

Intergenerational Mobility and Transfers

Traditional Role Patterns, Family Background, and Intergenerational Income Mobility – Germany and the United States compared

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Abstract

Using SOEP-PSID data we analyze the impact of human capital and family background characteristics on intergenerational income mobility for two age cohorts in Germany and the United States. The results reveal a higher intergenerational persistence of economic status and a more pronounced influence of family background characteristics on income mobility patterns in the United States. The intergenerational transition matrices corroborate these results, indicating that much of the intergenerational income immobility is due to from what occurs in the tails of the income distribution. The results do not confirm the traditional social role patterns in Germany and a higher social mobility of the American society.

JEL Classifications: J24, D31, J62

1. Introduction

The research on intergenerational economic and social mobility sets out to explain the fact, that the children's economic and social positions are correlated with that of their parents. The structuring impact of economic and social stratification on income inequality, income dynamics, and poverty patterns are widely discussed in contemporary research and social policy (Layte / Whelan, 2002, 2009). Investigations of intergenerational income dynamics are based on the human capital approach (Becker, 1964; Mincer, 1974): the parents invest in their children which increases the human capital, and in turn affects the wages and earnings, as well as the relative income position of the children's generation. The studies considered in Becker and Tomes (1986, S1150) sup-

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port the seminal hypothesis of non-linearities in the intergenerational income dynamics and report an intergenerational elasticity of log income or log earnings of about 0.2 in various industrialized countries. Solon (1989, 174) among others showed that the high intergenerational mobility partly was due to sample selection and transitory fluctuations in earnings. 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, 1776; Solon, 2002, 62). Other approaches, addressing to a better proxy of the long-run economic status use occupation, education, gender, industry, or country dummies to instrument for the parental income (Mulligan, 1997; Gavira, 2002, 335; Mazumdar, 2005, 240). A problem of the IV method concerns the possibility of instruments being correlated to the children's economic status independently of the parental income, which generally cause an upward bias in the IV estimator (Solon, 1992, 395; Björklund / Jäntti, 1997, 1010). Recent studies focus on the interrelation between income inequality and intergenerational mobility. The "convergence" of intergenerational income mobility is a function not only of single-generation income correlation but also of structural changes in the income distribution and distinct transition mechanisms for different age cohorts at different points of the income distribution (Fertig, 2003 / 04; Solon, 2004; Mayer / Lopoo, 2005, 176).

The intention of this paper is to analyze the influence of human capital and family background characteristics on the income mobility patterns in countries with different social role models. We start from the hypotheses that the link between social stratification, labor market behavior and income dynamics works differently according to the family role setting. 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. We test these hypotheses for two age cohorts in Germany and the United States, two countries differing concerning the permeability of the social system (Giele / Holst, 1997; Dustmann, 2004, 227). Due to a stronger link between generations we suppose the influence of human capital and family background characteristics on income mobility to be more pronounced in Germany.

The paper proceeds as follows: section 2 presents the data and sample organization, section 3 describes the model specifications, section 4 brings out the empirical results, and section 5 concludes with a discussion of the stylized facts about the intergenerational heritage of economic status.

2. Data Base and Sample Organization

The empirical analysis is based on data from the German Socio-Economic Panel (SOEP) and the Panel Study of Income Dynamics (PSID), which were

made available by the Cross-National-Equivalent-File (CNEF) project at the College of Human Ecology at Cornell University, Ithaca, N.Y.¹ Both the surveys track the socioeconomic variables of the members of a given household. The data bases do not provide a sufficient long time horizon to observe the parents and the children at identical life cycle situations, but cover a sufficiently long period to observe the socioeconomic characteristics of the parents living with their children and to link these data with the children's socioeconomic characteristics when becoming members of other family units. The data bases do not allow identifying parents – children relations exactly: for this analysis we consider adults, whose marital status is “married”, or “living with partner” and who are living in households with persons with the marital status “child” as “fathers” or “mothers”. The income variables in the database refer to the prior calendar year, so we use the income variables referring to the wave of the interview, but questioned in the following wave. We employ the income variables from the data bases, thus the results make not allowance for the bias of imputed values on income inequality and income mobility (Little/Su, 1989; Frick/Grabka, 2005, 49). Following Fitzgerald/Gottschalk/Moffit (1998a, 1998b) we construct a set of sample specific weights to address to non-random sample attrition.

