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Miles Corak
Michael Fertig
Marcus Tamm

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Forschungsinstitut
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of Labor

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Miles Corak
UNICEF Innocenti Research Centre
and IZA Bonn

Michael Fertig
RWI Essen
and IZA Bonn

Marcus Tamm
RWI Essen
and Ruhr University of Bochum

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IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
Email: iza@iza.org

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ABSTRACT

A Portrait of Child Poverty in Germany*

This paper offers a descriptive portrait of income poverty among children in Germany between the early 1980s and 2001, with a focus on developments since unification in 1991. Data from the German Socio-Economic Panel are used to estimate poverty rates, rates of entry to and exit from poverty, and the duration of time spent in and out of poverty. The analysis focuses upon comparisons between East and West Germany, by family structure, and citizenship status. Child poverty rates have drifted upward since 1991, and have been increasing more than the rates for the overall population since the mid-1990s. In part these changes are due to increasing poverty among children from households headed by non-citizens. Children in single parent households are by all measures at considerable risk of living in poverty. There are also substantial differences in the incidence of child poverty and its dynamics between East and West Germany.

JEL Classification: I32, I38, J13

Keywords: poverty dynamics, poverty duration, immigrant households

Corresponding author:

Michael Fertig
Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI Essen)
Hohenzollernstr. 1-3
45128 Essen
Germany
Email: fertig@rwi-essen.de

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1. Introduction

Despite half a century of considerable economic growth and large increases in *per capita* income, child poverty is still prevalent in the world's most advanced countries. According to Corak (2005) the proportion of children living in households with less than one-half of median income in the OECD countries ranges from less than 3 % to more than 25 %, and in the majority of countries is above one in ten. At the same time many observers fear that growing up in poverty undermines the well being and opportunities of children, possibly leading to learning difficulties, lower levels of schooling, higher probabilities of delinquent behavior and unemployment, and ultimately to a self-enforcing spiral of poverty across generations.

While there are more than a million children in Germany depending on social transfer benefit payments (BMA 2001), little is known about child poverty and its dynamics. There is a growing literature dealing with poverty among the German population at large, as evidenced in the overview by Hauser and Becker (2003), but only a few studies specifically addressing children. Schluter (2001), Jenkins, Schluter and Wagner (2003), and Jenkins and Schluter (2003) are notable exceptions. The major findings from this research suggest that child poverty was on a downward trend in West Germany during the 1980s, but then started to rise in the early 1990s. The findings also suggest that East German children, those in single parent households, and children of guest workers (gastarbeiter) face higher poverty rates. Those in households receiving means-tested assistance do relatively well in avoiding the risk of poverty. Very few children spend long periods of time in low income, though this is less so for children in the higher risk groups, and the major events associated with starting a spell of poverty are related to family and labour market changes. Marital separation or the job loss of the household head are the most likely events to precipitate a spell of low income. Escaping poverty is more complicated, certainly associated with the formation of dual parent

households and job finding, but not exclusively as many poor children live with two working parents.

The objective of this paper is to supplement and update existing research by offering a portrait of child poverty in Germany and its dynamics during the 1980s through to 2001, with a focus on the last ten years. The 1990s are a particularly important period to review because the onset of the decade was marked by political unification and major economic changes, and also by a commitment to give priority to the rights and the welfare of children as reflected in the government's support of the *Convention on the Rights of the Child*. To this end, we utilize data from the German Socio-Economic Panel and estimate poverty rates, entry and exit rates, as well as the duration of poverty spells and time spent out of poverty. The analysis focuses upon comparisons between East and West Germany, comparisons by family structure, and comparisons by citizenship status. Furthermore, we relate these patterns to the central constituents of the German tax and transfer system dealing with family income and child poverty, and how they have changed over time.

We find that, according to one of the measures put forward, slightly more than one in ten children in Germany live in poverty. In 2001 the rate of child poverty was 10.2%, implying that 1.4 million children lived in low income. Child poverty rates are significantly higher in the East with 12.6% of children in low income, compared with 9.8% in West Germany. This said our analysis also suggests that these levels are sensitive to the particular definition of the poverty line employed. But regardless of which of several alternatives are used the situation has deteriorated. Child poverty has drifted upward in Germany since the late 1980s and early 1990s. Furthermore, children now face a slightly higher risk of low income than the average member of the population, a reversal of their relative standing at the onset of the 1990s.

Our analysis also finds that the upward drift in child poverty during this decade is in large part associated with the deterioration of the situation of children in households headed

by non-citizens. These children experienced an almost three-fold increase in the risk of poverty. The upward trend in child poverty is also due to both higher chances of falling into low income and lower chances of escaping, though the differences between groups—between the East and West, and between citizens and non-citizens—is for the most part the result of differences in the chances of starting a spell of low income. Further, by all accounts German children in single parent households face the most precarious circumstances. Their poverty rates are much higher than other groups, reflecting higher probabilities of starting a poverty spell, lower probabilities of leaving, and greater risk of falling back in should they be lucky enough to leave. Indeed a large fraction of all children who have escaped low income hover just above the poverty line with 50% destined to fall back in within five years.

Finally, our brief review of the German tax-transfer system suggests that government budgets play an important role in reducing market generated rates of child low income and clearly embody a preference for children. However, it is unlikely that changes during the 1990s strengthened this role, and there remains considerable need to understand the impact of the system on the particular groups in most need.

2. Empirical Framework

Our analysis is based on data from the German Socio-Economic Panel (GSOEP), a representative longitudinal survey of private households in Germany. This survey collects information on all members of sampled households including those living in the old and new German states, foreigners who have entered the country in the 1960s and early 1970s, and recent immigrants. The information collected includes household socio-economic composition, occupational biographies, employment, income and earnings, as well as health and life satisfaction indicators.

The income data we use refer to the period 1983 to 2001 for West Germans and non-citizens, and to 1991 to 2001 for East Germans. Central to our analysis is the calculation of

household income, which we measure in year 2000 Euros and define to include: (1) labor income including income from self-employment; (2) asset income; (3) income from private and public transfers; and (4) pension income. From these we subtract tax payments and social security contributions. In essence this refers to the total money income available to the household after taxes and social transfers. While income is measured at the household level, our primary unit of analysis is the individual. Household income is allocated equally to all household members—including the children who are defined to be those individuals younger than 18 years of age—after accounting for economies of scale using the square root of the number of household members as the equivalence scale. As such we are explicitly assuming that net household income is distributed equally among all household members irrespective of their age, and do not address the appropriateness of this assumption. It may well be that the sharing of resources within households and families may occur in very different ways—possibly to the extra benefit or to the extra detriment of children—but examining this issue in detail is beyond the scope of our analysis.[1] Our formulation is in accord with much of the literature on international comparisons of poverty rates as reflected, for example, in the Luxembourg Income Study data, Chen and Corak (2005) offering one recent example.

Information from all the GSOEP samples, except the "High Income Sample," is used. Due to a refreshment of the GSOEP in 1999, the sample size increases considerably for the years after 1999. An important methodological issue concerns the definition of a poverty line. First, it should be made explicit that we focus on what might more strictly be called "low income," putting the emphasis on monetary aspects of poverty. It may well be that other non-monetary characteristics of the household are relevant to the definition of poverty as stressed by, among others, Sen (1999). This choice emphasizes that the objective of our research is to offer the broadest possible picture in a way that relates most directly to the income transfer

[1] There is a growing and important literature on the sharing rules adopted by households, but it is not yet clear what generalities can be made for international comparative research. See for example, Browning (1992), Browning, Bourguignon, Chiappori, and Lechene (1994), Lundberg, Pollack, and Wales (1997), and Phipps and Burton (1995).

policies of governments, and in a way that might facilitate comparisons across groups within the country and internationally. Incorporating non monetary measures is certainly important, but it would relate the policy focus to a whole host of options beyond simply income transfers. In any case, since the appropriate measures may be very different in different regions this would complicate the ability to make comparisons across time and space. We use the terms “poverty” and “low income” interchangeably in the remainder of the text.

Second, following standard practice for high-income countries we focus on what is often termed “relative” poverty by defining the threshold between the poor and non poor to be a given fraction of the “typical” individual income level, which for the most part we take to be 50% of the prevailing median income. This choice masks a number of issues, some of which are discussed more thoroughly in Corak (2005). Linking the poverty line to the prevailing median income implies that it will change from year to year with changes in the median. This reflects the perspective that poverty is a relative concept having to do with not being able to afford the goods and services that most would consider necessary to live and participate normally in society. In fact, little in practice rests on the use of a purely relative poverty line, or on the specific choices made. We also calculate and examine poverty rates based upon a fixed median income which, by not changing through time, comes closer to an “absolute” poverty line. In fact, since median incomes have been fairly constant in Germany over this period fixing the comparison on the typical income prevailing in the early 1990s leads to results very similar to those based upon a median income that changes from year to year.

Figure 1 makes clear that the poverty line based on 50% of the prevailing median income does not change much during the period under analysis, reflecting the fact that Germany has not experienced notable growth in median incomes. In 1991 the poverty line based upon the median income for the entire country was 8248 Euros**,** while in 2001 it was 8702 Euros. The use of a moving threshold, reflecting a relative notion of poverty, or a fixed threshold, reflecting an absolute notion of poverty, is likely not to make much difference to

the current analysis. This said, it is not self apparent just what fraction of prevailing income is the appropriate cut-off, and we examine the robustness of choosing 50% by examining a host of alternative proportions. This offers a bridge into a complementary analysis of the income distribution for those below the poverty line and the degree to which the incomes of the poor fall short of the poverty threshold, the so-called “poverty gap”.

