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Child poverty in Britain and Germany

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Note: this is the first draft of a report to the Anglo-German Foundation with the same title that was published in January 2002 (ISBN 1 9000834 29 4). This draft contains many more details than the published report, together with an additional chapter on a related topic (Chapter 7). The final published report is available via the Anglo-German Foundation web-site at http://www.agf.org.uk/pubs/publications.html*, or hard-copies may be purchased (price £15.00) via bookshops or from the AGF's distributor, YPS (fax: +44 1904 430868, tel: +44 1904 431213).*

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EXECUTIVE SUMMARY

This study compares child poverty in Britain and Germany during the 1990s. The research is distinguished by the high comparability of the data used for the analysis, and by breadth of topics addressed – it considers not only poverty rates in a given year and trends over time (a cross-section perspective), but also movements into and out of poverty between one year and the next. The comparisons for Germany primarily refer to Western Germany but there are some statistics for Eastern Germany too, where data allow.

The report has three main parts:
1. Setting out the 'facts' about Anglo-German differences in child poverty;
2. Seeking explanations for these patterns.
3. Examining, for Western Germany, the relationship between low family income during childhood and the subsequent choice of school type at age 14.

1. Anglo-German differences in child poverty

- Relative to Western German children, British children experienced higher poverty rates (30 per cent compared to 19 per cent, on average for the period 1991–8).
- This difference can be related back to higher poverty entry rates and lower poverty exit rates in Britain relative to Germany.
- In both countries, children were at greater risk of being poor than the average person in the population, but the differential was greater in Britain than Germany.
- Child poverty rates were showed very little trend upwards or downwards over the 1990s in both countries.
- Child poverty rates in Eastern Germany fell substantially during the 1990s and by the end of the decade were similar to those in Western Germany
- British children experience longer poverty spells and shorter times out of poverty between poverty spells. More generally, poverty persistence is greater for British children than for German children.

2. Explaining the higher child poverty rate in Britain compared to Western Germany

- Anglo-German differences in child poverty rates can be explained in terms of differences in the relative size of 'problem groups' and differences in poverty rates within groups. Breakdowns of child poverty rates by household type and household labour market attachment draw attention to the fact that in Britain there are relatively more children in families without work (including a greater fraction of children in lone parent families). And among these groups – indeed among all groups – child poverty rates are higher than in Germany.
- This 'cross-sectional' explanation is complemented and substantially extended by the analysis of poverty dynamics. This related Anglo-German differences in child poverty

entry and exit rates to differences in the rate of occurrence of various 'trigger events', and differences in the consequences for income once a trigger event occurred. (Trigger events include events such as gains or losses of a job by a household member, or household formation or dissolution.)

- As in the cross-section analysis, we drew attention to the roles played by differences in labour markets and 'demography'. For example in Britain there are greater flows into and out of employment, and a greater prevalence of household formation and dissolution. But, in addition, the methodology enabled us to say more conclusively than before how differences in the British and German welfare states were related to differences in child poverty rates.
- Relative to the British tax and benefit system, the German system provides both better protection to children's incomes against adverse events and better reinforcement of positive events.

3. Longer-term consequences of child poverty in Germany: school type at age 14

- The odds of an individual entering Gymnasium at age 14 rather than Hauptschule or Realschule are much higher if that individual belongs to a household that was relatively well-off when he or she were a child rather than a household with low income. Gymnasium graduates have better career prospects and thence life chances than graduates of other school types.
- This 'raw' association between income and school type is potentially misleading because it does not control for other factors, including other types of differences in family background during childhood.
- When one controls for a range of other factors, notably parental educational qualifications, the association between income in childhood and school type is small. Income during early childhood is more important than income near to age 14.

Data and Methods

The research used specially-constructed comparable data derived from the British Household Panel Survey and the German Socio-Economic Panel, for survey years 1991–8. (The longer-term analysis about school type in Germany used GSOEP data for 1984–97.) In both surveys, respondents are interviewed annually about their incomes, labour market activity, their household, and many other aspects of their life. Individuals were counted as being poor if the income of their household, suitably adjusted for differences in household composition, was less than the poverty line. The principal poverty line used was 60 per cent of median contemporary national income. Extensive sensitivity checks show that the results are robust to variations in the poverty line and choice of equivalence scale.

Preface and acknowledgements

This is a report to the Anglo-German Foundation, to whom we are very grateful for funding our research. We also benefited from ISER's core funding from the Economic and Social Research Council and the University of Essex, and CASE's core funding from the Economic and Social Research Council.

The report draws on three project papers:

- 'The dynamics of child poverty: Britain and Germany compared', by Jenkins, Schluter and Wagner;
- 'Why are child poverty rates higher in Britain than in Germany? A longitudinal perspective', by Jenkins and Schluter; and
- 'Does low income in early childhood affect adolescent school attainment? Evidence from the German Socio-Economic Panel', by Jenkins and Schluter.

The first two papers are currently under consideration by scholarly journals, and the third is being revised for submission.

We would emphasise, however, that this report includes substantial amounts of new material that is not in any of the papers, together with much re-working of existing material in order to ensure that a consistent set of definitions is used throughout. This version of the report was drafted by Jenkins, drawing on all the materials produced by the project team.

We have received many helpful comments and suggestions from colleagues, and from participants at seminars and conferences at which we have presented our research. We wish to acknowledge the following individuals in particular: James Banks, Rich Burkhauser, John Ermisch, Marco Francesconi, Joachim Frick, Anne Gauthier, Dan Hamermesh, John Hills, Lutz Kaiser, Dean Lillard, John Micklewright, and Katharina Spiess. Any errors or omissions in the report are the responsibility of the authors alone, however.

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1. Introduction

1.1 Background and motivation

Germany and the UK are the two largest and most economically successful nations in the EU. However Germany does better than Britain in protecting children from the problems of low income. For example, according to the Statistical Office of the European Community, in 1993, there were 13 per cent of German children living in poor households but in Britain the proportion was more than double this figure, 32 per cent (Eurostat, 1997, Figure 3; the 12 country EU-average was 20 per cent). Trends in child poverty are also more favourable in Germany compared to the UK, as Figures 1(a) and 1(b) illustrate. The charts show that, between 1983 and 1996, there was relatively little change in the child poverty rate in Western German (and a decline in the East German rate), whereas in Britain the child poverty rate increased by at least 50 per cent.

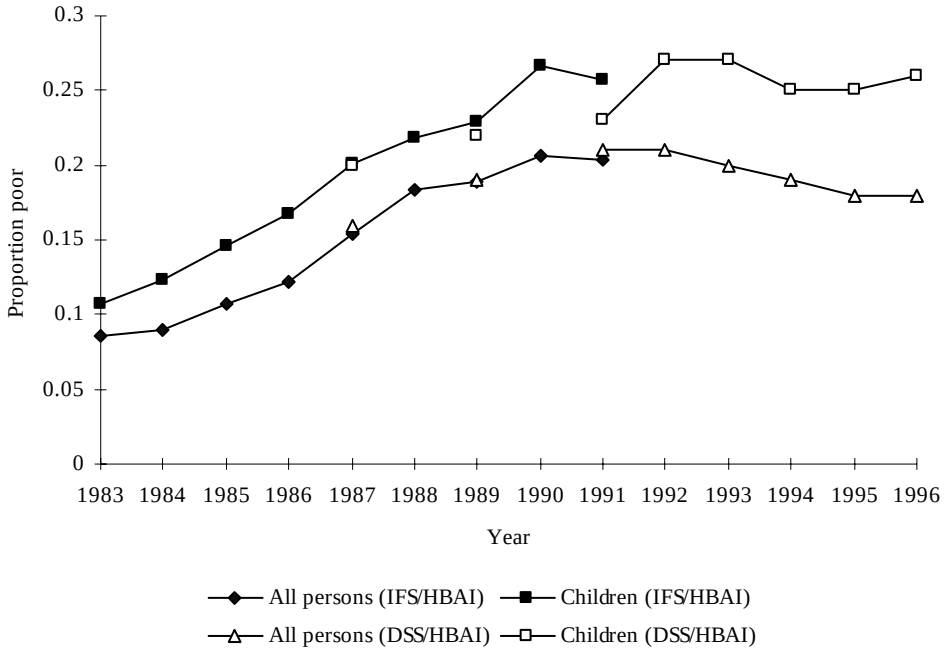
These statistics suggest that Britain has something to learn from Germany about how to protect children from poverty. (We return to discuss the validity of these statistics shortly.) There are also potential cautionary lessons for Germany as pressure increases on it to introduce economic and welfare reforms similar to those instituted in Britain over the last two decades. And, in one important sense there is a common lesson for both countries: they each have a child poverty problem in the sense that poverty rates are higher for children than 'all persons' in both Germany and the UK (see Figures 1(a), (b)). Thus both nations could improve their protection of one of the most vulnerable groups of citizens.

In both Britain and Germany there is, of course, public perception of child poverty as an issue already, and the topic has received headline news coverage.[1] In Britain the child poverty problem has long been recognised by some, and led for example to the formation of specialist pressure groups such as the Child Poverty Action Group more than twenty years ago. But at the same time there was also on-going debate about the extent or indeed existence of poverty. For example a former Conservative government minister stated during the 1980s that there was no such thing as poverty in Britain. Official attitudes have changed remarkably in the last few years however, with the change dating from the new Labour government in 1997. Now UK government ministers use the word 'poverty' explicitly and have established procedures to monitor it annually using low income thresholds related to average incomes (Department of Social Security, 1999). More specifically with reference to child poverty, the Prime Minister has stated that 'Our historic aim will be for ours to be the first generation to end child poverty' (Beveridge Lecture, Toynbee Hall, 18.03.99) and the Chancellor of the Exchequer has referred to child poverty as 'a scar on Britain's soul (Brown, 1999: 104). The current government has pledged to halve the number of poor children within ten years and to eliminate child poverty altogether within 20 years (Department of Social Security, 1999). The Budgets in 1998–2001 were notable for measures explicitly aiming to help children.