The sample selection in the underlying analysis includes children, co-resident with their parents in 1981 (United States) or 1984 (Germany). We consider children aged 15 to 20 years to avoid the overrepresentation of children staying at home until a late age (Kolodinsky/Shirey, 2000, 149). We separately analyze the income mobility patterns of a young cohort, aged 15 to 17 years. The children are at least 29 years old when we observe their income situation in the period 1998–2002 (Germany) or 1996–2001 (USA). We exclude persons in full-time education, because their income situation differs from the rest of population. In the parental generation we consider persons up to 60 years to avoid a too large bias of retired persons. The selection process leads to a sample of 1,613 German women and men and 2,142 US women and men out of the children's generation.

3. Methodology

3.1 Intergenerational Income Elasticity

A common approach to measure 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 on a logarithmic measure of the parental income variable. The estimating equation incorporates the age and the age

¹ For a detailed description of the data bases see Burkhauser et. al., 2001.

squared of both parents and children in order to correct for the fact that they are not observed at the same point of their life cycle (Corak / Heisz, 1999, 509; Charles / Hurst, 2003, 1161; Mazumdar, 2005, 243)

$$(1) \quad y_{ci} = \beta_0 + \beta_1 y_{pi} + \beta_2 Age_{pi} + \beta_3 Age_{pi}^2 + \beta_4 Age_{ci} + \beta_5 Age_{ci}^2 + \varepsilon_i .$$

The i denotes a parents-child pair, the y_{pi} is the log of the income variable of the parental generation and y_{ci} represents the log of the income variable of the children's generation. We prefer household income to individual earnings because household income is arguably a better measure of economic status than earnings. To exclude transitory income shocks and cross-section measurement errors we use the parental average family income in the period 1984 to 1988 (Germany) or 1981 to 1985 (USA), and the children's average family income in the period 1996 to 2001 (USA) or 1998 to 2002 (Germany). We employ the national CPI (2001 = 100) as a deflator. To consider the family structure we employ the OECD-equivalence scale to calculate the permanent household income per adult equivalent. The constant term β_0 represents the change in the economic status common to the children's generation, and the slope coefficient β_1 is the elasticity of the children's income level with respect to the parents' income level. The larger β_1 the more likely an individual as an adult will inhabit the same income position as her parents, which implies a greater persistence of the intergenerational economic status. The closer to zero β_1 is, the higher is the intergenerational income mobility. To account for the systematic heterogeneity in the income growth rates over the life cycle equation (1) controls for the age and the age square of the parents (Age_{pi} , Age_{pi}^2) and the children (Age_{ci} , Age_{ci}^2). The random error component ε_i is usually assumed to distributed as $N(0, \sigma^2)$.

The extension of equation (1) includes a set of additional controls (Z_c) to evaluate the influence of human capital and family background characteristics of the children on the intergenerational transmission of economic status (Charles / Hurst, 2003, 1166)

$$(2) \quad y_{ci} = \beta_0 + \beta_1 y_{pi} + \beta_2 Age_{pi} + \beta_3 Age_{pi}^2 + \beta_4 Age_{ci} + \beta_5 Age_{ci}^2 + \delta_c Z_c + \varepsilon_i .$$

