The German spatial poverty divide: poorly endowed or bad luck?

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Abstract

We study inter-temporal changes in poverty for Germany from year 1978 to 2003, and we employ the bootstrap method to test for statistical significance of results. All results are decomposed by household type and region. Poverty estimates are particularly high for single parents. Most striking, however, is the poverty divide between the old and newly-formed German Federal States, with poverty being significantly higher in the latter. We conduct a nonlinear Oaxaca-Blinder decomposition to quantify the separate contribution of regional differences in households' characteristics to the probability of being poor.

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JEL classification: H53, I38

1 Introduction

Poverty and child poverty in particular are recognized as key social problems. Duncan and Brooks-Gunn (1997) and later studies like Gregg and Machin (2000) suggest that growing up poor is likely to have negative effects on children's learning and social capabilities, and on their future life chances. Poor families' children are more likely to become teen and sole parents, are less successful in school (see, for example, Paxson and Schady, 2007) and in the labor market (see, for example, Chase-Landsdale and Brooks-Gunn, 1995, Rodgers and Pryor, 1998, or Oreopoulos et al., 2008). According to medical studies, poverty during infancy and childhood is an important predictor of mortality risk (see, for example, Nelson, 1992, Nersesian et al., 1985, and Wise et al., 1985). Similarly, Marmot (2004) finds the health conditions of adults to depend crucially on the individual economic opportunities, the so-called status syndrom. Other studies find positive correlations between peoples' economic situation on the one hand and drug use and crime rates on the other (see Patterson, 2006).

Being poor not only is an individual tragedy. High poverty rates are likely to create social costs, resulting average income to grow less rapidly.[1] For example, if households face credit constraints, which again prevent them from undertaking efficient human capital investments. Substantial income and wealth disparities may also discourage and frustrate people. In turn, deprived people might withdraw from social life, stop looking for work, or turn their backs on the democratic system. Finally, individuals who feel powerless in view of large economic disparities may see no other chance to improve their economic situation but to infringe social and ethical rules and norms. All this is as true in rich as it is in poor countries.

This study investigates the long-run poverty trends in Germany. Six waves of the German Sample Survey of Income and Expenditures from year 1978 to 2003 form our database. Estimates are decomposed by region of residence (newly-formed vs. old German Federal States) and household type. As a threshold, we use both a relative and an absolute poverty line applied. To allow for inter-temporal comparability of results, the absolute poverty line is held constant over time in CPI adjusted monetary units. Our incidence measure is the head count ratio, the normalized poverty gap ratio is our measure of poverty intensity.

Not all of our findings are new. Several empirical studies have explored poverty in Germany. Examples are Burkhauser et al. (1996), Smeeding et al. (2000), Schluter (2001), Jenkins et al. (2003), Jenkins and Schluter (2003), Valletta (2006), and Corak et al. (2008).

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[1] See Okun (1975) or Welch (1999) for opposite arguments.

For a comprehensive literature review see Hauser and Becker (2003). This article builds upon aforementioned literatures, extending it along two dimensions.

First, we employ the bootstrap method to test for statistical significance of results. In the context of inequality and poverty, the bootstrap approach was first applied by Mills and Zandvakili (1997), and its validity has been shown in Biewen (2002). Our results contribute to closing an apparent lack of statistical inference in the empirical poverty literature. Over the observation period, poverty is on the ease if the absolute poverty line is applied. However, little change for the better is found if the relative poverty line is applied. Across household types, single parents with children are prone to be poor. Most striking, however, is the huge regional divide in poverty: both the incidence and the intensity of poverty are substantially higher in the New Federal States.

The latter finding asks for explanations. Is it the reunification shock, turning the New States economy upside down from a command to a market economy and causing numerous firm liquidations, which causes the East/West poverty divide? Or is it that East German households have socio-economic characteristics making them particularly prone to be poor? As the second extension, to address these questions, we conduct a non-linear Oaxaca-Blinder decomposition. The decomposition quantifies how much of the East/West poverty divide is due to differences in Old and New States households' socioeconomic characteristics, the so-called characteristics effect.

It turns out that, in year 1993 the characteristics effect is unable to explain any of the poverty divide. Presuming the non-existence from non-observables, this result indicates that the reunification shock was the single reason for the poverty divide in the early years after reunification. Over time, however, the characteristics effect becomes more relevant. In year 2003 already, it explains about 30 percent of the poverty divide. Migration of well-educated and well-trained people, moving from the newly formed to the old Federal States, may underlie this trend.

The paper is structured as follows. Section 2 explains employed poverty measures, the use of the bootstrap method, and the Oaxaca-Blinder decomposition approach. Section 3 portraits the inter-temporal poverty trends including tests for significance. Section 4 summarizes the results from the non-linear Oaxaca-Blinder decomposition approach, and Section 5 concludes.

2 Methodological considerations

2.1 Conventions related to poverty measurement

Our analysis builds on six waves of the German Sample Survey of Household Income and Expenditure (EVS) collected at 5-year intervals between 1978 and 2003. The EVS is provided by the German Federal Statistical Office, and contains representative household data on incomes, taxes, social security contributions, social transfers, wealth, inventories, and expenditures, as well as several other socio-economic and demographic characteristics. Per cross section, sample size ranges between 40,000 to 60,000 household units.

The assessment of poverty necessitates several conventions with immediate implications for the way we have processed the data.[2] First, an income concept must be selected. Following standard international practice, all estimates are derived from *CPI-adjusted equivalent disposable household income* (henceforth "equivalent income"). It is not directly reported in the EVS, but can easily be computed from the EVS variable *disposable household income* (gross earnings, capital and self-employment income, plus public transfers and imputed rents, minus income taxes and social security contributions). First, we adjust disposable household income for changing consumer price indices (CPI). Incomes are adjusted to 2003 prices in Euros.[3] Second, to control for differences in households' needs, CPI-adjusted disposable household income is divided by the *OECD modified scale*.[4] Equivalent incomes are the outcome of the two-step adjustment.

Second, a poverty line must be defined. In Germany, an official poverty line does not exist. We follow the European Statistical Office which recommends a 60-percent-of-median standard *relative poverty line* (RPL).[5] Before reunification, it is based on the population resident in West Germany; afterwards, on the whole population.[6] A RPL ties down the minimum acceptable income to what other people get. Hence, derived poverty estimates, for example, remain unchanged if incomes of all households grow over time at same rate. A decrease in poverty essentially mirrors an improving economic situation of low income relative to high income households. Additionally, we apply an *absolute poverty line* (APL).

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[2] See also Deaton (2004).

[3] Although most Newly formed States districts are low-price regions, we apply the same consumer price index to households with residence in the Old and Newly formed German States. The reason is that a rough distinction of consumer prices by Old and Newly formed German States does not adequately capture living conditions in Germany. For example, structurally weak areas in the Old States like Bavarian areas nearby the Czech border, as well as some regions in Rhineland-Palatinate, the Saarland and Hesse, are also low-price areas (see Kosfeld et al., 2007, for details).

[4] The OECD modified scale assigns a value of 1.0 to the first adult household member, of 0.5 (0.3) to each further person of age 14 and above (below 14 years).

[5] See Eurostat, 2000, and Brewer and Gregg, 2002, for details.

[6] Alternatively, distinct poverty lines for East and West Germany could have been applied (for a discussion see Corak et al., 2008). As equivalent income is on average (median) lower in the Newly formed States, this procedure would lead to lower poverty estimates in the New and higher poverty estimates in the Old States.

Its monetary threshold coincides with the 2003 relative poverty line, and it is held constant for earlier periods. In case of an absolute poverty line, poverty remains constant if the income poor do not experience real income growth.

The third convention relates to the unit of analysis, i.e. households vs. individuals. All our poverty estimates are assessed on the individual level. It immunizes poverty estimates for changes in household formation. E.g., poverty is not affected by four poor people formerly living in the same household unit chose to live in separate household units. Technically speaking, let an EVS sampling unit consist of four members, and its frequency weight be 50. Then we assign equivalent income to each of the unit's members. If equivalent income is (not) below the poverty line, 200 people are assessed as (non) poor.

A fourth convention relates to the poverty measure. We employ a class of indexes introduced by Foster et al. (1984), covering two popular poverty measures with complementary features. Let z denote the poverty line (in money units), and y_i the equivalent income of household unit i. Let $i = 1,...,q$ denote the poor household units with $y_i < z$, then,

$$(1) \quad I(\alpha) = \frac{1}{N} \cdot \sum_{i=1}^{q} (w_i \cdot n_i) \cdot \left(1 - \frac{y_i}{z}\right)^{\alpha} = \frac{1}{N} \cdot \sum_{i=1}^{q} (w_i \cdot n_i) \cdot \left(\frac{z - y_i}{z}\right)^{\alpha} .$$

In equation (1), w_i denotes the EVS frequency weight pertaining to household unit i consisting of n_i members. The total number of observations, N, is defined as $N = \sum_i w_i \cdot n_i$. The term $z - y_i$ denotes the poverty gap pertaining to i. For $\alpha = 0$, equation (1) is the head count ratio. The head count ratio is a pure incidence measure, providing the frequency of poverty among the population but not "on the depth and distribution of poverty" (see Foster, 1998, p. 336). If $\alpha = 1$, we have the poverty gap ratio, the head count ratio times the average poverty gap. Gap measures add an important dimension to incidence measures, the intensity of poverty, i.e., how far the incomes of the income poor fall below the poverty line.

Fifth, the level of dis-aggregation must be defined. We provide poverty estimates by region of residence (Newly formed and Old Federal States) and household type. Altogether, nine household types are distinguished: single parents with one, two, and three or more children; (married or non-married) couples with one, two, and three or more children; childless single adults, childless couples, and other childless household units. Throughout the paper, we define children as persons below 18 years. Unweighted numbers of household units are provided in the Appendix (see Tables A1).

2.2 Bootstrap inference and poverty

To test for statistical significance of differences in poverty indices, we compute confidence intervals using the bootstrap method. From each EVS cross section we draw, with replacement, $B = 100$ random samples. Each random sample contains as many sampling units as the original cross section. Each sampling unit in the original cross section has the same probability of being selected. So the bootstrap does not account for EVS frequency weights, but the weights are accounted for whenever a poverty measure is computed. Be it for the calculation of point estimates from the original database or for the calculation of confidence intervals from bootstrap samples (see Biewen, 2002).

Accordingly, per cross section, we compute B values of a poverty index, one for each bootstrap sample. To derive confidence intervals for our estimates, we follow Hall (1994). Hall's confidence interval at the 95 percent level for the true value of I is given by $\Pr\left(2\hat{I} - I^*_{high} \leq I \leq 2\hat{I} - I^*_{low}\right) = (100 - 2\alpha)/100$, where $\hat{I}$ denotes the point estimate based on the original sample and I^*_{high} (I^*_{low}) denotes the 2.5[th] upper (lower) percentile in the bootstrap distribution of estimates. If we want to test for significance of a change in poverty between periods t and $t-5$, this gives B differences, $\Delta I(\alpha)^{*b}_t = I(\alpha)^{*b}_t - I(\alpha)^{*b}_{t-5}$, where $b = 1,...,B$ and $I(\alpha)^{*b}_t$ denotes the poverty estimate from bootstrap distribution b in period t. The difference in point estimates is $\Delta\hat{I} = \hat{I}_t - \hat{I}_{t-5}$. Hence, Hall's (1994) percentile confidence interval is given by $\Pr\left(2\Delta\hat{I} - \Delta I^*_{high} \leq \Delta I \leq 2\Delta\hat{I} - \Delta I^*_{low}\right) = (100 - 2\alpha)/100$. The term ΔI^*_{high} denotes the 2.5[th] upper and ΔI^*_{low} is the 2.5[th] lower percentile in the bootstrap distribution of differences, and ΔI is the true difference. An index difference is statistically different from zero if Hall's confidence interval does not include zero.