[1] For example, for Britain, see the article on 'War on poverty' and associated leader article in *The Guardian* (19.03.1999). For Germany, see for example the articles 'Länder halten Bericht zurück' and 'Die Sozialhilfe als Normalfall' in the *Süddeutsche Zeitung* (31.07.1998, and 21.08.1998).

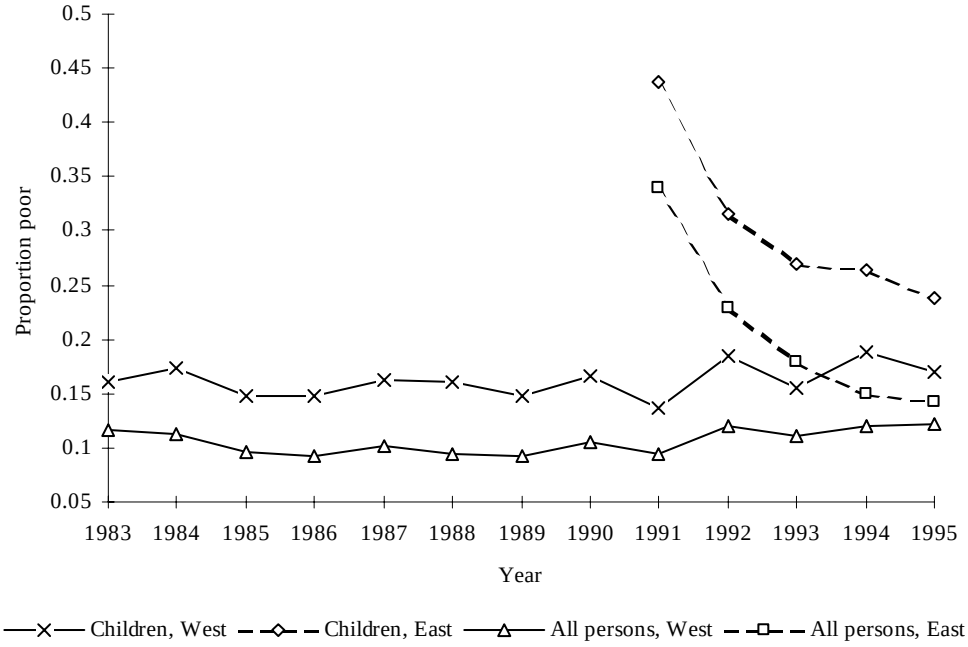
Figure 1. Poverty rates in Germany and the United Kingdom: children and all persons

(a) United Kingdom, 1983-96



Source: authors' calculations from Goodman and Webb (1994) IFS/HBAI data and Department of Social Security (1998) 'Households Below Average Income' (DSS/HBAI) data. The poverty line is half contemporary mean income. Incomes are adjusted using the McClements equivalence scale.

(b) Germany, 1983-95



Source: authors' calculations from German Socio-Economic Panel data. The poverty line is half contemporary mean income in West Germany. Incomes are adjusted using the social assistance equivalence scale.

By contrast, children's poverty is less of a political issue in Germany at present (and unsurprisingly given the differences in the extent of problem). But there is interest in the topic nonetheless. For example, a recent parliamentary commission on the economic well-being of children, Kommission zur Wahrnehmung der Belange der Kinder ('Kinderkommission'), drew attention to child poverty and the insufficiency of benefits for children (1997: 2). The Kinderkommission also cited the relative lack of information about children and argued the need for a special-purpose child welfare survey. As in Britain, however, such concerns are not equally shared. For example during the 1990s, the former Conservative minister for the family (Frau Claudia Nolte) stated that recipients of means-tested social assistance could not be regarded as being poor and hence poverty must be all but absent in Germany.[2]

1.2 The issues addressed

Against this background, this report provides a detailed study of child poverty in Germany and Britain in order to highlight cross-national similarities and differences and thence draw out potential lessons relevant to policy. Our research has three distinctive features: the emphasis on longitudinal perspectives on child poverty (both short-term and long-term), its use of consistently comparable cross-national data for each country, and the examination of the socio-economic correlates of poverty patterns.

All the statistics that we have cited so far refer to poverty rates at a point in time or trends in these annual poverty rates. Such statistics cannot tell us how long poor children stay poor, or how often they become poor. Policy makers have started to appreciate the importance of information about the longitudinal dimension of poverty. In Britain, the philosophy of anti-poverty policy has shifted – as in the USA before it – away from income supplementation of those currently poor and towards providing routes out of poverty and preventing falls into poverty.[3] The motivation is that: 'In the past, analysis ... has focused on static, snapshot pictures of where people are at a particular point in time. Snapshot data can lead people to focus on the symptoms of the problem rather than addressing the underlying processes which lead people to have or be denied opportunities' (HM Treasury 1999: 5).

If one takes the dynamic perspective, the salient research questions change from 'which children are most likely to be poor at the moment?' to 'which children are most likely to remain poor and which ones are most at risk of becoming poor?'. This is not to say that the dynamic perspective should totally supplant the cross-sectional perspective. On the contrary, the two perspectives complement one another, as we shall demonstrate later. But the cross-sectional view has predominated so far, and our emphasis on the dynamics of child poverty is, in part, simply a redressing of the balance between the two approaches.

By a 'dynamic' perspective, we do not simply mean the short term changes in income and child poverty status between one year and the next, but also the longer run consequences of low incomes for outcomes in later life. If these consequences are significantly deleterious, then interventions early in life might prevent them. There has been extensive US research on the effects of children's poverty on their later outcomes, but relatively little has been done for Britain and Germany. The US studies are consistent in demonstrating an association between children's abilities, attainments, and behaviours with family income during childhood. Low levels of childhood family income are associated with more limited achievements (for

[2] Quotation in 'Länder halten Bericht zurück', *Süddeutsche Zeitung* (31.07.1998).
[3] On the US experience, see Ellwood (1998).

example, less completed schooling and less early labour market success), and early childhood tends to be the stage when low levels of family income are most critical.[4] These studies reveal that it is not simply the experience of child poverty during childhood that matters, but also the specific patterns of low income – for example whether experienced at pre-school ages. We shall provide some new evidence for Germany about this aspect of poverty dynamics.

The consistent cross-national comparability of the data underpinning our analysis is a feature of our analysis. We presented evidence about Anglo-German differences in Figures 1(a) and 1(b) drawing on evidence that was available to us when we were planning our research project. The data used were the best national sources then available to us, and incorporated commonly-used national definitions, for example about the equivalence scale and the poverty line level. But does the picture remain the same if the same definitions are used for each country? And what if different assumptions had been used about equivalence scales and the poverty line or other issues? Differences of opinion about the importance of the (child) poverty problem – and how it differs between nations – may arise simply because of differences in definitions and types of data. Recognising these problems, we investigate cross-national similarities and differences in child poverty using definitions and data sets which are properly comparable and explore the robustness of conclusions to different choices. Getting the facts about child poverty straight should assist in clarifying the debates about child poverty *vis a vis* poverty among other groups in the population and thence policy priorities.

The data sets that we use are the British Household Panel Survey (BHPS) and the German Socio-Economic Panel (GSOEP) together with associated sub-files from the Cross-National Equivalent File (CNEF) database that contain cross-nationally comparable income and other data for Britain and West Germany.[5] The pre-eminent features of the data sets for our purposes are the combination of longitudinal data (so that we can analyse child poverty dynamics) together with cross-national comparability (so that we can do so on a consistent basis). The period we focus on is the 1990s, more precisely 1991–8. This reflects the fact that the first interview wave of the BHPS was only in 1991, and 1998 is the last year for which we had data when the project began. The GSOEP began in 1984, and we exploit the long-panel dimension when we analyse the long-run consequences of child poverty. We use our panel data as a sequence of cross-sections to examine trends in child poverty. The data are not perfectly suited for this task – arguably large-scale cross-section surveys are better – but our checks suggest that our panel data track national trends well and, in any case, a complete annual sequence of comparable data is not available.[6]

Documenting facts and comparing patterns is an important part of this report, but not the only one. A substantial part of our research is devoted to analysis of the socio-economic correlates of child poverty – examining the role of (differences in) the labour market, demographic characteristics, and in welfare states in explaining poverty patterns. We do this for the most part by relating poverty patterns to cross-national differences in work status and household type (cross-section analysis) and cross-national differences in *changes* in work status and household type (dynamic analysis).[7]

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[4] See for example Duncan *et al.* (1997, 1998); Haveman and Wolfe (1993, 1995), Mayer (1997), and McLoyd (1998). For some UK evidence see Ermisch and Francesconi (2000, 2001), Gregg *et al*. (1999), and Hobcraft (1998). For some related German evidence, see Büchel *et al.* (2001).

[5] The public-use BHPS and GSOEP files and the 2001 edition of the Cross-National Equivalent File are available via http://www.data-archive.ac.uk and http://www.human.cornell.edu/pam/gsoep/gspindex.cfm.

[6] Data from the Luxembourg Income Study provides cross-nationally comparable data for Britain and Germany for several cross-sections, but there is no annual sequence of surveys covering the 1990s.