However, it is also clear from the information in Figure 1 that the level of median incomes does differ considerably depending upon geographic region. Since median (net) equivalent income in East Germany is somewhat lower than in the West, the poverty line in the eastern part of Germany is below that of West Germany. The overall poverty line for the entire country lies between the region-specific poverty lines since it is calculated as a weighted average.

This raises a more subtle and just as important definitional concern: just which median income is considered to mark the prevailing norms in society? This is a concern in all international studies but is raised more starkly by the fact that East Germany was the first society to experience the transition from a command to a market economy, and that this transition was also marked by political unification. Should the income level considered typical be measured as the median income of the country as a whole? Or should it be the median income of the East and West separately, each region having its specific poverty line? These questions are important not only for the conduct of our analysis but more generally for the analysis of poverty in regions like that of the European Union, where the very notion and breadth of markets and communities continue to change.

The nature of the data dictate that our analysis for the pre-1991 period is based solely on West Germany, using the median income there as the basis for calculating the poverty line. But afterwards more choices are available, with the appropriate calculation reflecting the nature of comparisons that the typical German would make in assessing his or her standard of living. It is not self apparent how to proceed. It can quite reasonably be argued that West

Germans might well continue to use West German income levels as their reference standard in spite of the enlargement of the country. A country-wide median income that incorporates lower East German incomes will be lower than a strictly West German median income, and hence also imply lower poverty rates in the West. But West Germans may not consider themselves to be relatively better off because the median income in East Germany is lower than in the West. It can also be quite reasonably argued that East Germans, both before and after unification, gauged their relative well-being by a comparison to the Western standards, rather than just relative to those prevailing in the East. This is a specific and starker illustration of a concern that will have increasing salience in the enlarged EU. We are sensitive to this issue and begin our analysis by offering alternative poverty rates based upon different poverty lines.

3. A First Look at Child Poverty Rates

The evolution of child poverty, as measured by the proportion of children with individual equivalised net income below 50% of median income, is offered in Figure 2 for various measures of median income. The first point to note follows from considering just the information on West Germany. This is the longest consistent data series available to us, and suggests that child poverty was indeed on the decline during the 1980s, reaching a low of 4.5% in 1989, but that the upward drift since that time noted by Schluter (2001) has not been reversed during the later half of the 1990s. Indeed, the fraction of children in poverty based on a West German poverty line in 2001 stood at 10.5%, an all time high. This is equivalent to 1.2 million West German children living in relative poverty.[2] This pattern continues to hold when the country as a whole is examined. Child poverty rates were below 8% in the early 1990s,

[2] The information for 1999 suggests a sharp fall in poverty rates for that year, raising the suspicion that it may be a statistical artifact. This drop, however, shows up regardless of the choice of poverty line. Several sensitivity tests were not able to reveal the reason. In particular it is not associated with the use of the "refreshment sample," and we are left to conclude that it represents actual developments.

but closer to and indeed above 10% in 2000 and 2001. In 2001, 10.2% of German children, or 1.4 million, lived in poverty according to the poverty line for the entire country.

In addition, the information in this figure and the formal statistical tests provided in Table A1 of Appendix 1 illustrate that these rates differ significantly between the two regions of the country, being almost three percentage points higher in East Germany in 2001 (12.6% versus 9.8%). But Figure 2 also illustrates that the poverty rates are sensitive to which median income is used to peg the relative poverty comparison. When the country-wide median income is used child poverty rates are slightly lower in West Germany than the overall country rate or what they would be if West German median incomes were used. Similarly they are notably higher in East Germany, and are higher still if the West German median income is used as a yardstick for relative standards of living. These patterns reflect the differences in median incomes in the two parts of the country noted in Figure 1.

In spite of these differences in levels it is in all cases appropriate to conclude that child poverty in Germany is, at the very least, not lower in the early years of the new millennium than it was a decade earlier at the time the *Convention on the Rights of the Child* came into force. Indeed, it is very likely higher. However, not only has the child poverty rate increased in Germany during the last decade or so, it is also increased more than the rate for the overall population. As mentioned, in 2001 the risk that a German child was living in low income is over one-in-ten. For the population of adults not living in households with children it is lower at 8.8% (the difference, as illustrated in Table A1, being statistically significant at the 10% level of confidence). Figure 3 illustrates that this is a notable change from early in the decade. Between 1991 and 1993 the child poverty and the overall poverty rate were very similar, and not significantly different from the rate for adults living in childless households. Since 1994 the opposite has been the case, with children facing the highest risk of poverty. Given that the overall poverty rate includes children, and given that by construction all adults in households with poor children will themselves also be considered to be poor, the more appropriate

comparison group might be those adults in households without children. However, the patterns in Figure 3 suggest this distinction does not make much difference as after 1993 this series closely follows the overall poverty rate. In sum, children in Germany face a high and increasing risk of low income, and they will increasingly be likely to face a risk higher than other members of society if existing trends continue.

Child poverty rates also differ significantly by citizenship status. In fact, Figure 4 makes clear that the upward drift in child poverty rates during the 1990s is due to the situation of children in households whose head is not a citizen. The information depicted in this figure is exclusively for West Germany using the poverty line based upon 50% of the country wide median income. There is no obvious trend in the poverty rate of West German children living in households headed by citizens: the rate stood at 7.6% in 1991, and ended up at 8.1% a decade later. But for children living in households headed by non-citizens the probability of poverty almost tripled from about 5 % at the beginning of the period to 15% at the end.

The extended coverage of the GSOEP in the mid 1990s to include a sample of more recent immigrants offers information to suggest that they play an important role in these patterns. Children of the older, guest worker generation of immigrants have, at about 10%, higher poverty rates than citizens but at the same time lower poverty rates than all non-citizens. This is depicted by the series beginning in 1995 in Figure 4. Children of more recent immigrants experience the highest poverty rates, almost one in five during 1996, and for the most part higher than 15% in all other years since 1995.

The sharpest contrasts, however, are found for children living in single parent households. Four out of ten children in single parent households lives in poverty compared to only four in one hundred from two parent households. The poverty rates of children in lone parent households, however, did not increase during the 1990s.

The analysis of child poverty by household type allows us to address a current policy debate in Germany in which children are often perceived as a poverty risk for families. This is

not to say that children are "blamed" for poverty. Rather, many observers of the phenomenon fear that the economic situation of many households is so precarious that the birth of a child increases the chances a family will face poverty.[3] As a consequence they call for higher benefits for families with children.

In order to address this issue in at least a descriptive way we switch the unit of observation from children to households. Figure 5 presents household poverty rates by family type. The corresponding t-tests are presented in Table A2 in Appendix 1. The respective poverty line is the individual equivalised income. The household type is determined by the characteristics of the household head, whose individual equivalised income is compared to the poverty line. This leads to a household poverty rate given our assumption that all household resources are distributed equally among its members. This assumption implies that if one member of the household is poor, all others must also be poor.

Our results indicate that single adult households display a relatively high incidence of poverty. However, single adults with children exhibit a significantly higher poverty incidence than their counterparts without kids. For single adults, the average poverty rate more than doubles from 17% to 38% in the presence of children. In contrast, having children does not raise the chances of poverty for households with two adults. The differences in poverty rates between couple households with less than three children and those without children are insignificant. Along the same lines, our results also suggest that couples with more than two children experience poverty rates that are not significantly different than those for couples with fewer or no children. Whether and to what extent this finding is the result of a positive selection mechanism—that is, only relatively well off households have children because they can afford to do so—remains a question for further research. Yet, the findings suggest that having children does not *per se* constitute a poverty risk and therefore a general expansion of

[3] For instance the former German president, Johannes Rau, addressed this issue in his annual Christmas speech in 2002. In a current opinion poll among young adults on reasons for not (yet) having children, 47% reported the fear of financial burden as a major factor (IfD 2004).

child care benefits independently of household income might not be appropriate to reduce child poverty. Rather, a means-tested support of families with children or more attention to how the current system treats single parent households appears to be a more promising approach.

4. Alternative measures of child poverty

The choice of poverty lines is not just a technical issue, but reflects value judgments concerning the appropriate basis of the distinction between living in poverty and not. We explore three issues to determine the sensitivity of our major findings to the choices we have made to this point.

The first concerns the distinction between a “relative” and an “absolute” poverty line. Figure 6 illustrates that the overall level and pattern in poverty among children living in Germany is not very sensitive to this issue. The information in this figure compares the poverty rate based upon 50% of the prevailing median income in each year, a relative low income concept, to the poverty rate based upon 50% of the median income in 1991, one version of an absolute low income concept. As outlined in Corak (2005) these concepts are based on very different value judgments: a moving poverty line using contemporaneous median incomes suggests that the well being of poor children would improve only to the extent that there is a fall of inequality in the lower part of the prevailing income distribution; a fixed poverty line using median income in a given year suggests that well being should be judged only by the standards prevailing at some point in the past.