2.3 The non-linear Oaxaca-Blinder decomposition approach

We conduct an Oaxaca-Blinder decomposition for nonlinear regressions (see Oaxaca, 1973, Blinder, 1973, and Fairlie, 2005) to investigate whether differences in the distributions of socioeconomic characteristics in East and West Germany can explain the East/West poverty divide. More precisely, we assess the separate contribution of group differences in

individual/household characteristics to the probability of being poor *controlling for all other characteristics* (see Fairlie, 2005).[7]

The non-linear decomposition approach builds on logit regressions. In the logit regressions, the independent variable is a dummy. It is equal to 1.0 if a household unit i is poor, where else it is zero. Newly formed vs. Old German States households are assigned to two mutually-exclusive groups $g \in \{0,1\}$. In the logit model, the likelihood of i being poor is,

$$(2) \qquad P_i^g = \Pr(y_i^g < z) = F\left(x_i^g \beta^g\right) = \exp\left(x_i^g \beta^g\right) / \left[1 + \exp\left(x_i^g \beta^g\right)\right],$$

where x is a vector of household and individual characteristics, and F is the cumulative distribution function from the logistic distribution. Based on the logit estimates, the difference in the poverty rates between the groups is,

$$(3) \qquad \overline{P^1} - \overline{P^0} = \underbrace{\left[\sum_{i=1}^{N^1} \frac{F\left(x_i^1 \hat{\beta}^1\right)}{N^1} - \sum_{i=1}^{N^0} \frac{F\left(x_i^0 \hat{\beta}^1\right)}{N^0}\right]}_{characteristics-effect} + \underbrace{\left[\sum_{i=1}^{N^0} \frac{F\left(x_i^0 \hat{\beta}^1\right)}{N^0} - \sum_{i=1}^{N^1} \frac{F\left(x_i^0 \hat{\beta}^0\right)}{N^0}\right]}_{coefficient-effect \; \& \; unobservables}$$

(see Fairlie, 2005). In equation (3), $\overline{P^1}$ $\left(\overline{P^0}\right)$ denotes the poverty rate in group $g = 1$ $\left(g = 0\right)$, and $\hat{\beta}^g$ is the vector of coefficient estimates for g. The first term in brackets is the so-called aggregate characteristics effect which is the part of the poverty divide due to differences in the distributions of independent variables. The second term captures the part of the poverty divide which can be explained by differences in group processes determining poverty, but also due to group differences in non-quantified endowments. As it mixes up coefficient effects and the impact of non-observables (see Jones 1983, and Cain, 1986), it lacks a clear interpretation. For this reason, we refrain from commenting on the second term in the Sections that follow.

3 Long-run poverty trends

Figure 1 gives the two poverty lines underlying all our calculations (expressed in CPI adjusted Euros). The solid line connects point estimates corresponding to the 60-percent-of-median RPL, and the dashed line connects APL point estimates. Vertical bars indicate 95 percent Hall confidence intervals $\left(2\hat{z} - z_{high}^*, 2\hat{z} - z_{low}^*\right)$, where $\hat{z}$ is the point estimate of the respective poverty line, z_{high}^* is the 2.5[th] upper and z_{low}^* is the 2.5[th] lower percentile of the bootstrap distribution of poverty lines. The monetary equivalent of the RPL significantly increases over

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[7] A technically related analysis has recently been conducted by Gradín (2008) to investigate differences in poverty rates between minorities in the United States.

time. Only German Reunification causes a temporary slowdown of the increase between 1988 and 1993. By construction, the APL remains constant over time, and coincides with the RPL in 2003.

[Figure 1 about here]

3.1 The general picture

Figure 2 provides region-specific RPL and APL based head count ratios, FGT(0), and poverty gap ratios, FGT(1). Dark lines connect estimates for the Old States, whereas light lines connect New States estimates. Solid lines refer to RPL-based indices. APL-based point estimates are connected by dashed lines. As in Figure 1, vertical bars depict 95 percent Hall confidence intervals of estimates.

[Figure 2 about here]

Looking at estimates from a single cross section, most eye-catching is a substantial difference in poverty levels between the two German regions. In the newly formed East German States, poverty estimates average at substantially higher levels. For example, in year 1993 about 22 percent of the East German population fall below the RPL as opposed to only 13 percent of the population living in the West German states. In fact, the 1993 APL-based head count ratio in East Germany reaches almost 30 percent (West Germany: about 12 percent). Such an East/West poverty divide also exists in poverty gap ratios. Region-specific RPL-based (APL-based) poverty gap ratios differ by about three (two) percentage points. In Section 4, we further scrutinize the East/West divide in head count ratios by means of an Oaxaca-Blinder decomposition.

Comparing estimates over time, Figure 2 suggests an inter-temporal decline in APL-based poverty estimates. Most pronounced is the sharp decline of poverty in the New Federal States between 1993 and 1998. It is interesting to recognize that decreasing APL-based poverty estimates do not always translate into decreases in RPL-based measures. Instead, RPL-based estimates convey a rather inconclusive picture. From the late 1970s onwards, poverty estimates in the Old Federal States first go up, reaching a high point in the late 1980s, decline sharply between 1988 and 1993, before rising again. In the New States, the graphs suggest a slightly declining head count and a slightly increasing poverty gap ratio.

Tests for significance of inter-temporal changes are reported in Table 1. More precisely, Table 1 gives the differences in poverty estimates derived from two consecutive EVS cross sections, $\Delta \hat{I} = \hat{I}_t - \hat{I}_{t-5}$, together with the respective Hall confidence interval derived from the bootstrap samples. So, it is always the differences in point estimates from a recent year to a base year. A positive (negative) sign indicates that the poverty gap ratio between period $t-5$ and t has gone up (down), and a star confirms the change's significance. For example, take the entry "-4.46^*" in column "*West Germany, 1993 % 1988*", row "*absolute*, $\Delta\hat{I}(0)$". It indicates a significant decline in the APL-based head count ratio between 1988 and 1993 in the Old States by 4.46 percentage points.

[Table 1 about here]

We comment on the Old States first. Test statistics corroborate the visual impression from Figure 2. RPL-based head count and poverty gap ratios rise significantly between 1978 and 1988, decline between 1988 and 1993,[8] rise again between 1993 and 1998, and stagnate since then. APL-based figures indicate a robust and significant downward trend both in the incidence and intensity of poverty. Encouragingly, also poverty estimates in the New States decrease, at least in the early years after Reunification. From 1993 to 1998, head count and poverty gap ratios fall significantly. Yet, this trend comes to a quick end. Comparing 1998 and 2003, only one out of four differences is positive, one is negative and two are insignificant.

3.2 Poverty estimates by household-type
We next turn to the question whether results from Section 3.1 equally apply to all household types, and whether poverty levels differ by household type. We start of answering these questions using the same measures as in Figure 2, broken down by the nine household types defined in Section 2.1. Head count ratios are depicted in Figure 3a, poverty gap ratios in Figure 3b. Within each figure, nine graphs are provided, one for each household type. Again solid (dashed) lines refer to the relative (absolute) poverty line. Differences in bar width and color are chosen to offset Hall confidence intervals visually.

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[8] The pronounced decline between 1988 and 1993 is driven by German reunification, leading to many low income households entering the sample.

[Figures 3a and 3b about here]

There are striking differences across household types in the incidence and intensity of poverty. Most vulnerable to poverty are single parent households. As can be seen from Figure 3a, about 22 percent (31 percent) of West German single parents with one child fall below the RPL (APL) in year 1993, around 49 percent (56 percent) in the New States. Point estimates suggest that single parents with two children have the highest poverty risk: RPL-based (APL-based) head count ratios in 1993 are 36 percent (44 percent) in the West and 55 percent (69 percent) in the East. Confidence intervals, however, indicate that standard errors for single parents are particularly high. Consequently, point estimates should be interpreted with care. Also the poverty intensity is particularly high for single parents. As can be seen from Figure 3b, poverty gap ratios for single parents outrange estimates for all other household types by far. In sum, all our figures hint at an extra poverty risk faced by single parents.

Inter-temporal changes in poverty estimates are particularly interesting. Tables 2a to 2i, in analogy to Table 1, complement the graphic exposition with tests for significance. For example, take the entry "0.60^{*}" in Table 3a, column "*1998 % 1993*", row "*relative, $\Delta \hat{I}(1)$*". It is the difference in the RPL-based point estimates poverty gap ratios in 1998 and 1993 in case of "other childless households."

[Tables 2a to 2i about here]

We comment on the Old States first. Here, inter-temporal differences in RPL-based head count and poverty gap ratios for 1978 and 1983 are positive for five out of nine household types, i.e., for other childless households, single parents/couples with one or two children. Positive signs of the differences indicate that the incidence and intensity of poverty has gone up. In all other cases differences are insignificant. On the contrary, for the same period, APL-based differences convey a rather ambiguous picture. Only single parents with one child experience a simultaneous rise in their head count and poverty gap ratio. Poverty gap ratios increase for single parents with two children, and couples with one or two children. On the contrary, poverty levels lower for childless single adults, childless couples and couples with three or more children.

Estimates remain quite stable between 1983 and 1988. Only poverty estimates for single parents with one or two children change significantly and consistently across

indicators, and indicate rising poverty levels. The period from 1988 to 1993 is characterized by a significant decline in poverty levels: 24 out of 36 differences are negative and significantly different from zero. All other differences are insignificant. Between 1993 and 1998, poverty again is on the rise. Particularly childless households, single parents and couples with one child or two children are affected. Between 1998 and 2003, RPL-based poverty indices systematically and significantly decrease for couples with children, and rise for childless couples. All other household types are not affected by any systematic change.

Concerning the New States, household-type specific poverty estimates for 1993 and 1998 differ less than one might have expected. Only for couples with three or more children we find estimates to be significantly lower in 1998 for both poverty lines. APL-based head count and poverty gap ratios decline for other childless households and childless couples. For all other household types, results are ambiguous. Between 1998 and 2003 head count and poverty gap ratios drop systematically and significantly for single parents with three or more children only. Poverty gap ratios increase significantly and consistently across poverty lines for other childless households. For all other household types, a systematic pattern is not apparent.

In conclusion, we find systematic differences in poverty levels across household types. Both the intensity and the incidence of poverty are particularly high for single parent households. Also systematic regional differences are apparent, with poverty levels being substantially higher in the newly formed Federal States. Over time, systematic results are scarce. For the old Federal States, APL-based poverty rates decline, a trend that is particularly robust for childless single adults and couples, and couples with two or more children. For RPL-based estimates, for none of the nine household types an eye-catching trend exists. Comparing New and Old States, a prominent regional divide became apparent, with poverty being particularly pronounced in the New States.