[7] We do not estimate what economists would call a 'structural' model of poverty, through which can identify precisely the specific role of each of a number of factors. Structural modelling applied to poverty is a difficult

Much of the analysis in the report focuses on comparisons of Britain with Western Germany. By Britain we mean the countries of England, Wales and Scotland. (The United Kingdom comprises Britain and Northern Ireland.) By Western Germany, we mean individuals living in the regions (Länder) comprising the former West Germany (Federal Republic of Germany). This focus reflects, to a large extent, a constraint imposed by our data sets. In particular, the BHPS does not survey Northern Ireland. Moreover the GSOEP has income data for residents of Eastern Germany (the regions comprising the former German Democratic Republic) only for 1992 onwards. Comparisons between Britain and all Germany (i.e. Eastern and Western Germany combined), are potentially muddied by the huge changes in the economy and social institutions of Eastern Germany after re-unification. Nonetheless we recognise that a study of child poverty in Germany that omitted any consideration of the experience of a significant proportion of its inhabitants, those living in a region whose changing situation is of considerable interest to many, would be seriously deficient. Our response is supplement the main cross-sectional analysis contrasting child poverty trends in Britain and Western Germany (using data for 1991–8) with additional analysis that compares trends in Eastern and Western Germany and all Germany combined (using data for 1992–8).

We should point out that we do not aim to provide a fully comprehensive picture of poverty in each country. We do not consider separately, for example, the situation of children that belong to guest-worker families in Germany.[8] For evidence about the higher poverty risks for guest-workers and their families relative to native Germans, see Schluter (2001). Our principal goal is to elucidate the key elements of the differences in Anglo-German child poverty patterns and, to this end, we have explored in some detail the sensitivity of our main conclusions to alternative assumptions. For example, we use the same equivalence scale and poverty line definitions throughout the analysis, but check how results change if different scales and different lines are used. And in the trigger event analysis we examine the impact of errors in the measurement of transitions into and out of poverty.

Finally, we should stress that throughout our research we define poverty in terms of low income, as the majority of earlier studies also have. There is another literature in which poverty is measured in terms of multiple deprivation, i.e. a measure of the inability to afford a set of goods and services considered necessities. An example of research in this tradition is Gordon *et al.* (2000). Although these studies add valuable perspectives, they are typically one-off cross-section studies. Undertaking similar studies using a longitudinal perspective are rare in part because of a lack of suitable data and partly because summarising longitudinal changes in a set of indicators raises some formidable difficulties. For recent research that does do this, see Whelan *et al.* (2001), who include Britain and Germany among the countries studied.

1.3 Anglo-German poverty comparisons: previous literature

Our systematic analysis of Anglo-German differences in child poverty along a range of dimensions is the first such study. Most previous Anglo-German studies have analysed poverty in the population as a whole rather than focusing on children. Among the relatively few analyses of child poverty, the majority are country-specific – examining either the UK or

exercise and fraught with a number of as-yet unresolved problems. See Jenkins (2000) for elaboration of this argument.

[8] Guest-workers (Gastarbeiter) are non-German citizens who were recruited from abroad during the economic booms of the 1960s and 1970s.

Germany, but not both. Furthermore, virtually all these studies have looked at who is poor in a given year or years (a cross-section snapshot perspective) but have not looked at how each child's income and poverty changed from one year to the next (a longitudinal perspective).

Representative examples of country-specific studies of poverty trends include, for the UK, Goodman and Webb (1994), Jenkins (1994), and the official statistics on low income (Department of Social Security, 2000). For Germany see, for example, Hauser and Hübinger (1993) or Hanesch (1994). These also provide some separate breakdowns for dependent children. (However, the events and processes associated with child poverty have received little attention.) Gregg *et al.*'s (1999) study is a notable UK exception, analysing both cross-sectional trends in child poverty and some of the associations between the experience of child poverty and later outcomes.

Country-specific studies of poverty dynamics for the population as a whole (without a child focus) include Jarvis and Jenkins (1997) for Britain and Krause (1998) for Germany. There are two studies with a dynamic focus that do focus on children: Hill and Jenkins (2001) for Britain and Schluter (2001) for Germany. The research reported here is a substantial development from our earlier work. Not only does our current research examine a wider range of topics, but it is avowedly comparative – we make explicit cross-national comparisons on a common set of topics, rather than country-specific studies of different topics.

Our research about poverty dynamics should also be distinguished from studies of the dynamics of benefit receipt. (Examples of country-specific studies include Shaw *et al*. (1996) for Britain, and Buhr (1995) and Leisering and Leibfried (1998) for Germany.) As Bradbury *et al.* (2001a) explain, benefit receipt is not the same being poor, drawing particular attention to the problem of assessing child poverty from information about family benefit receipt.

There are a number of cross-national studies of poverty which include Britain and Germany amongst the countries analysed, most of which are based on surveys that form part of the Luxembourg Income Study database. See for example Bradshaw and Chen (1996). But these are all based on cross-sectional rather than longitudinal data. Cross-national research on child poverty dynamics is rare. Perhaps the most-well known study is that by Duncan et al. (1993), though they use families with children as the unit of analysis rather than children themselves, as we shall. Another study is Bradbury *et al.* (2001b) which documents patterns of child poverty dynamics across seven nations, including Britain and Germany. Our research is more wide-ranging in scope and more detailed than either of these two studies – one of the advantages derived from restricting analysis to only two countries.

One study similar in spirit to ours is that by Giles *et al*. (1998), also supported by the Anglo-German Foundation, which studied the distribution of income and wages in the UK and Germany. We shall emulate some of their definitions (notably of household income) and methods – for example the detailed comparisons of trends and breakdowns by different population groups – and use some of the same data sets. However the Giles *et al*. focus was on inequality rather than poverty or child poverty as ours is. We also add longitudinal perspectives (absent from the Giles *et al.* study).

1.4 Outline of the report

Our research comparing child poverty in Britain and Germany has two main parts. The first is a comparison of the levels and trends in child poverty during the 1990s – a cross-sectional perspective. This is contained in Chapter 4. These include comparisons of poverty among children with poverty among the population as whole, and breakdowns by household composition and household labour market attachment. The second and main part of the

research, reported in Chapters 5–7, takes a longitudinal perspective. Chapter 5 provides descriptive information about the dynamics of child poverty using a range of different perspectives. Chapter 6 is a detailed study of why child poverty exit rates are lower, and child poverty entry rates are higher, in Britain compared to Germany. We relate differences in poverty patterns to differences in the incidence of a number of important 'trigger events', and differences in their consequences. The trigger events considered correspond to major events for the individuals in the household in which a child lives. Examples include getting or losing a job, and household formation or dissolution. Whereas this analysis examines movements in to and out poverty between one year and the next, Chapter 7 takes a longer-run view. It examines, for Germany, the effect of different patterns of income receipt during childhood on the educational choices made at age 14 – whether to follow the Hauptschule, Realschule, or Gymnasium route.

The other chapters in the report provide background information for the central analysis chapters, and reflect on the implications of our findings. Chapter 2 provides a introduction to the institutional setting, briefly reviewing differences in the macro-economy (such as unemployment and economic growth) and in the welfare state (the nature of social assistance and social insurance benefits available, particularly for families and children). This is relevant to explaining the poverty patterns that we subsequently describe. Chapter 3 discusses the data sets that we use, and defines key concepts such as income, the equivalence scale and the poverty line. (Chapter-specific definitions appear in the relevant chapter.) A summary and conclusions with brief reflections about the policy relevance of our results appear in Chapter 8. There are also a number of additional tables that included in the Appendix at the end of the report.

2. The institutional setting

In the Introduction, we motivated our research project by drawing attention to initial evidence pointing out that child poverty was much less of a 'problem' in Germany than Britain. And the rest of the report in effect confirms and documents this statement in more detail, and then explores why the differences might arise. In Chapter 4, and more especially Chapter 6, when discussing the factors underlying the observed Anglo-German differences in child poverty, we shall refer to relevant differences in labour markets, marriage markets, and in welfare states. The aim of this chapter is rather more straightforward; simply to provide a very brief sketch of differences in the 1990s between Britain and Germany in their macro-economic conditions and their social security systems (insofar as they refer to children). In other words, our idea here is to fill in a few background facts, rather than provide a detailed examination of the differences in institutional settings between the two countries. For an extensive discussion elaborating upon the key distinguishing characteristics of the British and German welfare states, the reader should look elsewhere. See, for example, Daly (2000, especially part II).

The philosophies that underpin the welfare state regimes in Britain and Germany differ. Both countries rely on a mixture of social assistance and social insurance programmes, but the mixture of the two elements and emphasis is quite different. Put bluntly, in Britain the aim is more to minimise state intervention and the cash benefit system is characterised by a heavy and increasing reliance on means-tested social assistance. By contrast, the German social security system is more comprehensive and relies more than Britain on social insurance benefits (including unemployment benefits, the payments of which are related to former earnings). A cursory examination suggests that the German welfare state is more comprehensive and generous that the British one.

If one looks at 'family benefits' a different picture is revealed. Table 1 shows that Britain spends a slightly bigger share of GDP is spent on family benefits than Germany does: 2.29 per cent of GDP, rather than 2.01 per cent. However, for families, it is not only benefits which are directed to families *qua* families that are important, but also other benefits (and taxes). In particular unemployment benefits are particular relevant for the living standards of children, because many are paid to parents of young families. (By contrast the much more generous pension system in Germany does not matter very much for assessing children's experiences.) In Britain about 1.2 per cent of GDP is spent on labour market policies, whereas the corresponding figure for Germany is 3.6 per cent.

In the rest of this chapter, we provide an overview of Anglo-German differences in family benefits and unemployment benefits, and briefly compare them. We then consider differences in macroeconomic conditions. The discussion of benefits relies on information derived mostly from a new database compiled by an international team of experts for the Bertelsmann Foundation (see http://www.reformmonitor.org/index.php3?mode=status).[9] In both Britain and Germany, there were no substantial changes to institutions before the end of the 1990s, and so our description of the current system in each country will suffice for the entire time under investigation in the report (1991–8). There were some major changes in Britain at the very end of the 1990s, but as they are after the period that our data cover, we shall not discuss them in this chapter. There is some discussion in Chapter 6 and again in the concluding chapter (Chapter 8).