During the 1990s both poverty lines led to almost identical child poverty rates, though there is a divergence in 2000 and 2001. This pattern is similar for both parts of the country, though the divergence between the two series at the end of the period is more pronounced in the East than the West. Overall this similarity in results from the two alternative definitions implies that the risk of poverty among children is no lower and indeed was higher in 2001

than a decade earlier even when the comparison is based upon the living standards of the early 1990s. In a growing economy this is the least stringent test by which to assess changes in the status of poor children: even by the standards prevailing in the past the risk of child poverty is no lower in Germany.

Given the use of a relative low income line, the second issue concerns the choice of the fraction of median income to represent the threshold between those living in poverty and those not. The choice will determine the level of the poverty rate and the absolute number of individuals judged to be living in poverty. There is no clear answer to what fraction is correct. Fifty percent of median income is an often used standard in the academic literature dealing with cross-country comparisons of poverty and child poverty, as reflected for example in the development of the Luxembourg Income Study data sets. This is also a standard employed by some statistical agencies, but not exclusively so. Some of the indicators used to guide developments in social policy by the European Union are based upon 60% of median incomes, and in Ireland and the U.K. 70% of median income is also part of the policy discussion.

Our empirical results will clearly be sensitive to the choice of 50% of median income. Table 1 makes this clear by offering the child poverty rate for the country for a variety of thresholds, ranging from as low as 30% of median income to as high as 70%. At one extreme the child poverty rate is only 2.8% in 2001, while at the other it is 25.2%. However, the child poverty rate has risen over the course of the 1990s regardless of which threshold is used. This is illustrated in Figure 7, drawing information from 1991 and 2001 in Table 1. Where ever the line between the poor and non poor is drawn, the child poverty rate is higher in 2001 than in 1991. This pattern is particularly clear once thresholds of 40% or higher are considered. At this threshold and beyond the difference between the two series is about two percentage points at its lowest and is just above four percentage points when 60% of median income is used as a threshold.

The third issue concerning the sensitivity of our findings has to do with the focus on the so-called “head count” ratio as a measure of poverty. As pointed out by numerous observers, using the ratio of the number of individuals below a threshold to the total number in the population of like individuals can be potentially misleading. This measure gives equal weight to all individuals below the threshold and explicitly assumes that poverty is a discrete event associated with being above or below a given line. Someone one Euro below the threshold is given the same consideration as someone at the very bottom of the income distribution. In part, the appropriateness of this assumption will depend upon the theoretical perspective used. For example, one interpretation of a rights perspective might suggest that the headcount ratio is, in fact, the appropriate statistical indicator. A legal right is an either-or concept: it is either being respected or it is being violated. In this sense an indicator based upon a view that poverty is a discrete condition reflecting less than a minimum acceptable income might be viewed as appropriate. But other interpretations, and indeed other interpretations based upon a rights perspective, might quite reasonably suggest that individuals below the poverty threshold should not be weighted equally. The situation of those very much below the poverty line might in some sense matter more than those just below. The headcount ratio could after all be lowered by taking enough money from the very poorest and transferring it to those hovering just below the poverty line in order to move them just above. This sort of policy, which would lower the headcount ratio, might not have a good deal of intuitive appeal to many observers. Or referring specifically to our findings the poverty rate may well have risen in Germany, but this might imply only slight falls in the relative income of those just above the poverty line and may also mask improvements in the circumstances of those very much below.

This discussion follows that of Atkinson (1987), who also points out that a depiction of the sort used in Figure 7 can potentially clarify matters. Since the curves for the two years do not cross at any point we can unambiguously conclude that the rate of child poverty has

increased for a wide range of possible poverty thresholds, but also for a range of possible poverty indicators. Since the analysis in Figure 7 involves charting out the mass of the distribution in the lower tail of the income distribution it also offers information on the severity or depth of poverty, something not evident by looking solely at a single headcount ratio. The curve for 2001 in Figure 7 lies everywhere above that for 1991, and therefore poverty has in fact become more severe. The possible exceptions to this are at the lowest thresholds of 30 and 35% of median income, where the curves for the two years are very close to each other. At the 30% threshold the poverty rate rose from 2.3% to 2.8%, and at the 35% threshold it went from 3.8% to 4.1% over the course of the decade. It is unambiguously the case that poverty rose for thresholds of 40% and higher. Indeed, there is a deterioration in the circumstances of those even at the highest thresholds being considered in European social policy discussions. Our conclusion that the situation has deteriorated for German children does not depend upon our use of the head count ratio as an indicator of poverty.

5. Poverty dynamics

Income poverty rates are often supplemented with other measures of long term well being such as housing conditions, health status, or the consumption of a particular set of necessities like clothing or food. This is done because annual income may not be a completely appropriate measure of well-being, and in part is motivated by a theoretical orientation viewing well-being in more subtle ways associated with the capabilities of individuals rather than simply with their purchasing power (Sen 1999). In part it also reflects a more pragmatic view recognizing that annual measures of income are imperfect indicators of the economic circumstances of individuals, being subject to a good deal of year-to-year variation associated with temporary income fluctuations, and only roughly indicating the full access that households have to economic resources.

Our approach to this issue is to rely on the longitudinal nature of data available to us, which tracks the same set of households in West Germany since 1984, and for East Germany since 1992. In this way we can gauge the extent to which income poverty is a transitory phenomenon or a long-lasting one. We can also give more precision to the differences and trends observed in child poverty rates, and begin in a descriptive way to offer explanations. This shifts the focus of analysis to the chances of beginning a spell of low income, the chances of escaping from it, and ultimately to the length of time spent in poverty. Experiencing a short bout of poverty once during a childhood may be a very different event with very different consequences than spending a considerable fraction of a childhood, either through many repeated spells or through a few very long spells, in low income. This is a central theme of the essays in Bradbury, Jenkins and Micklewright (2001).

The average duration of a spell of poverty is one indicator of the severity of low income and, as illustrated in Table 2 in our data, is about 1.4 years for the entire country. This does not vary markedly across the sub-populations that are the focus of our analysis. The average duration of low income is slightly longer among children in the East than in the West and does not significantly differ between citizens and non-citizens. It is also somewhat longer among those living in single parent households than for children overall.

While statistics of this sort are important in beginning to gauge the severity of low income and to understanding the reasons for differences in the annual poverty rates, there is a sense in which they conceal as much as they reveal. First, a single statistic like an average cannot paint a full picture of low income if many spells are very short and others very long. In fact, the information in Table 2 suggests that there is a good deal of variation in outcomes.

The lower panel of the table indicates that while many children spend less than a year in poverty, a substantial proportion experience spells of very long lengths. The majority of children who begin a spell of low income escape poverty within a year. For the country as a whole 60% of low income spells end within 12 months. About four-in-ten poverty spells last

at least a year (39.9%), but one-in-ten are as long as three years. About three to four percent of child poverty spells are at least five years in length.

These measures may also not paint a full portrait of the experiences of children because they refer to the time spent in a single bout of low income. Some children may repeatedly experience bouts of low income so that while the length of any one particular spell may be short the total time in low income could be quite long.

Information on the probabilities of beginning as well as ending a spell of poverty is necessary to examine these issues, and to offer explanations for the trends and differences in poverty rates over time. Tables 3 and 4 present these annual entry and exit rates. (A set of t-tests for the significance of differences between groups of children are provided in Table A3 in Appendix 1.) Both rates vary significantly from year to year, reflecting cyclical and structural changes in the economy as well as statistical uncertainty associated with the calculations. But the averages over the period tell a story that sheds light on the trends and differences in poverty rates noted in Section 3. In Table 3 the entry rate refers to the percent of children who begin a new spell of low income per year, while in Table 4 the exit rate is the fraction of those currently in a spell who leave that spell within a year.

These figures suggest that the upward trend in child poverty in West Germany since the mid 1980s has to do both with a higher risk of falling into low income and lower chances of leaving. Between 1984 and 1991 the chances a child in West Germany fell into low income were on average just over three percent (3.28%), but since 1992 have been on average close to four percent (3.91%). At the same time the odds that a spell of poverty ends fell from 49% to about 46%. Child poverty has gone up because both its probability and severity have increased.

Exit rates do not differ very much between East and West. However, entry rates do vary, suggesting that the major reason for higher poverty rates in the East has to do with higher risks of falling into poverty. On average between 1992 and 2001 the probability that a

child fell into low income is a full percentage point higher in the East than in the West (4.5% versus 3.5%). This reflects much higher entry rates in the early part of the decade, particularly before 1996, whereas these differences became insignificant afterwards.

The differences in poverty rates between citizen and non-citizen children have to do with a higher risk of experiencing poverty, and not with the chances of leaving poverty. The risk of starting a spell of low income is 4.6% for children in households headed by non-citizens, but only 3.2% for those in households headed by citizens. The most striking differences in Tables 3 and 4 have to do with the circumstances of children in single parent households, who experience an over 20% chance of starting a spell of low income and only a one-third chance (35.8%) that it will end within a year. This entry rate is close to six times higher than for the country as a whole, while the exit rate is about one-fourth lower.

