact concerning the provision of welfare (Esping-Andersen, 1990; Esping-Andersen, 1999) reflect and promote intergenerational "stratification". In countries with a conservative-corporatist welfare state regime (e.g. Germany, Austria) the government protects those who are unable to succeed in the market place. Health care, welfare, social insurance, and old age pensions are publicly provided. The society is more likely molded by traditional family role patterns. The educational system is formal and coordinated, and higher education is provided at government expense. The labor market policy ensures a high employment stability. The liberal welfare state regime (e.g. United States, Australia) promotes the market; the state reacts only in case of social failures in terms of minimal assistance. The social philosophy is grounded on the ideas of opportunity, and the success of individual effort. The higher education is financed privately. The labor market policies offer less protection for

workers. The social democratic welfare state regime (Scandinavian countries, Great Britain) is committed to reduce social risks. It advocates full employment and promotes equality including the provision of a safety net that no one should be allowed to fall through. Though classified as “liberal” in the Esping-Anderson typology, the public health system in Great Britain associates better with the social democratic welfare state regime.

The paper aims to quantify the impact of individual and family background characteristics and social exclusion features on the intergenerational transmission of economic and social (dis)advantages. We analyze the situation in Germany, the United States and Great Britain. Due to the traditional role patterns in Germany, we suppose that family background characteristics contribute to a higher extent to the intergenerational income elasticity than in the United States and in Great Britain. Due to country differences in the social and economic policy we hypothesize a higher impact of social exclusion features on the intergenerational income mobility, and on the relative poverty risk in the United States compared to Germany and Great Britain. The paper is organized as follows: section 2 reports the data and sample organization, section 3 outlines the methodological background, section 4 presents the empirical results and section 5 concludes with a summary of findings to derive social policy implications and directions for further research.

## 2. Data and Sample Organization

The empirical analysis is based on nationally representative 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 by the Cross-National-Equivalent-File 1980–2008 (CNEF 1980–2008) project at the College of Human Ecology at Cornell University, Ithaca, N.Y.<sup>1</sup> The surveys track the socioeconomic variables of a given household, and each household member is asked detailed questions about gender, age, marital status, educational level, labor market participation, working hours, employment status, occupational position, income situation, as well as household size and composition. The income variables are measured on an annual basis and refer to the prior calendar year.

We analyze the economic and social situation of children living in the parental household and as adults in their own households. We define “fathers” and “mothers” as adults with the marital status “married”, “living with partner”, “divorced” or “separated” and living in households with persons with the marital status “child”. To avoid overrepresentation of children staying at home

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<sup>1</sup> For a detailed description of the data bases see Burkhauser et al. (2001).

until a late age our sample is restricted to children aged 14 to 20 years, co-resident with their parents in 1987–1993 (United States) or 1988–1994 (Germany), or 1991–1997 (Great Britain). The children are at least 28 years (Germany, USA) respectively 24 years (GB) old when we observe their economic and social status in 2002–2008 (Germany) or 2001–2007 (USA, GB) in their own household. The US-sample includes 2,585 persons, due to the SOEP and BHSP sample organization we consider 2,128 persons in the former West Germany and 1,840 persons in Great Britain out of the children's generation.

The study is based on the equivalent post-government household income (pre-government household income plus household public transfers, plus household security pensions, deducting household total family taxes). We use the referred income variables from the data bases, thus the results make not allowance for the bias of imputed values on income inequality and income mobility (Frick/Grabka, 2005). To consider the family structure we adopt the OECD-equivalence scale (OECD, 1982)<sup>2</sup>. The equivalent post-government household income is deflated with the national CPI (2001=100) to reflect constant prices. To exclude transitory income shocks and cross-section measurement errors we use moving averages of the income variable. We follow Fitzgerald et al. (1998a, 1998b) to construct a set of sample specific weights to address to the non-random sample attrition bias.

