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Poverty in Germany –
Statistical Inference and Decomposition

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Poverty in Germany – statistical inference and decomposition

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Abstract. Based on six harmonized cross-sections of the German Sample Survey of Income and Expenditure, we study inter-temporal changes in poverty from year 1978 to 2003. Results are decomposed by region and household types, and the bootstrap method is applied to test for the statistical significance of all our findings. Across household types, single parents with children have the highest poverty risk. Most striking is a huge regional divide in poverty which only narrows slightly over the period under investigation: the incidence and the intensity of poverty are substantially higher in the New states. A nonlinear Oaxaca-Blinder decomposition is conducted to quantify the separate contribution of regional differences in households' characteristics to the likelihood of being poor. Estimates from the decomposition indicate that differences in the distributions of socioeconomic characteristics play a negligible role for the 1993 poverty divide. Already in year 2003, however, differences in the distributions of characteristics explain more than fifty percent of the poverty divide, indicating that the poverty divide is likely to become a persistent phenomenon.

Key words: poverty, Oaxaca-Blinder decomposition, bootstrap, equivalence scale.

JEL codes: H53, I38

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1 Introduction

Poverty and child poverty in particular are recognized as key social problems. On the individual level, a slim budget not only restrains the actual possibility to consume. 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, 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). Similarly, Marmot (2004) finds that scarce resources not only restrain individual access to health services. The loss of autonomy and social participation can work as a psychological stressor deteriorating health, the so-called status syndrome. 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).

Poverty is not only an individual dilemma. High poverty rates are likely to create social costs and lower income growth. Credit constraints may prevent people with low income from undertaking efficient human capital investments.[1] Substantial income and wealth disparities may 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. 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 in poor countries. Measuring poverty, explaining its causes and consequences is thus on top of the research agenda of scholars from various disciplines.

This study investigates poverty in Germany since the late 1970th. Six waves of the German Sample Survey of Income and Expenditures from year 1978 to 2003 form our database. A particular focus of our study is a poverty decomposition 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. The head-count ratio is used to determine the incidence of poverty, while we use the normalized poverty-gap ratio to assess the intensity of poverty. To ensure comparability of household disposable incomes across time and regions (New states vs. Old states), we consider region-specific consumer-price indices (CPIs) and

[1] See, for example, Welch (1999) for opposite arguments.

purchasing powers (PP). Moreover, differences in needs are taken into account by means of the OECD modified equivalence scale.[2] The resulting equivalent income is comparable across households, time and regions. So we refrain from specifying household-type or region specific poverty lines.[3]

Several empirical studies have explored poverty in Germany. Examples include Burkhauser et al. (1996), Smeeding et al. (2000), Jenkins et al. (2003), Jenkins and Schluter (2003), Valletta (2006), and Corak et al. (2008). For a comprehensive literature review see Hauser and Becker (2003).

This article builds upon aforementioned literatures, extending it along two dimensions. First, the bootstrap method is applied for testing the statistical significance of all our 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 close an apparent lack of statistical inference in the empirical poverty literature. Two results from our analysis are particularly remarkable. From all household types single parents with children have by far the highest poverty risk. Most striking, however, is the regional poverty divide between New and Old states: The incidence and the intensity of poverty are substantially higher in the New compared to the Old states.

Concerning the East/West poverty divide, several nonexclusive explanations have been provided. One line of research stresses the role of external constraints, i.e. of factors not being in the individual sphere of influence. Particularly, the transfer of West German labor market institutions to the East may play a prominent role. Despite productivity levels in the East being low, unions and employers rapidly raised wages in the New states causing high unemployment rates (see Sinn, 2002). At the same time, unemployment and social welfare benefits have been raised close to West German standards, weakening individual incentives to undertake human capital investments. Resulting unemployment-, low-skill and poverty traps have been investigated in Snower and Merkl (2006).[4] Another line of research highlights the role of intrinsic factors, i.e. aspirations and beliefs, for individual poverty risks: The rapid change in all socio-political spheres might have negatively affected East Germans' aspirations

[2] See Section 2.1 for details.

[3] We are indebted to three anonymous referees and the Editor for valuable comments regarding the definition of an appropriate income aggregate. Another possible strategy would be the application of distinct poverty lines for East and West Germany as derived from the region-specific income distributions. Further insights into the debate can be found, for example, in Corak (2005) or Jenkins et al. (2003). As a robustness check, the Supplementing Materials provide all our results for the case that the PP-adjustment remains undone.

[4] Further external constraints potentially affecting poverty levels include credit/insurance market imperfections (e.g., Loury, 1981, Galor and Zeira, 1993, Banerjee and Newman, 1993, or Torvik, 1993), coordination problems (e.g., Hellman, 2002, or Kremer, 1993), and other institutional or governmental failures (e.g., Bardham, 1997).

and self-confidence, and this in turn may have limited their ability to successfully participate in the system and improve their own conditions (for such an other arguments see, for example, Mookherjee, 2003).[5] A third line stresses the role of East-to-West migration of the young and better educated, i.e. of people with low poverty risks.[6] As a result, the non-migrating New states residents may carry personal characteristics associated with high poverty risks.

Our second contribution is the investigation of regional differences in distributions of personal or household characteristics for the risk of being poor. Particularly, we assess how much of the East/West poverty divide is related to differences in observed characteristics between New and Old state households, such as the level of education, employment status, etc., and how much is related to other "unexplained" factors. As technical workhorse, we apply a non-linear Oaxaca-Blinder poverty decomposition. It is based on logit regressions which econometrically link the likelihood of being poor to households' socioeconomic and demographic characteristics. The Oaxaca-Blinder decomposition reveals how much of the East/West poverty divide results from differences in such observables, the so-called (aggregate) characteristics effect. The remaining part of the divide, the (aggregate) coefficient effect, indicates how differences in group-specific processes or non-quantified endowments contribute to the poverty divide.

The characteristics effect is zero in year 1993. Accordingly, differences in the distributions of characteristics between the New and the Old states cannot explain even a small fraction of the 1993 poverty divide. Instead, the divide must be related to other factors, most likely the Unification shock turning the New states economy upside down from a command to a market economy. Over time, however, the characteristics effect becomes more relevant. In year 2003, it explains more than 50 percent of the poverty divide. Migration of well-educated and well-trained people from the New to the Old states, may be one reason underlying the pattern. Another likely reason is discouraging social and labor market policies and substantial wealth and income disparities leading to inefficiently low human-capital investments in the New States.

The paper is structured as follows. Section 2 explains the poverty measures, the use of the bootstrap method, and the Oaxaca-Blinder decomposition approach. Section 3 portraits

[5] A related emerging strand of literature seeks to explain poverty with insights from behavioral economics (see Bertrand et al., 2004).

[6] Migration models supporting this conjecture are presented in Roy (1951) and Borjas (1987). Empirical evidence is provided in and Burda and Hunt (2001).

inter-temporal poverty trends including tests of 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 inter-temporally harmonized waves of the German Sample Survey of Household Income and Expenditure (EVS) collected at 5-year intervals between 1978 and 2003.[7] The EVS is provided by the German Federal Statistical Office, and contains representative household data on income, taxes, social security contributions, social transfers, wealth, inventories, and expenditure, as well as several other socioeconomic 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 data processing.[8] The first convention concerns the income concept. Following standard international practice, all estimates are derived from *CPI-PP-adjusted equivalent disposable household incomes* (henceforth "equivalent incomes"), 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). Equivalent income is always expressed in year 2003 prices, it is adjusted for changes in region-specific consumer price indices (CPI) and differences in purchasing power (PP) in East and West.[9] The *OECD modified scale* is applied to adjust for differences in need across household types.[10]

The second convention relates to the choice of the poverty line. In Germany, an official poverty line does not exist. We apply both a *relative* and an *absolute* poverty line. Before Unification, poverty lines are derived from the Old states population, and from the Old and New states population since then.[11] The construction of the *relative poverty line* (RPL) follows the recommendation of the European Statistical Office.[12] People with an income

[7] See Bönke et al. (2010) for details.
[8] See also Deaton (2004).
[9] Concerning the price and purchasing-power adjustments see Table A1 in the Supplementing Materials for details. For detailed information on region-specific price levels see Dreger and Kosfeld (2010).
[10] 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).
[11] Alternatively, distinct region-specific poverty lines could have been applied (for a discussion see Corak et al., 2008). As average equivalent income is lower in the New states, the procedure would imply lower poverty estimates in the New States and higher in the Old states.
[12] See Eurostat (2000) as well as Brewer and Gregg (2002) for details.

below 60-percent-of-median equivalent income are assessed as poor. The RPL ties down the minimum acceptable income to what other people get. Hence, derived poverty estimates remain unchanged if incomes of all households grow at same rate. A decrease in poverty essentially mirrors an improving economic situation of low income relative to high income households. For all years, we define the *absolute poverty line* (APL) as the CPI-PP corrected Euro-equivalent of the 2003 RPL. Accordingly, our APL is not defined via the costs of a basket of goods, but it is an "at-risk-of-poverty rate anchored at a fixed moment in time."[13] When APL is applied, 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. Accordingly, we do not compute the weighted number of (non) poor households, but the respective weighted numbers of individuals actually living in (non) poor households. Technically speaking, if an EVS household with a frequency weight of 50 consists of four members and equivalent income is below (above) the poverty line, 200 people are classified as (non) poor.

A fourth convention relates to the poverty measure. We employ a class of indices introduced by Foster et al. (1984). The class covers 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. Moreover, let $i = 1,...,q$ denote poor household units with $y_i < z$, then the index is,

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

In equation (1), w_i denotes the EVS frequency weight for household unit i consisting of n_i members. Population size, N, is defined as $N = \sum_i w_i \cdot n_i$. The term $z - y_i$ is the poverty gap for i. For $\alpha = 0$, equation (1) is the head-count ratio, $I(0) = \frac{1}{N} \cdot \sum_{i=1}^{q} (w_i \cdot n_i)$. The head-count ratio is a pure incidence measure, providing the fraction of the population classified as poor while ignoring "the depth and distribution of poverty" (see Foster, 1998, p. 336). If $\alpha = 1$, we have the poverty-gap ratio, $I(1) = \frac{1}{N} \cdot \sum_{i=1}^{q} (w_i \cdot n_i) \cdot \left(\frac{z - y_i}{z}\right)$. It is the head-count ratio weighted

[13] For further information see Eurostat at http://eur-lex.europa.eu/.

by 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.

The fifth convention concerns the level of aggregation. We provide poverty estimates by region of residence (New and Old states) and household type. Altogether, eight household types are distinguished: single parents with one as well as with two 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. The sample composition (non-weighted) is provided in Table A2 in the Supplementing Materials.

2.2 Bootstrap inference and poverty

To test for statistical significance of differences in poverty indices, we compute bias-corrected confidence intervals using the bootstrap method. Our approach relies on the theoretical framework outlined in Biewen (2002). We draw, with replacement, $B = 1,000$ random samples. Each random sample has as many sampling units as the original cross section, and each sampling unit in the original cross section has the same probability of being selected. EVS sampling weights are accounted for whenever a poverty measure is computed. For technically equivalent empirical applications see Athanasopoulos and Vahid (2003) or Bönke et al. (forthcoming). As income distributions typically give biased estimators, confidence intervals are bias corrected.

More precisely, for each cross section we compute B bootstrapped poverty indices, one index, I^b, per bootstrap sample, b. Confidence intervals are computed following Hall (1994). Hall's confidence interval at the 95 percent level for the true index value, I, is given by $\Pr\left(2\hat{I}^c - I^b_{high} \le I \le 2\hat{I}^c - I^b_{low}\right) = \left(100 - 2\alpha\right)/100$, where $\hat{I}^c$ denotes the bootstrap bias-corrected estimate, while I^b_{high} (I^b_{low}) denotes the 2.5$^{\text{th}}$ upper (lower) percentile in the bootstrap index distribution. The bootstrap bias-corrected estimator is $\hat{I}^c = \hat{I} - Bias$, where $\hat{I}$ is the index derived from the original sampling distribution and $Bias = \frac{1}{B} \cdot \sum_{b=1}^{B} I^b - \hat{I}$. The bias-corrected confidence interval has advantages compared to standard confidence intervals in case of a skewed distribution (Hall, 1994).

To test for significance of inter-temporal change in poverty estimates, we compute B index differences $\Delta I(\alpha)^b_t = I(\alpha)^b_t - I(\alpha)^b_{t-5}$, where $I(\alpha)^b_t$ ($I(\alpha)^b_{t-5}$) denotes the poverty

estimate from bootstrap distribution b in period t $(t-5)$. The difference in point estimates is $\Delta\hat{I}_t$, and $\Delta\hat{I}_t^c = \Delta\hat{I}_t - \Delta Bias_t$ with $\Delta Bias_t = \frac{1}{B}\cdot\sum_{b=1}^{B}\Delta I_t^b - \Delta\hat{I}_t$ denoting the bias-corrected estimate. Then Hall's (1994) bias-corrected confidence interval is $\Pr\left(2\Delta\hat{I}_t^c - \Delta I_{t,high}^b \le \Delta I_t \le 2\Delta\hat{I}_t^c - \Delta I_{t,low}^b\right) = (100-2\alpha)/100$. The term $\Delta I_{t,high}^b$ denotes the 2.5th upper and $\Delta I_{t,low}^b$ the 2.5th lower percentile in the bootstrap distribution of differences, and ΔI_t is the true difference. An index difference is statistically different from zero if Hall's bias-corrected 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 regional distributions of socioeconomic characteristics are capable to econometrically explain the East/West poverty divide.

The basic idea of the Blinder-Oaxaca decomposition is to explain differences in outcomes of groups by differences in characteristics and in regression coefficients. The Blinder-Oaxaca decomposition technique is particularly suited for estimating the separate contributions of group differences in measurable characteristics, such as education, household composition, geographical location, etc. in outcomes. Typically, the methodology is applied to continuous outcomes but, as illustrated in Fairlie (2005), it can also be modified to deal with binary outcomes. In the latter case, the Oaxaca-Blinder decomposition builds on logit or probit models.

In the poverty context, the dependent dummy variable is equal to 1 if a household unit is poor and zero else. Mutually-exclusive groups $g \in \{0,1\}$ are constructed according to region of residence (New vs. Old states). Accordingly, the head-count ratio of a particular group equals the average predicted probability of the group, and the decomposition quantifies the separate contribution of group differences in individual or household characteristics to the probability of being poor *controlling for all other characteristics* (see Fairlie, 2005).[14] When interpreting the results it should be kept in mind that the decomposition quantifies a statistical and not a causal relationship.

[14] Analyses technically similar to ours have been conducted by Gradín (2009) to investigate differences in poverty rates between minorities in the United States and Brazil; by Gang et al. (2008) and Bhaumik (2006) for inter-group poverty comparisons in India and Kosovo; and by Biewen and Jenkins (2005) as well as Quintano and D'Agostino (2006) for exploring poverty gaps across countries.

In the logit model, the likelihood of a household unit i being poor is,

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

where x is a vector of household and its members' 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,

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

(see Fairlie, 2005). In equation (3), $\overline{P^1}$ $\left(\overline{P^0}\right)$ denotes the poverty rate in group $g = 1$ $(g = 0)$, and $\hat{\beta}^g$ is the vector of coefficient estimates for g. The first term in brackets is the so-called aggregate characteristics effect, the part of the poverty resulting from different 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, or by differences in non-quantified endowments between groups. 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 what follows.

In the decomposition we apply the logit estimates derived from Old state residents. Accordingly, the decomposition builds on the correlation of socioeconomic variables with poverty risk in the Old states, and answers the following question: "Given that the correlation between socioeconomic characteristics and poverty were the same in East and West, how much of the East/West poverty divide can be explained by differences in the distributions of socioeconomic characteristics between the two regions?"

In addition to the aggregate characteristics effect, also the role of differences in distributions of a particular variable (or group of variables) can be assessed, the so-called detailed decomposition. The detailed decomposition identifies how the average predicted probability of being poor changes when the Old states distribution of a particular variable (group of variables) is replaced by the New states distribution while holding distributions of other variables constant (see Fairlie, 2005).

3 Long-run poverty trends

Before commenting on the results, some brief remarks concerning the actual monetary levels of poverty lines. Figure 1 gives the two poverty lines underlying all our calculations

(expressed in CPI-PP-adjusted Euros). The solid line connects point estimates corresponding to the 60-percent-of-median RPL, and the dashed line connects APL point estimates derived from the sample distribution. Vertical bars indicate 95 percent bias-corrected Hall confidence intervals $\left(2\hat{z}^c - z^b_{high}; 2\hat{z}^c - z^b_{low}\right)$, where z^b_{high} is the 2.5th upper and z^b_{low} is the 2.5th lower percentile of the bootstrap distribution of poverty lines. Different bar widths and colors are chosen to ensure confidence intervals to be visually distinguishable. The monetary equivalent of the RPL significantly increases over time, from around 860 Euros in 1978 to slightly above 1000 Euros in 2003. By construction, the APL remains constant over time, and coincides with the 2003 RPL.[15]

[Figure 1 about here]

3.1 The general picture

Figure 2 provides region-specific RPL and APL based head-count ratios, $I(0)$, and poverty-gap ratios, $I(1)$. 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 bias-corrected Hall confidence intervals of estimates, and different bar styles are chosen to ensure that confidence intervals are distinguishable.

[Figure 2 about here]

Looking at estimates from the same cross section, most eye-catching is a substantial difference in poverty levels between the two German regions, with regional differences in head-count ratios and poverty-gap ratios being particularly large in year 1993. In the New states, poverty estimates average at substantially higher levels. For example, in year 1993 about 16 percent of the New states population fall below the RPL as opposed to only 10 percent of the population living in the Old states. In fact, the 1993 APL-based head-count ratio for the New states reaches almost 21 percent (Old states: about 13 percent). Concerning the intensity of poverty, the picture is similar. When the RPL (APL) is applied, the New states

[15] Without the PP-adjustment, patterns are very similar except for the slight decrease of RPL between 1988 and 1993 (see Figure B1 in the Supplementing Materials).

poverty-gap ratio exceeds the Old states counterpart by about 30 (41) percent.[16] In Section 4, we further scrutinize the East/West divide in head-count ratios by means of Oaxaca-Blinder decomposition.