As a refinement we also examine the extent to which exit rates are driven by rather small changes in income leading individuals to hover near to the poverty line. (These small income changes might even be due to measurement errors). This exercise provides exit rates in the same manner as Table 4, but the underlying calculations record an exit from poverty to have occurred only if the increase in income places the child 10% or more above the poverty line. The contrast between these two sets of results demonstrates that a substantial share of all children leaving poverty cross the poverty line only marginally. For the country as a whole the average annual poverty exit rate between 1992 and 2001 is 36% when calculated in this way, substantially lower than the 46% reported in Table 4 using the narrower definition. The contrast is more striking for East Germany, where the chances of leaving poverty are only 30.6% on average between 1992 and 2001 (versus 47.1% from Table 4). A large fraction of children who leave low income might be more accurately considered as hovering just above the poverty line, and hence likely facing a risk of falling back into poverty.

To investigate the extent to which children climb out of poverty only to fall back in within a short time period we examine the duration of time spent out of poverty after a

previous spell. In other words, we estimate the chance of staying out of poverty a specific number of years for those children who have left poverty at least once during the sample period. This provides an estimate of the risk of falling into poverty conditional on ever having left it.

The results as reported in Table 5 suggest that poor children are susceptible to repeated spells of poverty. About 50% of those who left low income status have returned within four years. The chances of falling back in are much higher in the East than in the West of Germany. This is especially apparent after two years. Only 42% of children in East Germany have not fallen back into poverty after three years, and only about 17% stay out for five years.

There are also significant differences between citizen and non-citizen households: 88% of children in non-citizen households who have ever left poverty stay out for at least two years compared to 65% of those in citizen households. This is the only respect in which children from non-citizen households appear to face better circumstances than their counterparts: there seems to be less likelihood of experiencing repeated spells of low income if a child whose household head is a non-citizen manages to escape poverty. In Appendix 2 we offer evidence to suggest that this might in part be a statistical artifact, reflecting selective attrition from our sample. Non-citizen households exhibit significantly higher attrition, and being poor in a given year significantly increases the probability of dropping out of the sample in the next year. Finally, once again children in single parent families have the most tenuous time with about half falling back into poverty after only two years since their last spell ended.

6. Family income, taxes and benefits

With these facts in mind it is natural to ask what role government policy plays in determining both the level and direction of changes in child poverty rates. A full assessment of this issue is

beyond the scope of our research, but given our objective of offering a descriptive portrait of developments we examine poverty rates pre- and post-government taxes and transfers, and relate this to the structure of the tax-benefit system.

The German tax-transfer scheme plays a large role in altering market outcomes for children. Poverty rates before taxes and transfers are much higher than after. This is evident from Figure 8, which contrasts the child poverty rates in the country as a whole for 1991 and 2001 using market incomes and using incomes after taxes and transfers have been taken into account. The difference between poverty rates based on pre- and post-government income is large, but decreasing in percentage terms over the 1990s. In 1991 the difference between pre and post government poverty rates was about 52% (=[(15.7-7.6)/15.7]×100), but in 2001 somewhat lower at 44%. The impact of the tax/transfer system is pronounced in East Germany, with the poverty rate based upon market incomes falling 67% in 1991 and 53% in 2001. The difference between pre- and post-government child poverty rates is smaller in West Germany, though at around 40% still substantial. While this is not a perfect nor a complete way of assessing government policy, it is a first step for any more detailed analyses attempting to account for the behavioral impact of government programmes. It is also consistent with the analysis of reasons for changes in child poverty rates offered by Chen and Corak (2005).

On this basis alone government transfers in Germany play an important role in lowering child poverty in East Germany, and in narrowing the gap between the two regions. The extent of the impact seems to have fallen over the course of the decade. In this regard it is important to appreciate the nature of and changes in the most important constituents of the German tax and benefit system related to family income. A much more detailed overview than we are able to offer is provided in Rosenschon (2001). In the German tax and benefit system child care benefits and tax allowances provide the most important support for parents with children. In addition, parents are eligible for maternity and parental leave, child raising

benefits, free coverage of children in the public health care system and of parents during parental leave. Furthermore, they receive higher unemployment and social assistance compared to families without children. Finally, there are several other partly non-pecuniary benefits: the consideration of child raising periods for the calculation of pension entitlements or lower fees for children in, for example, public transport and museums.

From 1983 to 1996 parents received tax allowances and child benefits simultaneously. The yearly tax allowance increased from 432 DM in 1983 to 2,484 DM in 1986 and further to 3,024 DM in 1990. Child care benefits were 50 DM per month for the first, 70 to 100 DM for the second, 140 to 220 DM for the third and 140 to 240 DM for each additional child during these years.[4]

In 1996 the system changed considerably. Since that time parents have been free to choose between a yearly tax allowance of 3,132 DM in 1996 (3,456 DM from 1997 and afterward) per child and parent or a fixed amount of child care benefits, depending on what is more favorable for them. (The tax allowance is only favorable for high income families with a yearly income of more than 100,000 DM.) The monthly child benefit was equal to 200 DM for the first and second child, 300 DM for the third and 350 DM for each additional child in 1996 and since then has been increased stepwise for the first and second child up to 270 DM in 2000/01. Single parent households with children receive an additional tax allowance of 5,616 DM per year (1990-2002).

Mothers are eligible for maternity leave six weeks before and eight weeks after childbirth. This benefit is a compensation for income loss during this period and equals the average income the mother received before maternity leave. Additionally, there is a “child raising benefit” for parents not working at all or part-time and who are mainly occupied by raising their children. This benefit is equal to 600 DM per month since 1986 but its actual

[4] At the time of the € conversion the exchange rate was fixed at 1.96 DM/€.

amount depends on total income. The period of receipt was extended from 10 months in 1986 to 2 years from 1993 onward.

Since 1986 mothers (parents) are entitled to parental leave, which is now up to 36 months. During this time parents are covered by the public health care system for free. (Children have always been free in the public health care system as long as their parents are covered.)

Unemployment benefits and unemployment assistance are higher for parents with children. In 2000 the replacement rate of unemployment benefit was 67% of the former wage for parents with children and 60% for those without, and respectively 57% and 53% in unemployment assistance. Social assistance is also higher for families with children. The household head receives a fixed amount of welfare and each additional family member receives a fraction of this amount. The fraction varies by age of the family member. Children below age 7 receive 50% of the amount, those aged 7-13 years receive 65% and children aged 14-17 receive 90%.

That the tax-transfer system in German plays a central role in the lives of children is evident in Figure 9, which illustrates the age incidence of taxes and transfers for the year 2000 using information in Corak, Lietz and Sutherland (2005) developed from the EUROMOD micro-simulation model. Unfortunately we are not in a position to examine similar information for a period in the early 1990s. Doing so would offer a clearer impression of how the above policy changes actually reflected changes in the priority given to children in government budgets. The calculation of taxes and transfers received by children assumes that the incomes and tax obligations of each household are shared equally among its members. (In this way the mediating role of the family and differences in family structures and living arrangements are explicitly recognized but on the basis of an assumed equal sharing rule. This parallels our derivation and analysis of child poverty). The information in Figure 9 is meant to offer one possible indicator of the age priorities embedded in government budgets.

The German transfer system favours younger children, particularly in the case of the low income population. Children under the age of 12 receive about one fifth of their economic resources through state transfers. This is as high as 85% for low income children under five, and 75% for low income children between 6 and 11 years of age. But these proportions fall off rapidly after the age of 17 years. While this preference is clear in the system overall our analysis suggests that there is a need for a more detailed understanding of how the tax-transfer system plays out for particular groups, most notably those in the East, those in non-citizen households, and particularly those in single parent families.

7. Conclusions

This paper provides a portrait of child poverty in Germany and its dynamics since the mid 1980s. Our analysis of data from the German Socio-Economic Panel offers estimates of poverty rates, entry and exit rates as well as the duration of poverty spells and time out of poverty for the country as a whole as well as between East and West Germany, citizenship status, and family structure. The major findings suggest that poverty rates among children declined moderately during the 1980s but have increased since the beginning of the 1990s. For the most part child poverty rates in East Germany are significantly higher than in the western part of the country, and increased more over the decade.

The situation of children has also deteriorated relative to the entire population, and the adult population in households without children. During the 1980s and early 1990s children faced risks of poverty no different and indeed slightly lower than those faced by the average member of the population, but since then their chances of living in poverty have increased compared to the rest of the population. The dramatic changes in German society and economy, involving unification and significant economic adjustments, are associated with a deterioration in the relative situation of children.

Child poverty is also notably higher and increasing among children in households headed by non-citizens, and particularly among children in single parent families. The upward trend in child poverty rates is linked with the deterioration of the situation of children in non-citizen households, particularly more recent arrivals. Children in single parent families, however, face the most dire circumstances of all, with much higher poverty rates. They have a 23% likelihood per year of falling into low income compared to only about 4% for the entire population of children. Once in low income they face much longer spells, with only a one-third chance of leaving within a year. The comparable rate for all children is almost one-half. Finally once out of poverty over half fall back in with two years.

Our analysis of poverty rates by household type indicates that single adult households with children exhibit significantly higher poverty rates than single adults without children. We also observe that risk of low income is no different among the average couple with children as it is among the average couple without children. Thus, in terms of the current policy discussion in Germany, having children does not *per se* constitute a poverty risk. It may be the case that this finding is the result of a positive selection mechanism, with only those couple households which can afford it have children. An assessment of the interrelationship between fertility and poverty risk is beyond the scope of this paper and requires additional research. However, our results suggest that a general expansion of child care benefits independently of household income might not be appropriate to reduce child poverty. Rather, greater attention to how the current benefit structure responds to the needs of single parent households and means-tested support for families with children appear to be more promising approaches.