[9] The German part is provided by DIW Berlin . We thank C. Katharina Spiess for most valuable help.

Table 1. Expenditure on family benefits (1995) and labour market policy (1998), as percentage of GDP

	UK	Germany
Family cash benefits	1.87	1.23
Family services	0.48	0.78
All family benefits	2.29	2.01
Labour market policy	1.19	3.56

Source: Bertelsmann Reformmonitor.

2.1 Family benefits

2.1.1 Britain

Let us first consider cash benefits, and then maternity benefits. In UK there is a universal cash benefit paid in respect of children up to the age of 16 (18 for children still in full-time non-advanced education). In 1999 the amount of benefit paid for the eldest or only child of a couple was about £14.40 per week, an amount that corresponds to some 10 per cent of the poverty line we use later. (For the eldest or only child in a lone parent family the payment was about £17.10 per week, or about 15 per cent of the poverty line.). The amount paid for each additional child was £9.60 per week (less than 10 per cent of the poverty line).

Means-tested benefits are also available for low income working families. (This was the Family Credit programme. From October 1999, i.e. after the period that our data span, Family Credit was replaced by the Working Families Tax Credit.) To be eligible for Family Credit, parents must be responsible for at least one child under 16 (or under 19 in full-time non-advanced education); they must be working at least 16 hours a week; and they must not have savings of over £8,000.

Maternity benefits amount to 90 per cent of average earnings for 6 weeks. After this period, insured mothers receive a flat rate benefit for an additional 12 weeks, or if not insured, a lower flat-rate benefit for 18 weeks. Regarding the ease of combing work with bringing up children, there have been some new measures to assist employed lone parents get help with child care costs under Family Credit. In 1995 the share of GDP spent on family cash benefits was 1.87 per cent and the share on family services 0.48 per cent.

2.1.2 Germany

In Germany child benefits can be claimed for children under 18 years of age (under 21 if unemployed and under 27 if in educational training, no age limit if disabled) regardless of the parents' income. In 1999 the amount payable under the child benefit programme was DM 250 each for the first and second child (amounts that correspond to about one fifth of the poverty line used below), DM 300 for the third child (about 24 per cent of poverty line) and DM 350 for the fourth and each additional child (about 28 per cent of poverty line). Additionally, when assessing income tax, the tax office checks that the amount of child benefit paid satisfies the constitutional rule on tax relief (in other words, that the parents have received enough child benefits to cover the tax refund due to them). If not, their tax bill is reduced by

the tax-free allowance for children less the child benefit they have already received. Parents without gainful employment or who work less than 19 hours per week are entitled to a federal child-care allowance until the child is 24 months old.

Statutory maternity leave begins six weeks before the child is due and ends eight weeks after childbirth (twelve weeks after a premature or multiple birth). The maternity benefit paid by the statutory health insurance is 100per cent of female worker's net earnings payable during the statutory maternity leave. Maternity benefit is not subject to tax and social security contributions (after the period of investigation since 1999 new rules open the possibility for a mother and a father to be on parental leave simultaneously). Regarding the ease of combing work with bringing up children, since 1997 every child 3 years of age and older is entitled to Kindergarten care. For each child under 12 years of age, a working parent may take up to 10 days leave to care for a sick child (requires certification by a doctor). Parents may take a maximum of 25 days per child and year to care for sick children. In 1995 the share of GDP spent on family cash benefits was 1.23 per cent and the share on family services 0.78 per cent.

2.1.3 Anglo-German comparison

The amount of cash benefits (sum of universal and means-tested benefits) is bigger in Britain than in Germany. However, the universal scheme (Kindergeld) is much stronger in Germany than in Britain. Looking at the compatibility of work and bringing up children reveals different pictures for different ages of children (cf. Europäische Kommission 1996; Rostgaard and Fridberg 1998). For children below age of 3 in both countries the share of children who can get care is small (about 2 per cent in Britain and 3 per cent in West Germany, but about 50 per cent in East Germany). For children between three and school entry the provision of day care is higher in Germany (78 per cent in West Germany, about 100 per cent in East Germany) than in Britain (about 60 per cent). However, children start school one year later in Germany than in Britain, and most of the German schools are half-day schools that do not supply lunch or teaching or other activities in the afternoon (cf. Kreyenfeld *et al.* 2000, Spiess 1997). Taking into account all age groups of children, the British system seems to be better suited for combining work and bringing up children.

2.2 Unemployment Benefits

2.2.1 United Kingdom

Unemployment insurance benefits and income support for the unemployed were replaced by the Job Seekers Allowance (JSA) in 1996. (Under neither scheme are payment amounts related to former earnings.) The unemployed can claim either a personal allowance of contribution-based JSA for up to 6 months (corresponding to the earlier social insurance) or an income-tested JSA (social assistance) for themselves and their dependents for an unlimited period that also automatically entitles them to assistance with high housing costs (via the benefit and Council Tax benefit programmes). The basic amount of the JSA is £48 per week for a single person.

2.2.2 Germany

Unemployment insurance benefit is an insurance benefit that is paid monthly and set at 67 per

cent of the recipient's last net wage (only 60 per cent if the claimant has no child that they can claim tax relief for). The maximum earnings for contribution and benefit purposes is DM 98,000 per year in western Germany and DM 85,200 in eastern Germany. Unemployment benefits are paid for a period of 6 to 32 months, depending on the recipient's age and their length of membership in the insurance system. After a means-test and asset-test of both the claimant and their spouse, unemployment assistance can be paid as a follow-up benefit. Unemployment assistance amounts to 57 per cent of net wages (only 53 per cent if the claimant has no child they can claim tax relief for). It is granted for an unlimited period, but eligibility has to be proven every year.

2.2.3 Anglo-German comparison

Unemployed people, especially those who raise children, are very much better off in Germany than in Britain. Some further details about the relationship between incomes in and out of work are provided in Chapter 6.

2.3 Macroeconomic conditions

In Britain and Germany, overall macroeconomic conditions were different in the 1990s. Since 1993, the annual rate of growth in real GDP has been higher in Britain: see Table 2. German unification makes comparisons somewhat difficult: an overall growth rate for Germany is not available for 1991, given unification in 1990 (and no reliable GDP figures were available for the German Democratic Republic which became East Germany).

Table 2. Annual rate of growth in real Gross Domestic Product (%)

Year	UK	Germany
1991	–1.5	
1992	0.1	2.2
1993	2.3	–1.1
1994	4.4	2.3
1995	2.8	1.7
1996	2.6	0.8
1997	3.5	1.5
1998	2.1	2.2

Source: DIW Berlin

Macroeconomic growth has an impact on unemployment, which in turn has an important impact on the well-being of families. In fact in Britain the unemployment rate declined in the nineties, whereas in Germany the rate increased. But the picture is more complicated than it looks at first glance, for several reasons.

First, the unemployment rates which are measured by the statistical agencies in Britain and Germany are not strictly comparable. They are defined differently and the survey methods used to derive them also differ. In order to compare the figures they need to be standardised.

In Table 3 we show estimates derived on a standardised basis and published by OECD. The table shows that after 1996 the unemployment rate in Britain was much lower than in Germany. However, the difference is smaller than the difference that may be calculated using 'raw' figures of both national statistical agencies. For the beginning of the 1990s there is no OECD figure available for unified Germany. Looking at the raw data it seems to be plausible that the unemployment rate was lower in Germany than in Britain. For our analysis the numbers for West Germany are of particular interest. But the OECD does not provide standardised figures for only West Germany. The national figures show a considerable increase in West German unemployment, but the standardised difference to Britain should be small, even in the last years when the rate dropped in Britain.

Table 3. Unemployment rates (%)

	OECD standardised rate		National definition		
	UK	Germany	All Germany	West Germany	East Germany
1991	8.8		6.5	5.7	
1992	10.1		7.4	6.0	14.4
1993	10.5	7.9	8.5	7.4	15.1
1994	9.6	8.4	9.2	8.3	15.1
1995	8.7	8.2	9.0	8.3	13.9
1996	8.2	8.9	9.9	9.1	15.7
1997	7.0	9.9	11.5	9.8	18.3
1998	6.3	9.4	11.1	9.3	18.1

Source: DIW Berlin

3. Data sources and definitions

3.1 The British Household Panel Survey and the German Socio-Economic Panel

The research on poverty trends and poverty dynamics that is reported in Chapters 4–6 uses eight waves of data, survey years 1991–8, of the British Household Panel Survey (BHPS) and the German Socio-Economic Panel (GSOEP). For the long-run dynamics analysis reported in Chapter 7, we use a sample drawn from survey years 1984–98 of the GSOEP. Because of the special nature of this sample, its derivation is described in greater detail in the chapter. In the rest of this section, we concentrate on describing general characteristics of the BHPS and GSOEP, and the samples that are used in the main trends and dynamics analyses (Chapters 4–6).

The BHPS and the GSOEP are of similar design. The first wave of each survey (1991 for the BHPS, 1984 for the GSOEP) was a nationally representative sample of the population living in private households, in the German case also including an over-sample of 'guest workers' (foreign-born residents and their children) recruited abroad during the economic booms of the 1960s and 1970s. Original sample respondents have been followed and they (and co-resident adults) have been interviewed at approximately one year intervals subsequently. Children in original sample households have also been interviewed in their own right when they became adults. We use survey weights in our analysis in order to account for differential non-response and attrition (and the differential sampling probabilities of GSOEP guest worker sample members).

We use the full BHPS sample and several German samples depending on the topic addressed. The main focus is in on Western Germany – individuals residing in the Länder (provinces) that comprised the former West Germany.[10] In the poverty trends analysis we also consider Eastern Germany (individuals residing in the former East Germany), and all Germany, which is Eastern and Western Germany combined.