### 3. Methodology

#### 3.1 Intergenerational Income Elasticity

We estimate the intergenerational income elasticity applying ordinary least squares (OLS) to the regression of the logarithm of the average equivalent post-government income (2001=100) of a person  $i$  ( $y_i$ ) on the logarithm of the average equivalent post-government income (2001=100) of the parental household ( $y_p$ )

$$(1) \quad y_i = \beta_0 + \beta_1 y_p + \varepsilon_i.$$

The constant term  $\beta_0$  represents the change in the economic status common to the children's generation. The slope coefficient,  $\beta_1$ , expresses the elasticity of the income variable with respect to the parents' income situation. The larger  $\beta_1$  the greater is the intergenerational income persistence. The random error component  $\varepsilon_i$  is usually assumed to be distributed  $N(0, \sigma^2)$ . To the extent that a set of individual and family characteristics, and social exclusion features ( $X_i$ )

<sup>2</sup> The (old) OECD equivalent scale assigns a value of 1 to the first household member, of 0.7 to each additional adult and of 0.5 to each child.

$$(2a, b) \quad y_i = \beta_0 + \beta_1 y_p + \sum_{i=2}^n \beta_i X_i + \varepsilon_i$$

lower the coefficient  $\beta_1$  compared to the model specification (1) they “account for” the raw intergenerational income elasticity (Björklund/Jäntti, 2000; Hertz, 2004; Grawe, 2004). The variables in  $X_i$  reflect individual and family background characteristics of a person and are indicated with the subscript (c). The subscripts (p) denote the characteristics of her father or her mother in the parental household. In general, the variables in  $X_i$  are observed in the last year of the observation period for both the samples.

We control for gender differences on intergenerational elasticity (GEN<sub>c</sub>, 1 male). The human capital is captured by the years of education (EDUC<sub>c</sub>). In the case of missing values the educational attainment is set equal to the amount reported in the previous year. The parental educational status is included with the average educational years of father and mother (EDUC<sub>p</sub>). The number of children in the household (CHILD<sub>c</sub>) considers the effects of care requirements on the income situation. The occupational status (OCC<sub>c</sub>, OCC<sub>p</sub>) captures the impact of the social class on the intergenerational income elasticity. We reorganize the 2-digit occupational categories in the data base, which are oriented at the ISCO-88 (International Standard Classification of Occupations) and include the occupational dummies “academic/scientific professions/managers”, “professionals/technicians/associate professionals”, “trade/personal services”, and “elementary occupations” (model specification 2a).

In the model specification (2b) we control for a set of factors which are known to have adverse effects on a person’s life and are likely to influence the extent and degree of social exclusion. To capture the employment situation in the parental household we include the variable EMP<sub>p</sub>, which takes the value 1 if the father or the mother was unemployed more than half of the observation period. The person’s actual family structure as well as the family structure in the parental household (DISRUPT<sub>c</sub>, DISRUPT<sub>p</sub>, 1 marital status is “widowed”, “divorced”, or “separated”) are introduced to capture the fact, that family disruption in each generation might affect the economic and social situation of the household. Additionally, we take into account the disability status of a person and her father or her mother (DISABIL<sub>c</sub>, DISABIL<sub>p</sub>, 1 disabled) to capture the impact of physical or mental disability on the intergenerational income elasticity. Finally, the health status of a person’s father or mother (SATHEALTH<sub>p</sub>, 1 excellent, fair, good health) refers to the fact, that the satisfaction the health status affects the degree of economic and social integration and the intergenerational transmission of economic and social (dis)advantages.

To quantify the dimension of the intergenerational income mobility at different points of the income distribution we employ the Bartholomew index

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

(Bartholomew, 1982). The equivalent post-government household incomes (2001=100) of the parents and the children are allocated to five equally populated ranked 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  $j^{\text{th}}$  quintile of the income distribution given that she belongs to the  $i^{\text{th}}$  quintile of the income distribution of the parental household with  $\sum_j p_{ij} = \sum_i p_{ij} = 1$ . The Bartholomew index sums up the moves off the main diagonal ( $p_{ij}$ ). In the case of no mobility the Bartholomew index takes the value of 0, the further the move the greater the weight assigned to it, and the higher the value of the index.