Clearly, our analysis is descriptive. The results neither provide an answer to the question of which events are associated with entering or leaving poverty, nor explain the duration of poverty spells. But we also point out that the German tax-transfer system plays an important role in reducing the chances of poverty among children. Though there is a clear

preference for children embodied in how the tax-transfer system works, it is likely that this has weakened somewhat during the 1990s and may not be fully addressing the needs of high risk groups.

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Table 1
Child poverty rates in Germany using a range of possible poverty lines, 1991-2001

Year	Child poverty rate (%)								
	Threshold between poor and non-poor as a percent of median income								
	30%	35%	40%	45%	50%	55%	60%	65%	70%
1991	2.3	3.8	4.4	5.6	7.6	10.0	12.8	17.7	22.7
1992	1.4	3.1	3.8	5.0	6.9	10.3	14.2	19.1	24.2
1993	2.2	2.9	3.9	5.7	7.6	9.7	12.9	16.8	22.8
1994	2.9	4.2	5.4	7.0	9.3	11.4	14.8	19.7	25.3
1995	2.7	4.0	5.0	6.6	8.6	10.8	14.6	19.6	23.5
1996	2.4	3.3	4.5	6.2	8.4	10.7	13.7	18.0	22.9
1997	2.4	3.1	4.2	5.9	7.9	11.0	14.4	18.2	23.0
1998	1.9	3.5	5.0	6.2	8.3	10.7	13.6	17.6	21.7
1999	1.3	2.5	3.4	4.6	6.7	8.7	11.3	14.9	18.6
2000	2.9	4.3	6.2	7.6	9.5	12.1	15.0	19.3	24.4
2001	2.8	4.1	6.2	7.8	10.2	13.2	16.9	21.1	25.2

Note: The alternative poverty lines are expressed as a percentage of the German median income in each year.

Table 2
Average duration of low income and proportions still in poverty by spell duration, 1991-2001

	Entire Country	West Germany	East Germany	West Germany		Single Parent	West Germany (1983-2001)[1]
				Citizen	non Citizen		
			(years)				
Average spell duration	1.40	1.36	1.51	1.39	1.29	1.52	1.48
Standard error	0.035	0.039	0.073	0.048	0.061	0.060	0.042
Years since poverty spell started			Proportion remaining in poverty (%)				
1	39.9	38.3	44.4	41.5	33.8	54.6	38.6
2	19.3	16.5	27.2	14.6	20.4	28.7	19.1
3	9.6	8.0	14.4	7.7	8.9	14.4	10.5
4	5.3	4.5	7.7	3.3	6.5	8.1	6.7
5	3.9	3.8	3.8	3.3	5.2	4.9	3.0
6	3.2	3.1	3.8	0.0	5.2	2.4	2.2
7	1.9	1.5	3.8		2.6	2.4	1.9
8	1.9	1.5	3.8		2.6	2.4	1.4
9	1.9		3.8			2.4	0.7
10							0.7
11							0.7
12							0.7
13							0.7
14							0.0

	Tests of statistical significance in differences	
	West and East	Citizens and non Citizens
Average spell duration (t-statistic)	-1.84*	1.29
Survivor function (chi²-statistic)[2]	5.82**	0.01

Note: The calculations of the survivor function are based upon Kaplan-Meier estimates for the years 1991-2001. The poverty threshold is 50% of the country wide median income.
[1)] Based on West German poverty line for the period 1983-2001.
[2)] Equality of survivor functions analyzed using log-rank test. Test statistic indicates significance at *** 1%-level, ** 5%-level, * 10%-level.

Table 3
Entry rates (proportion of children not in poverty beginning a spell per year)

	Entire Country	West Germany	East Germany	West Germany		Single Parent	West Germany[1]
				Citizen	non Citizen		
1984							4.34
1985							3.71
1986							2.26
1987							4.58
1988							2.40
1989							1.53
1990							3.50
1991							3.95
1992	2.86	2.27	4.73	1.91	3.61	22.32	3.10
1993	3.61	3.10	5.41	2.80	4.52	23.77	3.62
1994	4.59	4.26	5.76	3.98	5.04	22.28	4.63
1995	3.79	3.13	6.31	2.59	5.32	21.06	4.34
1996	3.32	3.36	3.14	3.17	4.10	24.35	3.53
1997	4.35	4.62	3.19	4.85	3.73	30.24	4.39
1998	4.33	4.27	4.57	3.59	6.84	21.80	4.47
1999	2.97	2.94	3.08	2.58	4.22	16.59	3.17
2000	3.13	2.99	3.79	3.18	2.34	21.59	3.18
2001	4.31	4.15	5.14	3.46	6.38	22.92	4.64
Average (1992 to 2001)	3.73	3.51	4.51	3.21	4.61	22.69	3.91
Average (1984 to 1991)							3.28

Note: Entry rates based on poverty threshold of 50% of the country wide median income.
[1)] Based on West German poverty line

Table 4
Exit rates (proportion of children in poverty leaving a spell per year)

	Entire Country	West Germany	East Germany	West Germany		Single Parent	West Germany[1]
				Citizen	non Citizen		
1984							48.0
1985							50.1
1986							43.6
1987							45.1
1988							52.1
1989							60.9
1990							46.8
1991							44.0
1992	48.1	47.7	49.3	41.8	86.4	29.79	47.1
1993	42.7	48.6	32.4	41.3	69.4	29.44	51.5
1994	41.5	40.1	44.5	41.3	33.9	33.06	42.6
1995	48.6	46.0	55.4	50.0	42.8	28.19	45.4
1996	48.5	47.9	50.2	61.4	23.4	41.13	48.7
1997	60.4	61.3	58.3	66.9	52.4	54.61	58.9
1998	41.4	38.8	49.9	42.0	30.6	35.65	34.7
1999	42.4	46.0	32.3	47.5	43.7	30.74	48.2
2000	48.3	50.1	43.5	42.3	62.5	38.00	47.3
2001	41.9	37.7	55.0	41.3	32.6	37.81	38.2
Average (1992 to 2001)	46.4	46.4	47.1	47.6	47.8	35.84	46.3
Average (1984 to 1991)							48.8

Note: Exit rates based on poverty threshold of 50% of the country wide median income.
[1)] Based on West German poverty line

Table 5
Proportion of children remaining out of poverty by years since last spell ended

Years since poverty spell ended	Entire Country	West Germany	East Germany	West Germany		Single Parent	West Germany ('83-'01)[1]
				Citizen	non Citizen		
1	77.3	80.5	71.7	71.7	91.7	66.7	76.6
2	71.8	74.8	66.2	64.8	88.1	51.9	64.6
3	53.0	58.6	41.8	44.0	83.2	28.8	57.3
4	49.8	58.6	33.5	44.0	83.2	28.8	51.4
5	46.7	58.6	16.7	44.0	83.2	14.4	43.5
6	46.7	58.6		44.0	83.2		40.3
7	46.7	58.6		44.0			40.3
8							40.3
9							40.3
10							40.3
11							26.8

	Test on significance of differences between	
	West and East	Citizens and non Citizens
Survivor function (chi²-statistic)[2]	5.12**	9.95***

Note: The calculations of the survivor function are based upon Kaplan-Meier estimates for the years 1991-2001. The poverty threshold is 50% of the country wide median income.
[1)] Based on West German poverty line for the period 1983-2001.
[2)] Equality of survivor functions analyzed using log-rank test. Test statistic indicates significance at *** 1%-level, ** 5%-level, * 10%-level.