Concerning inter-temporal patterns, Figure 2 suggests that APL-based poverty estimates decline over time. The decline indicates an improvement in the absolute living conditions in both parts of Germany. Most prominent is the decline in the Old states between 1988 and 1993. This reduction, of course, is artificial, resulting from Unification and low incomes in the New states. But also in the New states APL-based poverty estimates decrease over time, at least between 1993 and 1998. Comparing East and West, results indicate a convergence of APL-based poverty gap ratios, but head count ratios in the New states exceed Old states estimates by far. Put simply, absolute living standards of the poor in East and West converge, but the poor fraction of the population remains higher in the New states. While the APL-based estimates indicate an inter-temporal poverty reduction in both parts of Germany, the picture is less positive when the RPL is applied. From the late 1970s onwards, Old states head count and poverty gap ratio first go up, reaching a high point in the late 1980s, decline again between 1988 and 1993 due to German Unification, and then rise again. In the New states, the graphs suggest quite stable head-count and slightly rising poverty-gap ratio.[17] In case of the RPL, both the incidence and intensity of poverty are systematically higher in the New states.[18] So, we still face divergent relative living conditions in East and West.

Tests of significance of inter-temporal changes are reported in Table 1. More precisely, the Table gives the differences in poverty point estimates derived from two consecutive EVS cross sections, $\Delta\hat{I} = \hat{I}_t - \hat{I}_{t-5}$, together with the respective 95 percent bias-corrected bootstrapped Hall confidence interval. So, the coefficients provided are differences in point estimates from a recent year to a base year. A positive (negative) sign indicates an inter-temporal increase (decrease) in the poverty measure between period $t-5$ and t, and two stars indicate that the change is significant (at the 5 percent level). For example, take the entry "2.18**" in column "*Old states, 1998 % 1993*", row "*relative,* $\Delta\hat{I}(0)$". It indicates a significant rise in the RPL-based head-count ratio between 1993 and 1998 in the Old states by 2.18 percentage points.

[16] Differences are even more pronounced in absence of PP adjustment (see Figure B2 in the Supplementing Materials).
[17] Figure B2 in the Supplementing Materials reconfirms the inter-temporal decline in poverty in absence of PP adjustment. Then RPL based poverty-gap ratios in the New states tend to decrease over time as well.
[18] Only 1998 poverty gap ratios do not significantly differ.

[Table 1 about here]

We comment on the Old states first. In sum, 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,[19] rise again between 1993 and 1998, and stagnate between 1998 and 2003. APL-based poverty indices significantly decrease between 1978 and 1983, between 1988 and 1993 and also between 1998 and 2003. Only between 1993 and 1998 the APL-based poverty-gap rises significantly. In the New states, APL-based measures slightly fall in the early years after Unification and stagnate since then. On the contrary, RPL-based measures stagnate between 1993 and 1998 and rise over the two later years.[20]

3.2 Poverty estimates by household-type

We next turn to the questions 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 household types as defined in Section 2.1. Head-count ratios are depicted in Figure 3a, poverty-gap ratios in Figure 3b. Within each figure, eight 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 bias-corrected Hall confidence intervals visually. The scaling of ordinates in the graphs is chosen so as to optimize readability of each graph. As a result, scaling of ordinates differs across household types. Visual comparisons should be made with adequate care.

[Figures 3a and 3b about here]

There are striking differences across household types concerning the incidence and intensity of poverty. Single parent households are most vulnerable to poverty. As can be seen from Figure 3a, about 26 percent (32 percent) of Old states single parents with one child fall

[19] As mentioned above, the pronounced decline between 1988 and 1993 is driven by German unification, leading to many low income households entering the sample.

[20] All the patterns for the Old states also hold in absence of PP-adjustment. In the New states, however, CPI-adjusted estimates indicate a significant decrease both in the incidence and intensity of poverty (see Table B1 in the Supplementing Materials).

below the RPL (APL) in year 1993, around 40 percent (49 percent) in the New states. Point estimates suggest that single parents with two or more children have the highest poverty risk: RPL-based (APL-based) head-count ratios in 1993 are 41 percent (47 percent) in the Old and 51 percent (61 percent) in the New states. Confidence intervals, however, indicate particularly high standard errors for single parents, calling for conservative interpretation. 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 the figures indicate a particularly high poverty risk for single parent compared to other household types.[21]

Inter-temporal changes in poverty estimates are particularly interesting. Tables 2a to 2h, in analogy to Table 1, complement the graphic exposition with tests for significance. For example, take the entry "0.74^{**}" in Table 2a, column "*Old states, 1998 % 1993*", row "*relative,* $\Delta\hat{I}(1)$". The coefficient indicates a rise in the poverty intensity for "other childless households" between 1993 and 1998 in case of the relative poverty line.

[Tables 2a to 2h about here]

We comment on the Old states first. Between 1978 and 1983, head-count and poverty-gap ratios rise significantly for five out of eight household types, i.e., for other childless households, single parents with one and two or more children and couples with one or two children. For childless single adults and couples as well as for couples with three or more children, RPL-based measures in the same period remain constant whereas APL-based measures decline significantly. Estimates usually remain quite stable between 1983 and 1988. However, during the same period RPL and also APL based poverty rates and gaps of single parents are significantly on the rise. As outlined above, the adjacent poverty reduction from 1988 to 1993 is a statistical artifact. Between 1993 and 1998, poverty again is on the rise for other childless households, (single) parents with one child and couples with two children. For the other household types, differences are usually insignificant. Finally, between 1998 and 2003, poverty indices systematically decrease for couples with two or three children. APL-based measures decrease for single parents with two or more children while RPL-based

[21] The statistical differences, of course, do not necessarily imply causal relationships. For example, with regard to the poverty risk of single parents the causality might run the other way round. For various reasons, partners might tend to leave a poor household more often than a non poor one.

measures rise for childless couples. For all other household types, no systematic inter-temporal patterns can be observed.

Concerning the New states, household-type specific poverty estimates for 1993 and 1998 remain quite stable. Particularly, RPL-based measures exhibit little variation, while both APL-based measures decline for some household types. The effect is most pronounced for parents with three or more children. Between 1998 and 2003 head-count and poverty-gap ratios hardly change. Only five out of 32 differences are significant, and three out of the 32 differences suggest a decrease in poverty.

In conclusion, systematic differences in poverty levels exist across household types and regions. Incidence and intensity of poverty are higher among New compared to Old states households. Across household types, poverty rates and intensity are the highest among single parent households. Over time, most eye-catching is the decrease in APL-based poverty estimates. Moreover, there is some evidence in favor of a slight convergence of East German to West German poverty levels, at least between 1993 and 1998.[22]

4 Explaining the East/West poverty divide

4.1 Specification of logit regressions and regression estimates

The non-linear Oaxaca-Blinder decomposition relies on multivariate logit regressions explaining the likelihood of a household being poor, conditioned on a set of explanatory variables. Given that being poor means lacking income to pass the poverty line, we included among the explanatory variables a number of characteristics of the household head, the bread winner, potentially relevant for the determination of his/her capability to generate income. These variables include the head's gender, age (by cohort), family status, labor force status, and highest educational degree.[23] As an example, if the household head is young and at an early stage of her employment career, earnings are likely to be low and this may translate into a higher poverty risk. The second set of variables refers to the household level. These variables may influence the income-generating capability of the head or determine the earnings-generating capability of other household members. The variable set comprises:

[22] The interested reader may consult Tables B2a-h in the Supplementing Materials for the respective PP-unadjusted estimates.

[23] Despite their common history, education systems in FRG and GDR differed by a large extent. A detailed comparison of the two German systems can be found in Krueger and Pischke (1992). After Unification, the former West German system replaced the East German system. When preparing the EVS database, the German Federal Statistical Office seeks to ensure that the education variable conveys information that is comparable across the two parts of Germany. By choosing a broad classification of education attainments, we seek to limit potential biases in the decomposition analysis.

household type; number of earners; and number of other household members belonging to a specific age cohort. For example, children may create an additional poverty risk as they rise household needs but not the household's earnings capability. Table 3 lists the explanatory variables and their items. An extensive sample breakdown is provided in Table A2-4 in the Supplementing Materials. Following standard convention in decomposition literature, regressions are estimated separately for each group, i.e. separately for households resident in the New and Old states.

[Table 3 about here]

Tables 4a and 4b summarize the logit-regression results. Table 4a refers to an RPL-based distinction of poor and non-poor households, Table 4b to an APL-based distinction. In each table, results from six regressions are reported, per cross section (1993, 1998, 2003) one for residents in the Old states and one for New states residents. For each variable, the regression coefficient together with its standard error and significance level is reported. In between the region-specific regressions, χ^2 test statistics indicate whether regression coefficients are different for Old and New states residents. The regression benchmark is a childless couple (unmarried) with a single earner; the household head is a male white-collar worker, age 30 to 39, holding an engineering school degree (or equivalent).

Before commenting on the regression coefficients in detail, some words on the broad picture. First, regression coefficients in Tables 4a and 4b are rather close, indicating that regressors, irrespective of the poverty line, have a similar effect on poverty risks. Second, apart from a few exemptions, socioeconomic and demographic variables play a similar role for New and Old state residents. Moreover, differences in region-specific regression coefficients (indicated by significant χ^2 test statistics) over time become smaller or vanish. At the same time, Old states coefficients do not exhibit systematic inter-temporal variation. In combination, the two regularities suggest that individual/household characteristics start playing a more similar role for poverty risks in the two parts of Germany.

Let us now turn to the link between characteristics of household heads and poverty risk. Compared with the regression benchmark, a male headed couple, the poverty risk is higher if the household head is female or divorced, and lower when widowed. Concerning the employment status, self-employees and blue-collar workers are more likely to be poor than white-collar workers while the opposite holds for civil servants. As expected, the poverty risk

is also higher if the household head is unemployed or non-working. Education has a poverty reducing effect. The age of the household head again is negatively related with the likelihood of being poor.

Concerning household-level characteristics, poverty risk tends to be systematically higher for households with members of age 10 to 19. One plausible reason is that raising children demands a considerable amount of parental time, obliging parents to work shorter hours. In line with the previous results (see Figure 3a), the regression coefficients indicate particularly high poverty risks for single parents. Research from family economics indicates that parents face additional opportunity costs upon deciding to start working full time, lowering their incentives to work (e.g., Koulovatianos, 2009). Finally, the number of earners has a strong and negative effect on the likelihood of being poor.[24]

[Tables 4a and 4b about here]

4.2 Results from the non-linear Oaxaca-Blinder decomposition

The results from the non-linear Oaxaca-Blinder decomposition are summarized in Tables 5a and 5b. Estimates are provided for all three cross sections and for both poverty lines. To make the read more convenient, the top rows in the first panel of the tables repeat head-count ratios from Section 3 and differences in the levels between West and East. The second panel reports the characteristics effects from the decomposition by eight groups of variables, analogously to the eight sets distinguished in Tables 4a and 4b. Each reported coefficient reveals how differences in distributions of a specific variable contribute to the East/West poverty divide. In all our calculations, Old states residents serve as reference and New states residents as the comparison group.[25] As separate contributions from independent variables may be sensitive to ordering of variables, it is randomized to approximate results over all possible orderings (see Fairlie, 2005, for details).[26] The third panel summarizes the aggregate characteristics effect. It is the total explanatory contribution of group differences in regressors (first row), i.e. the fraction of the poverty divide actually explained by the decomposition.

[24] Our conclusions also hold in absence of PP adjustment (see Tables B4a and B4b in the Supplementary Materials).

[25] 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.

[26] Alternative approaches to overcome this dependency are suggested by Even and Macpherson (1993), Nielson (1998), and Yun (2005). These authors seek to overcome the dependency by determining the relative contribution of each variable to each component using appropriately constructed weights.

[Tables 5a and 5b about here]

As indicated by aggregate characteristics effects, the decomposition cannot explain even a small fraction of the East/West poverty divide in year 1993. For both poverty lines, the aggregate characteristics effects in year 1993 are very small and carry the wrong sign. The ongoing transition of the East German command economy into a western-style market economy, however, should alleviate the explanatory power of the decomposition. Indeed, in year 1998 the aggregate characteristics effect explains already 13.309 percent (14.285 percent) of the East/West poverty divide when the RPL (APL) is applied: Had New states residents the same characteristics as Old states residents, regional differences in poverty rates would be of -0.023 (-0.032) as opposed to -0.028 (-0.037). In 2003, the aggregate characteristics effect already explains more than half of the divide, i.e. 55.995 percent.

From the considered set of socioeconomic variables, differences in the labor force status are a key determinant of the East/West poverty divide. The share of unemployed household heads in the New states is about twice the share in the Old states. In recent years, an exodus of high-skilled and young New states residents further contributed to this difference (e.g., Burda, 1993). That in the New states the fraction of civil servants, a group with a particularly low poverty risk, is small (especially in the early years after German Unification) also contributes to the poverty divide. Another source driving the divide is the higher fraction of female-headed and divorced households. 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 the variable “number of earners”. Over the observation period, the associated decomposition coefficient switches from positive to negative. While high employment rates of females in the new federal states lowered the poverty risk in the early 1990s, high unemployment and early retirement rates dominated in years 1998 and 2003.

Summing up the decomposition results, there is an apparent inter-temporal pattern. In 1993 the aggregate characteristics effect is incapable even to explain a small part of the East/West poverty divide. Poverty risks were quasi randomly distributed among New states residents Given the huge Unification shock, 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. Already in year 2003, regional differences in the distributions of poverty-relevant characteristics explain more than half of the East/West poverty divide. Accordingly, the distribution of poverty-relevant socioeconomic characteristics in the New states inheres a higher poverty risk compared to the Old states distribution.[27] This may be due to the fact that people with low poverty risks are leaving the economic week regions of Eastern Germany. Then, the transitory divide is likely to become a persistent phenomenon.[28]

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 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. However, the positive picture, most of all, is a technical artifact. It results from the choice of deriving the poverty line from the income distribution for overall Germany together with average equivalent income being substantially lower in Eastern Germany.

A specific goal in Germany is the creation of similar living circumstances across states. Our estimates, however, reveal substantial regional differences in poverty rates. New states' head-count and poverty-gap ratios exceed Old states' estimates by far. Evidence in favor of an inter-temporal convergence of poverty rates is limited. While the poverty East/West poverty divide reduces moderately between 1993 and 1998, there is no further convergence since then. 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. Particularly in the early years after Unification, regional differences in the distributions of socioeconomic characteristics play a minor role. In later years, however, differences in poverty-relevant characteristics substantially contribute to the poverty divide.

[27] See Table A2-A4 in the Supplementing Materials for a summary of the inter-temporal changes in the distributions of personal and household characteristics.

[28] The results from the decomposition for non-PP adjusted incomes are provided in Table 5B in the Supplementing Materials, and are supporting our conclusions.

Across household types, poverty rates of single parents are the highest. Over the observation period, little improvement has been made in this respect, although the basic problems of single parents are well understood. They rely on the earnings of a single person, in many cases hired for a low-skilled part time job. Accordingly, earnings are typically low whereas unemployment risk is high. 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.[29]

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

Poverty line	Poverty index	Old states 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	1.69**	0.75**	-2.23**	2.18**	-0.10	-0.66	1.52**
	(95% CI)	(1.15; 2.21)	(0.17; 1.34)	(-2.82; -1.57)	(1.44; 2.83)	(-0.78; 0.56)	(-2.07; 0.84)	(0.13; 2.92)
	$\Delta\hat{I}(1)$	0.43**	0.23**	-0.45**	0.55**	0.04	0.13	0.42**
	(95% CI)	(0.30; 0.57)	(0.05; 0.38)	(-0.61; -0.27)	(0.35; 0.75)	(-0.15; 0.24)	(-0.21; 0.48)	(0.08; 0.76)
Absolute	$\Delta\hat{I}(0)$	-1.51**	-0.65	-4.57**	0.71	-1.58**	-4.08**	-0.82
	(95% CI)	(-2.16; -0.84)	(-1.42; 0.05)	(-5.33; -3.86)	(-0.11; 1.49)	(-2.29; -0.84)	(-5.57; -2.39)	(-2.25; 0.44)
	$\Delta\hat{I}(1)$	-0.08	0.04	-1.04**	0.26**	-0.33**	-0.50**	-0.06
	(95% CI)	(-0.25; 0.11)	(-0.18; 0.24)	(-1.25; -0.83)	(0.04; 0.49)	(-0.53; -0.11)	(-0.88; -0.09)	(-0.39; 0.25)

Note. $\Delta\hat{I}(.)$ denotes the observed change in poverty indices between periods t and t-5. CI denotes Hall's bias-corrected confidence interval. ** denotes that the change is significantly different from zero at the 5 percent 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 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	1.79**	-0.06	-2.21**	3.59**	0.20	1.11	2.70
	(95% CI)	(0.78; 2.79)	(-1.31; 1.32)	(-3.53; -0.81)	(1.85; 5.27)	(-1.64; 2.17)	(-1.79; 4.30)	(-0.50; 6.02)
	$\Delta\hat{I}(1)$	0.30**	0.19	-0.54**	0.74**	0.22	0.20	0.94**
	(95% CI)	(0.06; 0.59)	(-0.19; 0.58)	(-0.90; -0.18)	(0.34; 1.13)	(-0.25; 0.72)	(-0.29; 0.74)	(0.17; 1.68)
Absolute	$\Delta\hat{I}(0)$	0.08	0.11	-3.97**	2.28**	-0.29	-1.27	1.82
	(95% CI)	(-1.25; 1.56)	(-1.40; 1.73)	(-5.47; -2.33)	(0.49; 3.96)	(-2.18; 1.65)	(-4.55; 2.19)	(-1.52; 5.11)
	$\Delta\hat{I}(1)$	0.16	0.07	-0.90**	0.67**	-0.01	-0.07	0.67
	(95% CI)	(-0.17; 0.52)	(-0.40; 0.54)	(-1.36; -0.46)	(0.22; 1.13)	(-0.50; 0.52)	(-0.70; 0.56)	(-0.14; 1.45)

Note and source. See Table 1.