Household income measures (described below) are based on variables available in the 2001 edition of the Cross-National Equivalent File, a derived variable subfile of comparable cross-national data from the GSOEP and the BHPS (and the US PSID and Canadian SLID): see Burkhauser *et al*. (2000) and Bardasi *et al* (1999) for further details.

Our analysis sub-samples consist of those individuals in households with non-missing data on income and household composition. For Britain there is information over the eight waves for some 18,731 different individuals of whom some 4,819 are children – defined by us to be those individuals aged under 17 years – resulting in 99,876 person-year observations (23,169 for children, 76,707 for adults). For Western Germany, there is information for some 16,450 individuals (4,494 children), resulting in 95,023 person-year observations (20,988 for children, 74,035 for adults). We have unbalanced panels for each country: only about one third of all the children ever present in each panel were present in all eight waves, the main reason being that a significant number of them were born after 1991.

Each annual cross-section of data for Britain consists of approximately 8,500 adults and 2,500 children. For Western Germany, the corresponding figures are 9,500 adults and 2,600 children, and for Eastern Germany, 3,500 adults and 1,000 children. Although these are relatively large samples when all children are considered together, the numbers in some

[10] More specifically, we use persons from GSOEP samples A-D if they satisfy the condition about current residence. We do not use new supplementary sample E (the 1998 Ergänzung-Stichprobe).

subgroups (notably lone parent and 'other' households – defined below) are quite small in any given year: some 200–300 children or fewer (with the number of households smaller still). Hence most analysis of subgroups is based on data pooled from all waves of data that are available. Two factors reduce sample sizes a little further in some calculations (and are reflected in larger sampling errors associated with the estimates). First, variables summarising the total number of workers in a household (defined below) have missing values for households in which there was at least one adult that did not provide an interview.[11] Second, in our analyses of poverty entries and exits we restrict analysis to those individuals who were children at two consecutive waves (before and after the relevant transition).

3.2 Definitions of key variables

Any study of poverty, including ours, has to make assumptions about a number of concepts. These include the following: the measure of income that is used to summarise living standards; how to adjust money incomes to account for differences in household size and composition (the equivalence scale issue); the level of the low income threshold used to distinguish the 'poor' from the 'non-poor' (the poverty line issue); and how to summarise poverty among the population as a whole, or particular subgroups within it (the aggregate poverty measure issue). Cross-national comparisons add another requirement: that we use comparable definitions and measures for each country. We also need to classify individuals in a number of ways, and this requires definitions of variables such as: child and adult; worker and full-time worker; and household type (with classifications by household composition and labour market attachment).

Most of the definitions that we use are conventional and commonly-used ones. Although alternative definitions and measures were possible, we wished to retain links with earlier studies which used similar definitions and, of course, we were constrained by our cross-national comparability requirement.

3.2.1 Income

We count an individual as being poor if the needs-adjusted real net annual income of the household to which he or she belongs – 'income' for short – is less than the poverty line. Household net income is the sum across all household members of cash income from all sources (income from employment and self-employment, investments and savings, private and occupational pensions, and other market income, plus cash social security and social assistance receipts), minus direct taxes.

Incomes were deflated to 1998 prices using a national price index derived from the IMF's *Financial Statistics*.

3.2.2 Equivalence scale(s)

The needs adjustment is done using an equivalence scale according to which each household income was deflated by a

$$\text{household equivalence factor} = [(\text{number of adults}) + \alpha^*(\text{number of children})]^{\beta}, \qquad (3.1)$$

where $\alpha = 0.7$, $\beta = 0.75$.

[11] The household income data includes imputed values, so there are non-missing values as long as not all adults were non-respondents.

This scale is the one of the two-parameter ones recommended by the US National Research Council Panel on Poverty and Family Assistance (Citro and Michael, 1995). In order to consider the sensitivity of results to changes in the equivalence scale, we repeated our analyses using three other scales: (α, β) = (0.7, 0.5), (0.5, 0.75), (0.5, 0.5). Changing the scale led to some systematic effects on the results about poverty trends, but almost entirely for within-country poverty differences.[12] As we show later, the patterns of cross-national differences were hardly effected at all, whether looking at trends or at dynamics.

An alternative approach would have been to use equivalence scales commonly used in country-specific studies, in which case two obvious reference points are, for Britain, the so-called 'McClements before housing costs' equivalence scale (see Department of Social Security, 1998, for details) and, for Germany, the 'social assistance' scale implied by the German Social Assistance laws (BSHG). A problem with this is that the scales incorporate different assumptions about economies of scale and hence incomes based on them are not truly comparable. In particular the German scale attributes larger weights to additional persons than the British scale does.[13]

From a empirical point of view, complex equivalence scales can be well approximated by simple parametric scales. For example, Jenkins and Cowell (1994) show that the two-parameter scale with (α, β) = (0.5, 0.75) closely mimics the British McClements equivalence scale.[14] The equivalence scales most commonly used in previous cross-national poverty comparisons has been the so-called 'square root' scale or OECD scale. The former is simply the case (α, β) = (1.0, 0.5). The OECD scale, equal to 1 + 0.7*(number of adults – 1) + 0.3*(number of children), corresponds to a two-parameter scale with (α, β) = (0.74, 0.80) (Jenkins and Cowell, 1994).

3.2.3 *The poverty line*

The poverty line that we use in most of the analysis is 60 percent of contemporary national median income, a threshold recommended by the Eurostat Task Force (1998) for cross-national poverty comparisons. Table 4 sets out the poverty line values in detail.

For Britain, the 60-per-cent-of-median poverty line in 1991 is £4,665 per annum, with slightly higher cut-offs in each successive year, and a 1998 poverty line of £5,166, some 11 percent higher than the 1991 one. These changes reflect the economic growth over the decade as the economy came out of recession after 1991. Germany's recession came later, starting around 1992–3, with recovery not until the end of the period that we consider. As a result, median income in Western Germany followed a relatively flat trend over time. The poverty lines are DM 15,195 for survey year 1991 and DM 15,008 for 1998 (about 1 percent lower than the 1991 level), varying in between by at most 5 percent. We measure Eastern Germany's poverty rates using the Western Germany poverty line as well. Arguably after re-unification the benchmarks in the East for living standards and aspirations became those of Western Germany rather than those of the former East Germany.

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[12] For previous research about the sensitivity of results to equivalence scale choice, see for example Atkinson *et al.* (1998), Buhmann *et al.* (1988), Burkhauser *et al.* (1996), Coulter *et al.* (1992) and Jenkins and Cowell (1994).

[13] Jenkins and Cowell (1994) and Burkhauser *et al.* (1996) fit the Buhmann *et al.* (1988) single parameter scale to British and German income data (this scale is our two parameter scale with α fixed at 1.0). The McClements scale is well approximated in the British data by a value of $\alpha = 0.67$, and the BSHG scale is well approximated in the German data by a value of $\alpha = 0.81$.

[14] They estimated (using 1988/89 data) that the McClements scale was well approximated by values of $\alpha = 0.53$ and $\beta = 0.77$.

Table 4. Relative and absolute poverty line values (national currency, 1998 prices)

Year	Britain (£)	Western Germany (DM)
	60% of contemporary national median income ('relative' poverty line)	
1991	4665	15195
1992	4732	15384
1993	4899	15346
1994	4863	15150
1995	4921	14721
1996	5023	15029
1997	5112	14898
1998	5166	15008
	60% of 1991 median income in Britain ('absolute' poverty line)	
1991–8	4665	15355

The absolute poverty line for Western Germany was converted to DM from £ using the 1991 OECD Purchasing Power Parity (£1 = DM 3.29).

Our use of a poverty line that varies in value according to the distribution being considered – a 'relative' poverty line by contrast with an 'absolute' poverty line which is fixed in real terms across years and countries – is potentially controversial. Measures of relative poverty are sensitive to differences in inequality as well as the incidence of low income *per se* (and relative poverty rates may rise even if all incomes have risen). But this is a property of relative measures, rather than a fundamental criticism. Relative poverty lines of the type that we employ are widely accepted in Europe. It is a specification reflecting the European Union's definition of poverty.[15] Moreover the UK government has officially adopted this relative poverty definition for monitoring progress towards its goal of eradicating child poverty (Department of Social Security, 1999). The report of the US Research Council Panel on Poverty and Family Assistance also suggested that the US official poverty line should be updated in line with secular income growth (Citro and Michael, 1995).

We have repeated all our analysis using an absolute poverty line set equal to 60 percent of the 1991 British median income (£4,665, or DM 15,355 when converted at the 1991 OECD purchasing power parity). As we shall show, our results changed little. The

[15] The EU Council of Ministers defined people to be poor if their 'resources (material, cutural, and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live' (Council Decision, 19 December 1984, quoted by Atkinson 1998: 2). A 'half national average income' poverty line has been the concrete implementation of this definition in a large number of official Eurostat and other studies. See Atkinson (1998) for extensive discussion of European poverty lines, and official poverty lines in general.

reason is that, over the 1990s and in both countries, not only was secular growth in median income relatively small, but also the shape of the income distribution changed hardly at all.

3.2.4 Demographic and labour market variables

Perhaps the most important definition is that which distinguishes children from adults. We use a simple age-based criterion: to us, children are those individuals aged under 17 years, and adults those aged 17+ years. The advantages of this simple definition are that it is transparent, easy to calculate, and has been used in other studies. It does not correspond exactly to definitions used in country-specific analyses or for the rules describing benefit eligibility. For example in Britain's official poverty statistics (Department of Social Security, 2000) a dependent child is defined to be an individual aged less than 17 years, or aged 16–18 and still in full-time education (and unmarried) – a definition that corresponds to eligibility for assessment of Child Benefit. In Germany, family benefits paid in respect of children (Kindergeld) are paid for all children until they are 18 years old, with extended eligibility up to age 27 for children undergoing training and up to age 21 for older children without a job.