Figure 1
Individual Equivalent Median Income and Poverty Lines

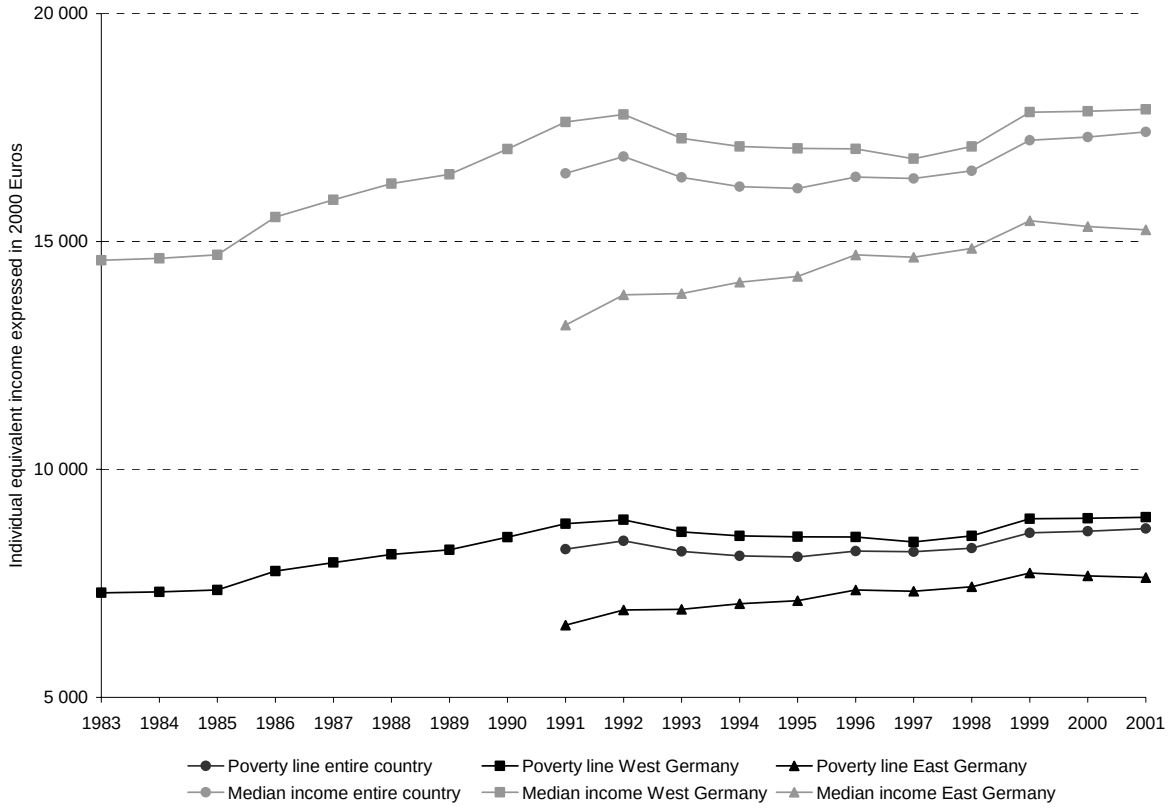


Figure 2
Child poverty rates by region and for different poverty lines

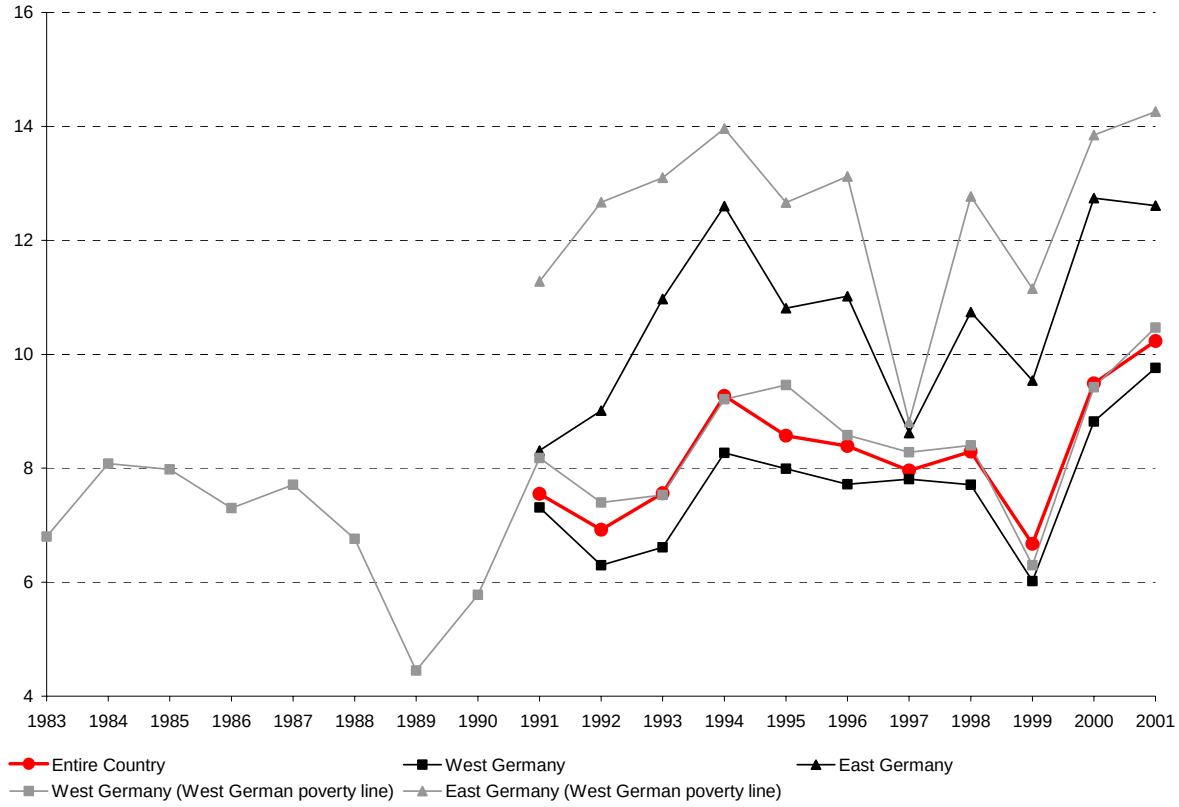
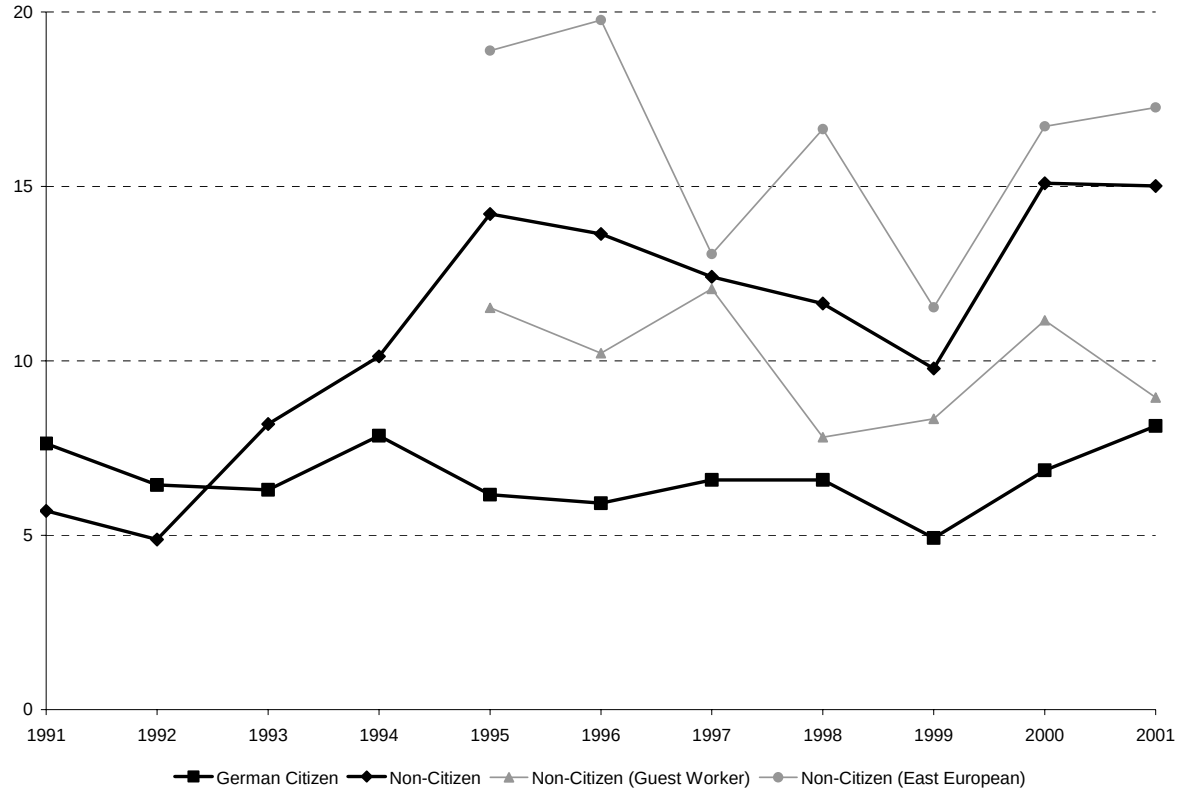


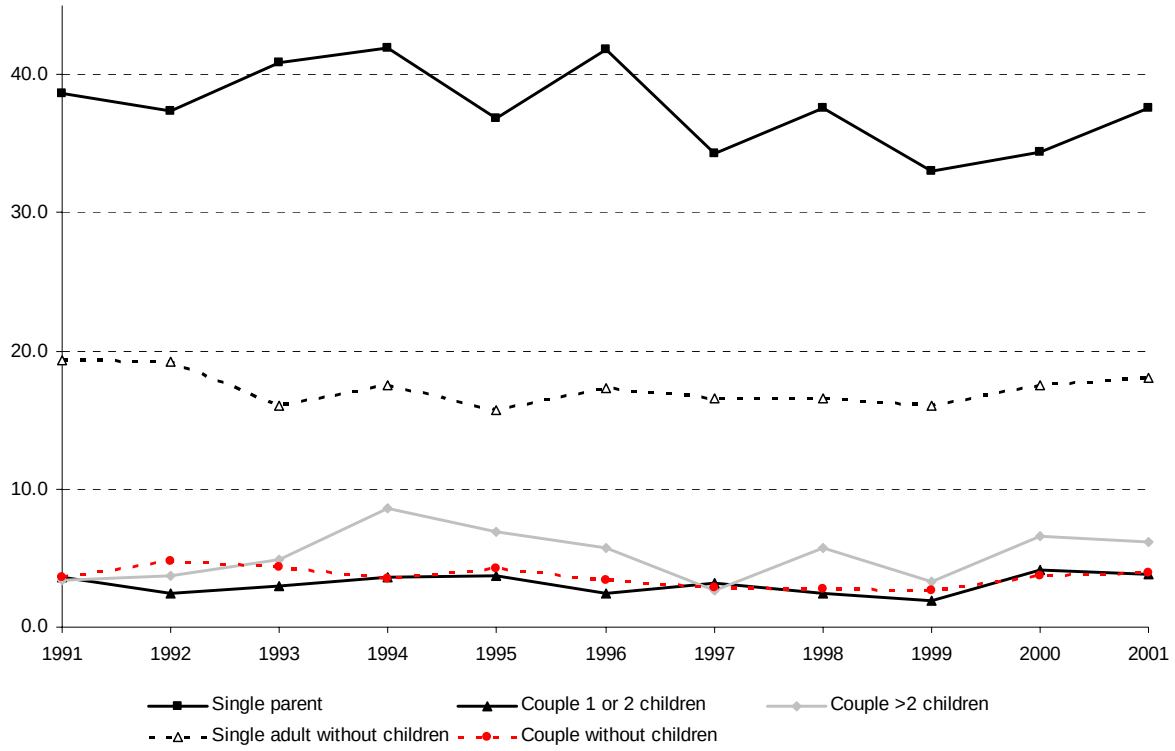
Figure 3
Child poverty rates relative to the overall population and adult households without children