The human capital is captured by the years of education, observed in 1996 (USA) or 1998 (Germany). In the case of missing values the educational attainment is set equal to the amount reported in the next year, for it is possible to increase educational attainment but impossible to decrease it. The employment behavior of the children is considered with their average working hours in the period 1996 to 2001 (USA) or 1998 to 2002 (Germany). The health dummy takes the value 1 if the person is satisfied with her health in 1996 (USA) or 1998 (Germany) and 0 else. Finally, the Z_c variables include the number of persons in the parental household in 1981 (USA) or 1984 (Ger-

many) to capture whether the household size interferes with equal chances of the children. The variables Z_c account for the individual characteristics of the children, which partly express the indirect effects of the parental income on the children's income: the higher the income of the parents the higher their investment in the education of the children, which in turn cause a higher income of the children. To the extent that the variables Z_c lower (raise) the focus coefficient β_1 , these other effects "account for" the raw intergenerational income elasticity, β_1 , from equation (1).

3.2 Intergenerational Income Transitions

The intergenerational income elasticity measures the average income mobility but throws not important light on the probabilities of economic success conditional to the economic background of the parents. The movement from one income position to another and the factors that influence them are the key issues from a welfare point of view (Heckman, 1981). The transition matrix allows to analyze the intergenerational persistence of income positions. We use the log permanent family incomes of the parents and the children and split them into five equal segments to create parent-child transition matrices. Additionally, we employ a first-stage OLS regression of the children's and parents' log permanent family income on their age and age squared. Then we split the residuals from these two regressions into five equal segments and create intergenerational income transition matrices (Charles/Hurst, 2003, 1162). Each element m_{ki} of the parents-child matrices indicates the probability (in percent) that a child belongs to the k^{th} quintile of the distribution for children, given that her parents belong to the i^{th} quintile of the parental distribution. The entries sum to 1 along the columns. The more independent the children's and the parents' income, the greater the likelihood that the elements of this transition matrix are close to 0.2, representing an equal distribution across all quintiles. The greater the elements of the transition matrix differ from 0.2 the greater is the intergenerational similarity of the age adjusted relative income positions.

3.3 Attrition-Bias Correction

To address to the non-random sample attrition bias we construct a compensatory set of sample specific weights, that do not account for attrition in general, but for attrition among the particular groups under study and its relation to the particular outcome. 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 (Fitzgerald/Gottschalk/Moffit, 1998a; Fitzgerald/Gottschalk/Moffit, 1998b). Presuming that the samples are representative when the children are still children we construct a set of weights

$$(3) \quad w(z, x) = \left[\frac{\Pr(A = 0 \mid z, x)}{\Pr(A = 0 \mid x)} \right]^{-1}$$

where x denotes 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 child's gender, the parental age and education and 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 $w(x, z)$ then are multiplied with the parental weights, which yields a set of weights that apply to the children as adults. The parental weights are assumed to capture the attrition effects and the weights, $w(x, z)$, compensate for subsequent non-random attrition.

4. Empirical Results

Table 1 contrasts the mean and the percentage distribution of the individual and family background characteristics with respect to gender. In both the countries, the summary statistics indicate statistically significant gender differences concerning the log permanent family income and the employment behavior of the children. In Germany, the proportion of full-time employed men doubles the proportion of full-time employed women. In the United States the average working hours of women make about two third of the average working hours of men. In the United States the young cohort persons experience a higher log permanent family income, higher average working hours, and a higher proportion of persons satisfied with their health than in Germany, but the differences are statistically not significant. In Germany the parental log permanent family income is significantly higher than in the United States. The country and gender differences may be due to the different economic conditions and institutional labor market settings, but may also be traced back to traditional role models.