4 Explaining the East/West poverty divide

The Oaxaca-Blinder decomposition builds on two sets of logit regression coefficients. One coefficient set is derived from a pooled sample. I.e., both households resident in the New and in the Old German States enter the regression simultaneously. Hence, estimates contain "mixed" information on the impact of socioeconomic characteristics on poverty risk from a region with long-established markets and institutions (West Germany) and a region in transition (East Germany). The other coefficient set relates to a regression where only Old

State households are included. These regression coefficients reveal the correlation of socioeconomic variables with poverty risk in the Old Federal States.

The full-sample approach seeks to answer the following question: "Given that the correlation between socioeconomic characteristics and poverty was the same in East Germany as it is in Germany as a whole, how much of the East/West poverty divide can be explained by differences in the distributions of socioeconomic characteristics between the two regions?" The restricted-sample approach answers the question: "Given that the correlation between socioeconomic characteristics and poverty was the same in the East as it is in the West, how much of the East/West poverty divide can be explained by differences in the distributions of socioeconomic characteristics between the two regions?"

4.2 Regression and decomposition results

In the logit regressions, we include the following right-hand variables: gender, age, family status, labor force status, and highest occupational degree of the household head, household type, number of income recipients, and number of earners. Table 3 lists the independent regression variables and their items. A sample breakdown provides Table A2 in the Appendix.

[Table 3 about here]

Tables 4a-d summarize the logit-regression results. For each regressor, the marginal effect is reported. Our regression benchmark is a childless couple (unwed) with a single earner; the household head is a male white-collar worker, age 30 to 39, holding an engineering school degree (or equivalent). Compared with the regression benchmark, the poverty risk is higher if the household head is female, divorced, younger, and holds a low educational degree. The poverty risk is also higher if the household head is self-employed, a blue collar worker, unemployed or non-working (e.g., a pensioner). The poverty risk decreases with age of the household head, if the household head is married or widowed, and/or a civil servant.

Concerning the household-level characteristics, the poverty risk decreases in the age of the other households members and in the number of earners. It increases in the number of children. The latter effect is more pronounced for single parents compared with two-parent households, supporting our findings from Section 3. Most of the regression results are robust

for all three EVS cross sections, for both poverty lines, and for both the full-sample and the restricted-sample approach.

[Tables 4a and 4b about here]

The results from the non-linear Oaxaca-Blinder decomposition are summarized in Tables 5a and 5b. Each reported coefficient reveals how much different regional distributions of a specific variable contribute to the East/West poverty divide. In all our calculations, the West German population serves as the reference group and the East German population as the comparison group.[9] As separate contributions from independent variables may be sensitive to the variable ordering, variable ordering is randomized to approximate results over all possible orderings (see Fairlie, 2005, for details). To make the read more convenient, the top rows of the tables repeat poverty rates from Section 3.

[Tables 5a and 5b about here]

The total explanatory contribution of group differences in regressors is given in the row "total explained." The explanatory power of the decomposition is limited, especially for the early years after German reunification. In the full-sample approach and choosing the relative (absolute) poverty threshold, the characteristics effect can only explain 11.9 percent (10.9 percent) of the regional poverty divide. This means that if New States residents had the same characteristics as Old States residents, the discrepancy in poverty rates would be narrowed by a modest 1.5 percentage points. The characteristics effect is even smaller in case of the restricted-sample approach, indicating that the socioeconomic characteristics-poverty nexus has a regional component.

The ongoing transition of the East German command economy into a western-style market economy, however, should alleviate the explanatory power of the decomposition. Although the explanatory power is still low in 1998, it rises substantially in 2003. In case of the full-sample (restricted-sample) approach, the 2003 characteristics effect explains 31.4 (28.1) percent for the poverty divide. Another pattern is also interesting to note: coefficients of the two approaches, the full-sample and the restricted-sample approach, converge over

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[9] The choice of the reference and of the comparison group can change the decomposition results. However, in our decomposition analysis we do not find such effects, and hence refrain from stating results from scenarios where reference and comparison group are reversed. All estimates can be provided by the authors upon request.

time. This is indicative for socioeconomic characteristics start playing similar roles for individual poverty risks in the two parts of Germany.

From the considered set of socioeconomic variables, differences in the labor force status are a key factor for the East-West poverty divide. The share of unemployed household heads in the New Federal States is about twice the share in the Old States. In recent years, an exodus of high-skilled and young East Germans further contributed to this difference. Moreover, a relatively small fraction of civil servants in East Germany, especially in the early years after German reunification, drives the poverty divide. That more East German household heads are female and/or divorced is another driving source. Finally, East/West differences in the age distributions of other household members contribute to the East/West poverty divide. In the opposite direction works the variable education.

Distributional differences in other household-level variables hardly matter. An interesting result, however, pertains to the variable "number of earners". Over the observation period, the associated decomposition coefficient switches from positive to negative. Whereas above-average employment rates of females in the new federal states lowered the poverty risk in the early 1990s, rising unemployment and early retirement dominate in years 1998 and 2003.

Summing up, the decomposition shows that in 1993 the characteristics effect can hardly explain any of the East/West poverty divide. Given the huge shock of reunification, turning the New States economy upside down from a command to a market economy, and numerous firm liquidations, this may not come as a big surprise. While results for year 1998 show a steep decline in poverty rates compared to 1993, the convergence seems to have stopped afterwards and poverty rates have even somewhat increased. Furthermore, now regional differences in the distributions of poverty-relevant characteristics explain almost one third of the East/West poverty divide. Hence, in the first years after reunification higher poverty risks were quasi randomly distributed among the East German population, whereas higher risks are inherent in the distribution of poverty-relevant socioeconomic characteristics in more recent years.[10] This may be due to the well endowed leaving the economic week regions of Eastern Germany and, therefore, the transitory divide is likely to become a persistence or permanent phenomenon.

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[10] See Table A2 for a summary of the inter-temporal changes in the distributions of personal and household characteristics.

5 Conclusion

A major goal of welfare states all over the world, including Germany, is poverty reduction. We quantify head count and poverty gap ratio to assess whether the situation, indeed, improved since 1978 in Germany's Old Federal States. When the partitioning criterion is a relative poverty line (60-percent-of-median equivalent income), our answer is "no:" there is no significant trend of poverty reduction. Our conclusion is different when an inter-temporally constant absolute poverty line serves as the partitioning criterion. Here, our answer is "yes:" poverty declines significantly during the observation period.

A Germany-specific goal is the creation of similar living circumstances across Federal States. Our estimates, however, reveal substantial regional differences in poverty rates. Particularly, New States' head count and income gap ratios exceed Old States' estimates by far. Evidence that poverty rates have converged over time is also limited. A non-linear Oaxaca-Blinder decomposition of poverty rates for the two parts of Germany indicates that the poverty divide, first of all, is owed to macroeconomic differences between the two regions. Regional differences in the distributions of socioeconomic characteristics play a minor role. In recent years, however, differences in poverty-relevant characteristics contribute significant to the poverty divide.

Across household types, poverty rates of single parents are the highest. Little improvement has been made as to that, although the basic problems of single parents are well understood. They rely on the earnings of a single person, typically a low-skilled part time working woman, so that employment income is typically below and unemployment risk above average. Moreover, child-rearing requires a substantial amount of parental time and affordable childcare facilities are scarce. Hence, parents, and single parents in particular, face additional opportunity costs upon deciding to work, lowering their labor market participation rates.[11]

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[11] Francesconi and van der Klaauw (2007) or Tekin (2007), for example, investigate policies to break this vicious circle.