### 3.2 The Relative Poverty Risk

To evaluate the extent to which individual and household characteristics and social exclusion features determine the individual poverty risk we employ a binomial logit model (Mc Fadden, 1973; Heckman, 1981). The main poverty line used in the OECD countries is a relative poverty measure, set at 50% or 60% of the median household income. The poverty threshold used in this study considers precarious income and wealth situations including the range of 50% to 80% of the median household income. The dependent variable ( $pov$ ) takes the value 1 if a person is positioned in the first or the second quintile of the income distribution. The relative poverty risk is estimated as

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

The  $Z$  characterizes the linear combination  $Z = B_0 + \sum_{i=2}^n B_i X_i$  with  $X_i$  the individual and family background characteristics, and social exclusion features, and  $B_i$  the regression coefficients. The interpretation of the regression coefficients ( $B_i$ ) is based on the odds, that is the ratio of the probability that the person is in a poverty situation and the probability that she is well off.

$$(5) \quad \frac{P(pov = 1)}{P(pov = 0)} = e^{B_0 + \sum_{i=2}^n B_i X_i}.$$

The  $\exp(B_i)$  are the factors by which the odds change when the  $i$ -th independent variable increases by one unit, e.g. this value expresses the relative risk ratio of poverty with a one-unit change in the  $i$ -th variables in  $X_i$ .

## 4. Empirical Results

### 4.1 Intergenerational Income Mobility

Table 1 presents the empirical results of the intergenerational income mobility. The model specification (1) reveals the highest intergenerational income elasticity for the United States (.678) compared to Great Britain (.504), and Germany (.484). The individual and family characteristics count for 21 percentage points of the intergenerational income elasticity in the United States, versus 10 percentage points in Germany, and 7.8 percentage points in Great Britain (model specification 2a). The empirical evidence confirms the findings of various studies reporting a higher intergenerational income or earnings persistence (Solon, 2002; Mayer/Lopoo, 2005), and a higher intergenerational correlation of the endowment factors in the United States compared to Germany and Great Britain (Couch/Dunn, 1997; Dunn/Couch, 1999). The lower contribution of individual and family background characteristics in Germany and Great Britain might be attributed to an efficient social and welfare policy in these countries.

The results do not validate the hypothesis of a higher impact of individual and family characteristics on intergenerational income mobility due to traditional family role patterns in Germany. In all the countries, gender and family size negatively affects the intergenerational income elasticity. In Germany and the United States, educational attainment significantly increases the household's financial well-being which confirms the human capital hypothesis. In Germany, social origin matters: to have parents engaged in academic occupations significantly affects one's income situation and intergenerational income elasticity.

The empirical results of model specification (2b) support the hypothesis that social exclusion experienced in childhood limits the economic chances in adulthood. In the United States, social exclusion features contribute more than 17 percentage points to the intergenerational income elasticity, compared to 2.6 percentage points in Great Britain, and 0.3 percentage points in Germany. In Germany and the United States a large part of the intergenerational income persistence is due to the family structure. In both the countries, the parental disability status lowers the "raw" intergenerational income mobility. In Great Britain, the results reveal no significant effect of the social exclusion variables on the intergenerational income elasticity. A tentative interpretation might be that the social and economic policy in conservative-corporatist as well as social democratic welfare state regimes succeeds in combating social exclusion situations.

The Bartholomew index confirms a higher intergenerational income mobility in Germany (1.18) than in the United States (1.13) and in Great Britain (1.12).