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

Poverty line	Poverty index	Old states 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	-0.49	-0.95	-3.22**	0.60	1.54	1.39	2.01
	(95% CI)	(-2.27; 1.26)	(-2.70; 0.68)	(-4.99; -1.48)	(-1.40; 2.38)	(-0.10; 3.19)	(-2.49; 5.40)	(-1.92; 5.55)
	$\Delta\hat{I}(1)$	0.06	-0.41	-0.85**	0.58**	0.67**	1.52**	0.14
	(95% CI)	(-0.44; 0.56)	(-0.92; 0.06)	(-1.35; -0.38)	(0.06; 1.12)	(0.20; 1.16)	(0.44; 2.59)	(-0.93; 1.17)
Absolute	$\Delta\hat{I}(0)$	-3.56**	-1.84**	-6.89**	-1.40	-0.47	-2.32	-1.25
	(95% CI)	(-5.49; -1.63)	(-3.67; -0.14)	(-8.86; -5.03)	(-3.39; 0.47)	(-2.15; 1.18)	(-6.14; 1.87)	(-5.14; 2.21)
	$\Delta\hat{I}(1)$	-1.20**	-0.81**	-1.86**	-0.10	0.04	0.50	-0.80
	(95% CI)	(-1.81; -0.58)	(-1.40; -0.25)	(-2.47; -1.32)	(-0.66; 0.48)	(-0.44; 0.53)	(-0.68; 1.63)	(-1.87; 0.26)

Note and source. See Table 1.

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

Poverty line	Poverty index	Old states: 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states: 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	8.98**	15.33**	-13.04**	10.13**	-0.96	-3.17	5.38
	(95% CI)	(3.29; 14.29)	(8.65; 21.32)	(-19.62; -6.20)	(2.96; 17.03)	(-7.70; 5.60)	(-13.37; 6.61)	(-4.35; 14.77)
	$\Delta\hat{I}(1)$	1.99**	3.45**	-3.03**	1.88**	-0.15	-1.71	0.84
	(95% CI)	(0.69; 3.27)	(1.68; 5.27)	(-4.95; -1.05)	(0.06; 3.88)	(-1.99; 1.75)	(-4.25; 0.70)	(-1.32; 2.96)
Absolute	$\Delta\hat{I}(0)$	9.23**	14.05**	-14.62**	7.81**	-5.08	-6.16	-0.03
	(95% CI)	(3.15; 14.81)	(7.91; 20.39)	(-20.74; -7.92)	(0.55; 14.32)	(-11.88; 1.07)	(-15.47; 3.43)	(-10.14; 9.09)
	$\Delta\hat{I}(1)$	2.30**	4.29**	-4.86**	1.28	-1.26	-3.06**	-0.34
	(95% CI)	(0.46; 3.94)	(2.17; 6.44)	(-7.11; -2.57)	(-0.77; 3.46)	(-3.19; 0.69)	(-5.84; -0.33)	(-2.46; 1.83)

Note and source. See Table 1.

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

Poverty line	Poverty index	Old states: 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states: 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	12.63**	11.09**	-14.74**	-1.92	-2.75	-6.96	-3.56
	(95% CI)	(3.20; 21.55)	(1.14; 20.16)	(-24.24; -5.43)	(-11.05; 7.34)	(-11.04; 4.85)	(-21.10; 7.20)	(-17.27; 11.40)
	$\Delta\hat{I}(1)$	5.78**	0.39	-2.90	-1.21	-1.05	-2.98	-0.51
	(95% CI)	(2.07; 9.00)	(-3.56; 4.489	(-6.20; 0.50)	(-4.11; 1.67)	(-3.25; 0.97)	(-7.69; 1.66)	(-4.06; 3.41)
Absolute	$\Delta\hat{I}(0)$	9.73**	5.15**	-15.48**	-3.17	-8.27**	-11.77	-7.99
	(95% CI)	(0.61; 18.31)	(-3.46; 13.73)	-(25.15; -6.78)	(-11.88; 6.32)	(-16.59; -1.16)	(-25.02; 1.41)	(-21.64; 6.74)
	$\Delta\hat{I}(1)$	5.13**	0.59	-5.34**	-2.43	-2.25**	-4.86	-1.91
	(95% CI)	(1.19; 8.73)	(-3.60; 4.78)	(-8.91; -1.73)	(-5.60; 0.71)	(-4.53; -0.14)	(-9.70; 0.18)	(-5.44; 2.13)

Note and source. See Table 1.

Table 2e. Inter-temporal changes in poverty, childless couple

Poverty line	Poverty index	Old states: 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states: 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	-0.58	-0.09	-3.20**	0.81	1.19**	0.70	0.88
	(95% CI)	(-1.58; 0.49)	(-1.18; 1.12)	(-4.31; -2.07)	(-0.31; 1.72)	(0.18; 2.31)	(-1.29; 2.54)	(-1.32; 2.97)
	$\Delta\hat{I}(1)$	-0.16	-0.04	-0.47**	0.10	0.36**	0.18	0.50**
	(95% CI)	(-0.42; 0.11)	(-0.33; 0.27)	(-0.73; -0.21)	(-0.16; 0.37)	(0.11; 0.62)	(-0.21; 0.54)	(0.07; 0.96)
Absolute	$\Delta\hat{I}(0)$	-3.50**	-1.15	-5.26**	-0.80	0.37	-2.67**	-0.70
	(95% CI)	(-4.68; -2.21)	(-2.51; 0.20)	(-6.57; -4.11)	(-1.91; 0.32)	(-0.69; 1.44)	(-4.98; -0.51)	(-3.04; 1.38)
	$\Delta\hat{I}(1)$	-0.84**	-0.25	-1.05**	-0.12	0.13	-0.21	0.21
	(95% CI)	(-1.17; -0.49)	(-0.62; 0.13)	(-1.39; -0.74)	(-0.42; 0.17)	(-0.14; 0.40)	(-0.67; 0.21)	(-0.26; 0.68)

Note and source. See Table 1.

Table 2f. Inter-temporal changes in poverty, couple with one child

Poverty line	Poverty index	Old states 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	2.22**	0.23	-0.64	4.89**	-1.65	3.52	-2.21
	(95% CI)	(1.32; 3.12)	(-0.99; 1.62)	(-1.98; 0.81)	(2.75; 7.02)	(-4.07; 0.55)	(-0.09; 6.92)	(-5.71; 1.62)
	$\Delta\hat{I}(1)$	0.41**	0.25	-0.15	1.08**	-0.34	0.89**	-0.48
	(95% CI)	(0.23; 0.59)	(-0.06; 0.57)	(-0.52; 0.21)	(0.49; 1.73)	(-1.01; 0.26)	(0.13; 1.65)	(-1.24; 0.33)
Absolute	$\Delta\hat{I}(0)$	0.72	-0.93	-3.14**	4.58**	-3.05**	0.17	-4.47**
	(95% CI)	(-0.40; 2.06)	(-2.36; 0.70)	(-4.88; -1.64)	(2.37; 6.81)	(-5.40; -0.72)	(-3.55; 3.81)	(-7.96; -0.60)
	$\Delta\hat{I}(1)$	0.33**	0.07	-0.48**	1.02**	-0.67**	0.61	-0.89**
	(95% CI)	(0.07; 0.60)	(-0.32; 0.49)	(-0.93; -0.06)	(0.38; 1.73)	(-1.36; -0.01)	(-0.24; 1.44)	(-1.70; -0.03)

Note and source. See Table 1.

Table 2g. Inter-temporal changes in poverty, couple with two children

Poverty line	Poverty index	Old states 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	3.51**	-0.08	-1.38**	2.46**	-3.10**	-2.85	1.78
	(95% CI)	(2.44; 4.64)	(-1.40; 1.45)	(-3.00; -0.05)	(0.72; 4.60)	(-4.89; -1.33)	(-6.23; 1.19)	(-2.35; 5.65)
	$\Delta\hat{I}(1)$	0.55**	0.08	-0.12	0.56**	-0.72**	-0.46	0.09
	(95% CI)	(0.35; 0.78)	(-0.21; 0.36)	(-0.46; 0.21)	(0.07; 1.14)	(-1.23; -0.23)	(-1.28; 0.38)	(-0.71; 0.95)
Absolute	$\Delta\hat{I}(0)$	0.18	-1.71	-4.19**	1.01	-4.76**	-5.22**	-1.19
	(95% CI)	(-1.38; 1.73)	(-3.35; 0.00)	(-6.07; -2.49)	(-0.90; 3.28)	(-6.61; -2.77)	(-8.79; -1.22)	(-5.50; 2.87)
	$\Delta\hat{I}(1)$	0.35**	-0.14	-0.63**	0.36	-1.02**	-1.10**	-0.34
	(95% CI)	(0.05; 0.67)	(-0.52; 0.25)	(-1.05; -0.22)	(-0.17; 0.98)	(-1.55; -0.49)	(-2.01; -0.12)	(-1.19; 0.56)

Note and source. See Table 1.

Table 2h. Inter-temporal changes in poverty, couple with three or more children

Poverty line	Poverty index	Old states 1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	New states 1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	-0.35	-0.43	1.39	-1.25	-2.54	-14.03**	-6.62
	(95% CI)	(-2.73; 2.26)	(-3.49; 2.69)	(-2.30; 4.96)	(-5.18; 2.78)	(-6.11; 0.75)	(-24.94; -3.13)	-(15.17; 3.20)
	$\Delta\hat{I}(1)$	0.31	0.10	0.32	0.21	-0.99**	-1.26	-0.87
	(95% CI)	(-0.15; 0.82)	(-0.57; 0.88)	(-0.48; 1.21)	(-0.96; 1.33)	(-1.98; -0.08)	(-3.34; 0.80)	(-2.77; 1.01)
Absolute	$\Delta\hat{I}(0)$	-6.56**	-5.71**	-0.44	-3.51	-5.22**	-19.65**	-11.94**
	(95% CI)	(-9.38; -3.39)	(-9.46; -2.23)	(-4.41; 3.66)	(-7.41; 0.72)	(-8.76; -1.73)	(-30.92; -7.34)	-(22.03; -0.91)
	$\Delta\hat{I}(1)$	-0.92**	-0.43	-0.12	-0.35	-1.41**	-3.04**	-1.61
	(95% CI)	(-1.56; -0.23)	(-1.30; 0.54)	(-1.10; 0.92)	(-1.59; 0.91)	(-2.47; -0.45)	(-5.59; -0.46)	(-3.60; 0.41)

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
Martial status	unmarried; married; widowed; divorced	dummy variables 1: status applies 0: else	unmarried
Labor force status	self-employed or farmer; civil servant; white-collar worker; blue-collar worker; unemployed; non-working	dummy variables 1: status applies 0: else	white collar
Highest educational 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
Age cohort	age cohort (in years: 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
Household-level characteristics			
Number of other household members belonging to a specific age cohort	(in years: 0-4; 5-9; 10-19; 20-29; 30-39; 40-49; 50-59; 60-69; 70 and above)	one covariate per age cohort	one-member household
Family type	single adults with 0, 1, 2+ children; couple with 0, 1, 2, 3+ children; other childless	dummy variables 1: type applies 0: else	childless couple
Number of earners	0-3+	dummy variables 1: number applies 0: else	

Table 4a. Logistic regressions, relative poverty line

	1993			1998			2003		
Household head	Old states	Diff. test	New states	Old states	Diff. test	New states	Old states	Diff. test	New states
Female	0.210**	0.693	0.107	0.185**	1.022	0.306**	0.194***	1.637	0.348***
	(0.071)		*(0.106)*	*(0.063)*		*(0.099)*	*(0.059)*		*(0.103)*
Married	-0.214	1.043	-0.491*	-0.191	0.183	-0.089	-0.427***	1.180	-0.19
	(0.153)		*(0.218)*	*(0.133)*		*(0.199)*	*(0.112)*		*(0.189)*
Widowed	-0.721***	29.271***	-1.889***	-0.857***	24.835***	-2.007***	-0.786***	34.024***	-2.366***
	(0.106)		*(0.195)*	*(0.106)*		*(0.205)*	*(0.104)*		*(0.256)*
Divorced	0.298**	1.649	0.083	0.085	0.580	0.193	0.029	6.366**	0.383**
	(0.095)		*(0.143)*	*(0.079)*		*(0.119)*	*(0.074)*		*(0.123)*
Self-employed	1.202***	2.878*	1.721***	1.095***	1.451	0.739**	1.165***	5.757**	0.392
	(0.125)		*(0.268)*	*(0.114)*		*(0.274)*	*(0.110)*		*(0.294)*
Civil servant	-2.055***	2.848*	-0.955	-1.579***	1.103	-2.351**	-1.413***	0.005	-1.453**
	(0.287)		*(0.601)*	*(0.212)*		*(0.718)*	*(0.222)*		*(0.520)*
Blue-collar worker	0.561***	1.391	0.782***	0.685***	0.371	0.587***	0.862***	0.000	0.859***
	(0.101)		*(0.150)*	*(0.086)*		*(0.132)*	*(0.085)*		*(0.144)*
Unemployed	1.683***	4.326**	1.117***	1.874***	3.693*	1.309***	2.090***	0.903	1.819***
	(0.173)		*(0.204)*	*(0.166)*		*(0.239)*	*(0.152)*		*(0.233)*
Non-working	0.731***	0.223	0.593*	1.099***	0.014	1.061***	1.115***	0.071	1.196***
	(0.163)		*(0.241)*	*(0.167)*		*(0.266)*	*(0.155)*		*(0.254)*
University degree	-0.622***	4.989**	-1.153***	-0.373***	3.801*	-0.724***	-0.368***	14.586***	-1.063***
	(0.138)		*(0.191)*	*(0.104)*		*(0.147)*	*(0.089)*		*(0.156)*
Univ. of applied sciences degree	-0.644***	0.020	-0.612***	-0.426***	0.212	-0.513***	-0.670***	0.309	-0.770***
	(0.148)		*(0.172)*	*(0.115)*		*(0.148)*	*(0.103)*		*(0.148)*
In apprenticeship	0.360***	0.269	0.456**	0.538***	2.947*	0.771***	0.244***	2.254	0.435***
	(0.092)		*(0.159)*	*(0.075)*		*(0.112)*	*(0.064)*		*(0.112)*
No degree	1.373***	0.831	1.125***	1.449***	0.000	1.450***	1.212***	0.676	1.438***
	(0.102)		*(0.245)*	*(0.098)*		*(0.228)*	*(0.094)*		*(0.248)*
Age 20-29 years	0.463***	2.656	0.131	0.502***	0.008	0.520**	0.575***	0.017	0.545**
	(0.103)		*(0.174)*	*(0.091)*		*(0.174)*	*(0.096)*		*(0.196)*
Age 40-49 years	-0.336***	6.691***	0.131	-0.353***	9.149***	0.119	-0.220**	2.943*	0.062
	(0.102)		*(0.153)*	*(0.080)*		*(0.131)*	*(0.079)*		*(0.144)*
Age 50-59 years	-0.553***	3.818*	-0.111	-0.739***	23.121***	0.194	-0.547***	15.812***	0.243
	(0.117)		*(0.194)*	*(0.100)*		*(0.166)*	*(0.096)*		*(0.174)*
Age 60-69 years	-1.243***	31.457***	0.187	-1.219***	7.821***	-0.560**	-1.119***	9.736***	-0.378
	(0.125)		*(0.222)*	*(0.110)*		*(0.204)*	*(0.106)*		*(0.206)*
Age 70+ years	-1.108***	27.544***	0.35	-1.307***	7.283***	-0.622**	-1.118***	3.382*	-0.632**
	(0.127)		*(0.249)*	*(0.117)*		*(0.226)*	*(0.116)*		*(0.237)*
Household level									
Number other members age 0-4	0.200	4.628**	0.728***	0.229*	0.000	0.226	0.124	1.000	-0.204
	(0.119)		*(0.191)*	*(0.107)*		*(0.200)*	*(0.119)*		*(0.268)*
Number other members age 5-9	0.129	1.253	0.380*	0.171	0.337	0.297	0.096	3.837*	-0.547*
	(0.112)		*(0.171)*	*(0.101)*		*(0.178)*	*(0.111)*		*(0.271)*
Number other members age 10-14	0.385***	0.083	0.449**	0.351***	0.062	0.297	0.064	1.787	-0.363
	(0.111)		*(0.173)*	*(0.100)*		*(0.175)*	*(0.109)*		*(0.261)*
Number other members age 15-19	0.707***	10.066***	1.365***	0.586***	2.786*	0.877***	0.556***	5.044**	-0.002
	(0.098)		*(0.160)*	*(0.085)*		*(0.142)*	*(0.087)*		*(0.199)*
Number other members age 20-29	0.467***	0.032	0.519*	0.413***	0.003	0.401*	0.386***	5.128**	-0.169
	(0.120)		*(0.239)*	*(0.111)*		*(0.177)*	*(0.103)*		*(0.201)*
Number other members age 30-39	0.404*	2.157	-0.107	-0.019	0.104	-0.122	0.035	1.376	-0.365
	(0.167)		*(0.288)*	*(0.151)*		*(0.257)*	*(0.153)*		*(0.274)*
Number other members age 40-49	0.246	1.252	-0.153	0.000	0.380	-0.184	0.045	0.885	-0.244
	(0.181)		*(0.292)*	*(0.156)*		*(0.239)*	*(0.147)*		*(0.244)*
Number other members age 50-59	0.184	3.437*	-0.509	-0.404*	0.544	-0.182	0.056	3.386*	-0.516*
	(0.182)		*(0.304)*	*(0.161)*		*(0.257)*	*(0.144)*		*(0.261)*
Number other members age 60-69	0.188	8.502***	-0.970**	-0.590***	4.437**	-1.292***	-0.360*	17.183***	-1.868***
	(0.185)		*(0.324)*	*(0.166)*		*(0.293)*	*(0.152)*		*(0.309)*
Number other members age 70+	0.387*	11.589***	-1.101**	-0.317	2.553	-0.939**	-0.256	11.084***	-1.741***
	(0.186)		*(0.376)*	*(0.178)*		*(0.354)*	*(0.169)*		*(0.390)*
Other childless household	0.191	0.084	0.100	0.306*	0.066	0.374	0.103	0.168	0.211
	(0.150)		*(0.254)*	*(0.142)*		*(0.216)*	*(0.129)*		*(0.219)*
Single adult, childless	0.855***	0.416	0.631*	0.561***	1.590	0.924***	0.422**	0.066	0.349
	(0.154)		*(0.282)*	*(0.150)*		*(0.233)*	*(0.133)*		*(0.229)*