Figure 4
Child poverty rates in West Germany by Citizenship status



Note: The poverty line is defined as 50% of the median country wide individual equivalised income.

Figure 5
Household poverty rates by family type (entire country)



Note: Poverty rates are defined as the proportion of households living in poverty, not the proportion of individuals in poverty. The poverty line is still defined as 50% of the median country wide individual equivalised income.

Figure 6
Child poverty rates for relative and absolute thresholds

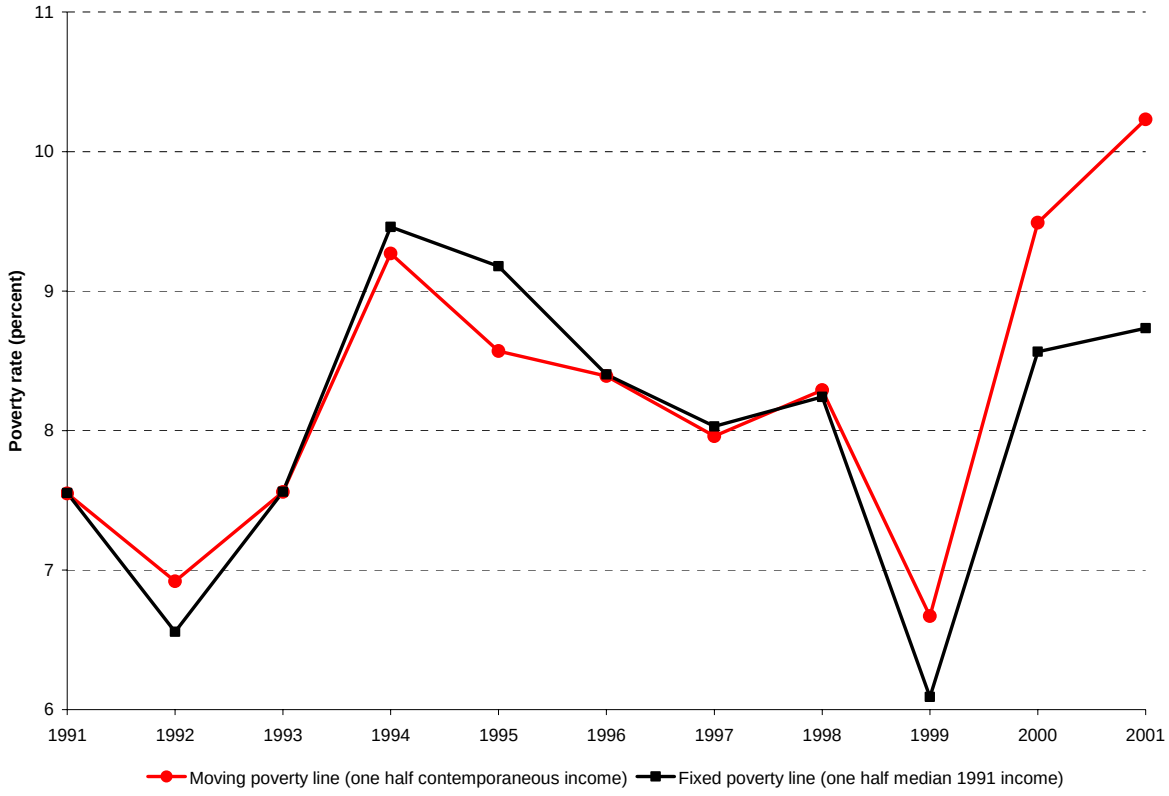


Figure 7
Child poverty rates for varying percentages of median equivalised income