Table 1  
Intergenerational Income Mobility

|          | Model Specification                              | GERMANY |         |         | USA     |         |         | GB      |         |         |
|----------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|          |  | (1)     | (2a)    | (2b)    | (1)     | (2a)    | (2b)    | (1)     | (2a)    | (2b)    |
| $y_p$    | Constant   | 5.002** | 6.181** | 6.312** | 3.346** | 4.647** | 5.579** | 4.779** | 5.595** | 6.021** |
|          | post-government income, parental household       | .484**  | .377**  | .374**  | .678**  | .465**  | .385**  | .504**  | .426**  | .400**  |
| $X_2$    | GENc 1 male 0 female                             |         | -.149** | -.123** |         | -.128** | -.120** |         | -.031   | -.028   |
| $X_3$    | EDUCc  |         | .017**  | .019**  |         | .088**  | .087**  |         | n.a.    | n.a.    |
| $X_4$    | CHILDC   |         | -.149** | -.162** |         | -.171** | -.197** |         | -.127** | -.133** |
| $X_5$    | EDUCp  |         | .004    | .005    |         | .009    | .003    |         | n.a.    | n.a.    |
| $X_6$    | OCCp   |         | .126*   | .144*   |         | .084    | .048    |         | .207**  | .212**  |
|          | 1 academic/scientific/managers, 0 else           |         | .087    | .099    |         | .069    | .044    |         | .214**  | .212**  |
|          | 1 professionals, 0 else                          |         | .004    | .013    |         | .008    | .020    |         | .070    | .078    |
|          | 1 trade/personal service, 0 else                 |         | -.121   | -.114   |         | -.074   | -.103   |         | .019    | .111    |
|          | 1 elementary occupations, 0 else                 |         |         | -.031   |         |         | -.055   |         |         | -.021   |
| $X_7$    | EMPp 1 unemployed, 0 else                        |         |         | -.162** |         |         | -.322** |         |         | -.019   |
| $X_8$    | DISRUPT <sub>c</sub> 1 family disruption, 0 else |         |         | .089    |         |         | .089    |         |         | .089    |
| $X_9$    | DISRUPT <sub>p</sub> 1 family disruption, 0 else |         |         | -.219*  |         |         | -.003   |         |         | -.129   |
| $X_{10}$ | DISABIL <sub>p</sub> 1 disabled, 0 else          |         |         | .119    |         |         |         |         |         | -.068   |
| $X_{11}$ | DISABIL <sub>c</sub> 1 disabled, 0 else          |         |         |         |         |         |         |         |         | -.138   |
| $X_{12}$ | SATHEALTHp                                       |         |         |         |         |         |         |         |         |         |
|          | 1 excellent, good, fair; 0 poor, very poor       |         |         |         |         |         |         |         |         |         |
|          | $R^2_{adj}$                                      | .130    | .356    | .394    | .229    | .289    | .365    | .219    | .323    | .328    |
|          | RMSE   | .458    | .347    | .338    | .815    | .708    | .651    | .411    | .355    | .354    |
|          | LL   | -584    | -120    | -106    | -1310   | -790    | -686    | -537    | -149    | -145    |
|          | Mean VIF   |         | 1.23    |         |         | 1.30    |         |         |         | 1.30    |

Source: SOEP, PSID, BHPS, author's calculations. \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

In all the countries, the highest intergenerational income persistence appears in the tails of the income distribution.<sup>3</sup> At the bottom of the income distribution the highest intergenerational income immobility is performed in Great Britain (47.5 percent), compared to 37.1 percent in the United States, and 33.7 percent in Germany. These results might underpin that the social policy, the institutional labor market settings, and the publicly financed educational system in Germany succeed to contribute to a higher social permeability. At the upper tail of the income distribution the intergenerational income immobility is highest in the United States (46.3 percent), compared to Germany (39.3 percent), and Great Britain (35.6 percent).

#### 4.2 The Relative Risk of Poverty

Table 2 presents the relative risk ratios ( $\exp(B_i)$ ) and the significance level for each of the explanatory variables  $X_i$  of the binomial logit model. In Germany and the United States women experience a higher poverty risk. In all the countries, the relative poverty risk significantly increases with household size. The significantly negative impact of educational attainment on the poverty risk validates the human capital theory. To be engaged in academic, scientific, or professional occupations significantly lowers the relative poverty risk, for persons in elementary occupations the reverse is true. In the United States, persons engaged in trade and personal service professions experience a significantly higher relative risk of poverty. In all the countries the significant effect of the father's occupational status on the relative poverty risk underlines the social class persistence (Lentz/Laband, 1989). The impact of social exclusion features on the relative poverty risk is ambiguous: In Germany, unemployment and poor health condition of one of the parents significantly increase the relative poverty risk. In the United States and Great Britain, persons living in instable family relations in childhood experience a higher poverty risk as adults.