Single parent, 1 child	0.787***	1.134	0.331	0.844***	0.603	0.555	0.921***	0.143	0.771*
	(0.222)		*(0.336)*	*(0.195)*		*(0.295)*	*(0.182)*		*(0.313)*
Single parent, 2+ children	0.905**	2.303	-0.007	0.351	0.131	0.542	0.823**	0.696	1.356*
	(0.305)		*(0.463)*	*(0.272)*		*(0.418)*	*(0.272)*		*(0.530)*
Couple, 1 child	0.479**	2.528	-0.100	0.232	0.004	0.214	0.383*	0.052	0.299
	(0.177)		*(0.274)*	*(0.158)*		*(0.266)*	*(0.156)*		*(0.309)*
Couple, 2 children	0.564*	0.397	0.252	0.105	0.800	0.499	0.101	5.778**	1.587**
	(0.245)		*(0.376)*	*(0.217)*		*(0.366)*	*(0.230)*		*(0.504)*
Couple, 3+ children	0.590	0.309	0.169	0.119	0.109	0.352	0.459	2.087	1.797*
	(0.364)		*(0.583)*	*(0.328)*		*(0.588)*	*(0.347)*		*(0.770)*
Number of earners: 0	1.801***	0.000	1.796***	1.346***	1.121	1.043***	1.180***	0.468	0.997***
	(0.151)		*(0.203)*	*(0.159)*		*(0.236)*	*(0.144)*		*(0.218)*
Number of earners: 2	-1.276***	0.727	-1.439***	-1.230***	2.117	-1.487***	-1.204***	1.660	-1.461***
	(0.115)		*(0.151)*	*(0.096)*		*(0.144)*	*(0.096)*		*(0.170)*
Number of earners: 3+	-1.896***	0.956	-2.442***	-1.845***	2.725*	-2.734***	-1.150***	0.242	-1.388**
	(0.302)		*(0.460)*	*(0.302)*		*(0.442)*	*(0.229)*		*(0.423)*
Constant	-4.450***	7.765***	-3.267***	-3.809***	0.158	-3.672***	-3.309***	1.890	-2.838***
	(0.200)		*(0.344)*	*(0.177)*		*(0.282)*	*(0.157)*		*(0.284)*
$P > \chi^2$	0.000		0.000	0.000		0.000	0.000		0.000
Log likelihood	-5764.69		-2091.98	-7081.69		-2382.81	-7253.44		-2065.45
Pseudo R^2	0.293		0.303	0.287		0.33	0.286		0.38
N	31389		8374	39010		10261	33797		8596

Note. Dependent variable: dummy poor. N denotes the number of non-weighted observations.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 4b. Logistic regressions, absolute poverty line

	1993			1998			2003		
Household head	Old states	Diff. test	New states	Old states	Diff. test	New states	Old states	Diff. test	New states
Female	0.246***	2.316	0.079	0.232***	0.004	0.239*	0.194***	1.637	0.348***
	(0.065)		*(0.090)*	*(0.061)*		*(0.094)*	*(0.059)*		*(0.103)*
Married	-0.175	3.060*	-0.588**	-0.172	0.247	-0.061	-0.427***	1.180	-0.190
	(0.136)		*(0.186)*	*(0.125)*		*(0.186)*	*(0.112)*		*(0.189)*
Widowed	-0.736***	32.767***	-1.866***	-0.872***	26.490***	-1.992***	-0.786***	34.024***	-2.366***
	(0.096)		*(0.176)*	*(0.101)*		*(0.191)*	*(0.104)*		*(0.256)*
Divorced	0.183*	3.121*	-0.092	0.074	0.296	0.148	0.029	6.366**	0.383**
	(0.088)		*(0.133)*	*(0.077)*		*(0.114)*	*(0.074)*		*(0.123)*
Self-employed	1.096***	1.673	1.447***	1.018***	2.694	0.559*	1.165***	5.757**	0.392
	(0.108)		*(0.236)*	*(0.106)*		*(0.260)*	*(0.110)*		*(0.294)*
Civil servant	-1.884***	2.606	-1.081*	-1.571***	2.136	-2.637***	-1.413***	0.005	-1.453**
	(0.213)		*(0.471)*	*(0.190)*		*(0.716)*	*(0.222)*		*(0.520)*
Blue-collar worker	0.569***	0.754	0.701***	0.700***	0.422	0.604***	0.862***	0.000	0.859***
	(0.084)		*(0.124)*	*(0.079)*		*(0.121)*	*(0.085)*		*(0.144)*
Unemployed	1.687***	8.269***	1.018***	2.081***	10.192***	1.196***	2.090***	0.903	1.819***
	(0.152)		*(0.173)*	*(0.155)*		*(0.228)*	*(0.152)*		*(0.233)*
Non-working	0.719***	0.473	0.546**	1.161***	0.415	0.965***	1.115***	0.071	1.196***
	(0.140)		*(0.206)*	*(0.156)*		*(0.255)*	*(0.155)*		*(0.254)*
University degree	-0.629***	4.248**	-1.048***	-0.365***	5.274**	-0.748***	-0.368***	14.586***	-1.063***
	(0.120)		*(0.159)*	*(0.097)*		*(0.137)*	*(0.089)*		*(0.156)*
Univ. of applied sciences degree	-0.732***	1.207	-0.514***	-0.446***	0.067	-0.401**	-0.670***	0.309	-0.770***
	(0.130)		*(0.146)*	*(0.107)*		*(0.136)*	*(0.103)*		*(0.148)*
In apprenticeship	0.394***	0.127	0.453***	0.505***	3.281*	0.735***	0.244***	2.254	0.435***
	(0.079)		*(0.137)*	*(0.070)*		*(0.105)*	*(0.064)*		*(0.112)*
No degree	1.391***	0.535	1.205***	1.441***	0.156	1.344***	1.212***	0.676	1.438***
	(0.090)		*(0.227)*	*(0.093)*		*(0.225)*	*(0.094)*		*(0.248)*
Age 20-29 years	0.503***	3.577*	0.161	0.561***	0.205	0.476**	0.575***	0.017	0.545**
	(0.093)		*(0.151)*	*(0.087)*		*(0.165)*	*(0.096)*		*(0.196)*
Age 40-49 years	-0.305***	4.806**	0.039	-0.351***	12.013***	0.159	-0.220**	2.943*	0.062
	(0.088)		*(0.135)*	*(0.075)*		*(0.123)*	*(0.079)*		*(0.144)*
Age 50-59 years	-0.652***	10.896***	-0.001	-0.768***	23.512***	0.138	-0.547***	15.812***	0.243
	(0.106)		*(0.170)*	*(0.097)*		*(0.158)*	*(0.096)*		*(0.174)*
Age 60-69 years	-1.203***	45.722***	0.341	-1.189***	6.410**	-0.612**	-1.119***	9.736***	-0.378
	(0.113)		*(0.198)*	*(0.106)*		*(0.196)*	*(0.106)*		*(0.206)*
Age 70+ years	-1.092***	38.728***	0.468*	-1.232***	5.252**	-0.670**	-1.118***	3.382*	-0.632**
	(0.116)		*(0.224)*	*(0.112)*		*(0.218)*	*(0.116)*		*(0.237)*
Household level									
Number other members age 0-4	0.163	10.138***	0.809***	0.282**	0.114	0.360	0.124	1.000	-0.204
	(0.104)		*(0.174)*	*(0.100)*		*(0.187)*	*(0.119)*		*(0.268)*
Number other members age 5-9	0.115	7.576***	0.639***	0.208*	0.358	0.335*	0.096	3.837*	-0.547*
	(0.098)		*(0.158)*	*(0.095)*		*(0.170)*	*(0.111)*		*(0.271)*
Number other members age 10-14	0.336***	1.362	0.560***	0.355***	0.000	0.352*	0.064	1.787	-0.363
	(0.097)		*(0.158)*	*(0.095)*		*(0.166)*	*(0.109)*		*(0.261)*
Number other members age 15-19	0.664***	16.006***	1.358***	0.549***	4.695**	0.907***	0.556***	5.044**	-0.002
	(0.086)		*(0.145)*	*(0.081)*		*(0.134)*	*(0.087)*		*(0.199)*
Number other members age 20-29	0.509***	0.460	0.676***	0.443***	0.005	0.428**	0.386***	5.128**	-0.169
	(0.101)		*(0.199)*	*(0.105)*		*(0.166)*	*(0.103)*		*(0.201)*
Number other members age 30-39	0.310*	0.366	0.128	-0.027	0.368	-0.207	0.035	1.376	-0.365
	(0.142)		*(0.240)*	*(0.142)*		*(0.239)*	*(0.153)*		*(0.274)*
Number other members age 40-49	0.052	0.095	0.147	-0.030	0.664	-0.257	0.045	0.885	-0.244
	(0.157)		*(0.243)*	*(0.147)*		*(0.224)*	*(0.147)*		*(0.244)*
Number other members age 50-59	0.307*	5.084**	-0.413	-0.436**	1.112	-0.139	0.056	3.386*	-0.516*
	(0.155)		*(0.257)*	*(0.153)*		*(0.241)*	*(0.144)*		*(0.261)*
Number other members age 60-69	0.144	7.773***	-0.791**	-0.566***	6.730***	-1.375***	-0.360*	17.183***	-1.868***
	(0.160)		*(0.271)*	*(0.157)*		*(0.276)*	*(0.152)*		*(0.309)*
Number other members age 70+	0.293	12.441***	-1.034**	-0.288	5.075**	-1.127***	-0.256	11.084***	-1.741***
	(0.162)		*(0.315)*	*(0.169)*		*(0.341)*	*(0.169)*		*(0.390)*
Other childless household	0.239	0.931	-0.018	0.276*	0.032	0.321	0.103	0.168	0.211
	(0.130)		*(0.217)*	*(0.136)*		*(0.204)*	*(0.129)*		*(0.219)*
Single adult, childless	0.784***	0.336	0.613*	0.588***	1.841	0.957***	0.422**	0.066	0.349
	(0.137)		*(0.242)*	*(0.143)*		*(0.221)*	*(0.133)*		*(0.229)*
Single parent, 1 child	1.098***	2.739*	0.481	0.981***	1.063	0.615*	0.921***	0.143	0.771*
	(0.198)		*(0.292)*	*(0.187)*		*(0.281)*	*(0.182)*		*(0.313)*

Single parent, 2+ children	1.128***	4.578**	0.011	0.548*	0.003	0.576	0.823**	0.696	1.356*
	(0.273)		*(0.414)*	*(0.260)*		*(0.398)*	*(0.272)*		*(0.530)*
Couple, 1 child	0.513***	4.681**	-0.131	0.289	0.030	0.239	0.383*	0.052	0.299
	(0.155)		*(0.237)*	*(0.149)*		*(0.249)*	*(0.156)*		*(0.309)*
Couple, 2 children	0.810***	5.039**	-0.112	0.216	0.448	0.498	0.101	5.778**	1.587**
	(0.214)		*(0.338)*	*(0.205)*		*(0.345)*	*(0.230)*		*(0.504)*
Couple, 3+ children	0.884**	3.058*	-0.210	0.245	0.001	0.222	0.459	2.087	1.797*
	(0.317)		*(0.525)*	*(0.309)*		*(0.557)*	*(0.347)*		*(0.770)*
Number of earners: 0	1.747***	0.145	1.662***	1.233***	0.071	1.161***	1.180***	0.468	0.997***
	(0.131)		*(0.177)*	*(0.148)*		*(0.227)*	*(0.144)*		*(0.218)*
Number of earners: 2	-1.234***	1.895	-1.448***	-1.139***	3.503*	-1.437***	-1.204***	1.660	-1.461***
	(0.094)		*(0.123)*	*(0.086)*		*(0.129)*	*(0.096)*		*(0.170)*
Number of earners: 3+	-1.585***	2.853*	-2.300***	-1.720***	4.454**	-2.712***	-1.150***	0.242	-1.388**
	(0.228)		*(0.343)*	*(0.275)*		*(0.389)*	*(0.229)*		*(0.423)*
Constant	-4.056***	14.744***	-2.680***	-3.705***	0.910	-3.397***	-3.309***	1.890	-2.838***
	(0.175)		*(0.292)*	*(0.168)*		*(0.265)*	*(0.157)*		*(0.284)*
$P > \chi^2$	0.000		0.000	0.000		0.000	0.000		0.000
Log likelihood	-7047.45		-2689.58	-7767.21		-2641.35	-7253.44		-2065.45
Pseudo R^2	0.283		0.283	0.286		0.326	0.286		0.380
N	31389		8374	3901		10261	33797		8596

Note. Dependent variable: dummy poor. N denotes the number of non-weighted observations.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table 5. Non-linear decomposition of East/West poverty divide

	Relative poverty line			Absolute poverty line		
	1993	1998	2003	1993	1998	2003
Head-count ratio, Old states	0.099	0.121	0.119	0.128	0.135	0.119
Head-count ratio, New states	0.156	0.149	0.164	0.213	0.172	0.164
Difference	-0.057	-0.028	-0.045	-0.085	-0.037	-0.045
Characteristics effects by groups of variables						
Gender of household head	-0.002***	-0.004***	-0.002***	-0.002***	-0.005***	-0.002***
	-120.78	*-273.92*	*-181.28*	*-158.78*	*-297.70*	*-180.76*
Marital status of household head	-0.002***	-0.003***	-0.004***	-0.003***	-0.003***	-0.004***
	-187.68	*-247.52*	*-222.52*	*-212.93*	*-255.70*	*-215.73*
Age cohort household head	-0.003***	-0.001***	-0.003***	-0.004***	-0.002***	-0.002***
	-95.44	*-42.97*	*-52.59*	*-112.49*	*-46.58*	*-49.36*
Labor force status of household head	-0.014***	-0.008***	-0.016***	-0.015***	-0.011***	-0.017***
	-341.69	*-224.16*	*-323.91*	*-373.86*	*-261.00*	*-326.00*
Highest educational degree of household head	0.023***	0.013***	0.008***	0.027***	0.014***	0.009***
	843.11	*810.65*	*530.99*	*958.86*	*834.80*	*530.34*
Household age composition	-0.002***	-0.001***	-0.003***	-0.003***	-0.001***	-0.002***
	-43.02	*-23.14*	*-66.14*	*-55.50*	*-12.67*	*-44.79*
Family type	-0.000***	-0.001***	0.000***	-0.001***	-0.000***	0.000***
	-4.51	*-31.61*	*5.60*	*-23.23*	*-11.66*	*3.35*
Number of earners	0.002***	0.002***	-0.006***	0.005***	0.002***	-0.006***
	27.56	*27.78*	*-89.10*	*77.93*	*34.07*	*-98.53*
Aggregate characteristics effects (total explained)						
Total explained	0.002	-0.005	-0.025	0.004	-0.005	-0.025
Explained in percent	0	13.309	55.995	0	14.285	55.995

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

Note. Decomposition results are based on 500 replications using randomized ordering of variables. HHH denotes household head; HH denotes HH type. t statistics in italics. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

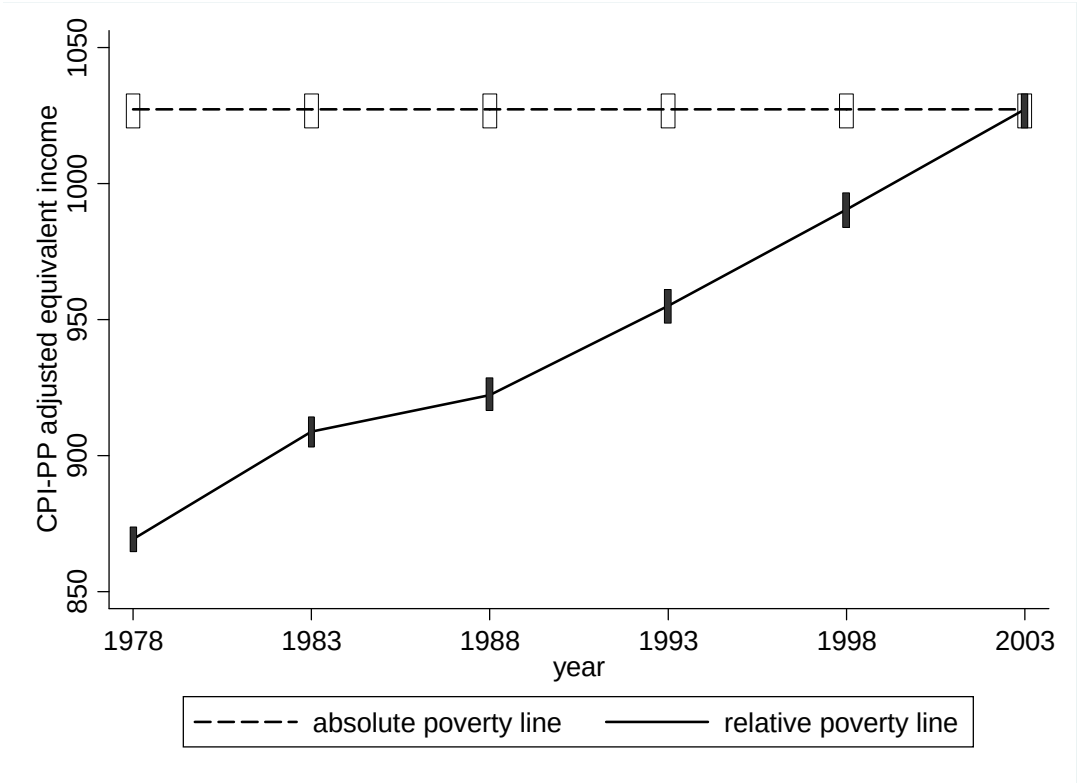

Figure 1. Income levels associated with poverty lines.
Note. Vertical bares indicate bias-corrected Hall confidence intervals.
Data. German Sample Survey of Income and Expenditure.