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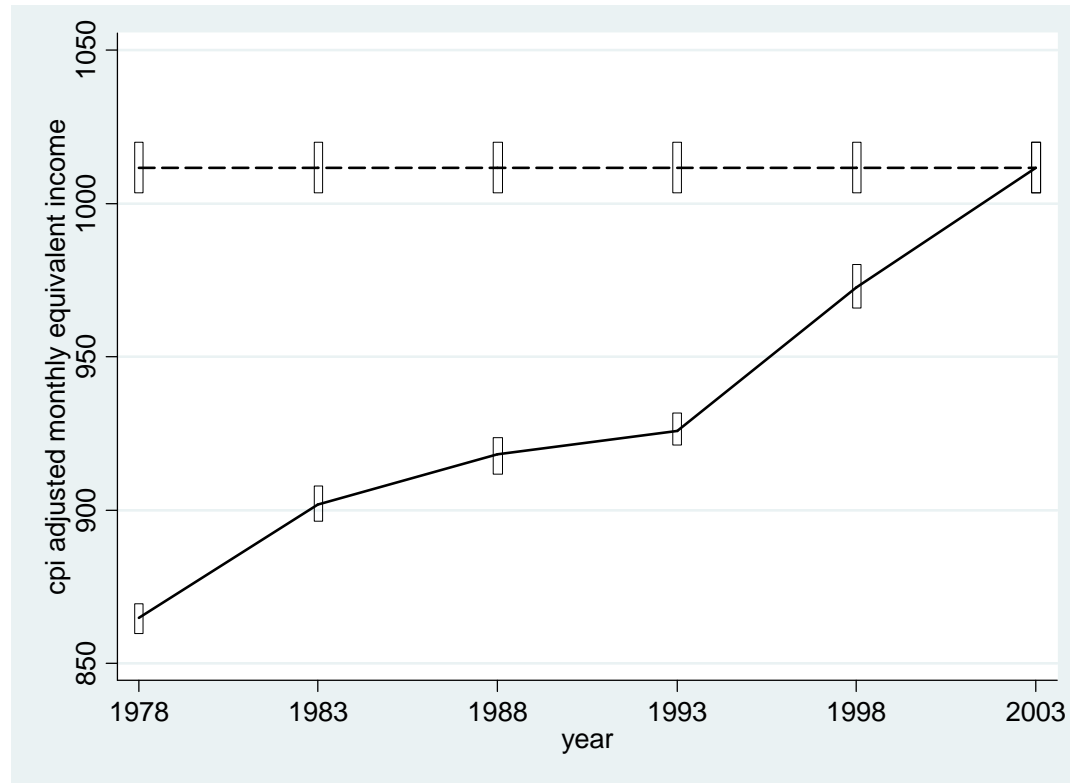
Figure 1. Income levels associated with poverty lines.
Data. German Sample Survey of Income and Expenditure.
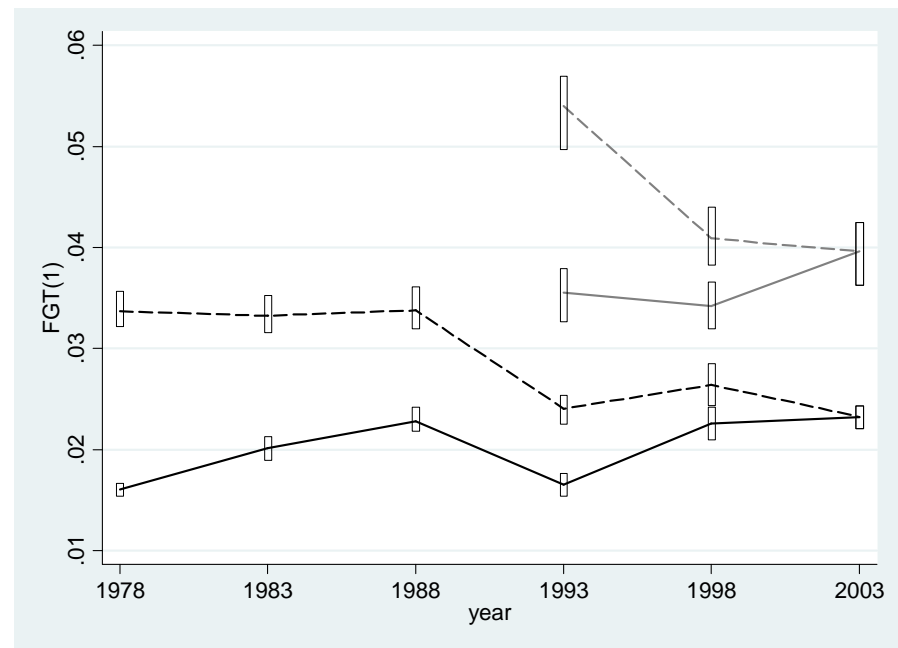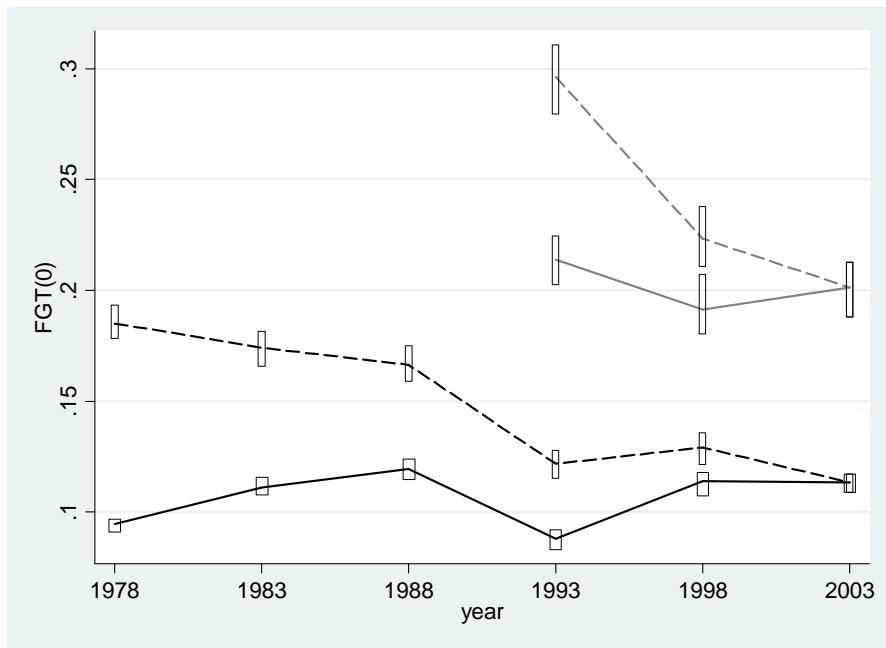
Figure 2. Incidence and intensity of poverty in the overall population.
Data. German Sample Survey of Income and Expenditure.
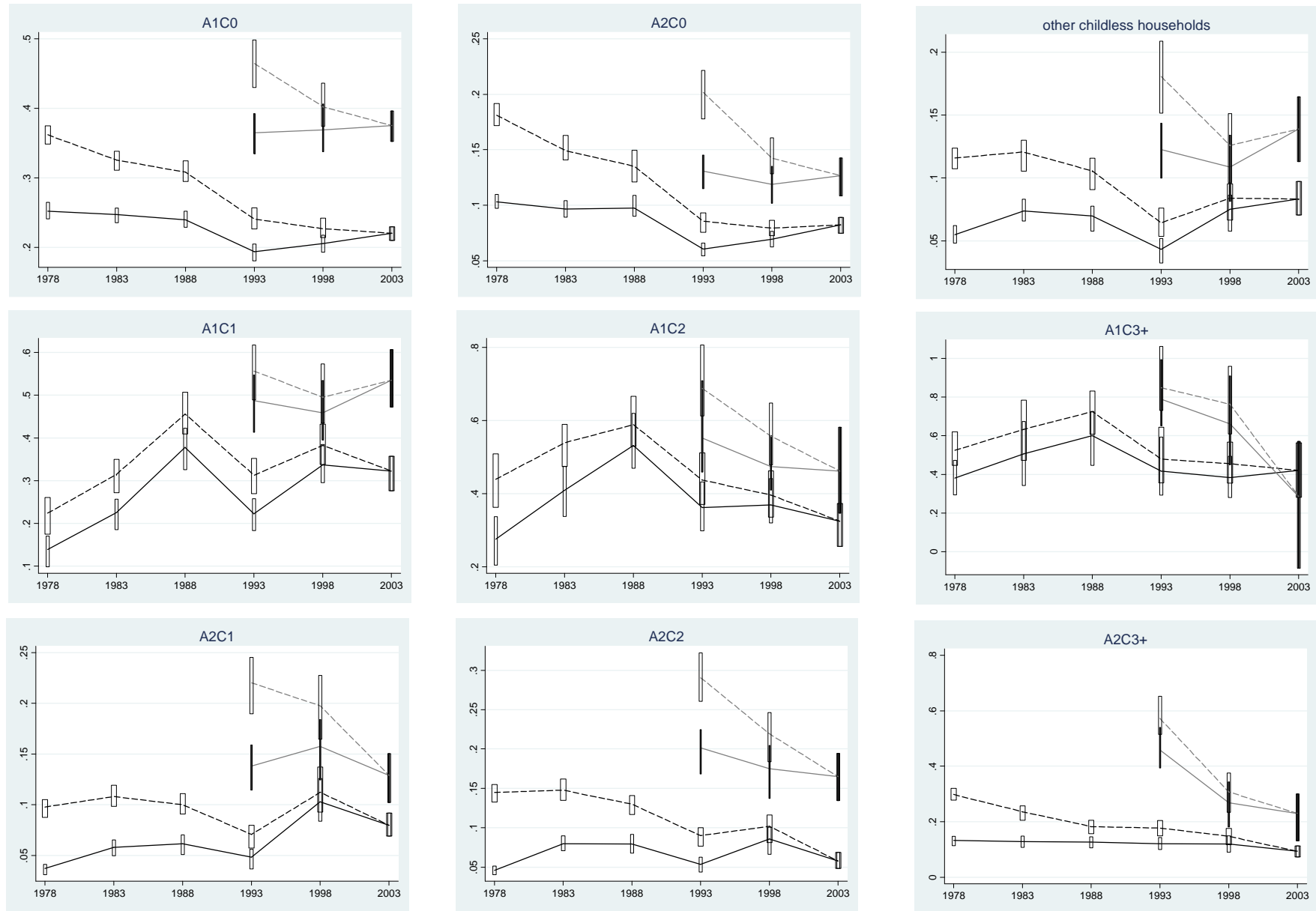
Figure 3a. Head count ratios by household type.
Data. German Sample Survey of Income and Expenditure.
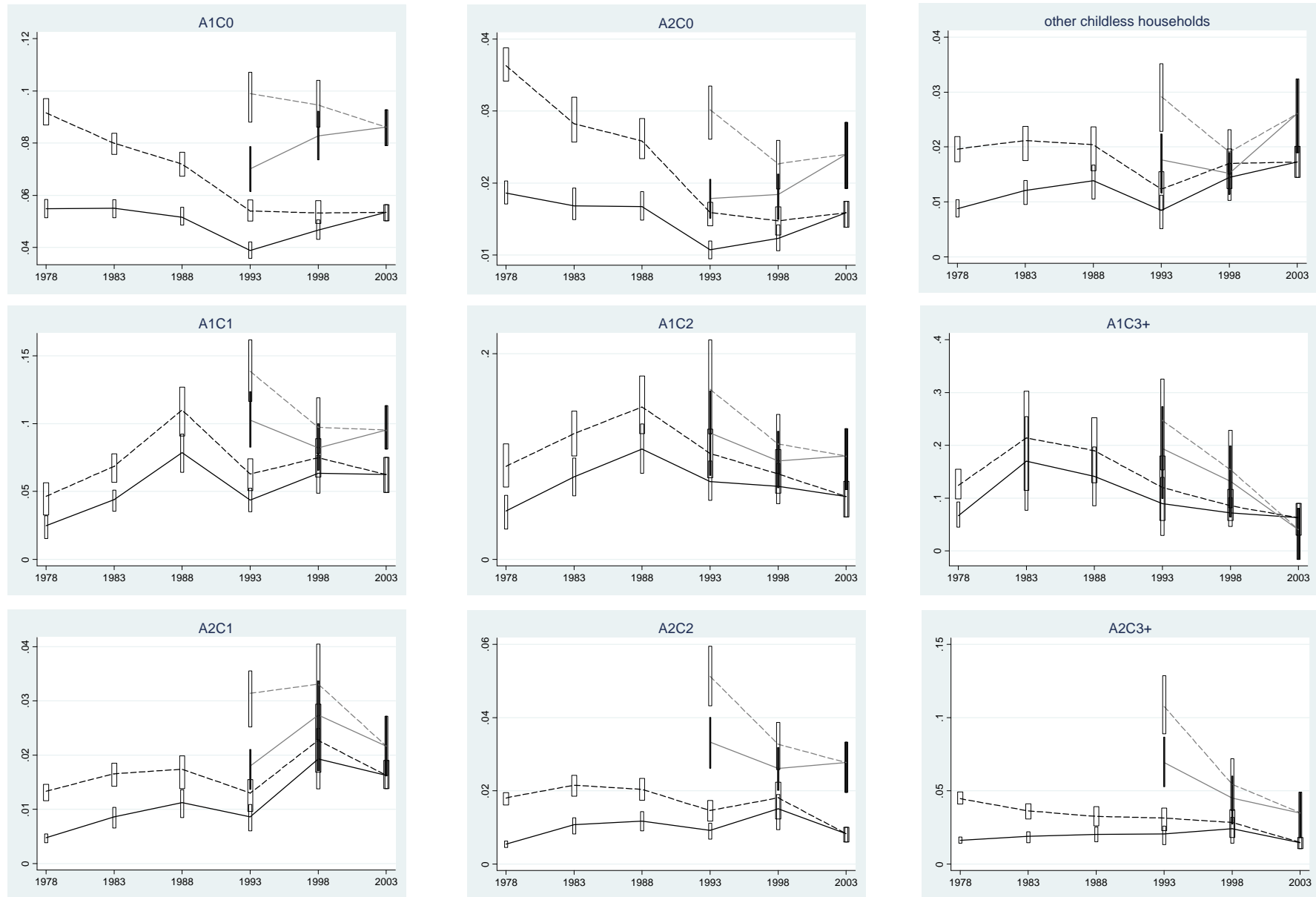
Figure 3b. Poverty gap ratios by household type.
Data. German Sample Survey of Income and Expenditure.

Table 1. Inter-temporal changes in poverty, all households

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	1.66*	0.85*	-3.16*	2.60*	-0.05	-2.25*	1.00
	(95% CI)	(1.24; 2.24)	(0.10; 1.36)	(-3.90; -2.49)	(1.91; 3.18)	(-0.62; 0.72)	(-3.95; -0.35)	(-0.98; 2.95)
	$\Delta\hat{I}(1)$	0.41*	0.27*	-0.63*	0.60*	0.07	-0.13	0.54*
	(95% CI)	(0.27; 0.56)	(0.12; 0.44)	(-0.80; -0.48)	(0.43; 0.78)	(-0.12; 0.22)	(-0.41; 0.30)	(0.10; 0.92)
absolute	$\Delta\hat{I}(0)$	-1.10*	-0.76	-4.46*	0.73	-1.57*	-7.30*	-2.20*
	(95% CI)	(-1.76; -0.46)	(-1.45; 0.03)	(-5.51; -3.59)	(-0.07; 1.39)	(-2.29; -0.71)	(-8.65; -5.48)	(-3.79; -0.85)
	$\Delta\hat{I}(1)$	-0.04	0.05	-0.97*	0.24*	-0.32*	-1.31*	-0.12
	(95% CI)	(-0.24; 0.12)	(-0.17; 0.27)	(-1.24; -0.76)	(0.03; 0.42)	(-0.54; -0.09)	(-1.63; -0.74)	(-0.58; 0.21)

Note. $\Delta\hat{I}(.)$ denotes the observed change in poverty indices between periods t and t-5. CI denotes Hall's confidence interval. * denotes that the change is significantly different from zero at the 5% level.
Source. German Sample Survey of Income and Expenditures 1978-2003. Own calculations.