The regression results of equation (1) reveal a higher persistence of the intergenerational income positions in the United States, German women experience a significant lower intergenerational income mobility than women in the United States. In Germany, men experience a higher intergenerational income elasticity than women, whereas in the United States the reverse is true, but these gender differences are statistically not significant. Compared to the United States, the German young cohort experiences a significantly lower intergenerational income elasticity, which confers substantial advantages to their better off. The attrition-bias correction lowers the intergenerational income

Table 1: Individual and Family Background Characteristics

| Individual and family background characteristics | German sample | | | | | US sample | | | | |
|--|---------------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|
| | obs. year | men | | women | | obs. year | men | | women | |
| | | mean | SE | mean | SE | | mean | SE | mean | SE |
| In permanent household income, children | 1998–2002 | 9.11 | .02 | 8.51 | .03 | 1996–2001 | 9.73 | .04 | 9.47 | .04 |
| age, children | 1998 | 31.3 | .09 | 34.4 | .10 | 1996 | 32.1 | .08 | 32.0 | .07 |
| educational attainment, children | 1998 | 12.1 | .15 | 11.7 | .16 | 1996 | 12.8 | .09 | 12.9 | .09 |
| average working hours, children | 1998–2002 | 1,805 | 48.59 | 917 | 60.95 | 1996–2001 | 1,804 | 46.91 | 1,279 | 43.32 |
| full-time employed (in %), children | 1998 | 70.4 | 1.14 | 31.5 | 1.16 | 1996 | 65.5 | 1.03 | 43.6 | 1.07 |
| satisfied with health (in %), children | 1998 | 96.4 | .58 | 94.0 | .59 | 1996 | 94.8 | .48 | 91.7 | .56 |
| In permanent household income, parents | 1984–1988 | 9.97 | .01 | 9.96 | .02 | 1981–1985 | 9.24 | .02 | 9.17 | .02 |
| household size | 1984 | 4.4 | .05 | 4.5 | .06 | 1981 | 5.0 | .06 | 5.2 | .07 |
| <i>N</i> | | 1,613 | | | | 2,142 | | | | |

| Individual and family background characteristics | German sample, young cohort | | | | | US sample, young cohort | | | | |
|--|-----------------------------|-------|-------|-------|-------|-------------------------|-------|-------|-------|-------|
| | obs. year | men | | women | | obs. year | men | | women | |
| | | mean | SE | mean | SE | | mean | SE | mean | SE |
| In permanent household income, children | 1998–2002 | 9.01 | .02 | 8.46 | .05 | 1996–2001 | 9.79 | .06 | 9.58 | .05 |
| age, children | 1998 | 29.9 | .06 | 30.0 | .07 | 1996 | 30.9 | .05 | 31.0 | .05 |
| educational attainment, children | 1998 | 12.0 | .21 | 11.5 | .23 | 1996 | 12.9 | .13 | 13.1 | .12 |
| average working hours, children | 1998–2002 | 1,716 | 69.45 | 920 | 65.66 | 1996–2001 | 1,850 | 62.83 | 1,343 | 55.39 |
| full-time employed (in %), children | 1998 | 67.2 | 1.66 | 34.0 | 1.68 | 1996 | 67.3 | 1.24 | 45.8 | 1.58 |
| satisfied with health (in %), children | 1998 | 95.3 | .75 | 92.9 | .91 | 1996 | 97.5 | .49 | 93.6 | .77 |
| In permanent household income, parents | 1984–1988 | 9.93 | .02 | 9.91 | .03 | 1981–1985 | 9.20 | .03 | 9.14 | .03 |
| household size | 1984 | 4.4 | .06 | 4.5 | .08 | 1981 | 5.0 | .08 | 5.1 | .09 |
| <i>N</i> | | 788 | | | | 1,006 | | | | |

Source: SOEP-PSID, own calculations.

elasticity in both the countries. For the German sample, the differences are statistically not significant and thus the attrition bias correction is of limited value. In general, the results do not indicate a higher social mobility in the United States at all. The consideration of human capital and family background controls lowers the intergenerational elasticity in both the countries. The regression results of equation (2) reveal a significant influence of human capital and the family background characteristics on the mobility patterns only in the United States. Possible explanations may be that the public transfer system and the various welfare-state programs in Germany (Federal Childcare Payment and Parental Leave Act *Bundesperziehungsgeldgesetz*, BErzGG, 2001) “override” the influence of individual and family background characteristics on intergenerational income mobility. Another explanation could be that labor market segregation and discrimination partly diminishes the importance of family background variables. A final explanation could be that a person’s own family is more important for her income status than her family background. In both the countries the attrition-bias correction indicate a lower intergenerational income elasticity. Statistically significant differences we find only for German women and for US young women. In all other cases the attrition-bias correction is only of limited value. (Table 2)