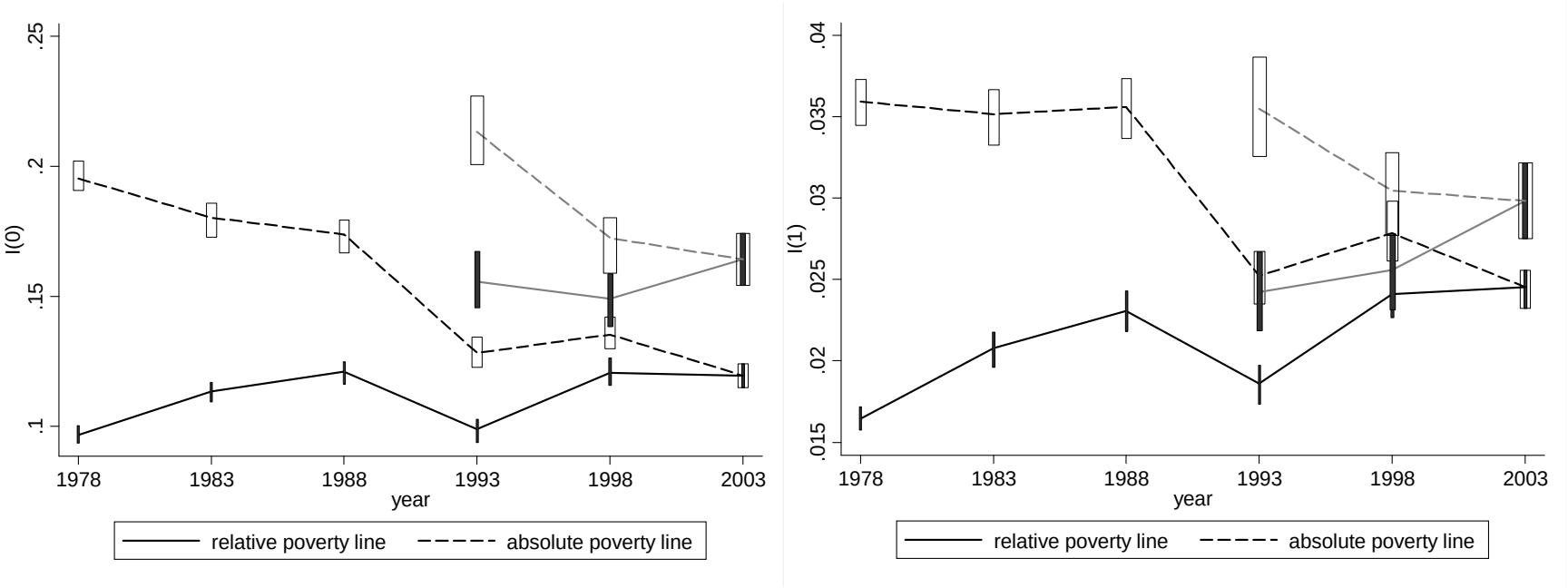

Figure 2. Incidence and intensity of poverty in the overall population.

Note. Left figure: head count ratio. Right figure: poverty gap ratio. Vertical bares indicate bias-corrected Hall confidence intervals.

Data. German Sample Survey of Income and Expenditure.

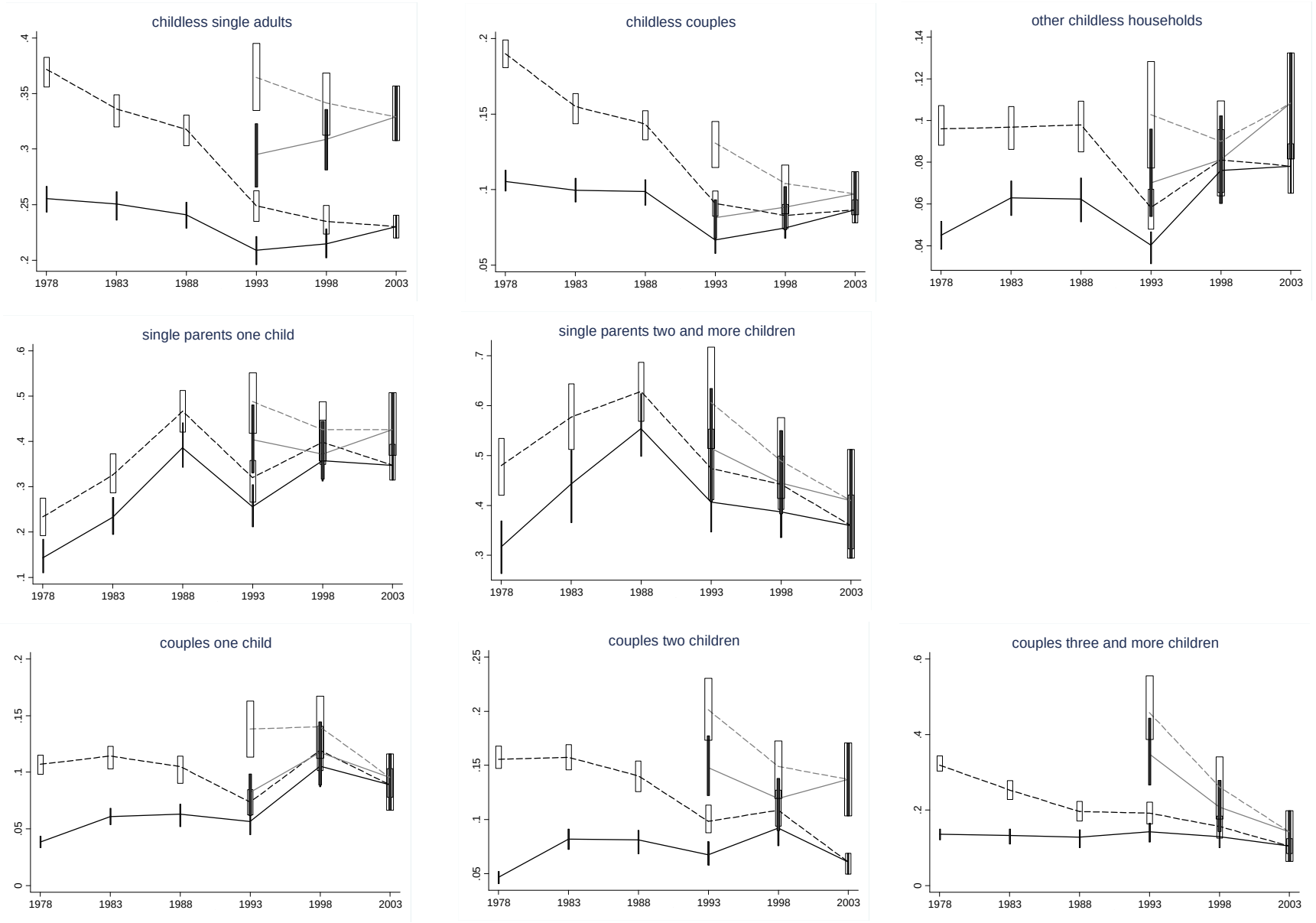

Figure 3a. Head count ratios by household type.

Note. Vertical bares indicate bias-corrected Hall confidence intervals. Dashed lines refer to absolute poverty line; solid lines refer to relative poverty line.

Data. German Sample Survey of Income and Expenditure.

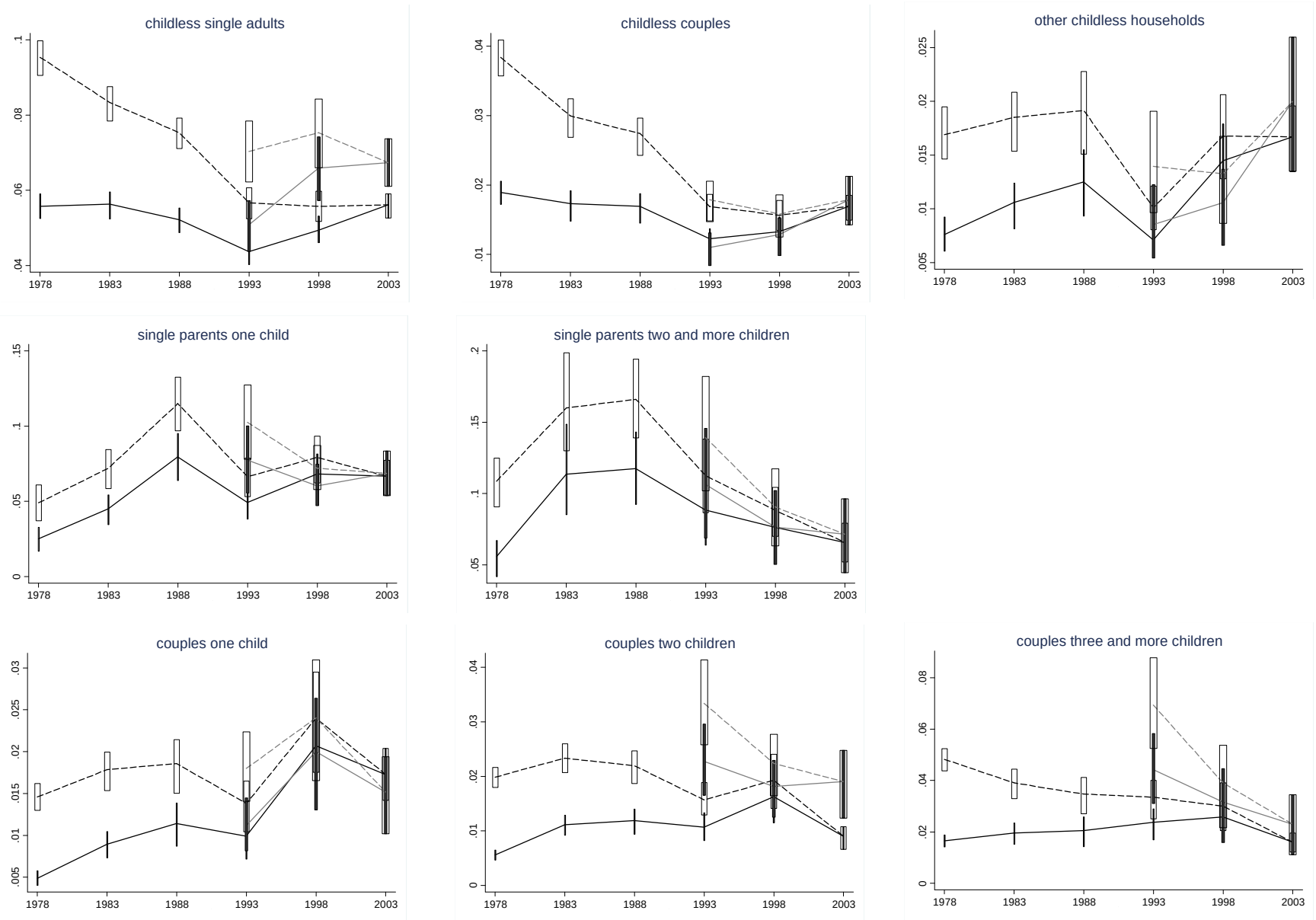

Figure 3b. Poverty gap ratios by household type.

Note. Vertical bares indicate bias-corrected Hall confidence intervals. Dashed lines refer to absolute poverty line; solid lines refer to relative poverty line.

Data. German Sample Survey of Income and Expenditure.

Supplementing Material for "Poverty in Germany – statistical inference and decomposition"

Timm Bönke and Carsten Schröder

Structure of the materials

The supplementing material is split in two parts. Part A contains technical details concerning the database and its preparation. Part B provides poverty and decomposition estimates when incomes in the New states are not adjusted for purchasing-power differences compared to the Old states.

PART A. DATABASE AND DATA PROCESSING

A.1 Working sample

Our working sample includes all EVS household observations corresponding to one of the eight defined household types as described in the article. From these observations we have discarded a small number of households if "disposable income" is not reported in the database or if it is negative. Over the entire observation period, this leaves us with 263,227 non-weighted household observations (for further details on the sample composition see Table A2 below).

A.1 Income adjustments for changes in consumer prices and differences in purchasing power

Income adjustments for changes in consumer prices (CPIs) rely on datasets provided by the German Federal Statistical Office (see http://www-genesis.destatis.de/genesis/online). Data on differences in purchasing power (PPs) are taken from Nierhaus (2001). CPI and PP factors can be taken from Table A1 below.

Table A1. Consumer prices and purchasing powers

	CPI		PP
Year	Old states	New states	
1978	54.3	---	---
1983	68.8	---	---
1988	72.9	---	---
1993	85.9	86.4	90.3
1998	93.4	94.9	92.3
2003	100.0	100.0	92.0

In the main body of the paper, incomes are adjusted by region-specific CPIs and PPs. In addition, in Part B of the Supporting Materials, we conduct an equivalent analysis to the one carried out in the main body with the single difference that incomes are adjusted by means of CPI but *not* by PP factors.

A.2 Description of the sample

This subsection provides further descriptive statistics on our database complementing the figures in the main body of the article. Particularly, Table A2 gives relative non-weighted frequencies of household types by year and region of residence. Underneath total numbers of observations (non-weighted) are reported. Altogether, sample sizes should always be sufficient large to ensure reliability of derived poverty indices.

Table A2. Sample composition (relative frequencies and total numbers of observations, non-weighted)

	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
Other childless	10.64	12.68	15.29	10.73	8.78	9.19	10.41	9.49	13.05
Childless single adult	16.36	18.07	19.92	24.47	17.02	22.80	19.43	25.14	20.81
Single parent, 1 child	1.15	1.71	1.65	1.93	3.56	2.50	4.10	2.40	3.09
Single parent, 2+ children	0.81	0.79	0.84	1.05	1.67	1.61	2.00	1.32	1.24
Childless couple	28.27	24.82	26.45	28.77	31.94	30.03	33.22	33.90	36.98
Couple, 1 child	18.11	19.13	15.61	12.47	16.28	12.42	14.56	10.55	14.34
Couple, 2 children	17.65	17.58	15.17	13.18	17.08	15.41	14.07	12.56	8.47
Couple, 3+ children	7.01	5.20	5.07	7.40	3.68	6.05	2.20	4.64	2.00
Number of observation	45,786	42,560	43,454	31,389	8,374	39,010	10,261	33,797	8,596

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

A breakdown of the sample including all the variables entering the logit regressions is given in Tables A3 and A4. All reported frequencies are computed using EVS frequency weights. The upper panel of the table summarizes individual information of the household head, while the lower panel contains household-level information.

Table A3. Breakdown of the sample (relative frequencies of all households, weighted)

		1993		1998		2003	
Characteristics of the household head		Old states	New states	Old states	New states	Old states	New states
Gender	female	32.58	43.48	34.20	43.38	36.18	46.35
	male	67.42	56.52	65.80	66.62	63.82	53.65
Marital status	unmarried	18.52	14.16	22.67	19.20	25.54	24.47
	married	55.92	60.00	52.53	54.09	50.19	47.65
	widowed	15.67	13.22	11.11	8.97	8.77	7.28
	divorced	9.90	12.62	13.69	17.74	15.50	20.60
Labor force status	self-employed or farmer	7.52	2.45	6.42	4.12	5.99	4.62
	civil servant	5.87	0.88	5.27	2.24	4.59	2.93
	white-collar worker	22.89	27.10	28.64	27.63	30.28	25.72
	blue-collar worker	21.26	23.78	19.18	21.28	16.68	18.29
	unemployed	3.64	10.42	4.55	8.96	4.40	10.00
	non-working[A]	38.81	35.37	35.93	35.77	38.05	38.43
Highest level of education	university	9.11	19.10	11.58	19.12	13.21	19.86
	univ. of applied sciences	8.87	24.81	9.70	15.48	10.51	17.32
	engineering school[B]	12.34	7.57	14.68	16.10	17.62	17.63
	apprenticeship	55.07	45.08	56.19	46.05	51.96	41.36
	no degree	14.62	3.44	7.85	3.25	6.70	3.83
Age cohort	20-29 years	10.83	10.10	8.71	7.92	9.44	9.53
	30-39 years	20.25	21.81	21.96	19.60	18.98	16.06
	40-49 years	16.74	17.96	18.36	20.95	21.07	23.35
	50-59 years	18.27	21.62	17.43	17.78	15.71	15.11
	60-69 years	15.17	15.70	15.12	15.98	16.14	17.06
	70+ years	18.75	12.81	18.41	17.77	18.65	18.89
Characteristics of the household							
Family type	Other childless	11.04	7.93	10.70	12.88	9.78	11.62
	Childless single adult	34.77	28.65	36.37	32.18	37.19	36.62
	Single parent, 1 child	1.89	3.31	2.07	3.14	2.48	3.34
	Single parent, 2+ children	1.03	1.60	1.03	1.32	1.20	1.32
	Childless couple	27.56	30.12	29.29	29.70	29.49	30.15
	Couple, 1 child	10.76	13.80	8.29	9.95	7.98	9.81
	Couple, 2 children	9.22	12.22	9.11	9.48	8.71	5.82
	Couple, 3+ children	3.74	2.38	3.13	1.35	3.18	1.32
Number of earners	0	37.33	39.71	38.20	42.39	40.46	46.42
	1	37.23	31.34	36.74	29.99	35.68	29.88
	2	22.43	26.26	22.74	23.67	21.63	20.90
	3+	3.01	2.69	2.32	3.95	2.23	2.79

Source. German Sample Survey of Income and Expenditures 1993-2003.
Note. Own calculations. [A] Includes pensioners, housemen/wives, etc. [B] Also includes similar degrees.