Table 2a. Inter-temporal changes in poverty, other childless households

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	1.90*	-0.40	-2.65*	3.18*	0.83	-1.39	3.02
	(95% CI)	(0.59; 2.98)	(-1.67; 1.07)	(-4.03; -1.12)	(1.57; 4.38)	(-0.60; 3.46)	(-5.01; 2.35)	(-0.80; 7.71)
	$\Delta\hat{I}(1)$	0.33*	0.18	-0.54	0.60*	0.28	-0.25	1.09*
	(95% CI)	(0.04;0.58)	(-0.22; 0.58)	(-0.96; 0.01)	(0.08; 0.97)	(-0.15; 0.82)	(-0.91; 0.53)	(0.32; 1.96)
absolute	$\Delta\hat{I}(0)$	0.47	-1.51	-4.13*	1.97*	-0.06	-5.48*	1.30
	(95% CI)	(-1.17;1.77)	(-3.16; 0.18)	(-5.80; -2.28)	(0.19; 3.22)	(-1.65; 2.49)	(-8.83; -1.38)	(-2.20; 6.42)
	$\Delta\hat{I}(1)$	0.15	-0.08	-0.81*	0.47	0.03	-1.01*	0.70*
	(95% CI)	(-0.24; 0.49)	(-0.55; 0.45)	(-1.34; -0.24)	(-0.14; 0.84)	(-0.42; 0.62)	(-1.81; -0.17)	(0.00; 1.54)

Note and source. See Table 1.

Table 2b. Inter-temporal changes in poverty, childless single adult

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	-0.48	-0.79	-4.58*	1.22	1.45	0.43	0.63
	(95% CI)	(-2.01; 1.20)	(-2.38; 0.90)	(-6.41;-3.12)	(-0.45; 2.72)	(-0.21;2.97)	(-3.57; 4.93)	(-3.71; 4.20)
	$\Delta\hat{I}(1)$	0.01	-0.35	-1.27*	0.78*	0.68*	1.26*	0.34
	(95% CI)	(-0.49; 0.57)	(-0.87; 0.18)	(-1.72; -0.83)	(0.31; 1.24)	(0.19; 1.16)	(0.18; 2.44)	(-0.78; 1.37)
absolute	$\Delta\hat{I}(0)$	-3.63*	-1.73	-6.75*	-1.37	-0.68	-6.24*	-2.70
	(95% CI)	(-5.60; -2.02)	(-3.57; 0.36)	(-8.67; -5.05)	(-3.39; 0.15)	(-2.58; 0.86)	(-10.95; -1.71)	(-6.50; 0.96)
	$\Delta\hat{I}(1)$	-1.16*	-0.80*	-1.79*	-0.08	0.02	-0.44	-0.84
	(95% CI)	(-1.82; -0.56)	(-1.38; -0.27)	(-2.33; -1.26)	(-0.66; 0.44)	(-0.49; 0.57)	(-1.57; 1.02)	(-1.94; 0.34)

Note and source. See Table 1.

Table 2c. Inter-temporal changes in poverty, single parent with one child

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	8.58*	15.27*	-15.55*	11.47*	-1.44	-2.91	7.64
	(95% CI)	(3.38; 13.73)	(9.97; 21.02)	(-22.15; -8.39)	(4.92; 17.86)	(-8.15; 4.05)	(-12.83; 7.38)	(-3.09; 19.10)
	$\Delta\hat{I}(1)$	1.92*	3.47*	-3.50*	1.97*	-0.10	-2.03	1.32
	(95% CI)	(0.55; 3.25)	(1.93; 5.19)	(-5.37; -1.83)	(0.28; 3.70)	(-2.34; 1.49)	(-4.53; 0.89)	(-1.27; 4.08)
absolute	$\Delta\hat{I}(0)$	9.09*	14.14*	-14.33*	6.98*	-6.01*	-6.17	4.00
	(95% CI)	(0.00; 14.10)	(8.94; 21.77)	(-21.05; -7.62)	(0.91; 13.99)	(-12.78; -0.17)	(-15.07; 4.47)	(-6.75; 14.75)
	$\Delta\hat{I}(1)$	2.21*	4.15*	-4.72*	1.20	-1.24	-4.12*	-0.20
	(95% CI)	(0.43; 3.98)	(2.47; 5.82)	(-6.72; -2.38)	(-0.50; 3.11)	(-3.16; 0.39)	(-6.94; -0.91)	(-2.79; 2.62)

Note and source. See Table 1.

Table 2d. Inter-temporal changes in poverty, single parent with two children

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	13.41*	12.31*	-17.04*	0.77	-4.46	-7.85	-1.21
	(95% CI)	(4.16; 20.18)	(0.00; 22.67)	(-29.21; -7.97)	(-8.20; 8.63)	(-16.14; 1.79)	(-24.35; 6.27)	(-17.59; 12.48)
	$\Delta\hat{I}(1)$	3.31*	2.70*	-3.15	-0.46	-0.99	-2.72	0.50
	(95% CI)	(0.54; 5.42)	(0.00; 5.50)	(-6.37; 0.40)	(-3.58; 1.77)	(-3.93; 0.77)	(-8.06; 2.70)	(-4.40; 4.53)
absolute	$\Delta\hat{I}(0)$	10.00	4.98	-15.17*	-4.11	-7.13*	-13.08*	-9.54
	(95% CI)	(-0.88; 17.81)	(-2.94; 16.09)	(-25.55; -5.06)	(-14.54; 3.53)	(-18.66; -0.26)	(-25.78; -0.36)	(-26.46; 4.09)
	$\Delta\hat{I}(1)$	3.18*	2.61	-4.53*	-2.00	-2.18*	-5.31	-1.16
	(95% CI)	(0.09; 6.02)	(-0.55; 6.38)	(-8.77; -0.54)	(-5.49; 0.16)	(-5.14; -0.34)	(-10.80; 0.54)	(-6.48; 2.98)

Note and source. See Table 1.

Table 2e. Inter-temporal changes in poverty, single parent with three or more children

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	12.46	9.50	-18.37	-3.23	3.57	-12.85	-37.54*
	(95% CI)	(-4.87; 31.11)	(-13.20; 30.44)	(-37.69; 4.00)	(-21.51; 16.52)	(-14.26; 19.79)	(-47.37; 14.00)	(-91.30; -4.00)
	$\Delta\hat{I}(1)$	10.29	-2.90	-5.13	-1.75	-0.92	-6.19	-9.16*
	(95% CI)	(-0.35; 19.40)	(-13.51; 21.02)	(-12.45; 2.70)	(-8.70; 5.36)	(-4.52; 2.59)	(-16.17; 3.78)	(-16.44; -1.27)
absolute	$\Delta\hat{I}(0)$	10.85	9.16	-24.49*	-2.41	-3.54	-8.56	-47.73*
	(95% CI)	(-8.11; 27.18)	(-11.37; 30.39)	(-42.21;-3.17)	(-19.95; 16.64)	(-22.47; 10.73)	(-33.22; 15.09)	(-92.25; -10.09)
	$\Delta\hat{I}(1)$	8.99	-2.41	-6.98	-3.45	-2.27	-9.33	-11.34*
	(95% CI)	(-1.74; 18.86)	(-13.94; 10.75)	(-14.94; 2.02)	(-10.65; 4.39)	(-5.77; 1.49)	(-20.03; 0.19)	(-19.09; -2.93)

Note and source. See Table 1.

Table 2f. Inter-temporal changes in poverty, two adults without a child

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	-0.63	0.06	-3.69*	0.90*	1.31*	-1.20	0.78
	(95% CI)	(-1.53; 0.51)	(-1.10; 1.36)	(-4.98; -2.61)	(0.15; 1.84)	(0.12; 2.37)	(-3.85; 1.36)	(-1.45; 2.79)
	$\Delta\hat{I}(1)$	-0.18	-0.01	-0.60*	0.16	0.36*	0.06	0.56
	(95% CI)	(-0.49; 0.11)	(-0.33; 0.37)	(-0.89; -0.36)	(-0.05; 0.40)	(0.08; 0.59)	(-0.40; 0.47)	(-0.14; 1.11)
absolute	$\Delta\hat{I}(0)$	-3.19*	-1.41	-4.95*	-0.62	0.31	-5.95*	-1.58
	(95% CI)	(-4.24; -1.84)	(-2.60; 0.00)	(-6.62; -3.57)	(-1.59; 0.49)	(-0.94; 1.48)	(-8.79; -2.55)	(-3.90; 0.53)
	$\Delta\hat{I}(1)$	-0.81*	-0.24	-0.99*	-0.12	0.11	-0.75*	0.13
	(95% CI)	(-1.15; -0.48)	(-0.60; 0.17)	(-1.41; -0.72)	(-0.34; 0.15)	(-0.14; 0.36)	(-1.33; -0.19)	(-0.60; 0.70)

Note and source. See Table 1.

Table 2g. Inter-temporal changes in poverty, two adults with one child

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	2.05*	0.37	-1.31	5.43*	-2.30	1.91	-2.85
	(95% CI)	(1.12; 3.17)	(-0.86; 1.61)	(-2.99; 0.12)	(3.19; 7.92)	(-4.47; 0.05)	(-1.08; 5.09)	(-7.47; 1.31)
	$\Delta\hat{I}(1)$	0.39*	0.26	-0.26	1.07*	-0.31	0.95*	-0.57
	(95% CI)	(0.20; 0.60)	(-0.08; 0.52)	(0.12; -0.62)	(0.45; 1.70)	(-0.88; 0.29)	(0.00; 1.70)	(-1.52; 0.65)
absolute	$\Delta\hat{I}(0)$	1.04	-0.82	-2.92*	4.16*	-3.25*	-2.27	-6.86*
	(95% CI)	(-0.09; 2.51)	(-2.12; 0.66)	(-4.79; -1.56)	(1.70; 6.42)	(-5.17; -0.87)	(-5.52; 1.69)	(-11.52; -2.22)
	$\Delta\hat{I}(1)$	0.32*	0.09	-0.44	0.97*	-0.65*	0.17	-1.14
	(95% CI)	(0.07; 0.64)	(-0.34; 0.40)	(-0.87; 0.02)	(0.32; 1.69)	(-1.31; -0.06)	(-0.82; 1.09)	(-2.14; 0.12)

Note and source. See Table 1.