We classified children in several ways according to the type of household they lived in and by household labour market attachment. Changes in classifications between one year and the next were used to define trigger events: see Chapter 6 for details.

We defined a 'lone parent household' to be a household containing one adult plus one or more children. A 'married couple household' is a household containing two or more adults with or without children, where the spouse of the head of household is present. ('Married' refers to both legal marriages and cohabiting unions.) Some 15 percent of British children and 9 percent of Western German children live in lone parent households (pooled data for 1991–8). About 80 percent of all children lived in married couple households in Britain and 90 percent in Western Germany. The remaining group of 'other' households comprised two or more adults living together with or without children and where the household head has no spouse present. Included under this heading may have been a lone parent and her children sharing the household with unrelated adults (for example another lone parent family) or the lone parent's own parents. Thus our 'lone parent household' group does not include all lone parents and their children. On the other hand, the fraction of all children in the 'other' group is small: 4 percent in Britain, 2 percent in Western Germany.

We defined an adult household member to be a 'worker' if his or her annual labour earnings were positive, and he or she worked at least 52 hours over the reference year (defined in Chapter 6). Full-time workers were those who worked 1,500 or more hours per annum. For each child we calculated the number of workers and the number of full-time workers in his or her household.

3.2.5 The aggregate poverty measure

Most studies summarise poverty in terms of the 'poverty rate' – the proportion of persons in the relevant population who are poor (as in all the statistics we have cited so far) – but do not examine how poor people are. Our research is no exception: virtually all our analyses also use the poverty rate to summarise the prevalence of poverty among the population or among population subgroups. This is potentially problematic because one country may have relatively high poverty incidence, but also have relatively small short-falls of income from the poverty line. In this report we include only a few Anglo-German comparisons in terms of poverty-gap poverty measures (see Chapter 5). We should say however that these exploratory checks suggest that our conclusions based on the poverty rate measure are robust.

3.2.6 Sampling errors for estimates

In most tables we report measures of the sampling errors associated with the statistics of interest. Virtually all of these statistics are a type of proportion or mean (this includes the poverty rates and poverty transition rates). To keep the discussion non-technical, we do not make extensive reference to sampling errors but, where relevant, we have remarked if these become sufficiently important to affect the conclusions drawn.

Most estimates of standard errors that we report account for the clustering that arises when there are repeated observations per household in each wave. We took no account of the complex survey design in the BHPS and GSOEP (but information is not available to do this in the same way for both surveys), nor did we account for repeated observations on the same person across waves (in the analyses pooling data from several waves). For this reason, our estimates of sampling errors may be under-estimates. Also we did not account for the sampling error associated with the poverty line itself. However Preston (1995) shows that this may lead to under- or over-estimates of the true standard error for the poverty rate. His simulations indicate that ignoring the endogeneity of the relative poverty line will be of little practical consequence in our case.

4. Trends in child poverty rates during the 1990s

In this chapter we compare child poverty rates between Britain and Germany during the 1990s using a cross-sectional perspective, addressing questions such as: how much higher are child poverty rates in Britain compared to Germany, and how do they compare to poverty within the population as a whole. Have trends over time been similar? What has been the experience of children in Eastern Germany? We also check whether our answers depend on the choice of poverty line or the equivalence scale. Finally we consider how Anglo-German differences in child poverty rates relate to differences in patterns of household composition and labour market attachment.

4.1 Poverty rates in Britain and Western Germany, 1991–8

Table 5 shows estimates of British and Western German poverty rates over the period 1991–8, based on the relative and absolute poverty lines, and also contrasts the rates for all children with the rates for all persons. The trends in rates for all children are summarised in Figure 2.

Four main findings are apparent. First, patterns are very similar regardless of whether one uses the relative or the absolute poverty line – because the shape of the income distribution changed little over the period in either country (see earlier). Our discussion of Table 5 and subsequent tables therefore focuses on the results for the relative poverty line.

The second finding is that poverty rates were much higher in Britain than Western Germany whichever year is considered, and the differences are statistically significant at conventional levels. The proportion of British children with an income below 60 percent of median income was about 30 percent (if one pools the data for the period as a whole), whereas for Western Germany the corresponding figure was over one third smaller, 19 percent.

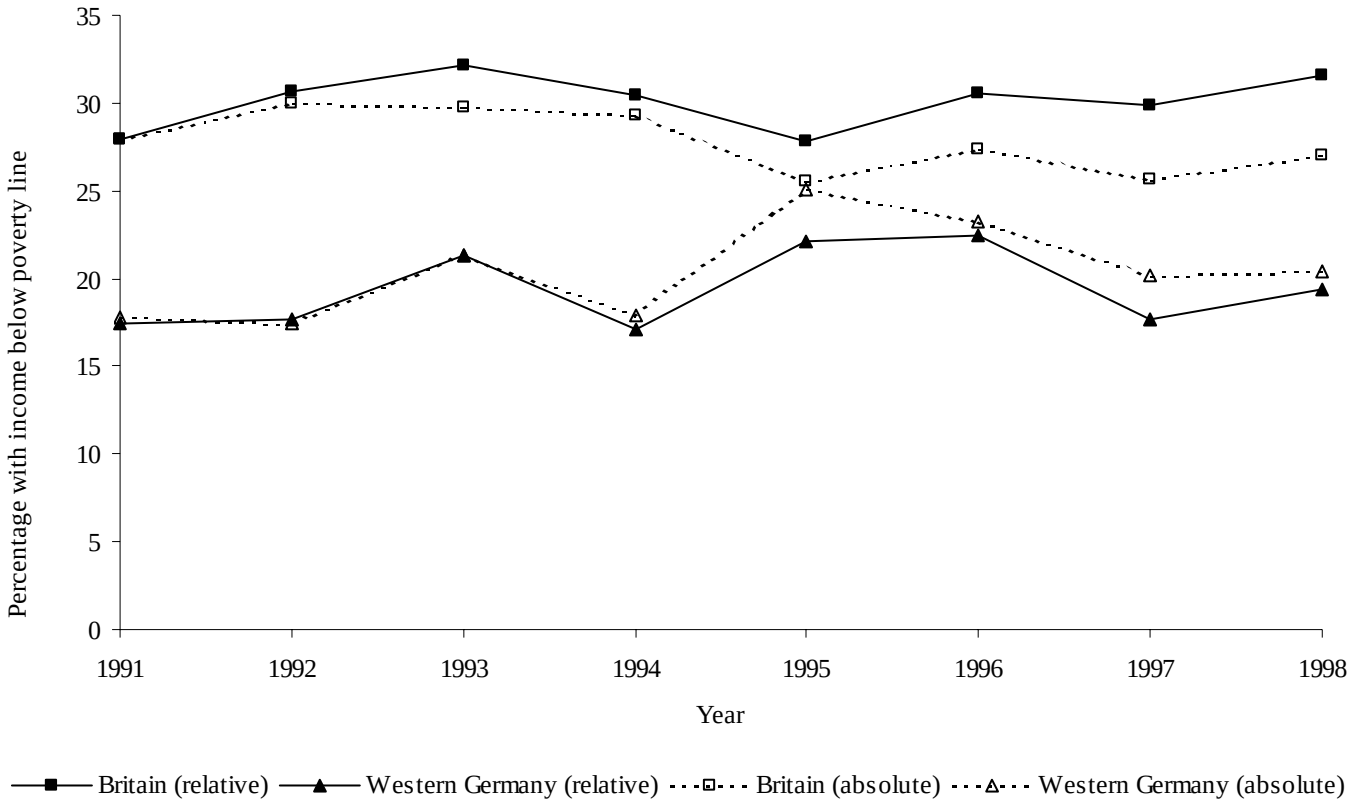
Third, child poverty rates in each year, and for each country, are higher than the poverty rates for all persons. In Britain the child poverty rate is one third higher than the all-persons rate (pooled data), whereas in Western Germany the corresponding differential was one quarter. Fourth, over the eight year period, poverty rates hardly changed at all in Britain and only slightly in Western Germany. In the latter case, they increased in the mid-1990s as the recession bit and then fell again but, even so, the variation is small, especially once one takes sampling variation into account. (A 95 percentage point confidence band for each estimate spans the estimates for the other years.) On these grounds it is reasonable to take the stability of cross-sectional rates over time as a working assumption – the starting point of our analysis of movements into and out of child poverty in Chapter 6.

Table 5. Poverty rates (%) in Britain and Western Germany, children and all persons, by survey year and type of poverty line

Year	Poverty line = 60% of contemporary national median income				Poverty line = 60% of median income in Britain in 1991			
	Children		All persons		Children		All persons	
	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany
1991	27.9	17.5	19.2	13.4	27.9	17.8	19.2	13.7
	(1.3)	(2.0)	(0.6)	(0.8)	(1.3)	(1.6)	(0.6)	(0.8)
1992	30.7	17.7	20.2	13.6	30.0	17.5	19.6	13.4
	(1.4)	(1.7)	(0.7)	(0.8)	(1.4)	(1.7)	(0.6)	(0.8)
1993	32.1	21.3	21.0	15.7	29.7	21.3	19.3	15.7
	(1.5)	(2.0)	(0.7)	(0.9)	(1.5)	(2.0)	(0.7)	(0.9)
1994	30.4	17.1	20.4	14.2	29.3	17.9	19.0	14.5
	(1.5)	(0.2)	(0.7)	(0.8)	(1.4)	(1.8)	(0.7)	(0.9)
1995	27.8	22.1	20.4	15.6	25.5	25.1	17.4	17.8
	(1.4)	(1.8)	(0.7)	(0.8)	(1.4)	(1.9)	(0.7)	(0.9)
1996	30.6	22.5	19.5	15.3	27.4	23.3	17.0	16.0
	(1.5)	(2.0)	(0.7)	(0.9)	(1.5)	(2.0)	(0.7)	(0.9)
1997	29.9	17.7	19.5	13.7	25.7	20.2	16.2	15.0
	(1.5)	(1.8)	(0.7)	(0.9)	(1.5)	(1.9)	(0.7)	(0.9)
1998	31.6	19.4	20.2	14.5	27.0	20.4	16.3	15.2
	(1.7)	(2.1)	(0.8)	(1.0)	(1.6)	(2.1)	(0.7)	(1.0)
Pooled	30.1	19.4	20.0	14.5	27.9	20.4	18.1	15.2
	(0.5)	(0.6)	(0.2)	(0.3)	(0.5)	(0.6)	(0.2)	(0.3)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses.