Table A4. Household composition by number of persons belonging to a specific age cohort (relative frequencies of all households, weighted)

		1993		1998		2003	
Number of household members of		Old states	New states	Old states	New states	Old states	New states
Age 0-5	0	89.78	91.57	90.42	94.85	92.00	94.61
	1	8.16	7.41	7.64	4.46	6.55	4.70
	2	1.92	1.00	1.82	0.67	1.38	0.69
	3	0.14	0.02	0.12	0.03	0.06	0.01
	4	0.00	0.00	0.00	0.00	0.00	0.00
Age 6-10	0	89.20	86.41	89.87	91.97	90.03	94.42
	1	8.16	11.22	7.73	7.02	7.51	4.82
	2	2.45	2.13	2.25	0.97	2.30	0.73
	3	0.17	0.23	0.14	0.04	0.15	0.03
	4	0.01	0.00	0.01	0.00	0.01	0.00
Age 10-14	0	89.58	84.98	91.16	87.20	90.22	91.18
	1	8.17	12.38	6.80	10.71	7.43	7.74
	2	2.08	2.47	1.90	2.02	2.18	1.04
	3	0.16	0.16	0.13	0.07	0.17	0.04
	4	0.01	0.01	0.01	0.00	0.00	0.00
Age 15-19	0	90.80	87.75	91.92	86.03	90.92	86.60
	1	7.50	10.55	6.56	12.01	7.32	11.50
	2	1.58	1.64	1.42	1.88	1.61	1.76
	3	0.11	0.06	0.10	0.07	0.14	0.14
	4	0.01	0.00	0.00	0.01	0.01	0.00
age 20-29	0	84.22	86.20	87.36	87.01	88.86	88.46
	1	14.36	13.43	11.64	11.91	10.13	10.77
	2	1.26	0.37	0.91	1.08	0.94	0.72
	3	0.14	0.00	0.08	0.01	0.07	0.06
	4	0.02	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00
Age 30-39	0	83.65	84.33	84.47	86.36	86.70	89.77
	1	16.27	15.66	15.52	13.64	13.30	10.23
	2	0.07	0.01	0.01	0.00	0.00	0.01
	3	0.01	0.00	0.00	0.00	0.00	0.00
Age 40-49	0	87.47	87.57	88.07	85.56	86.90	85.59
	1	12.51	12.42	11.91	14.36	13.06	14.30
	2	0.02	0.01	0.02	0.07	0.04	0.12
	3	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00
Age 50-59	0	86.89	83.76	87.92	86.96	90.12	90.17
	1	13.09	16.23	11.92	12.93	9.77	9.64
	2	0.01	0.01	0.15	0.11	0.11	0.20
	3	0.00	0.00	0.01	0.00	0.00	0.00
Age 60-69	0	91.31	90.02	90.22	88.61	89.07	88.27
	1	8.66	9.96	9.56	11.19	10.82	11.49
	2	0.03	0.02	0.22	0.20	0.11	0.24
Age 70+	0	95.09	96.26	94.35	94.86	93.32	93.10
	1	4.84	3.71	5.57	5.12	6.60	6.88
	2	0.07	0.02	0.08	0.06	0.08	0.02
	3	0.00	0.00	0.00	0.00	0.00	0.00

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

PART B. PURCHASING-POWER CORRECTED ESTIMATES

Part B of the Supplementing Materials contains estimates complementing the results from the main body of the article *without* correction for East/West differences in purchasing power. Particularly, Tables B1, B2a-h, B4a-b and Table B5 are equivalent with Tables 1, 2a-h, 4a-b and Table 5 in the article. Figures B1 to B3b are equivalent with Figures 1 to 3b.

Table B1. Inter-temporal changes in poverty, all households

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	1.69**	0.75**	-4.24**	3.18**	0.22	-9.14**	-3.48**
	(95% CI)	(1.15; 2.21)	(0.17; 1.34)	(-4.83; -3.60)	(2.49; 3.83)	(-0.40; 0.95)	(-10.95; -7.17)	(-5.19; -1.83)
	$\Delta\hat{I}(1)$	0.43**	0.23**	-0.88**	0.71**	0.17	-1.79**	-0.43**
	(95% CI)	(0.30; 0.57)	(0.05; 0.38)	(-1.03; -0.71)	(0.52; 0.89)	(-0.01; 0.37)	(-2.28; -1.28)	(-0.86; -0.04)
Absolute	$\Delta\hat{I}(0)$	-1.27**	-0.62	-4.40**	0.76	-1.59**	-18.75**	-7.41**
	(95% CI)	(-1.91; -0.61)	(-1.40; 0.13)	(-5.13; -3.71)	(-0.04; 1.58)	(-2.31; -0.82)	(-20.40; -16.89)	(-9.18; -5.84)
	$\Delta\hat{I}(1)$	-0.06	0.06	-0.98**	0.25**	-0.31**	-4.45**	-1.49**
	(95% CI)	(-0.23; 0.12)	(-0.17; 0.25)	(-1.19; -0.78)	(0.03; 0.47)	(-0.51; -0.10)	(-4.93; -3.86)	(-1.90; -1.09)

Note. $\Delta\hat{I}(.)$ denotes the observed change in poverty indices between periods t and t-5. CI denotes Hall's bias-corrected 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 B2a. Inter-temporal changes in poverty, other childless households

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	1.79**	-0.06	-3.24**	3.96**	0.46	-2.94	0.02
	(95% CI)	(0.78; 2.79)	(-1.31; 1.32)	(-4.50; -1.95)	(2.32; 5.47)	(-1.34; 2.37)	(-6.90; 1.17)	(-4.18; 4.25)
	$\Delta\hat{I}(1)$	0.30**	0.19	-0.71**	0.73**	0.31	-0.68	0.56
	(95% CI)	(0.06; 0.59)	(-0.19; 0.58)	(-1.06; -0.37)	(0.38; 1.11)	(-0.14; 0.78)	(-1.50; 0.21)	(-0.42; 1.46)
Absolute	$\Delta\hat{I}(0)$	0.22	0.04	-3.72**	2.46**	-0.47	-9.50**	-3.31
	(95% CI)	(-1.08; 1.64)	(-1.60; 1.57)	(-5.29; -2.15)	(0.69; 4.23)	(-2.41; 1.44)	(-14.09; -4.62)	(-7.56; 0.70)
	$\Delta\hat{I}(1)$	0.16	0.06	-0.86**	0.64**	0.00	-2.12**	-0.13
	(95% CI)	(-0.15; 0.51)	(-0.39; 0.52)	(-1.30; -0.42)	(0.21; 1.08)	(-0.48; 0.51)	(-3.13; -1.04)	(-1.12; 0.83)

Note and source. See Table B1.

Table B2b. Inter-temporal changes in poverty, childless single adult

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	-0.49	-0.95	-6.55**	2.49**	1.99**	-9.34**	-4.20**
	(95% CI)	(-2.27; 1.26)	(-2.70; 0.68)	(-8.34; -4.80)	(0.59; 4.26)	(0.39; 3.71)	(-13.42; -4.78)	(-8.10; -0.66)
	$\Delta\hat{I}(1)$	0.06	-0.41	-1.77**	1.02**	0.88**	-1.19	-1.35**
	(95% CI)	(-0.44; 0.56)	(-0.92; 0.06)	(-2.24; -1.31)	(0.53; 1.50)	(0.42; 1.37)	(-2.57; 0.20)	(-2.62; -0.10)
Absolute	$\Delta\hat{I}(0)$	-3.60**	-1.65**	-6.81**	-1.39	-0.56	-17.61**	-8.69**
	(95% CI)	(-5.50; -1.68)	(-3.50; -0.01)	(-8.56; -4.94)	(-3.38; 0.53)	(-2.21; 1.06)	(-21.58; -13.64)	(-12.70; -5.13)
	$\Delta\hat{I}(1)$	-1.16**	-0.79**	-1.78**	-0.08	0.05	-4.66**	-3.05**
	(95% CI)	(-1.76; -0.55)	(-1.37; -0.26)	(-2.38; -1.26)	(-0.62; 0.48)	(-0.42; 0.52)	(-6.09; -3.17)	(-4.35; -1.76)

Note and source. See Table B1.

Table B2c. Inter-temporal changes in poverty, single parent with one child

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	8.98**	15.33**	-18.17**	12.56**	-0.74	-8.90**	2.20
	(95% CI)	(3.29; 14.29)	(8.65; 21.32)	(-24.89; -11.50)	(5.21 18.36)	(-6.87; 6.47)	(-18.13; -0.30)	(-7.50; 11.74)
	$\Delta\hat{I}(1)$	1.99**	3.45**	-4.11**	2.15**	0.25	-4.91**	-0.85
	(95% CI)	(0.69; 3.27)	(1.68; 5.27)	(-5.92; -2.19)	(0.46 3.95)	(-1.51; 2.08)	(-8.08; -1.79)	(-3.33; 1.64)
Absolute	$\Delta\hat{I}(0)$	8.89**	14.28**	-14.35**	6.69	-5.63	-17.19**	-3.16
	(95% CI)	(3.21; 14.73)	(7.59; 20.42)	(-20.76; -7.91)	(-0.15 13.75)	(-12.28; 0.55)	(-24.81; -9.28)	(-12.73; 5.46)
	$\Delta\hat{I}(1)$	2.20**	4.13**	-4.70**	1.19	-1.19	-8.47**	-2.99**
	(95% CI)	(0.42; 3.79)	(2.05; 6.21)	(-6.93; -2.46)	(-0.81 3.32)	(-3.06; 0.70)	(-11.91; -4.92)	(-5.59; -0.38)

Note and source. See Table B1.

Table B2d. Inter-temporal changes in poverty, single parent with two or more children

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	12.63**	11.09**	-22.00**	3.07	-2.03	-14.44**	-14.80**
	(95% CI)	(3.20; 21.55)	(1.14; 20.16)	(-31.01; -12.18)	(-5.71; 12.00)	(-10.14; 5.54)	(-25.17; -2.74)	(-28.70; -0.16)
	$\Delta\hat{I}(1)$	5.78**	0.39	-4.66**	-0.35	-0.60	-7.55**	-3.13
	(95% CI)	(2.07; 9.00)	(-3.56; 4.48)	(-7.97; -1.33)	(-3.13; 2.38)	(-2.73; 1.36)	(-12.67; -2.19)	(-7.30; 1.55)
Absolute	$\Delta\hat{I}(0)$	10.14**	5.38	-17.65**	-3.93	-6.57	-19.66**	-23.14**
	(95% CI)	(1.33; 18.70)	(-3.12; 14.15)	(-26.57; -8.62)	(-12.75; 4.97)	(-14.77; 0.86)	(-27.62; -9.55)	(-36.60; -9.64)
	$\Delta\hat{I}(1)$	5.06**	0.52	-5.16**	-2.41	-2.16**	-11.78**	-5.74**
	(95% CI)	(1.09; 8.58)	(-3.67; 4.69)	(-8.70; -1.60)	(-5.51; 0.64)	(-4.36; -0.09)	(-16.77; -6.21)	(-9.79; -1.02)

Note and source. See Table B1.

Table B2e. Inter-temporal changes in poverty, childless couple

		Old states					New states	
Poverty line	Poverty index	1983 %1978	1988 %1983	1993 %1988	1998 %1993	2003 %1998	1998 %1993	2003 %1998
Relative	$\Delta\hat{I}(0)$	-0.58	-0.09	-4.44**	1.37**	1.44**	-8.17**	-2.80**
	(95% CI)	(-1.58; 0.49)	(-1.18; 1.12)	(-5.47; -3.35)	(0.30; 2.28)	(0.49; 2.57)	(-11.11; -5.54)	(-5.30; -0.12)
	$\Delta\hat{I}(1)$	-0.16	-0.04	-0.76**	0.23	0.43**	-1.16**	-0.07
	(95% CI)	(-0.42; 0.11)	(-0.33; 0.27)	(-1.01; -0.51)	(-0.02; 0.48)	(0.17; 0.69)	(-1.79; -0.62)	(-0.66; 0.54)
Absolute	$\Delta\hat{I}(0)$	-3.22**	-1.37	-4.95**	-0.58	0.33	-20.09**	-6.11**
	(95% CI)	(-4.37; -1.99)	(-2.68; 0.00)	(-6.23; -3.86)	(-1.65; 0.46)	(-0.71; 1.46)	(-23.25; -17.40)	(-8.65; -3.31)
	$\Delta\hat{I}(1)$	-0.80**	-0.24	-0.99**	-0.12	0.12	-3.47**	-0.79**
	(95% CI)	(-1.13; -0.46)	(-0.59; 0.14)	(-1.32; -0.69)	(-0.41; 0.17)	(-0.13; 0.39)	(-4.19; -2.78)	(-1.41; -0.14)

Note and source. See Table B1.

Table B2f. Inter-temporal changes in poverty, couple 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	$\Delta\hat{I}(0)$	2.22**	0.23	-2.11**	5.74**	-1.93	-4.23	-7.75**
	(95% CI)	(1.32; 3.12)	(-0.99; 1.62)	(-3.48; -0.80)	(3.77; 7.82)	(-4.07; 0.32)	(-8.74; 0.08)	(-11.80; -3.30)
	$\Delta\hat{I}(1)$	0.41**	0.25	-0.39**	1.08**	-0.20	-0.21	-1.41**
	(95% CI)	(0.23; 0.59)	(-0.06; 0.57)	(-0.75; -0.06)	(0.50; 1.71)	(-0.85; 0.40)	(-1.34; 0.89)	(-2.39; -0.38)
Absolute	$\Delta\hat{I}(0)$	0.99	-0.85	-2.77**	4.16**	-3.25**	-12.98**	-10.86**
	(95% CI)	(-0.13; 2.25)	(-2.32; 0.68)	(-4.44; -1.19)	(1.93; 6.35)	(-5.38; -0.96)	(-17.58; -8.40)	(-15.29; -6.53)
	$\Delta\hat{I}(1)$	0.32**	0.09	-0.44**	0.97**	-0.63	-2.29**	-2.34**
	(95% CI)	(0.07; 0.59)	(-0.30; 0.49)	(-0.88; -0.03)	(0.35; 1.66)	(-1.31; 0.01)	(-3.53; -1.11)	(-3.35; -1.22)

Note and source. See Table B1.

Table B2g. Inter-temporal changes in poverty, couple 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	$\Delta\hat{I}(0)$	3.51**	-0.08	-3.32**	3.33**	-2.37**	-9.68**	-6.68**
	(95% CI)	(2.44; 4.64)	(-1.40; 1.45)	(-4.81; -2.00)	(1.62; 5.28)	(-4.16; -0.64)	(-14.14; -5.28)	(-11.40; -2.31)
	$\Delta\hat{I}(1)$	0.55**	0.08	-0.40**	0.62**	-0.59**	-2.38**	-0.81
	(95% CI)	(0.35; 0.78)	(-0.21; 0.36)	(-0.71; -0.08)	(0.17; 1.17)	(-1.08; -0.12)	(-3.52; -1.21)	(-1.80; 0.30)
Absolute	$\Delta\hat{I}(0)$	0.31	-1.75**	-3.90**	1.08	-4.31**	-19.73**	-10.82**
	(95% CI)	(-1.20; 1.76)	(-3.29; -0.06)	(-5.65; -2.30)	(-0.81; 3.31)	(-6.23; -2.47)	(-23.84; -14.81)	(-15.92; -6.48)
	$\Delta\hat{I}(1)$	0.35**	-0.11	-0.57**	0.35	-0.97**	-5.09**	-1.89**
	(95% CI)	(0.07; 0.66)	(-0.47; 0.26)	(-0.98; -0.18)	(-0.18; 0.97)	(-1.50; -0.45)	(-6.38; -3.74)	(-2.96; -0.78)

Note and source. See Table B1.

Table B2h. Inter-temporal changes in poverty, couple 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	$\Delta\hat{I}(0)$	-0.35	-0.43	-1.76	0.16	-1.90	-27.74**	-9.69
	(95% CI)	(-2.73; 2.26)	(-3.49; 2.69)	(-5.42; 1.55)	(-3.65; 4.17)	(-5.56; 1.33)	(-37.74; -16.14)	(-20.65; 2.16)
	$\Delta\hat{I}(1)$	0.31	0.10	-0.31	0.54	-0.83	-6.44**	-2.38
	(95% CI)	(-0.15; 0.82)	(-0.57; 0.88)	(-1.04; 0.51)	(-0.54; 1.59)	(-1.76; 0.02)	(-9.49; -3.16)	(-4.79; 0.05)
Absolute	$\Delta\hat{I}(0)$	-6.19**	-5.32**	-0.67	-2.93	-5.33**	-36.50**	-17.86**
	(95% CI)	(-9.02; -3.02)	(-8.92; -1.76)	(-4.49; 3.25)	(-6.91; 1.13)	(-8.92; -1.92)	(-46.04; -26.83)	(-28.61; -5.34)
	$\Delta\hat{I}(1)$	-0.84**	-0.35	-0.12	-0.30	-1.35**	-11.30**	-3.86**
	(95% CI)	(-1.44; -0.16)	(-1.19; 0.59)	(-1.08; 0.89)	(-1.51; 0.92)	(-2.38; -0.42)	(-14.60; -7.57)	(-6.36; -1.18)

Note and source. See Table B1.