Table 2h. Inter-temporal changes in poverty, two adults with two children

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	3.37*	-0.03	-2.58*	3.23*	-2.82*	-2.63	-1.02
	(95% CI)	(2.22; 4.45)	(-1.46;1.40)	(-4.07;-1.21)	(0.71; 4.94)	(-4.48; -0.42)	(-7.24; 1.38)	(-5.69; 3.22)
	$\Delta\hat{I}(1)$	0.53*	0.10	-0.25	0.58*	-0.68*	-0.72	0.16
	(95% CI)	(0.29; 0.72)	(-0.17;0.37)	(-0.63; 0.03)	(0.07; 1.11)	(-1.17; -0.13)	(-1.43; 0.26)	(-0.84; 0.98)
absolute	$\Delta\hat{I}(0)$	0.30	-1.78*	-4.01*	1.20	-4.43*	-7.15*	-5.45*
	(95% CI)	(-1.21; 2.13)	(-3.59;-0.46)	(-5.68; -2.56)	(-1.10; 3.08)	(-6.32; -2.26)	(-12.33; -2.64)	(-9.16; -0.52)
	$\Delta\hat{I}(1)$	0.35*	-0.12	-0.58*	0.35	-0.98*	-1.86*	-0.50
	(95% CI)	(0.04; 0.62)	(-0.48;0.21)	(-1.04; -0.23)	(-0.29; 0.89)	(-1.54; -0.39)	(-2.73; -0.67)	(-1.42; 0.27)

Note and source. See Table 1.

Table 2i. Inter-temporal changes in poverty, two adults with three or more children

poverty line	poverty index	Old States					New States	
		1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
relative	$\Delta\hat{I}(0)$	-0.41	-0.20	-0.56	-0.14	-2.65	-18.99*	-3.81
	(95% CI)	(-3.08; 2.18)	(-3.48; 2.89)	(-3.66; 2.98)	(-3.56;3.73)	(-6.67; 1.34)	(-30.29; -9.41)	(-17.23; 5.81)
	$\Delta\hat{I}(1)$	0.28	0.14	0.02	0.37	-0.95	-2.42*	-1.01
	(95% CI)	(-0.22; 0.66)	(-0.62; 0.92)	(-0.78; 0.83)	(-0.57; 1.33)	(-1.76; 0.19)	(-4.77; -0.67)	(-3.53; 1.05)
absolute	$\Delta\hat{I}(0)$	-6.18*	-5.37*	-0.50	-3.00	-5.44*	-26.49*	-7.74
	(95% CI)	(-9.22; -3.48)	(-9.11; -0.44)	(-4.05; 3.01)	(-7.67; 0.58)	(-9.01; -1.50)	(-36.48; -17.41)	(-19.24; 2.40)
	$\Delta\hat{I}(1)$	-0.85*	-0.36	-0.12*	-0.31	-1.37*	-5.31*	-1.95
	(95% CI)	(-1.56; -0.25)	(-1.40; 0.57)	(-1.09; -1.56)	(-1.43; 0.77)	(-2.28; -0.19)	(-8.14; -3.34)	(-4.43; 0.19)

Note and source. See Table 1.

Table 3. Socioeconomic characteristics

Characteristics of the household head		Type of variable	Reference category
Gender	male; female	dummy	male
Age cohort	age cohort (in years: 0-4; 5-9; 10-14; 15-19; 20-29; 30-39; 40-49; 50-59; 60-69; 70 and above)	dummy variables 1: age cohort applies 0: else	age 30-39 years
Labor force status	self-employed farmer; other self employed, civil servant; white-collar worker; blue-collar worker; unemployed; non-working	dummy variables 1: status applies 0: else	white collar
Highest occupational degree	university; university of applied sciences; equivalent to engineering school; apprenticeship etc.; no occupational degree or still in job training	dummy variables 1: status applies 0: else	equivalent to engineering school
Family status	unwed; married; widowed; divorced	dummy variables 1: status applies 0: else	unwed
Household-level characteristics			
Family type	single adults with 0, 1, 2, 3+ children; two adults with 0, 1, 2, 3+ children; other	dummy variables 1: type applies 0: else	childless couple
Number of earners	0-5	dummy variables 1: number applies 0: else	
Number of other household members belonging to a specific age cohort	cohorts are defined as above	one covariate per age cohort	one-member household

Table 4a. Marginal effects of logistic regressions, full-sample approach, relative poverty line

	1993			1998			2003		
	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|
HHH: female	0.010	0.000	0.000	0.025	0.000	0.000	0.033	0.000	0.000
HHH: married	-0.005	0.000	0.000	-0.007	0.000	0.000	-0.028	0.000	0.000
HHH: widowed	-0.013	0.000	0.000	-0.028	0.000	0.000	-0.043	0.000	0.000
HHH: divorced	0.003	0.000	0.000	0.005	0.000	0.000	0.014	0.000	0.000
HHH: self-employed farmer	0.215	0.001	0.000	0.182	0.001	0.000	0.509	0.001	0.000
HHH is self-employed	0.024	0.000	0.000	0.028	0.000	0.000	0.022	0.000	0.000
HHH: civil servant	-0.019	0.000	0.000	-0.033	0.000	0.000	-0.050	0.000	0.000
HHH: blue-collar worker	0.041	0.000	0.000	0.042	0.000	0.000	0.059	0.000	0.000
HHH: unemployed	0.141	0.000	0.000	0.154	0.001	0.000	0.274	0.001	0.000
HHH: non-working (pensioner, etc.)	0.039	0.000	0.000	0.073	0.000	0.000	0.108	0.000	0.000
HHH: university	-0.006	0.000	0.000	-0.011	0.000	0.000	-0.025	0.000	0.000
HHH: univ. of applied sciences	0.001	0.000	0.000	-0.011	0.000	0.000	-0.028	0.000	0.000
HHH: apprenticeship	0.008	0.000	0.000	0.019	0.000	0.000	0.010	0.000	0.000
HHH: no degree	0.033	0.000	0.000	0.095	0.000	0.000	0.109	0.000	0.000
HHH: 20-29 years	0.008	0.000	0.000	0.032	0.000	0.000	0.035	0.000	0.000
HHH: 40-49 years	-0.004	0.000	0.000	-0.007	0.000	0.000	-0.012	0.000	0.000
HHH: 50-59 years	-0.007	0.000	0.000	-0.011	0.000	0.000	-0.027	0.000	0.000
HHH: 60-69 years	-0.011	0.000	0.000	-0.018	0.000	0.000	-0.041	0.000	0.000
HHH: 70+ years	-0.007	0.000	0.000	-0.019	0.000	0.000	-0.050	0.000	0.000
Number of other HHM age 0-4 years	0.004	0.000	0.000	0.009	0.000	0.000	0.010	0.000	0.000
Number of other HHM age 5-9 years	0.006	0.000	0.000	0.002	0.000	0.000	-0.004	0.000	0.000
Number of other HHM age 10-14 years	0.009	0.000	0.000	0.015	0.000	0.000	0.013	0.000	0.000
Number of other HHM age 15-19 years	0.018	0.000	0.000	0.027	0.000	0.000	0.041	0.000	0.000
Number of other HHM age 20-29 years	0.004	0.000	0.000	0.013	0.000	0.000	0.026	0.000	0.000
Number of other HHM age 30-39 years	-0.005	0.000	0.000	-0.006	0.000	0.000	0.013	0.000	0.000
Number of other HHM age 40-49 years	-0.007	0.000	0.000	-0.004	0.000	0.000	0.012	0.000	0.000
Number of other HHM age 50-59 years	-0.008	0.000	0.000	-0.012	0.000	0.000	0.016	0.000	0.000
Number of other HHM age 60-69 years	-0.010	0.000	0.000	-0.036	0.000	0.000	-0.016	0.000	0.000
Number of other HHM age 70+ years	-0.008	0.000	0.000	-0.029	0.000	0.000	0.000	0.000	0.187
Single, childless	-0.001	0.000	0.000	0.008	0.000	0.000	-0.013	0.000	0.000
Single parent, 1 child	0.012	0.000	0.000	0.007	0.000	0.000	0.012	0.000	0.000
Single parent, 2 children	0.004	0.000	0.000	0.028	0.000	0.000	0.033	0.000	0.000
Single parent, 3+ children	0.008	0.000	0.000	0.008	0.000	0.000	0.011	0.000	0.000
Couple, 1 child	-0.006	0.000	0.000	-0.011	0.000	0.000	-0.002	0.000	0.000
Couple, 2 children	0.007	0.000	0.000	0.025	0.000	0.000	0.004	0.000	0.000
Couple, 3+ children	0.011	0.000	0.000	0.019	0.000	0.000	-0.009	0.000	0.000
Other household type	0.008	0.000	0.000	0.009	0.000	0.000	-0.005	0.000	0.000
Earners: 0	0.076	0.000	0.000	0.077	0.000	0.000	0.106	0.000	0.000
Earners: 2	-0.014	0.000	0.000	-0.031	0.000	0.000	-0.052	0.000	0.000
Earners: 3	-0.018	0.000	0.000	-0.038	0.000	0.000	-0.057	0.000	0.000
Earners: 4+	-0.020	0.000	0.000	-0.040	0.000	0.000	-0.067	0.000	0.000
Prob>chi2	0.000			0.000			0.000		
Log likelihood	-21,376,726			-22,922,873			-22,720,321		
Pseudo R2	0.271			0.251			0.270		

Note. Dependent variable: dummy poor. HHH denotes household head; HHM denotes household members.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 4b. Marginal effects of logistic regressions, full-sample approach, absolute poverty line