For both the countries the intergenerational transition matrices based on the attrition-bias corrected log permanent family incomes of parents and children reveal a noticeable persistence of the intergenerational relative income positions. Most of the transition probabilities significantly differ from 0.2, which implies that the relative income positions of the children are far from being perfectly predicted by the relative income position of their parents. The probability that a child ends up in an income quintile different from the one occupied by her parents tends to be monotonically decreasing the farther away that quintile is from that of her parents. In Germany 30.4 percent of the parents in the lowest income quintile have sons in the same quintile in the children’s income distribution. Women experience a higher degree of churning in the intergenerational income positions: 56.5 percent of the parents in the lowest income quintile have daughters whose income places them in the lowest quintile in the children’s income distribution. About 12 percent of the sons and daughters with parents in the lowest quintile perform into the highest quintile of the children’s income distribution. A similar degree of persistence is evident at the upper tail of the parental income distribution: more than 40 percent of high income parents have sons or daughters who end up in the top quintile of the children’s income distribution, and more than 75 percent of high income parents have sons or daughters, placed in the three top quintiles of the children’s income distribution. About 10 percent of the children of high income parents fall into the lowest income quintile of the children’s generation. For the young cohort persons the chance to perform into the highest quintile is significantly lower. In the United States the intergenerational mobility of the

Table 2: Intergenerational Income Elasticity (IGE)

| | IGE | | | | IGE – attrition-bias corrected | | | |
|---------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------|------------------------|------------------------|------------------------|
| | German Sample | | US sample | | German Sample | | US sample | |
| | Equation (1) | Equation (2) | Equation (1) | Equation (2) | Equation (1) | Equation (2) | Equation (1) | Equation (2) |
| all | .399* (.344 – .454) | .331* (.276 – .386) | .540* (.464 – .616) | .384* (.305 – .463) | .309* (.277 – .341) | .191* (.154 – .218) | .398* (.375 – .421) | .303* (.279 – .327) |
| male | .440* (.361 – .517) | .359* (.284 – .435) | .462* (.328 – .596) | .283* (.130 – .436) | .415* (.348 – .486) | .270* (.209 – .335) | .398* (.356 – .422) | .231* (.195 – .266) |
| female | .369* (.289 – .449) | .315* (.235 – .395) | .559* (.462 – .656) | .412* (.316 – .509) | .130* (.082 – .186) | .072* (.120 – .232) | .406* (.375 – .438) | .332* (.300 – .364) |
| young cohort | .316* (.210 – .422) | .249* (.095 – .396) | .512* (.423 – .601) | .395* (.284 – .506) | .328* (.242 – .420) | .273* (.204 – .348) | .339* (.309 – .370) | .244* (.213 – .275) |
| male | .279* (.151 – .407) | .244* (.106 – .382) | .449* (.309 – .589) | .165* (.055 – .385) | .357* (.289 – .431) | .296* (.230 – .368) | .269* (.225 .312) | .169* (.128 – .210) |
| female | .373* (.205 – .541) | .273* (.099 – .447) | .534* (.421 – .647) | .455* (.322 – .588) | .302* (.253 – .341) | .198* (.133 – .263) | .418* (.378 – .458) | .239* (.197 – .281) |

Source: SOEP-PSID, own calculations. Notes: * significant ($p = .05$), 95 percent confidence interval of the IGE in parentheses.