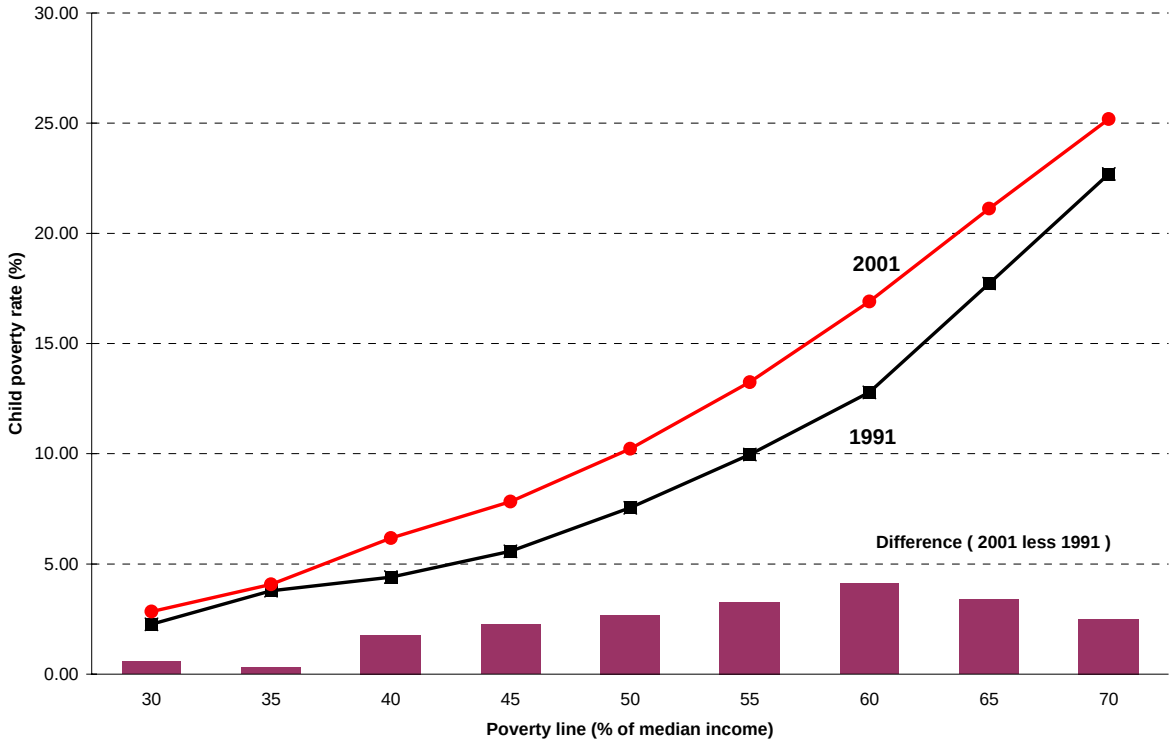


Figure 8
Child poverty rates before and after taxes and transfers

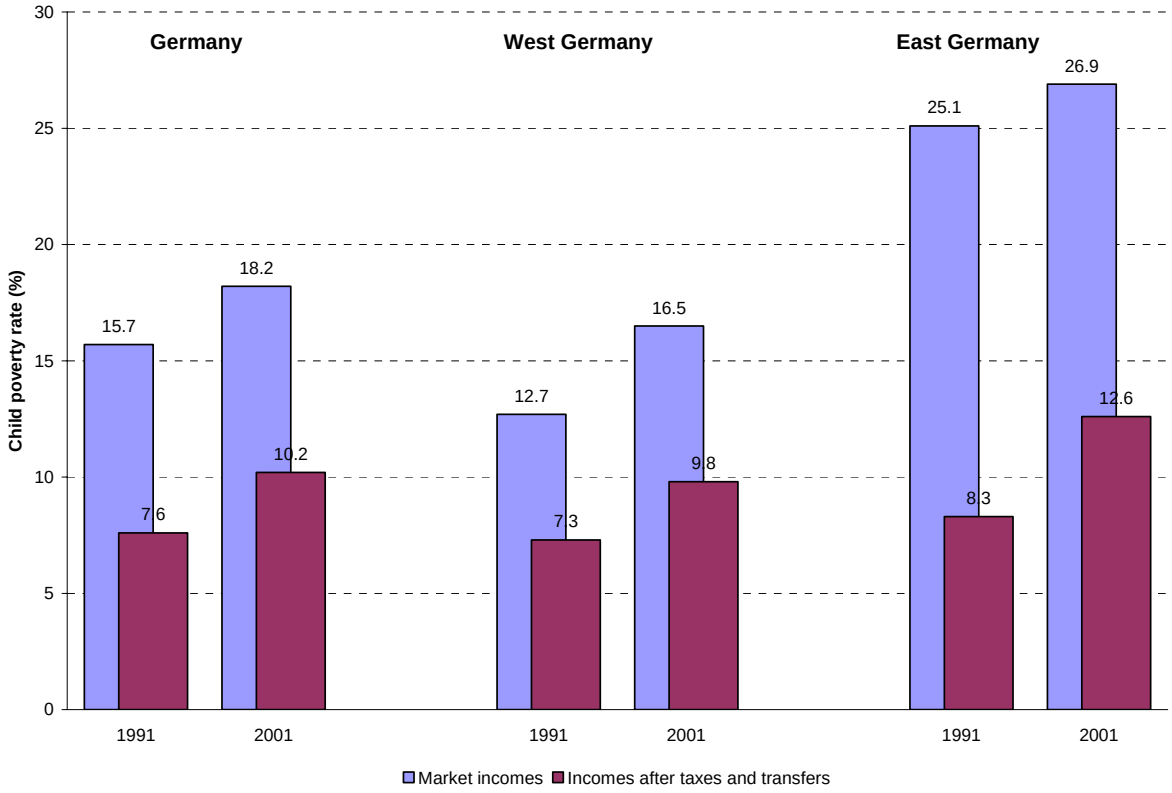
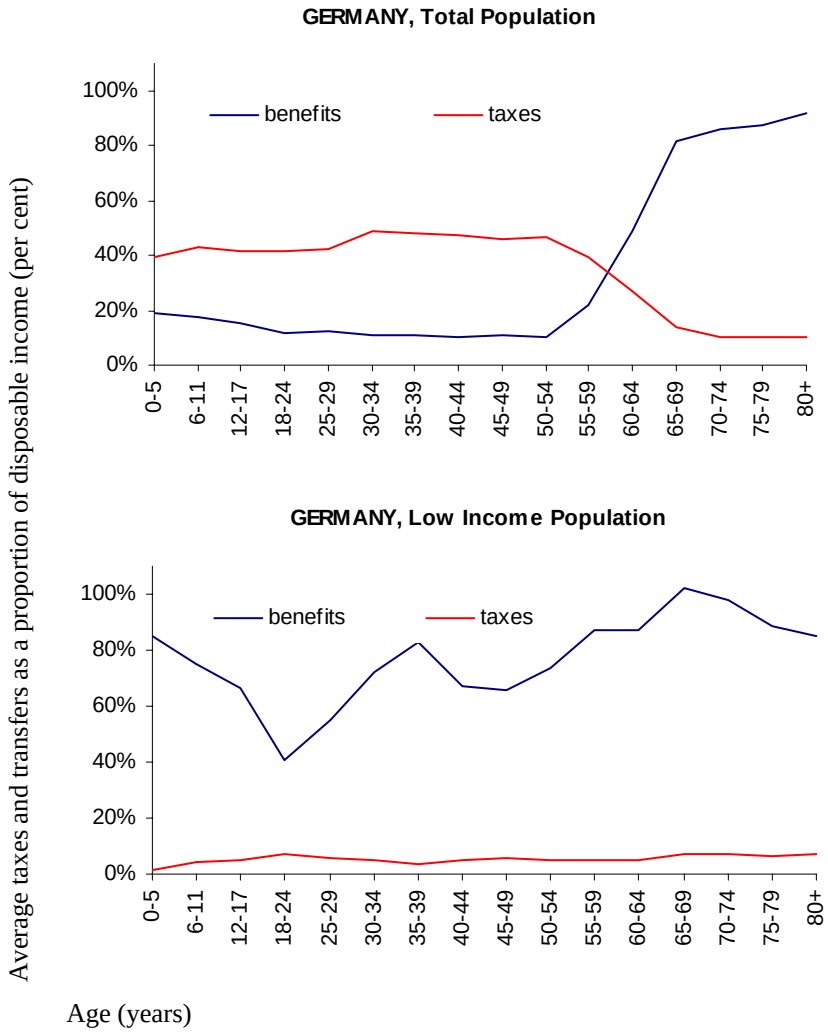


Figure 9
The distribution of taxes and transfers across age groups



Source: Corak, Lietz, Sutherland (2005).

Appendix 1

Table A1
t-tests on significance of differences in child poverty rates

Year	Child poverty East vs. West	Child poverty Non Citizen vs. Citizen	Adult poverty rate (no kids in HH) vs. Child poverty rate
1991	0.70	-0.94	0.60
1992	1.96**	-1.02	1.87*
1993	2.88***	0.75	-0.02
1994	2.65***	1.03	-1.62
1995	1.74*	4.37***	-0.87
1996	1.84*	3.36***	-0.44
1997	0.51	1.92*	-0.67
1998	1.88*	2.23**	-1.52
1999	2.32**	2.22**	0.56
2000	2.50**	4.09***	-1.79*
2001	1.84*	3.38***	-1.85*

Note: t-statistic indicates significance at *** 1%-level, ** 5%-level, * 10%-level. Poverty line for entire country.

Table A2
t-tests on significance of differences in household poverty rates by family type

Year	Single Parent with Children vs. Single Adult no Children	Couple with 1 or 2 Children vs. Couple no Children	Couple with > 2 Children vs. Couple no Children	Couple with 1 or 2 Children vs. Couple with > 2 Children
1991	3.87***	-0.03	-0.17	0.13
1992	3.49***	-3.17***	-0.87	-1.07
1993	4.85***	-1.62	0.36	-1.24
1994	4.78***	0.18	2.41**	-2.34**
1995	4.76***	-0.66	1.28	-1.56
1996	5.07***	-1.31	1.35	-1.91*
1997	3.76***	0.44	-0.16	0.38
1998	4.76***	-0.51	1.43	-1.57
1999	3.90***	-1.56	0.41	-0.95
2000	5.13***	0.53	1.72*	-1.41
2001	6.42***	-0.16	1.29	-1.32

Note: Unit of observation for poverty rates is the household, not the individual. t-statistic indicates significance at *** 1%-level, ** 5%-level, * 10%-level. Poverty line for entire country.

Table A3
t-tests on significance of differences in entry and exit rates from low income status

Year	Entry rate of children		Exit rate of children	
	East vs. West	Non Citizen vs. Citizen	East vs. West	Non Citizen vs. Citizen
1992	2.89***	1.60	0.16	4.41***
1993	2.00**	0.80	-1.78*	2.24**
1994	1.49	0.90	0.41	-0.33
1995	2.04**	2.32**	1.32	-0.81
1996	-0.24	0.87	0.24	-4.30***
1997	-1.34	-0.79	-0.28	-1.17
1998	0.24	1.94*	1.08	-0.85
1999	0.15	1.25	-1.46	-0.29
2000	0.47	-0.58	-0.61	1.21
2001	0.98	2.23**	2.26**	-1.03

Note: t-statistic indicates significance at *** 1%-level, ** 5%-level, * 10%-level. Poverty line for entire country.

Appendix 2

In this appendix we investigate the extent to which our results might be contaminated by selective panel attrition. To this end, we estimate a probit model for the period 1992-2002 in which the probability of dropping out of the sample is explained by a set of indicator variables. Specifically, the dependent variable takes on the value of 1 if an individual drops out of sample, in other words is never observed with valid income information after a specific year, and 0 otherwise. The explanatory variables comprise year indicators (1992-2000), an indicator for East Germans and non-citizens as well as an indicator for being poor in the year before a specific sample year. Furthermore, we employ two interaction terms indicating poor non-citizens and poor East Germans in the year before the observation year.

The estimation results, which are reported in Table A-4, indicate that non-citizen households have a statistically significantly higher probability of 2.6% of dropping out of sample. Furthermore, being poor in the year before the current observation year significantly increases the probability of dropping out by around 4.9%. No statistically significant differences between East and West Germans are found and no significant deviation for poor non-citizens. However, poor East Germans display a significantly lower probability of dropping out than poor West Germans (2.9% compared to 4.9%).

Table A-4
Estimation Results for Panel Attrition, 1992-2001

Co-variate in probit model	Marginal Effect	t-value
East German	-0.0011	-0.38
Non-Citizen	0.0263	8.48
Poor in year before attrition	0.0488	6.44
Poor non-citizen in year before attrition	-0.0132	-1.58
Poor East German in year before attrition	-0.0201	-2.36
Year dummy 1992	-0.0016	-0.29
Year dummy 1993	-0.0082	-1.53
Year dummy 1994	-0.0065	-1.23
Year dummy 1995	-0.0039	-0.72
Year dummy 1996	0.0170	2.95
Year dummy 1997	0.0060	1.06
Year dummy 1998	0.0070	1.24
Year dummy 1999	0.0170	2.89
Year dummy 2000	0.0670	11.35

Note: Number of observations is 41,019.

In general, these results suggest that being poor in a specific year increases the probability of panel attrition considerably and that our results might suffer to a certain extent from selective non-response. The extent to which this poses a serious problem depends on the poverty duration of those having left the sample. If these are individuals with an above average poverty duration our results might underestimate poverty incidence as well as poverty dynamics and duration. However, since we do not observe these individuals, this question must remain an unresolved issue.