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<sup>3</sup> The degree of immobility at the top and at the bottom of the 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.

Table 2

## Relative Poverty Risk Ratios

|   | Germany  | USA      | GB       |
|---|----------|----------|----------|
| GENc 1 male 0 female                                  | 2.365*   | 1.863*   | .879     |
| EDUCc   | .989     | .627*    | n.a.     |
| CHILDC  | 2.457*   | 2.082*   | 2.499*   |
| OCCc  |          |          |          |
| 1 academic / scientific / managers, 0 else            | 1.148*   | 1.811    | .396*    |
| 1 professionals, 0 else                               | 1.249*   | 1.094    | .231*    |
| 1 trade / personal service, 0 else                    | .887     | 3.029*   | 1.716    |
| 1 elementary occupations, 0 else                      | .099     | .106     | .115     |
| EDUCp   | .989     | .967*    | n.a.     |
| OCCp  |          |          |          |
| 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    |
| EMPP 1 unemployed, 0 else                             | .166*    | .796     | .544     |
| DISRUPTc 1 family disruption, 0 else                  | .566     | .808*    | .805*    |
| DISRUPTp 1 family disruption, 0 else                  | .891     | .824     | .972     |
| DISABILc 1 disabled, 0 else                           | .277     | .865     | .216     |
| SATHEALTHp 1 excellent, good, fair; 0 poor, very poor | 3.287*   | .841     | 1.364    |
| L   | -111.262 | -252.429 | -148.281 |
| $\chi^2$  | 97.79    | 139.59   | 99.19    |
| Pseudo R2   | .3053    | .2166    | .2506    |
| N   | 257      | 517      | 335      |

Note: \*indicates significance at the 5percent level in a two-tailed test ( $p < 0.05$ ).

Source: SOEP, PSID, BHPS, author's calculations.

## 5. Conclusion

We started from the hypothesis that the impact of individual and family background characteristics and social exclusion features on the intergenerational transmission of economic and social (dis)advantages differs according to the family role patterns and welfare state regimes. The empirical evidence partly supports these hypotheses:

- The empirical results point out a lower permeability of the social system in the United States: the intergenerational income persistence is more pronounced, the inclusion of individual and family background variables lower the raw intergenerational income elasticity onto a higher extent than in Germany and in Great Britain, and the contribution of social exclusion features to the intergenerational income mobility is higher than in Germany and in

Great Britain. The results do not validate the hypothesis of a higher intergenerational income persistence due to the traditional role patterns in Germany.

- In all the countries, the high intergenerational income persistence in the tails of the income distribution confirms the results of Atkinson et al. (1983) and Corcoran (2001) and implies a deepening of economic and social inequality across generations, and an increasing intergenerational transmission of poverty and social exclusion, a widening of the income and wealth gap implying economic inefficiencies and economic and social costs.
- The countries differ concerning the extent and the structure of the contribution of the endowment factors to the intergenerational transmission of (dis-)advantages. In all the countries, gender, educational attainment, and the number of children in the household significantly determine the intergenerational income mobility and relative poverty risk. The ambiguous effects of social exclusion features on the intergenerational income mobility and the relative poverty risk might partly be traced back to the different welfare state regimes.

Face to the significant contribution of individual and family background characteristics and social exclusion features to the intergenerational transmission of economic (dis)advantages social and welfare policy is challenged to conceptualize efficient measures to provide support and opportunities essential for a person's favorable economic and social development, and especially to recognize the potential of education to be a means to advance the social ladder. The results call for broader thinking on the mechanisms how families, labor markets and social policy interact in determining the intergenerational transmission of economic and social chances.

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