relative income positions in both the tails of the income distribution is more pronounced than in Germany. In both the countries, the status immobility of women in the tails of the distribution is significantly higher than for men. The higher probability for the stayers at both the very top and very bottom of the parental income distribution in part represents the non-linearity in the mobility process (Atkinson / Maynard / Trinder, 1983, 83). The degree of immobility at the top and at the bottom of the distribution might be exaggerate, for upward mobility is not possible for those born at the top, downward mobility is not possible for those born at the bottom. (Table 3a) In both the countries the transition matrices based on the age-adjusted relative income positions reveal a higher intergenerational persistence of economic status for men and women in the low income quintiles. In the highest income quintile the immobility of economic status for men increased, but for women decreased. In the United States this effect is more pronounced than in Germany, especially for the young cohort. (Table 3b) However, the results do not support the hypothesis of a higher social permeability in the United States and traditional role and income mobility patterns in Germany.

5. Conclusion

The analysis of the influence of family background characteristics on the income dynamics in Germany and the United States document a substantial amount of churning of the economic status across generations. The empirical findings do not support the hypothesis of traditional role models in Germany and a higher social mobility in the United States. The family background characteristics significantly affect the intergenerational income elasticity only in the United States. In both the countries, the attrition-bias corrected results suggest a higher intergenerational income mobility and corroborate the gender and cohort specific mobility patterns. The transition matrices demonstrate that much of the intergenerational income persistence arises from what occurs in the tails of the income distribution: children brought up in families with a very low or a very high income background rarely end with an income substantially different from their parents' relative income position. In both the countries, the transition matrices based on the age-adjusted relative income positions reveal a higher persistence of economic status for women in the lower tail of the income distribution, denoting decreasing chances to the better off. Therefore, in both the countries social policy is called upon to improve the access to educational attainment to facilitate the prospects of further climbing up the occupational ladder, to enhance gender equality chances, and family work reconciliation strategies to enforce upward intergenerational income mobility, and thus to raise the permeability of the social structure.

Table 3a

Intergenerational Transition of Attrition-bias Corrected Income Positions

(a) Germany

| quintiles children | quintiles parental generation | | | | | | | | | |
|--------------------|-------------------------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .304 | .565 | .189 | .241 | .336 | .133 | .199* | .235 | .099 | .080 |
| 2 | .306 | .051 | .101 | .193* | .142 | .190* | .077 | .127 | .148 | .160 |
| 3 | .150 | .102 | .391 | .170 | .213 | .345 | .246 | .191* | .234 | .240 |
| 4 | .120 | .153 | .194* | .241 | .061 | .079 | .165 | .129 | .086 | .080 |
| 5 | .121 | .128 | .125 | .155 | .248 | .254 | .314 | .319 | .434 | .440 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| quintiles children, young cohort | 1 | | 2 | | 3 | | 4 | | 5 | |
|----------------------------------|-------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| | 1 | .137 | .528 | .247 | .267 | .440 | .136 | .221 | .071 | .015 |
| 2 | .426 | .061 | .083 | .320 | .229 | .279 | .095 | .104 | .075 | .031 |
| 3 | .221* | .181 | .341 | .165 | .124* | .256 | .132 | .283 | .126* | .246 |
| 4 | .168 | .194* | .151 | .208* | .093 | .129 | .320 | .138 | .361 | .220* |
| 5 | .046 | .036 | .178 | .040 | .115 | .199* | .232 | .404 | .423 | .499 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