Figure 2. Child poverty rates (%) in Britain and Western Germany, 1991–8, by poverty line type



Source: authors' calculations from BHPS and GSOEP data. Definitions explained in Section 3. The relative poverty line is 60 percent of contemporary national median income. The absolute poverty line is 60 percent of 1991 median income in Britain.

4.2 Do conclusions change if we change the equivalence scale?

Let us now consider whether the findings just reported are robust to changes in equivalence scale relativities. We repeated the calculations underpinning the statistics reported in Table 5 for the relative poverty line case, for the three alternative equivalence scales discussed earlier: see Table 6. All but one of the findings is robust.

First, poverty rates, whether for all children or for all persons, remain higher in Britain than in Western Germany. Second, the trend in poverty rates over time remains flat in both countries.

What needs to be modified is the conclusion about the within-country relativities between the child poverty rate and the all-persons poverty rate. For the case (α, β) = (0.5, 0.5), the all children poverty rate is now much the same as the all person rate in Germany and it is only slightly higher in Britain rather than markedly higher. For example using pooled data, the rates are 14.5 per cent and 15.4 per cent in Western Germany, respectively, and 25.2 per cent and 21.8 per cent for Britain. The result is unsurprising: if a relatively low weight is given to children compared to adults and higher economies of scale are assumed, then (equivalised) income differentials between families with children and other families – i.e. between larger and smaller families on average – are reduced. This finding needs to be kept in mind in the subsequent analysis as this focuses on results derived using the equivalence scale with (α, β) = (0.7, 0.75), the one more consistent with previously used national scales. On the other hand, observe that the sensitivity of conclusions affects within-country differences rather than the between-country patterns that are our main interest.

Table 6. Poverty rates (%) in Britain and Western Germany, children and all persons, by survey year and equivalence scale

Year	(α, β) = (0.7, 0.5)				(α, β) = (0.5, 0.75)				(α, β) = (0.5, 0.5)			
	Children		All persons		Children		All persons		Children		All persons	
	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany
1991	25.8	11.7	22.0	13.6	25.1	12.4	19.4	12.3	24.2	11.1	22.1	14.2
	(1.2)	(1.3)	(0.7)	(0.7)	(1.2)	(1.3)	(0.6)	(0.7)	(1.2)	(1.3)	(0.6)	(0.7)
1992	28.9	14.8	22.8	15.0	27.7	14.8	20.0	13.3	26.1	13.2	22.4	14.8
	(1.4)	(1.7)	(0.7)	(0.8)	(1.3)	(1.7)	(0.6)	(0.8)	(1.3)	(1.6)	(0.6)	(0.8)
1993	28.7	15.6	22.6	15.9	29.2	16.2	20.8	14.8	25.8	14.4	21.8	16.2
	(1.5)	(1.8)	(0.7)	(0.8)	(1.5)	(1.8)	(0.7)	(0.8)	(1.5)	(1.8)	(0.7)	(0.8)
1994	28.4	14.3	22.5	15.1	28.0	15.7	20.4	14.5	25.7	13.1	22.3	15.6
	(1.4)	(1.6)	(0.7)	(0.8)	(1.4)	(1.7)	(0.7)	(0.8)	(1.4)	(1.6)	(0.7)	(0.8)
1995	24.6	17.7	21.0	15.9	25.1	18.3	19.4	15.1	22.7	17.2	20.9	16.5
	(1.4)	(1.7)	(0.7)	(0.9)	(1.4)	(1.6)	(0.7)	(0.8)	(1.4)	(1.7)	(0.7)	(0.8)
1996	28.1	18.0	21.7	15.8	27.8	18.9	20.0	14.7	25.2	16.9	21.3	15.7
	(1.4)	(1.9)	(0.7)	(0.9)	(1.5)	(1.9)	(0.7)	(0.9)	(1.5)	(1.9)	(0.7)	(0.9)
1997	27.1	15.8	20.9	15.0	26.4	16.0	19.0	13.9	25.1	15.1	20.9	15.3
	(1.5)	(1.8)	(0.7)	(0.9)	(1.5)	(1.8)	(0.7)	(0.9)	(1.5)	(1.8)	(0.7)	(0.9)
1998	29.0	15.4	22.1	14.7	28.5	17.0	20.1	14.4	27.2	14.6	22.4	14.7
	(1.5)	(1.9)	(0.8)	(1.0)	(1.6)	(2.0)	(0.8)	(1.0)	(1.6)	(1.9)	(0.8)	(1.0)
Pooled	27.5	15.4	21.9	15.1	27.2	16.1	19.9	14.1	25.2	14.5	21.8	15.4
	(0.5)	(0.6)	(0.2)	(0.3)	(0.5)	(0.6)	(0.2)	(0.3)	(0.5)	(0.6)	(0.2)	(0.3)

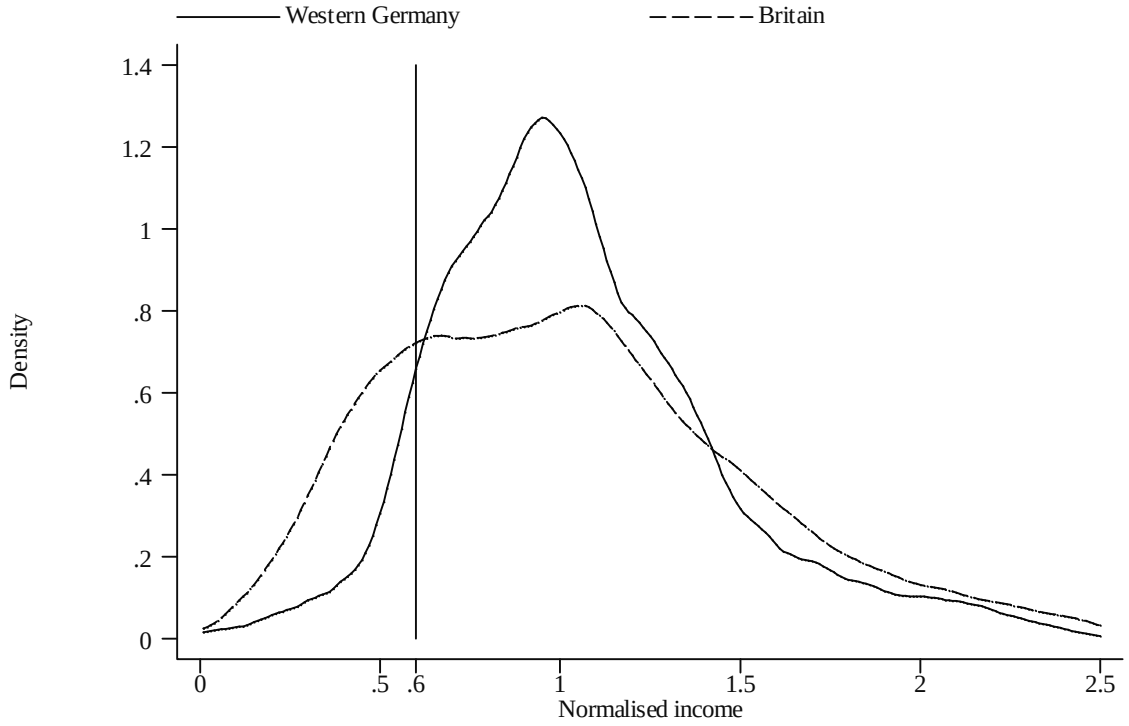
Poverty line = 60% of contemporary national median income. Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. The equivalence scale is the 2-parameter scale discussed in the text. Results for (α, β) = (0.7, 0.75) are shown in Table 5.

4.3 Effects of changing the 60-per-cent-of-median poverty line fraction

The choice of 60% as the relevant fraction of median income is not likely to be crucial to our results. See Figure 3 which pictures the income distributions among children in Britain and Western Germany in 1991. Incomes in each country have been expressed relative to national median income ('normalised'); hence a poverty line of 60 per cent of contemporary national median income corresponds to a normalised income equal to 0.6. The graphs show the concentration of incomes at each point along the income range. (More formally, they show estimates of probability density functions, and were derived using kernel density smoothing methods.) Areas under each graph to the left of a given income value represent the proportion of all children that have an income less than that income value, i.e. the child poverty rate based on that threshold.

The figure shows that there are striking differences in the shape of the lower tails of Britain's and Western Germany's income distributions that would be picked up whatever plausible fraction of median income were used to define the low income threshold. Put another way, the low income cut-off would have to be near to 100 per cent of median income or greater before the child poverty rate in Britain was less than the Western German one.

Figure 3. The distribution of income among children in 1991, Britain and Western Germany



Note: normalised income is income divided by national median income.