Table B4a. Logistic regressions, relative poverty line

	1993			1998			2003		
Household head	Old states	Diff. test	New states	Old states	Diff. test	New states	Old states	Diff. test	New states
Female	0.189*	2.533	0.017	0.180**	0.069	0.152	0.199***	1.779	0.350***
	(0.076)		*(0.076)*	*(0.065)*		*(0.083)*	*(0.060)*		*(0.096)*
Married	-0.227	1.005	-0.470**	-0.286*	0.028	-0.250	-0.434***	0.300	-0.320
	(0.171)		*(0.162)*	*(0.137)*		*(0.157)*	*(0.115)*		*(0.170)*
Widowed	-0.834***	14.217***	-1.567***	-0.871***	45.709***	-2.282***	-0.778***	53.310***	-2.702***
	(0.117)		*(0.162)*	*(0.109)*		*(0.174)*	*(0.107)*		*(0.246)*
Divorced	0.270**	4.739**	-0.077	0.065	0.224	0.002	0.051	1.892	0.241*
	(0.102)		*(0.128)*	*(0.082)*		*(0.107)*	*(0.075)*		*(0.118)*
Self-employed	1.240***	0.617	1.031***	1.175***	12.005***	0.280	1.212***	8.465***	0.343
	(0.146)		*(0.209)*	*(0.120)*		*(0.228)*	*(0.113)*		*(0.261)*
Civil servant	-2.285***	4.379**	-1.217***	-1.569***	2.217	-2.313***	-1.354***	0.004	-1.385**
	(0.388)		*(0.344)*	*(0.232)*		*(0.458)*	*(0.227)*		*(0.429)*
Blue-collar worker	0.522***	1.647	0.728***	0.714***	1.596	0.535***	0.877***	0.057	0.839***
	(0.122)		*(0.101)*	*(0.092)*		*(0.103)*	*(0.088)*		*(0.129)*
Unemployed	1.878***	13.608***	0.981***	2.003***	8.922***	1.199***	2.119***	1.348	1.802***
	(0.190)		*(0.151)*	*(0.171)*		*(0.202)*	*(0.157)*		*(0.213)*
Non-working	0.905***	2.025	0.533**	1.201***	1.033	0.903***	1.137***	0.316	1.301***
	(0.182)		*(0.179)*	*(0.172)*		*(0.228)*	*(0.161)*		*(0.233)*
University degree	-0.507**	10.835***	-1.176***	-0.363***	6.875***	-0.780***	-0.358***	24.503***	-1.211***
	(0.156)		*(0.128)*	*(0.109)*		*(0.116)*	*(0.091)*		*(0.144)*
Univ. of applied	-0.491**	0.460	-0.629***	-0.477***	1.155	-0.298**	-0.660***	1.643	-0.881***
sciences degree	*(0.165)*		*(0.120)*	*(0.122)*		*(0.114)*	*(0.106)*		*(0.136)*
In apprenticeship	0.389***	0.700	0.255*	0.507***	3.142*	0.721***	0.244***	2.054	0.416***
	(0.106)		*(0.115)*	*(0.078)*		*(0.093)*	*(0.065)*		*(0.103)*
No degree	1.434***	0.425	1.261***	1.380***	1.485	1.678***	1.231***	0.044	1.173***
	(0.116)		*(0.226)*	*(0.101)*		*(0.223)*	*(0.096)*		*(0.248)*
Age 20-29 years	0.252*	0.243	0.162	0.521***	1.175	0.328*	0.575***	0.216	0.673***
	(0.114)		*(0.134)*	*(0.094)*		*(0.150)*	*(0.098)*		*(0.184)*
Age 40-49 years	-0.365**	11.056***	0.172	-0.333***	8.855***	0.085	-0.214**	3.107*	0.060
	(0.115)		*(0.115)*	*(0.084)*		*(0.109)*	*(0.081)*		*(0.134)*
Age 50-59 years	-0.624***	15.100***	0.136	-0.714***	27.558***	0.224	-0.555***	19.637***	0.280
	(0.129)		*(0.149)*	*(0.104)*		*(0.142)*	*(0.098)*		*(0.164)*
Age 60-69 years	-1.344***	58.466***	0.384*	-1.200***	17.804***	-0.278	-1.160***	17.571***	-0.210
	(0.137)		*(0.179)*	*(0.114)*		*(0.182)*	*(0.108)*		*(0.196)*
Age 70+ years	-1.132***	37.402***	0.364	-1.274***	15.719***	-0.331	-1.209***	4.716**	-0.662**
	(0.138)		*(0.203)*	*(0.121)*		*(0.203)*	*(0.119)*		*(0.226)*
Household level									
Number other	0.062	7.243***	0.625***	0.220	0.689	0.401*	0.043	0.084	0.127
members age 0-4	*(0.137)*		*(0.164)*	*(0.113)*		*(0.166)*	*(0.123)*		*(0.238)*
Number other	0.135	5.250**	0.577***	0.116	0.220	0.213	0.021	1.724	-0.356
members age 5-9	*(0.129)*		*(0.152)*	*(0.107)*		*(0.153)*	*(0.114)*		*(0.239)*
Number other	0.276*	4.513**	0.686***	0.330**	0.004	0.342*	0.040	0.001	0.030
members age 10-14	*(0.127)*		*(0.153)*	*(0.106)*		*(0.149)*	*(0.112)*		*(0.230)*
Number other	0.714***	10.242***	1.265***	0.589***	2.488	0.847***	0.536***	1.544	0.262
members age 15-19	*(0.112)*		*(0.134)*	*(0.090)*		*(0.121)*	*(0.089)*		*(0.176)*
Number other	0.404**	0.446	0.564***	0.408***	0.030	0.442**	0.355***	3.130*	-0.047
members age 20-29	*(0.139)*		*(0.169)*	*(0.117)*		*(0.143)*	*(0.106)*		*(0.180)*
Number other	0.377	2.653	-0.112	-0.015	0.406	-0.191	0.016	1.473	-0.370
members age 30-39	*(0.193)*		*(0.202)*	*(0.160)*		*(0.202)*	*(0.158)*		*(0.245)*
Number other	0.201	3.140*	-0.348	-0.031	0.363	-0.191	-0.004	1.235	-0.321
members age 40-49	*(0.210)*		*(0.203)*	*(0.165)*		*(0.191)*	*(0.152)*		*(0.218)*
Number other	0.190	10.292***	-0.838***	-0.368*	0.134	-0.270	0.018	2.114	-0.408
members age 50-59	*(0.207)*		*(0.217)*	*(0.169)*		*(0.208)*	*(0.148)*		*(0.229)*
Number other	0.168	12.630***	-0.991***	-0.634***	10.632***	-1.580***	-0.345*	19.378***	-1.798***
members age 60-69	*(0.210)*		*(0.227)*	*(0.176)*		*(0.233)*	*(0.156)*		*(0.268)*
Number other	0.387	22.338***	-1.317***	-0.331	6.369**	-1.172***	-0.229	11.094***	-1.509***
members age 70+	*(0.210)*		*(0.261)*	*(0.189)*		*(0.276)*	*(0.174)*		*(0.325)*

Table continues

Table continued

Other childless households	0.177 *(0.169)*	0.062	0.242 *(0.183)*	0.248 *(0.149)*	0.538	0.423* *(0.176)*	0.116 *(0.132)*	0.363	0.265 *(0.197)*
Single adult, childless	0.870*** *(0.172)*	3.639*	0.319 *(0.207)*	0.517*** *(0.157)*	0.348	0.671*** *(0.194)*	0.396** *(0.136)*	0.243	0.264 *(0.207)*
Single parent, 1 child	0.711** *(0.247)*	1.256	0.289 *(0.259)*	0.724*** *(0.204)*	0.000	0.723** *(0.249)*	0.829*** *(0.187)*	0.112	0.705* *(0.288)*
Single parent, 2+ children	0.846* *(0.341)*	2.379	0.029 *(0.382)*	0.298 *(0.285)*	1.250	0.847* *(0.359)*	0.796** *(0.279)*	0.021	0.710 *(0.483)*
Couple, 1 child	0.468* *(0.201)*	0.515	0.253 *(0.210)*	0.258 *(0.166)*	0.607	0.472* *(0.215)*	0.374* *(0.161)*	0.352	0.174 *(0.276)*
Couple, 2 children	0.543 *(0.281)*	0.599	0.218 *(0.315)*	0.087 *(0.229)*	2.394	0.717* *(0.306)*	0.223 *(0.236)*	2.553	1.104* *(0.446)*
Couple, 3+ children	0.678 *(0.416)*	0.392	0.283 *(0.487)*	0.103 *(0.347)*	0.300	0.456 *(0.496)*	0.588 *(0.356)*	1.016	1.409* *(0.677)*
Number of earners: 0	1.707*** *(0.165)*	0.258	1.825*** *(0.160)*	1.288*** *(0.163)*	0.611	1.081*** *(0.203)*	1.215*** *(0.148)*	0.874	0.974*** *(0.201)*
Number of earners: 2	-1.329*** *(0.142)*	1.297	-1.527*** *(0.100)*	-1.186*** *(0.103)*	1.749	-1.385*** *(0.105)*	-1.163*** *(0.099)*	3.328*	-1.488*** *(0.145)*
Number of earners: 3+	-1.814*** *(0.354)*	3.112*	-2.594*** *(0.279)*	-1.732*** *(0.315)*	3.947**	-2.583*** *(0.288)*	-1.148*** *(0.241)*	0.701	-1.515*** *(0.362)*
Constant	-4.727*** *(0.226)*	78.257***	-1.634*** *(0.247)*	-3.889*** *(0.185)*	17.519***	-2.622*** *(0.229)*	-3.381*** *(0.161)*	8.921***	-2.430*** *(0.255)*
$P > \chi^2$	0.000		0.000	0.000		0.000	0.000		0.000
Log likelihood	-4825.69		-3482.05	-6530.97		-3300.58	-6949.18		-2348.49
Pseudo R^2	0.298		0.286	0.291		0.308	0.290		0.378
N	31389			8374	3901		10261	33797	

Note. Dependent variable: dummy poor. N denotes the number of non-weighted observations.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table B4b. Logistic regressions, absolute poverty line

	1993			1998			2003		
Household head	Old states	Diff. test	New states	Old states	Diff. test	New states	Old states	Diff. test	New states
Female	0.232***	2.529	0.079	0.221***	1.063	0.118	0.199***	1.779	0.350***
	(0.066)		*(0.069)*	*(0.062)*		*(0.077)*	*(0.060)*		*(0.096)*
Married	-0.130	1.862	-0.422**	-0.105	2.741*	-0.432**	-0.434***	0.300	-0.320
	(0.140)		*(0.148)*	*(0.129)*		*(0.144)*	*(0.115)*		*(0.170)*
Widowed	-0.708***	20.477***	-1.544***	-0.877***	52.505***	-2.282***	-0.778***	53.310***	-2.702***
	(0.098)		*(0.163)*	*(0.103)*		*(0.162)*	*(0.107)*		*(0.246)*
Divorced	0.203*	6.805***	-0.196	0.091	1.697	-0.077	0.051	1.892	0.241*
	(0.089)		*(0.129)*	*(0.078)*		*(0.104)*	*(0.075)*		*(0.118)*
Self-employed	1.119***	1.245	0.858***	1.072***	14.669***	0.127	1.212***	8.465***	0.343
	(0.110)		*(0.186)*	*(0.109)*		*(0.216)*	*(0.113)*		*(0.261)*
Civil servant	-1.931***	5.824**	-1.141***	-1.574***	1.856	-2.136***	-1.354***	0.004	-1.385**
	(0.227)		*(0.247)*	*(0.200)*		*(0.366)*	*(0.227)*		*(0.429)*
Blue-collar worker	0.555***	1.972	0.732***	0.700***	2.060	0.515***	0.877***	0.057	0.839***
	(0.087)		*(0.090)*	*(0.082)*		*(0.096)*	*(0.088)*		*(0.129)*
Unemployed	1.719***	7.213***	1.138***	1.964***	8.457***	1.220***	2.119***	1.348	1.802***
	(0.154)		*(0.146)*	*(0.161)*		*(0.193)*	*(0.157)*		*(0.213)*
Non-working	0.740***	0.634	0.563***	1.116***	0.620	0.899***	1.137***	0.316	1.301***
	(0.143)		*(0.165)*	*(0.162)*		*(0.218)*	*(0.161)*		*(0.233)*
University degree	-0.675***	6.932***	-1.121***	-0.377***	10.643***	-0.856***	-0.358***	24.503***	-1.211***
	(0.123)		*(0.115)*	*(0.100)*		*(0.108)*	*(0.091)*		*(0.144)*
Univ. of applied	-0.725***	0.223	-0.644***	-0.464***	2.118	-0.243*	-0.660***	1.643	-0.881***
sciences degree	*(0.133)*		*(0.111)*	*(0.111)*		*(0.105)*	*(0.106)*		*(0.136)*
In apprenticeship	0.361***	0.429	0.271*	0.526***	4.024**	0.752***	0.244***	2.054	0.416***
	(0.081)		*(0.108)*	*(0.072)*		*(0.087)*	*(0.065)*		*(0.103)*
No degree	1.355***	0.015	1.321***	1.426***	0.617	1.615***	1.231***	0.044	1.173***
	(0.092)		*(0.247)*	*(0.095)*		*(0.220)*	*(0.096)*		*(0.248)*
Age 20-29 years	0.510***	1.695	0.297*	0.543***	1.734	0.318*	0.575***	0.216	0.673***
	(0.095)		*(0.124)*	*(0.089)*		*(0.143)*	*(0.098)*		*(0.184)*
Age 40-49 years	-0.296**	9.555***	0.134	-0.319***	10.739***	0.112	-0.214**	3.107*	0.060
	(0.091)		*(0.104)*	*(0.077)*		*(0.103)*	*(0.081)*		*(0.134)*
Age 50-59 years	-0.605***	27.935***	0.303*	-0.799***	39.003***	0.258	-0.555***	19.637***	0.280
	(0.108)		*(0.134)*	*(0.099)*		*(0.135)*	*(0.098)*		*(0.164)*
Age 60-69 years	-1.203***	59.821***	0.398*	-1.227***	29.736***	-0.085	-1.160***	17.571***	-0.210
	(0.115)		*(0.170)*	*(0.108)*		*(0.175)*	*(0.108)*		*(0.196)*
Age 70+ years	-1.095***	43.298***	0.409*	-1.263***	25.189***	-0.117	-1.209***	4.716**	-0.662**
	(0.118)		*(0.195)*	*(0.114)*		*(0.196)*	*(0.119)*		*(0.226)*
Household level									
Number other	0.113	12.829***	0.828***	0.286**	0.248	0.389*	0.043	0.084	0.127
members age 0-4	*(0.107)*		*(0.166)*	*(0.103)*		*(0.158)*	*(0.123)*		*(0.238)*
Number other	0.082	10.864***	0.692***	0.215*	0.011	0.194	0.021	1.724	-0.356
members age 5-9	*(0.101)*		*(0.156)*	*(0.097)*		*(0.147)*	*(0.114)*		*(0.239)*
Number other	0.309**	3.930**	0.671***	0.388***	0.014	0.366*	0.040	0.001	0.030
members age 10-14	*(0.100)*		*(0.156)*	*(0.096)*		*(0.143)*	*(0.112)*		*(0.230)*
Number other	0.629***	13.582***	1.203***	0.565***	2.233	0.794***	0.536***	1.544	0.262
members age 15-19	*(0.089)*		*(0.132)*	*(0.082)*		*(0.115)*	*(0.089)*		*(0.176)*
Number other	0.503***	0.012	0.524***	0.388***	0.158	0.317*	0.355***	3.130*	-0.047
members age 20-29	*(0.103)*		*(0.148)*	*(0.108)*		*(0.133)*	*(0.106)*		*(0.180)*
Number other	0.287*	0.872	0.058	-0.079	2.082	-0.442*	0.016	1.473	-0.370
members age 30-39	*(0.146)*		*(0.180)*	*(0.146)*		*(0.188)*	*(0.158)*		*(0.245)*
Number other	0.050	0.655	-0.155	-0.040	0.668	-0.238	-0.004	1.235	-0.321
members age 40-49	*(0.161)*		*(0.179)*	*(0.151)*		*(0.176)*	*(0.152)*		*(0.218)*
Number other	0.280	17.616***	-0.803***	-0.465**	0.324	-0.324	0.018	2.114	-0.408
members age 50-59	*(0.159)*		*(0.191)*	*(0.158)*		*(0.190)*	*(0.148)*		*(0.229)*
Number other	0.148	17.097***	-0.956***	-0.636***	13.239***	-1.588***	-0.345*	19.378***	-1.798***
members age 60-69	*(0.164)*		*(0.202)*	*(0.162)*		*(0.211)*	*(0.156)*		*(0.268)*
Number other	0.313	22.014***	-1.064***	-0.360*	13.253***	-1.483***	-0.229	11.094***	-1.509***
members age 70+	*(0.166)*		*(0.228)*	*(0.174)*		*(0.259)*	*(0.174)*		*(0.325)*

Table continues

Table continued

Other childless households	0.260 *(0.134)*	0.446	0.115 *(0.162)*	0.351* *(0.138)*	1.201	0.591*** *(0.162)*	0.116 *(0.132)*	0.363	0.265 *(0.197)*
Single adult, childless	0.838*** *(0.139)*	6.446**	0.218 *(0.186)*	0.591*** *(0.147)*	0.510	0.419* *(0.180)*	0.396** *(0.136)*	0.243	0.264 *(0.207)*
Single parent, 1 child	1.184*** *(0.202)*	4.808**	0.464 *(0.243)*	0.892*** *(0.191)*	0.525	0.660** *(0.235)*	0.829*** *(0.187)*	0.112	0.705* *(0.288)*
Single parent, 2+ children	1.192*** *(0.280)*	1.589	0.581 *(0.382)*	0.351 *(0.265)*	1.286	0.877* *(0.344)*	0.796** *(0.279)*	0.021	0.710 *(0.483)*
Couple, 1 child	0.581*** *(0.158)*	4.357**	0.045 *(0.197)*	0.226 *(0.152)*	1.745	0.561** *(0.201)*	0.374* *(0.161)*	0.352	0.174 *(0.276)*
Couple, 2 children	0.838*** *(0.220)*	4.910**	-0.007 *(0.312)*	0.095 *(0.209)*	4.012**	0.854** *(0.290)*	0.223 *(0.236)*	2.553	1.104* *(0.446)*
Couple, 3+ children	0.979** *(0.327)*	2.530	0.062 *(0.482)*	0.100 *(0.316)*	1.614	0.867 *(0.468)*	0.588 *(0.356)*	1.016	1.409* *(0.677)*
Number of earners: 0	1.717*** *(0.133)*	0.423	1.850*** *(0.152)*	1.322*** *(0.154)*	1.964	0.971*** *(0.194)*	1.215*** *(0.148)*	0.874	0.974*** *(0.201)*
Number of earners: 2	-1.203*** *(0.097)*	2.064	-1.392*** *(0.089)*	-1.148*** *(0.090)*	1.416	-1.308*** *(0.096)*	-1.163*** *(0.099)*	3.328*	-1.488*** *(0.145)*
Number of earners: 3+	-1.588*** *(0.236)*	5.167**	-2.297*** *(0.217)*	-1.747*** *(0.283)*	3.530*	-2.459*** *(0.250)*	-1.148*** *(0.241)*	0.701	-1.515*** *(0.362)*
Constant	-4.152*** *(0.179)*	116.612***	-0.944*** *(0.223)*	-3.782*** *(0.172)*	35.659***	-2.124*** *(0.212)*	-3.381*** *(0.161)*	8.921***	-2.430*** *(0.255)*
$P > \chi^2$	0.000		0.000	0.000		0.000	0.000		0.000
Log likelihood	-6787.74		-4037.50	-7456.08		-3677.00	-6949.18		-2348.49
Pseudo R^2	0.282		0.283	0.286		0.298	0.290		0.378
N	31389		8374	3901		10261	33797		8596

Note. Dependent variable: dummy poor. N denotes the number of non-weighted observations.
Source. German Sample Survey of Income and Expenditures 1993-2003. Own calculations.