(b) USA

| quintiles children | quintiles parental generation | | | | | | | | | |
|--------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .160 | .238 | .099 | .035 | .012 | .039 | .079 | .050 | .061 | .031 |
| 2 | .404 | .272 | .301 | .106 | .309 | .126 | .109 | .120 | .023 | .073 |
| 3 | .064 | .306 | .339 | .644 | .421 | .446 | .203* | .243 | .201* | .216* |
| 4 | .330 | .150 | .213 | .189 | .190 | .325 | .202* | .349 | .405 | .244 |
| 5 | .043 | .034 | .048 | .025 | .068 | .063 | .407 | .238 | .310 | .436 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| quintiles children, young cohort | 1 | | 2 | | 3 | | 4 | | 5 | |
|----------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| | 1 | .060 | .189 | .132 | .035 | .035 | .047 | .043 | .039 | .034 |
| 2 | .402 | .340 | .106 | .154 | .288 | .017 | .039 | .127 | .043 | .002 |
| 3 | .110 | .226 | .389 | .621 | .460 | .564 | .221* | .197* | .304 | .255 |
| 4 | .358 | .226 | .256 | .141 | .132 | .270 | .119 | .313 | .391 | .251 |
| 5 | .060 | .019 | .116 | .048 | .085 | .101 | .578 | .324 | .228 | .446 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Source: SOEP-PSID, own calculations. Notes: (1) The likelihood ratio χ^2 statistics is significant ($p < .001$) in all comparisons. (2) * not significantly different from the expected probability of 0.2.

Table 3b
**Intergenerational Transition Matrices of Attrition-bias Corrected,
 Age-adjusted Income Positions**

(a) Germany

| quintiles children | quintiles parental generation | | | | | | | | | |
|--------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .272 | .563 | .255 | .184 | .171 | .225 | .188* | .164 | .009 | .092 |
| 2 | .253 | .050 | .218 | .329 | .154 | .118 | .187* | .254 | .183* | .315 |
| 3 | .288 | .034 | .202* | .185* | .253 | .280 | .263 | .169 | .077 | .046 |
| 4 | .137 | .176 | .269 | .144 | .284 | .121 | .177 | .212 | .252 | .191* |
| 5 | .050 | .178 | .056 | .158 | .137 | .256 | .185* | .201* | .479 | .357 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| quintiles children, young cohort | quintiles parental generation | | | | | | | | | |
|----------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .184 | .599 | .247 | .218 | .205* | .196* | .307 | .005 | .016 | .009 |
| 2 | .409 | .058 | .266 | .475 | .223 | .180 | .128 | .157 | .158 | .242 |
| 3 | .230 | .083 | .204* | .195* | .165 | .301 | .201* | .172 | .055 | .008 |
| 4 | .130 | .224 | .249 | .113 | .187 | .114 | .270 | .207* | .392 | .387 |
| 5 | .048 | .041 | .035 | .009 | .221 | .208* | .094 | .461 | .385 | .371 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

(b) USA

| quintiles children | quintiles parental generation | | | | | | | | | |
|--------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .401 | .306 | .305 | .193* | .121 | .185* | .086 | .195* | .074 | .082 |
| 2 | .231 | .397 | .348 | .356 | .114 | .220 | .203* | .156 | .074 | .081 |
| 3 | .166 | .167 | .123 | .225 | .138 | .355 | .139 | .248 | .123 | .268 |
| 4 | .193* | .114 | .130 | .071 | .267 | .148 | .191* | .158 | .341 | .285 |
| 5 | .007 | .017 | .095 | .154 | .360 | .093 | .381 | .244 | .387 | .284 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| quintiles children, young cohort | quintiles parental generation | | | | | | | | | |
|----------------------------------|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 1 | | 2 | | 3 | | 4 | | 5 | |
| | male | fem. | male | fem. | male | fem. | male | fem. | male | fem. |
| 1 | .310 | .323 | .327 | .145 | .109 | .121 | .053 | .167 | .149 | .002 |
| 2 | .251 | .365 | .356 | .394 | .215 | .376 | .207* | .112 | .173 | .131 |
| 3 | .135 | .124 | .148 | .112 | .124 | .296 | .159 | .183 | .121 | .313 |
| 4 | .292 | .181 | .102 | .112 | .127 | .118 | .119 | .169 | .294 | .291 |
| 5 | .013 | .007 | .067 | .238 | .425 | .089 | .462 | .369 | .263 | .263 |
| TOTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Source: SOEP-PSID, own calculations. Notes: (1) The likelihood ratio χ^2 statistics is significant ($p < .001$) in all comparisons. (2) * not significantly different from the expected probability of 0.2.

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