	1993			1998			2003		
	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|
HHH: female	0.017	0.000	0.000	0.030	0.000	0.000	0.033	0.000	0.000
HHH: married	-0.003	0.000	0.000	-0.006	0.000	0.000	-0.028	0.000	0.000
HHH: widowed	-0.019	0.000	0.000	-0.032	0.000	0.000	-0.043	0.000	0.000
HHH: divorced	0.005	0.000	0.000	0.004	0.000	0.000	0.014	0.000	0.000
HHH: self-employed farmer	0.313	0.001	0.000	0.212	0.001	0.000	0.509	0.001	0.000
HHH is self-employed	0.022	0.000	0.000	0.026	0.000	0.000	0.022	0.000	0.000
HHH: civil servant	-0.030	0.000	0.000	-0.040	0.000	0.000	-0.050	0.000	0.000
HHH: blue-collar worker	0.064	0.000	0.000	0.047	0.000	0.000	0.059	0.000	0.000
HHH: unemployed	0.177	0.000	0.000	0.191	0.001	0.000	0.274	0.001	0.000
HHH: non-working (pensioner, etc.)	0.057	0.000	0.000	0.089	0.000	0.000	0.108	0.000	0.000
HHH: university	-0.009	0.000	0.000	-0.015	0.000	0.000	-0.025	0.000	0.000
HHH: univ. of applied sciences	0.003	0.000	0.000	-0.011	0.000	0.000	-0.028	0.000	0.000
HHH: apprenticeship	0.011	0.000	0.000	0.022	0.000	0.000	0.010	0.000	0.000
HHH: no dregree	0.048	0.000	0.000	0.102	0.000	0.000	0.109	0.000	0.000
HHH: 20-29 years	0.014	0.000	0.000	0.034	0.000	0.000	0.035	0.000	0.000
HHH: 40-49 years	-0.004	0.000	0.000	-0.009	0.000	0.000	-0.012	0.000	0.000
HHH: 50-59 years	-0.013	0.000	0.000	-0.016	0.000	0.000	-0.027	0.000	0.000
HHH: 60-69 years	-0.019	0.000	0.000	-0.021	0.000	0.000	-0.041	0.000	0.000
HHH: 70+ years	-0.014	0.000	0.000	-0.022	0.000	0.000	-0.050	0.000	0.000
Number of other HHM age 0-4 years	0.003	0.000	0.000	0.011	0.000	0.000	0.010	0.000	0.000
Number of other HHM age 5-9 years	0.008	0.000	0.000	0.006	0.000	0.000	-0.004	0.000	0.000
Number of other HHM age 10-14 years	0.013	0.000	0.000	0.020	0.000	0.000	0.013	0.000	0.000
Number of other HHM age 15-19 years	0.025	0.000	0.000	0.031	0.000	0.000	0.041	0.000	0.000
Number of other HHM age 20-29 years	0.006	0.000	0.000	0.016	0.000	0.000	0.026	0.000	0.000
Number of other HHM age 30-39 years	-0.011	0.000	0.000	-0.006	0.000	0.000	0.013	0.000	0.000
Number of other HHM age 40-49 years	-0.018	0.000	0.000	-0.005	0.000	0.000	0.012	0.000	0.000
Number of other HHM age 50-59 years	-0.012	0.000	0.000	-0.016	0.000	0.000	0.016	0.000	0.000
Number of other HHM age 60-69 years	-0.014	0.000	0.000	-0.040	0.000	0.000	-0.016	0.000	0.000
Number of other HHM age 70+ years	-0.013	0.000	0.000	-0.031	0.000	0.000	0.000	0.000	0.187
Single, childless	0.004	0.000	0.000	0.009	0.000	0.000	-0.013	0.000	0.000
Single parent, 1 child	0.017	0.000	0.000	0.010	0.000	0.000	0.012	0.000	0.000
Single parent, 2 children	0.015	0.000	0.000	0.040	0.000	0.000	0.033	0.000	0.000
Single parent, 3+ children	0.027	0.000	0.000	0.011	0.000	0.000	0.011	0.000	0.000
Couple, 1 child	-0.009	0.000	0.000	-0.007	0.000	0.000	-0.002	0.000	0.000
Couple, 2 children	0.020	0.000	0.000	0.026	0.000	0.000	0.004	0.000	0.000
Couple, 3+ children	0.030	0.000	0.000	0.021	0.000	0.000	-0.009	0.000	0.000
Other household type	0.026	0.000	0.000	0.009	0.000	0.000	-0.005	0.000	0.000
Earners: 0	0.110	0.000	0.000	0.078	0.000	0.000	0.106	0.000	0.000
Earners: 2	-0.022	0.000	0.000	-0.034	0.000	0.000	-0.052	0.000	0.000
Earners: 3	-0.030	0.000	0.000	-0.044	0.000	0.000	-0.057	0.000	0.000
Earners: 4+	-0.031	0.000	0.000	-0.046	0.000	0.000	-0.067	0.000	0.000
Prob>chi2	0.000			0.000			0.000		
Log likelihood	-26,635,793			-25,065,356			-22,720,321		
Pseudo R2	0.259			0.247			0.270		

Note. Dependent variable: dummy poor. HHH denotes household head; HHM denotes household members.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 4c. Marginal effects of logistic regressions, restricted-sample approach, relative poverty line

	1993			1998			2003		
	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|
HHH: female	0.004	0.000	0.000	0.021	0.000	0.000	0.019	0.000	0.000
HHH: married	-0.003	0.000	0.000	-0.011	0.000	0.000	-0.022	0.000	0.000
HHH: widowed	-0.007	0.000	0.000	-0.024	0.000	0.000	-0.026	0.000	0.000
HHH: divorced	0.001	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000
HHH: self-employed farmer	0.240	0.001	0.000	0.218	0.001	0.000	0.488	0.001	0.000
HHH is self-employed	0.015	0.000	0.000	0.034	0.000	0.000	0.023	0.000	0.000
HHH: civil servant	-0.011	0.000	0.000	-0.029	0.000	0.000	-0.042	0.000	0.000
HHH: blue-collar worker	0.016	0.000	0.000	-0.036	0.000	0.000	0.041	0.000	0.000
HHH: unemployed	0.086	0.000	0.000	0.184	0.001	0.000	0.263	0.001	0.000
HHH: non-working (pensioner, etc.)	0.024	0.000	0.000	0.085	0.000	0.000	0.103	0.000	0.000
HHH: university	-0.004	0.000	0.000	-0.009	0.000	0.000	-0.013	0.000	0.000
HHH: univ. of applied sciences	-0.006	0.000	0.000	-0.013	0.000	0.000	-0.025	0.000	0.000
HHH: apprenticeship	0.004	0.000	0.000	0.019	0.000	0.000	0.010	0.000	0.000
HHH: no degree	0.032	0.000	0.000	0.109	0.000	0.000	0.108	0.000	0.000
HHH: 20-29 years	0.004	0.000	0.000	0.029	0.000	0.000	0.027	0.000	0.000
HHH: 40-49 years	-0.002	0.000	0.000	-0.009	0.000	0.000	-0.010	0.000	0.000
HHH: 50-59 years	-0.004	0.000	0.000	-0.014	0.000	0.000	-0.027	0.000	0.000
HHH: 60-69 years	-0.008	0.000	0.000	-0.020	0.000	0.000	-0.038	0.000	0.000
HHH: 70+ years	-0.006	0.000	0.000	-0.022	0.000	0.000	-0.043	0.000	0.000
Number of other HHM age 0-4 years	0.002	0.000	0.000	0.012	0.000	0.000	0.009	0.000	0.000
Number of other HHM age 5-9 years	0.003	0.000	0.000	0.003	0.000	0.000	0.002	0.000	0.000
Number of other HHM age 10-14 years	0.006	0.000	0.000	0.017	0.000	0.000	0.011	0.000	0.000
Number of other HHM age 15-19 years	0.009	0.000	0.000	0.024	0.000	0.000	0.036	0.000	0.000
Number of other HHM age 20-29 years	0.005	0.000	0.000	0.014	0.000	0.000	0.027	0.000	0.000
Number of other HHM age 30-39 years	0.001	0.000	0.000	-0.005	0.000	0.000	0.010	0.000	0.000
Number of other HHM age 40-49 years	-0.001	0.000	0.000	-0.001	0.000	0.000	0.009	0.000	0.000
Number of other HHM age 50-59 years	-0.002	0.000	0.000	-0.014	0.000	0.000	0.012	0.000	0.000
Number of other HHM age 60-69 years	-0.003	0.000	0.000	-0.028	0.000	0.000	-0.001	0.000	0.000
Number of other HHM age 70+ years	0.001	0.000	0.000	-0.024	0.000	0.000	0.011	0.000	0.000
Single, childless	-0.001	0.000	0.000	0.008	0.000	0.000	-0.010	0.000	0.000
Single parent, 1 child	0.015	0.000	0.000	0.002	0.000	0.000	0.015	0.000	0.000
Single parent, 2 children	0.007	0.000	0.000	0.025	0.000	0.000	0.038	0.000	0.000
Single parent, 3+ children	0.017	0.000	0.000	0.003	0.000	0.000	0.019	0.000	0.000
Couple, 1 child	-0.000	0.000	0.000	-0.014	0.000	0.000	0.021	0.000	0.000
Couple, 2 children	0.005	0.000	0.000	0.022	0.000	0.000	0.009	0.000	0.000
Couple, 3+ children	0.005	0.000	0.000	0.012	0.000	0.000	-0.011	0.000	0.000
Other household type	0.005	0.000	0.000	0.007	0.000	0.000	-0.007	0.000	0.000
Earners: 0	0.051	0.000	0.000	0.068	0.000	0.000	0.086	0.000	0.000
Earners: 2	-0.010	0.000	0.000	-0.031	0.000	0.000	-0.043	0.000	0.000
Earners: 3	-0.012	0.000	0.000	-0.037	0.000	0.000	-0.047	0.000	0.000
Earners: 4+	-0.012	0.000	0.000	-0.037	0.000	0.000	-0.057	0.000	0.000
Prob>chi2	0.000			0.000			0.000		
Log likelihood	-12,663,455			-16,998,492			-17,370,935		
Pseudo R2	0.308			0.260			0.259		

Note. Dependent variable: dummy poor. HHH denotes household head; HHM denotes household members.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 4d. Marginal effects of logistic regressions, restricted-sample approach, absolute poverty line

	1993			1998			2003		
	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|	dy/dx	Std.err.	P>|z|
HHH: female	0.006	0.000	0.000	0.023	0.000	0.000	0.019	0.000	0.000
HHH: married	-0.003	0.000	0.000	-0.006	0.000	0.000	-0.022	0.000	0.000
HHH: widowed	-0.010	0.000	0.000	-0.024	0.000	0.000	-0.026	0.000	0.000
HHH: divorced	0.001	0.000	0.000	0.001	0.000	0.000	0.005	0.000	0.000
HHH: self-employed farmer	0.322	0.001	0.000	0.226	0.001	0.000	0.488	0.001	0.000
HHH is self-employed	0.013	0.000	0.000	0.030	0.000	0.000	0.023	0.000	0.000
HHH: civil servant	-0.017	0.000	0.000	-0.031	0.000	0.000	-0.042	0.000	0.000
HHH: blue-collar worker	0.024	0.000	0.000	0.034	0.000	0.000	0.041	0.000	0.000
HHH: unemployed	0.094	0.000	0.000	0.191	0.001	0.000	0.263	0.001	0.000
HHH: non-working (pensioner, etc.)	0.027	0.000	0.000	0.084	0.000	0.000	0.103	0.000	0.000
HHH: university	-0.007	0.000	0.000	-0.009	0.000	0.000	-0.013	0.000	0.000
HHH: univ. of applied sciences	-0.009	0.000	0.000	-0.012	0.000	0.000	-0.025	0.000	0.000
HHH: apprenticeship	0.008	0.000	0.000	0.020	0.000	0.000	0.010	0.000	0.000
HHH: no dregree	0.049	0.000	0.000	0.107	0.000	0.000	0.108	0.000	0.000
HHH: 20-29 years	0.011	0.000	0.000	0.030	0.000	0.000	0.027	0.000	0.000
HHH: 40-49 years	-0.000	0.000	0.000	-0.009	0.000	0.000	-0.010	0.000	0.000
HHH: 50-59 years	-0.007	0.000	0.000	-0.016	0.000	0.000	-0.027	0.000	0.000
HHH: 60-69 years	-0.012	0.000	0.000	-0.021	0.000	0.000	-0.038	0.000	0.000
HHH: 70+ years	-0.008	0.000	0.000	-0.022	0.000	0.000	-0.043	0.000	0.000
Number of other HHM age 0-4 years	0.002	0.000	0.000	0.012	0.000	0.000	0.009	0.000	0.000
Number of other HHM age 5-9 years	0.003	0.000	0.000	0.007	0.000	0.000	0.002	0.000	0.000
Number of other HHM age 10-14 years	0.006	0.000	0.000	0.018	0.000	0.000	0.011	0.000	0.000
Number of other HHM age 15-19 years	0.012	0.000	0.000	0.024	0.000	0.000	0.036	0.000	0.000
Number of other HHM age 20-29 years	0.006	0.000	0.000	0.015	0.000	0.000	0.027	0.000	0.000
Number of other HHM age 30-39 years	-0.000	0.000	0.000	-0.005	0.000	0.000	0.010	0.000	0.000
Number of other HHM age 40-49 years	-0.004	0.000	0.000	-0.000	0.000	0.000	0.009	0.000	0.000
Number of other HHM age 50-59 years	-0.001	0.000	0.000	-0.016	0.000	0.000	0.012	0.000	0.000
Number of other HHM age 60-69 years	-0.003	0.000	0.000	-0.027	0.000	0.000	-0.001	0.000	0.000
Number of other HHM age 70+ years	0.000	0.000	0.000	-0.022	0.000	0.000	0.011	0.000	0.000
Single, childless	0.002	0.000	0.000	0.010	0.000	0.000	-0.010	0.000	0.000
Single parent, 1 child	0.019	0.000	0.000	0.009	0.000	0.000	0.015	0.000	0.000
Single parent, 2 children	0.023	0.000	0.000	0.040	0.000	0.000	0.038	0.000	0.000
Single parent, 3+ children	0.039	0.000	0.000	0.004	0.000	0.000	0.019	0.000	0.000
Couple, 1 child	0.005	0.000	0.000	-0.008	0.000	0.000	0.021	0.000	0.000
Couple, 2 children	0.013	0.000	0.000	0.018	0.000	0.000	0.009	0.000	0.000
Couple, 3+ children	0.020	0.000	0.000	0.010	0.000	0.000	-0.011	0.000	0.000
Other household type	0.025	0.000	0.000	0.006	0.000	0.000	-0.007	0.000	0.000
Earners: 0	0.077	0.000	0.000	0.067	0.000	0.000	0.086	0.000	0.000
Earners: 2	-0.015	0.000	0.000	-0.030	0.000	0.000	-0.043	0.000	0.000
Earners: 3	-0.017	0.000	0.000	-0.037	0.000	0.000	-0.047	0.000	0.000
Earners: 4+	-0.018	0.000	0.000	-0.038	0.000	0.000	-0.057	0.000	0.000
Prob>chi2	0.000			0.000			0.000		
Log likelihood	-16,072,661			-18,561,689			-17,370,935		
Pseudo R2	0.294			0.255			0.259		