Table B5. Non-linear decomposition of East/West poverty divide

	Relative poverty line			Absolute poverty line		
	1993	1998	2003	1993	1998	2003
Poverty rate, Old states	0.079	0.110	0.113	0.121	0.128	0.113
Poverty rate, New states	0.329	0.237	0.202	0.464	0.276	0.202
Difference	-0.250	-0.127	-0.091	-0.343	-0.148	-0.091
	Characteristics effects by variable groups					
Gender of household head	-0.001***	-0.004***	-0.002***	-0.002***	-0.005***	-0.002***
	-98.33	*-257.10*	*-175.03*	*-145.38*	*-290.63*	*-176.70*
Marital status of household head	-0.003***	-0.003***	-0.004***	-0.003***	-0.003***	-0.004***
	-191.41	*-248.24*	*-216.83*	*-194.64*	*-233.09*	*-219.62*
Age cohort household head	-0.004***	-0.001***	-0.004***	-0.005***	-0.001***	-0.002***
	-112.40	*-39.88*	*-71.33*	*-124.46*	*-43.67*	*-41.20*
Labor force status of household head	-0.015***	-0.009***	-0.016***	-0.014***	-0.009***	-0.017***
	-383.51	*-228.64*	*-320.01*	*-358.64*	*-234.63*	*-339.07*
Highest educational degree of household head	0.021***	0.013***	0.008***	0.026***	0.013***	0.008***
	771.00	*810.41*	*536.23*	*928.06*	*832.96*	*539.58*
Household age composition	-0.002***	-0.001***	-0.004***	-0.003***	-0.001***	-0.003***
	-48.60	*-15.00*	*-84.95*	*-61.32*	*-21.24*	*-76.44*
Family type	0.000***	-0.001***	0.001***	-0.002***	-0.001***	0.001***
	8.62	*-27.65*	*18.53*	*-37.41*	*-32.25*	*24.99*
Number of earners	0.002***	0.001***	-0.005***	0.007***	0.003***	-0.006***
	38.48	*14.84*	*-78.40*	*95.52*	*45.68*	*-99.49*
	Aggregate characteristics effects					
Total explained	-0.002	-0.005	-0.026	0.003	-0.005	-0.026
Explained in percent	0.693	4.087	28.579	0	3.233	28.579

Note. Decomposition results are based on 500 replications using randomized ordering of variables. t statistics in italics. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.
Source. German Sample Survey of Income and Expenditures 1993-2003.

References

Nierhaus, W. (2001): Warum die Preise in West- und Ostdeutschland so stark steigen, *ifo Schnelldienst*, 11, 35-38.

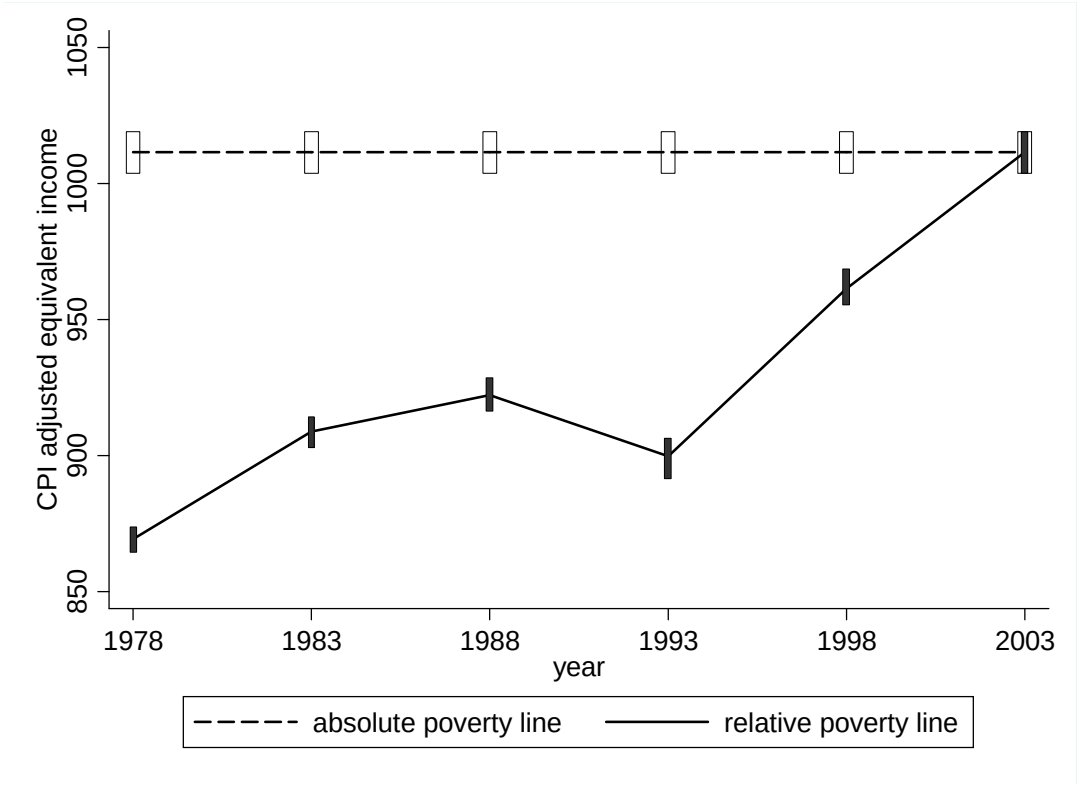

Figure B1. Income levels associated with poverty lines.
Note. Vertical bares indicate bias-corrected Hall confidence intervals.
Data. German Sample Survey of Income and Expenditure.

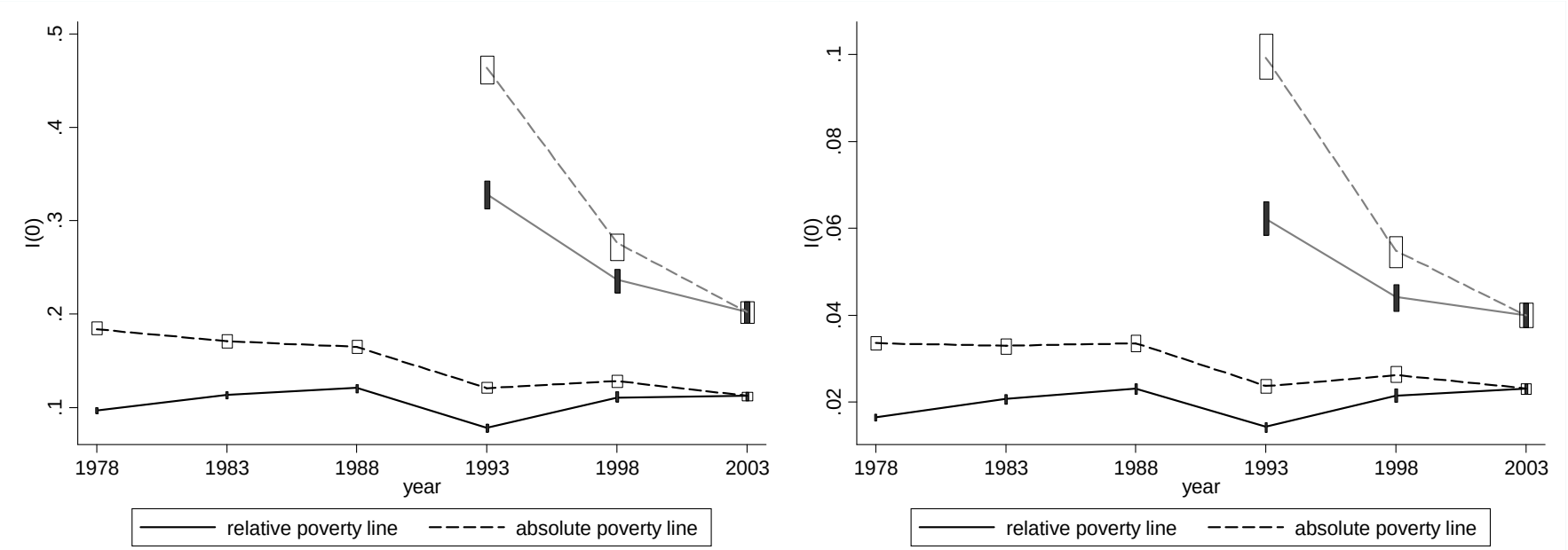

Figure B2. Incidence and intensity of poverty in the overall population.

Note. Left figure: head count ratio. Right figure: poverty gap ratio. Vertical bares indicate bias-corrected Hall confidence intervals.

Data. German Sample Survey of Income and Expenditure.

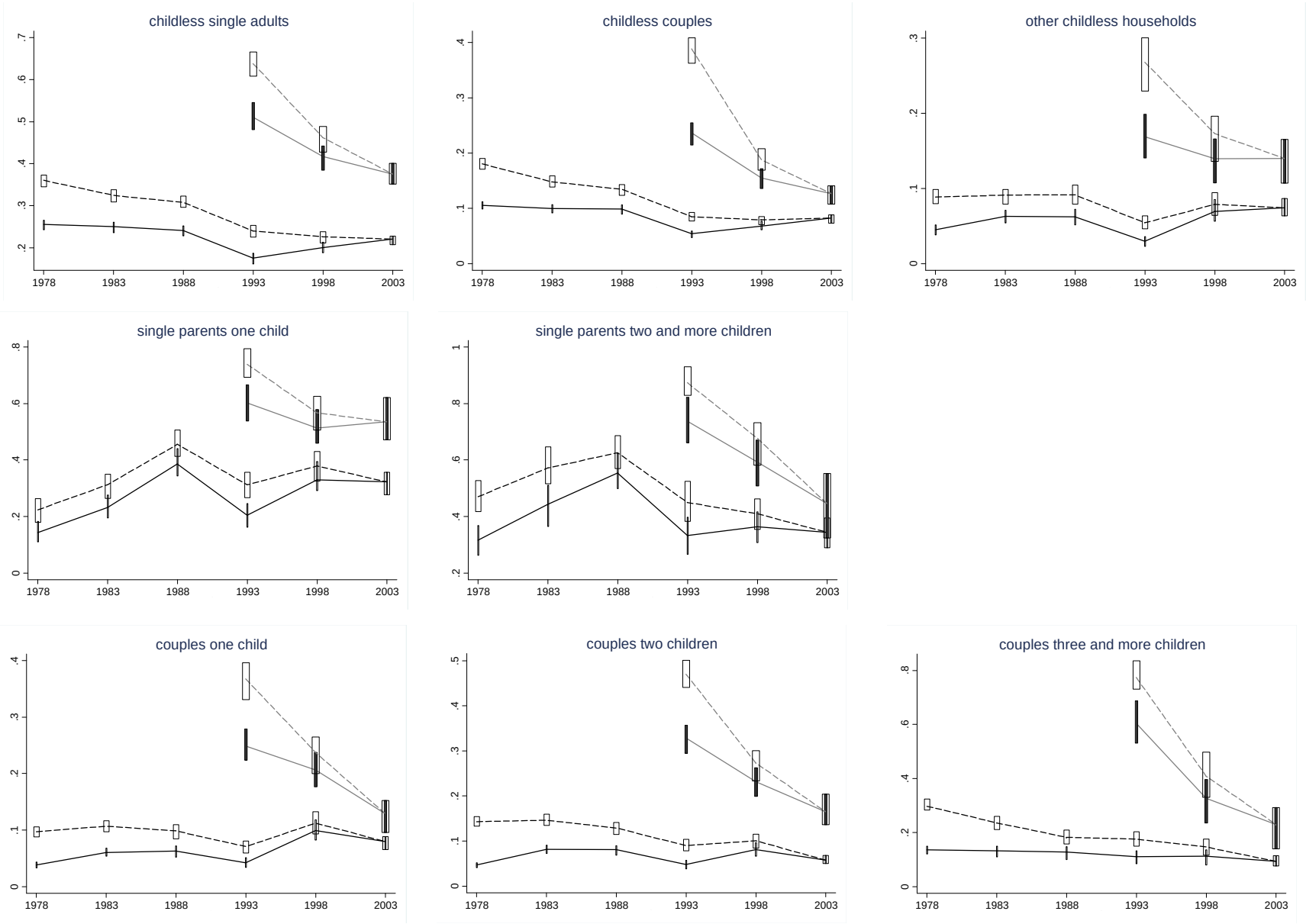

Figure B3a. Head count ratios by household type.

Note. Vertical bares indicate bias-corrected Hall confidence intervals. Dashed lines refer to absolute poverty line; solid lines refer to relative poverty line.

Data. German Sample Survey of Income and Expenditure.

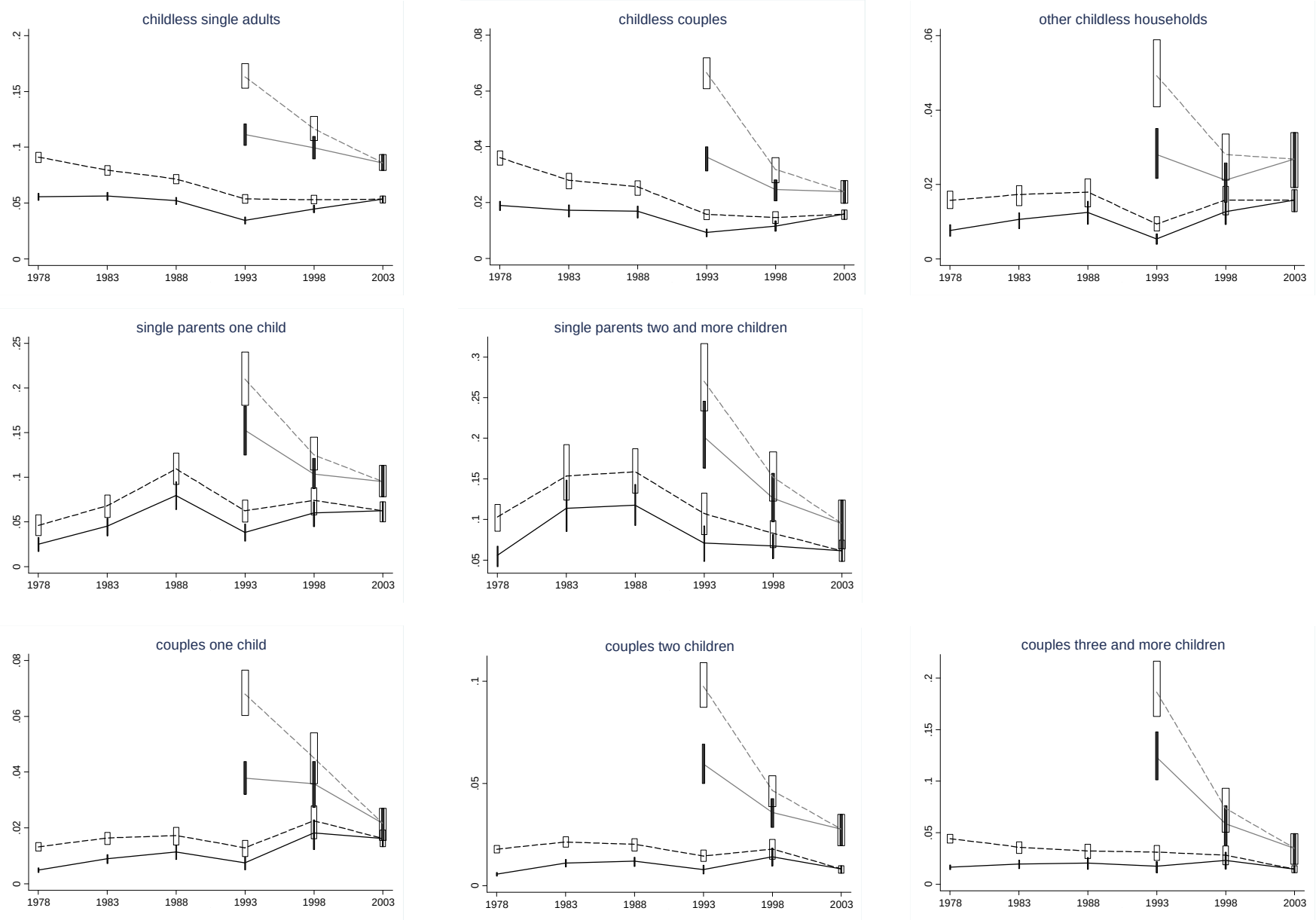

Figure B3b. Poverty gap ratios by household type.

Note. Vertical bares indicate bias-corrected Hall confidence intervals. Dashed lines refer to absolute poverty line; solid lines refer to relative poverty line.

Data. German Sample Survey of Income and Expenditure.