Note. Dependent variable: dummy poor. HHH denotes household head; HHM denotes household members.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 5a. Non-linear decomposition of East/West poverty divide (relative poverty line)

		1993			1998			2003		
	Poverty rate, West	0.088			0.114			0.113		
	Poverty rate, East	0.214			0.191			0.201		
	Difference	-0.126			-0.077			-0.088		
		Coef.	Std.err.	P>|z|	Coef.	Std.err.	P>|z|	Coef.	Std.err.	P>|z|
full sample	HHH sex	-0.004	0.000	0.000	-0.005	0.000	0.000	-0.004	0.000	0.000
	HHH age	-0.002	0.000	0.000	-0.008	0.000	0.000	-0.002	0.000	0.000
	HHH family status	-0.003	0.000	0.000	-0.005	0.000	0.000	-0.007	0.000	0.000
	HHH labor force status	-0.016	0.000	0.000	-0.006	0.000	0.000	-0.013	0.000	0.000
	HHH education	0.013	0.000	0.000	0.013	0.000	0.000	0.008	0.000	0.000
	HHM age	-0.004	0.000	0.000	-0.002	0.000	0.000	-0.003	0.000	0.000
	HH type	-0.000	0.000	0.000	-0.001	0.000	0.000	-0.001	0.000	0.000
	Number earners	0.002	0.000	0.000	0.006	0.000	0.000	-0.006	0.000	0.000
	Total explained, pooled	-0.015 (11.9%)			-0.008 (9.6%)			-0.028 (31.4%)		
restricted sample	HHH sex	-0.002	0.000	0.000	-0.003	0.000	0.000	-0.004	0.000	0.000
	HHH age	-0.005	0.000	0.000	0.012	0.000	0.000	-0.003	0.000	0.000
	HHH family status	-0.001	0.000	0.000	-0.002	0.000	0.000	-0.007	0.000	0.000
	HHH labor force status	-0.014	0.000	0.000	-0.018	0.000	0.000	-0.012	0.000	0.000
	HHH education	0.023	0.000	0.000	0.017	0.000	0.000	0.007	0.000	0.000
	HHM age	0.004	0.000	0.000	0.017	0.000	0.588	-0.004	0.000	0.000
	HH type	0.004	0.000	0.000	0.004	0.000	0.000	-0.001	0.000	0.000
	Number earners	-0.024	0.000	0.000	-0.032	0.000	0.000	-0.003	0.000	0.000
	Total explained, restricted	-0.000 (0.1%)			-0.005 (6.5%)			-0.025 (28.1%)		

Note. Specifications labelled "pooled" use the coefficient estimates from the full sample (pooled regression); specifications labelled "restricted" use the coefficient estimates from the West German population. Decomposition results are based 50 replications using randomized ordering of variables. HHH denotes household head; HH denotes HH type.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 5b. Non-linear decomposition of East/West poverty divide (absolute poverty line)

		1993			1998			2003		
	Poverty rate, West	0.122			0.129			0.113		
	Poverty rate, East	0.296			0.223			0.201		
	Difference	-0.175			-0.094			-0.088		
		Coef.	Std.err.	P>|z|	Coef.	Std.err.	P>|z|	Coef.	Std.err.	P>|z|
full sample	HHH sex	-0.006	0.000	0.000	-0.006	0.000	0.000	-0.004	0.000	0.000
	HHH age	-0.005	0.000	0.000	-0.008	0.000	0.000	-0.003	0.000	0.000
	HHH family status	-0.004	0.000	0.000	-0.004	0.000	0.000	-0.007	0.000	0.000
	HHH labor force status	-0.015	0.000	0.000	-0.006	0.000	0.000	-0.012	0.000	0.000
	HHH education	0.014	0.000	0.000	0.012	0.000	0.000	0.007	0.000	0.000
	HHM age	-0.008	0.000	0.000	-0.002	0.000	0.000	-0.004	0.000	0.000
	HH type	-0.003	0.000	0.000	-0.002	0.000	0.000	-0.001	0.000	0.000
	Number earners	0.007	0.000	0.000	0.008	0.000	0.000	-0.003	0.000	0.000
	Total explained, pooled	-0.019 (10.9%)			-0.008 (8.5%)			-0.028 (31.4%)		
restricted sample	HHH sex	-0.002	0.000	0.000	-0.004	0.000	0.000	-0.004	0.000	0.000
	HHH age	-0.002	0.000	0.000	-0.002	0.000	0.000	-0.003	0.000	0.000
	HHH family status	-0.003	0.000	0.000	-0.003	0.000	0.000	-0.007	0.000	0.000
	HHH labor force status	-0.011	0.000	0.000	-0.007	0.000	0.000	-0.012	0.000	0.000
	HHH education	0.026	0.000	0.000	0.013	0.000	0.000	0.007	0.000	0.000
	HHM age	-0.005	0.000	0.000	-0.002	0.000	0.000	-0.004	0.000	0.000
	HH type	-0.001	0.000	0.000	-0.001	0.000	0.000	-0.001	0.000	0.000
	Number earners	0.002	0.000	0.000	0.002	0.000	0.000	-0.003	0.000	0.000
	Total explained, restricted	0.004 (0%)			-0.004 (4.7%)			-0.025 (28.1%)		

Note. Specifications labelled "pooled" use the coefficient estimates from the full sample (pooled regression); specifications labelled "restricted" use the coefficient estimates from the West German population. Decomposition results are based 50 replications using randomized ordering of variables. HHH denotes household head; HH denotes HH type.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

APPENDIX

Table A1. Unweighted numbers of observations

	Year							
	1978	1983	1988	1993		1998		2003	
Household type	Old States	Old States	Old States	Old States	New States	Old States	New States	Old States	New States
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other childless	7,324	7,450	7,775	4,424	1,025	4,769	1,430	4,060	1,325
1 adult, no child	7,491	7,692	8,657	7,682	1,425	8,894	1,994	8,498	1,789
1 adult, 1 child	421	612	611	536	277	841	356	714	228
1 adult, 2 children	192	248	273	256	117	460	165	345	95
1 adult, 3+ children	84	56	69	63	18	129	27	79	9
2 adults, no child	14,218	12,075	13,133	9,560	2,809	12,403	3,641	12,107	3,428
2 adults, 1 child	6,848	6,426	5,295	3,133	1,110	3,909	1,105	2,836	925
2 adults, 2 children	7,437	6,938	6,219	3,868	1,371	5,693	1,401	3,960	688
2 adults, 3+ children	2,925	2,112	2,153	2,246	304	2,285	208	1,479	166

Source. German Sample Survey of Income and Expenditures 1978-2003. Own calculations.

Table A2. Breakdown of the sample (relative frequencies of all households, weighted)

	1993		1998		2003	
	Old States	New States	Old States	New States	Old States	New States
HHH: female	32.43	43.53	34.06	43.24	36.12	46.39
HHH: single	18.40	14.09	22.59	19.17	25.51	24.50
HHH: married	56.12	60.12	52.76	54.20	50.31	47.67
HHH: widowed	15.58	13.16	11.06	8.95	8.74	7.35
HHH: divorced	9.87	12.63	13.66	17.68	15.47	20.48
HHH: self-employed farmer	0.94	0.09	0.63	0.19	0.63	0.00
HHH is self-employed	6.73	2.36	5.86	4.15	5.45	4.43
HHH: civil servant	5.86	0.88	5.28	2.25	4.61	2.93
HHH: white-collar worker	22.84	27.03	28.64	27.59	30.30	25.74
HHH: blue-collar worker	21.32	23.89	19.28	21.43	16.76	18.34
HHH: unemployed	3.63	10.39	4.58	8.95	4.39	10.01
HHH: non-working (pensioner, etc.)	38.54	35.36	35.73	35.63	37.73	38.37
HHH: university	9.11	19.07	11.57	19.12	13.19	19.79
HHH: univ. of applied sciences	8.85	24.85	9.68	15.46	10.50	17.39
HHH: engineering school and similar degree	12.36	7.55	14.73	16.10	17.63	17.66
HHH: apprenticeship	55.02	45.10	56.10	46.05	51.92	41.24
HHH: no degree	14.63	3.43	7.83	3.28	6.71	3.91
HHH: 20-29 years	10.78	10.06	8.72	7.92	9.46	9.58
HHH: 40-49 years	20.25	21.83	21.98	19.58	19.01	16.00
HHH: 50-59 years	16.87	18.09	18.51	21.06	21.17	23.43
HHH: 60-69 years	18.31	21.56	17.43	17.81	15.74	15.10
HHH: 70+ years	15.15	15.76	15.05	15.94	16.06	16.96
Earners: 0	18.64	12.70	18.30	17.68	18.56	18.94
Earners: 1	37.04	39.56	38.07	42.18	40.31	46.26
Earners: 2	37.41	31.33	36.73	30.06	35.80	29.94
Earners: 3	22.53	26.29	22.81	23.77	21.77	21.02
Earners: 4+	2.58	2.65	2.09	3.53	1.98	2.54
Single, childless	0.53	0.17	0.34	0.45	0.32	0.24
Single parent, 1 child	22.48	19.95	23.24	21.97	24.14	25.89
Single parent, 2 children	11.99	8.45	12.84	10.00	12.79	10.47
Single parent, 3+ children	4.51	6.19	4.33	6.30	5.10	6.69
Couple, 1 child	27.32	29.87	29.06	29.50	29.27	29.93
Couple, 2 children	31.10	33.50	25.58	28.08	24.76	22.83
Couple, 3+ children	2.60	2.04	4.95	4.17	3.94	4.19

Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.