4.4 Poverty rates in Western and Eastern Germany, 1992–8

We now turn to consider child poverty within Germany over the period 1992–8. See Table 7 which shows poverty rates for Eastern and Western Germany and all Germany combined, using both the relative and absolute poverty line definitions. The rates for Western Germany are the same as those reported in Table 4. We used the same (Western Germany) poverty line in all cases.

The most striking finding concerns the rapid reduction in the prevalence of poverty in Eastern Germany, from about two and a half times the Western rate at the beginning of the 1990s to only about 25 per cent higher towards the end of the 1990s. (Again, it makes little difference to patterns whether the relative poverty line or the absolute one is used.) For example the child poverty rate in Eastern Germany was 43 per cent in 1992 compared to the Western Germany rate of 18 per cent. In 1998, the corresponding rates were 19 per cent in both regions. Observe too that, whereas in the early 1990s poverty rates for all children and all persons were much the same in Eastern Germany, by the end of the period, the children's rate was higher than the all persons one (as in Western Germany).

The picture for all Germany increasingly coincided with that for Western Germany as the decade progressed. It was higher at the start, reflecting the much higher Eastern Germany poverty rates (though the contribution of these to the all-Germany figure was reduced because there were relatively few individuals in that region compared to Western Germany), but this differential diminished as Eastern Germany poverty rates fell.

Table 7. Poverty rates (%) in All Germany, Western and Eastern Germany, children and all persons, by survey year and type of poverty line

Year	Poverty line = 60% of Western Germany median income						Poverty line = 60% of median income in Britain in 1991					
	Children			All persons			Children			All persons		
	All	Western	Eastern	All	Western	Eastern	All	Western	Eastern	All	Western	Eastern
1992	23.2	17.7	43.0	19.5	13.6	43.4	23.0	17.5	42.6	19.3	13.4	42.9
	(1.4)	(1.7)	(2.1)	(0.7)	(0.8)	(1.3)	(1.4)	(1.7)	(2.1)	(0.7)	(0.8)	(1.3)
1993	22.5	21.3	27.1	17.9	15.7	27.3	28.5	21.3	27.4	18.0	15.7	27.4
	(1.6)	(2.0)	(2.2)	(0.7)	(0.9)	(1.2)	(1.6)	(2.0)	(2.2)	(0.7)	(0.9)	(1.2)
1994	18.5	17.1	23.8	15.2	14.2	19.6	19.2	17.9	24.4	15.6	14.5	20.3
	(1.5)	(0.2)	(2.3)	(0.7)	(0.8)	(1.3)	(1.5)	(1.8)	(2.3)	(0.7)	(0.9)	(1.3)
1995	22.1	22.1	22.2	15.6	15.6	15.3	25.1	25.1	25.2	17.8	17.8	17.5
	(1.6)	(1.8)	(3.2)	(0.7)	(0.8)	(1.3)	(1.7)	(1.9)	(3.3)	(0.8)	(0.9)	(1.3)
1996	22.1	22.5	20.7	15.4	15.3	15.6	23.3	23.3	23.0	16.2	16.0	17.2
	(1.7)	(2.0)	(2.3)	(0.8)	(0.9)	(1.3)	(1.7)	(2.0)	(2.4)	(0.8)	(0.9)	(1.3)
1997	17.9	17.7	18.4	13.6	13.7	13.1	20.4	20.2	21.3	15.0	15.0	15.0
	(1.6)	(1.8)	(2.4)	(0.8)	(0.9)	(1.1)	(1.7)	(1.9)	(2.6)	(0.8)	(0.9)	(1.2)
1998	19.3	19.4	18.7	14.3	14.5	13.5	20.2	20.4	19.7	15.1	15.2	14.3
	(1.8)	(2.1)	(2.8)	(0.8)	(1.0)	(1.3)	(1.8)	(2.1)	(2.8)	(0.9)	(1.0)	(1.4)
Pooled	20.9	19.4	25.7	16.0	14.5	21.4	22.0	20.4	27.0	16.7	15.2	22.4
	(0.6)	(0.6)	(1.0)	(0.3)	(0.3)	(0.5)	(0.6)	(0.6)	(1.0)	(0.3)	(0.3)	(0.5)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses.

4.5 Who is most likely to be poor?

When one takes a cross-sectional perspective, then one obvious route to explaining cross-national differences in poverty rates is to compare differences in the prevalence of 'problem groups' and the incidence of poverty within each of these groups. Table 8 displays this type of information for Britain and Western Germany, with calculations based on pooled data set for 1991–8.[16] Child poverty rates and population shares are broken down by the child's household type (lone parent household, married couple household, or 'other' household). Estimates are also shown for selected subgroups characterised by different levels of work attachment in order to highlight 'problem' characteristics.

Table 8 shows that there are marked Anglo-German differences in the numbers of children in each of the three main household types. Some 15 percent of British children and 9 percent of Western German children live in lone parent households. About 81 percent of all children live in married couple households in Britain and 90 percent in Western Germany.

There are also striking cross-national differences in the numbers of children when the groups are broken down by work attachment. In Britain the proportion of all children who belong to lone parent households in which no-one is working is roughly double the Western Germany figure: 10 percent rather than 4 percent. There are even larger differentials when one looks at married couple households. Among this group, about 8 percent of all British children are in households with no workers, compared to only 2 percent in Western Germany. More than four-fifths of children in Western Germany are in households with at least one full-time worker, but only two-thirds of British children.

If above-average poverty rates are used to identify 'problem' groups, then there are some similarities between Britain and Germany. In both countries poverty rates are well above the national average for children in lone parent and 'other' households regardless of work status. And across all three household types, living in a household in which work attachment is low raises poverty rates substantially above the national average, though lack of work has a higher association with poverty in Britain. For example only about one tenth of the children in workless lone parent households are not poor in Britain, whereas in Western Germany the figure is one fifth. Among children in workless married couple households, the corresponding proportions are similar, however, about four-fifths. The importance of work for preventing low income is underlined by the case of children living in married couple households with at least one full-time worker. Only 11 percent of this group are poor in Britain and 8 percent in Germany (compared to the overall average poverty rates of 30 percent and 19 percent respectively).

In sum, from a cross-sectional point of view, it appears that the higher incidence of workless households in Britain (e.g. a higher proportion of children in lone parent households), plus the higher poverty risk associated with being in such a group, together provide a plausible explanation of why child poverty rates are higher in Britain than in Western Germany.

[16] We use pooled data because of the relatively small numbers of children (and households) in the lone parent and 'other' household groups, especially once one also partitions by work attachment. The point estimates indicate that the proportion of children in each household type changed little over time in both countries.

Table 8. Numbers of children and child poverty rates in Britain and Western Germany, by child's household type (pooled data, 1991–8)

Household type	Population share[a] (%)		Poverty rate (%)	
	Britain	Western Germany	Britain	Western Germany
All children	100.0	100.0	30.1	19.4
			(0.5)	(0.6)
Lone parent household	15.0	8.7	68.1	49.1
	(0.4)	(0.5)	(1.3)	(0.3)
Lone parent household, no workers	9.7	3.8	89.6	80.8
	(0.4)	(0.4)	(1.6)	(3.6)
Married couple household	81.3	89.5	22.4	16.3
	(0.4)	(0.5)	(0.5)	(0.6)
Married couple household, no worker	7.7	1.8	84.3	81.1
	(0.5)	(0.2)	(2.4)	(3.3)
Married couple household, 1+ full-time worker(s)	65.0	82.0	11.1	7.5
	(0.6)	(0.6)	(0.7)	(0.4)
'Other' household	3.8	1.8	46.4	33.3
	(0.2)	(0.1)	(2.6)	(3.6)
'Other' household, no workers	0.7	0.4	87.2	74.2
	(0.1)	(0.1)	(5.3)	(8.3)

[a]: Number of children in subgroup as a fraction of the total number of children. Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Household types defined in text. Poverty line = 60% of contemporary national median income.

Table 9 reports similar breakdowns for Eastern and Western Germany and the two regions combined. Interestingly the proportions of children in each of the different subgroups population is remarkably similar in each region, even when broken down by work attachment. There are some differences – for example, and as expected, the proportion of children in married couple households with no workers is higher than in Western Germany – but when sampling variation is taken into account, one cannot claim that these differences are statistically significant. Of course part of the reason for not finding greater differences is that the calculations are based on pooled data for the whole period, thus 'hiding' some trends but, nonetheless, the lack of differences remains striking.

The source of the higher child poverty rate in Eastern Germany compared to Western Germany therefore lies in differences in poverty rates within population subgroups. Observe that the picture is not one of uniformly higher poverty rates. For example poverty rates among children in workless married couple households are estimated to be slightly lower in Eastern Germany than in Western Germany (though note the large sampling error associated with the estimate). What really drives the East-West child poverty differential is the difference in poverty rates for children in married couple households with at least one full-time worker (some four-fifths of all children in both regions). The Eastern Germany poverty rate for this group is 17 per cent, more than double the corresponding Western Germany rate of 7 per cent.

Table 9. Numbers of children and child poverty rates in All Germany, Western and Eastern Germany, by child's household type (pooled data, 1992–8)

	Population share[a] (%)			Poverty rate (%)		
	All	Western	Eastern	All	Western	Eastern
All children	100.0	100.0	100.0	20.9	19.6	25.7
				(0.6)	(0.7)	(1.0)
Lone parent household	8.9	8.9	9.1	50.5	49.4	56.5
	(0.5)	(0.5)	(0.5)	(2.7)	(3.3)	(2.9)
Lone parent household, no workers	3.6	3.9	2.3	82.3	81.8	87.0
	(0.4)	(0.5)	(0.3)	(3.3)	(4.0)	(4.1)
Married couple household	89.1	89.3	88.5	17.4	16.4	22.8
	(0.5)	(0.6)	(0.6)	(0.6)	(0.7)	(1.0)
Married couple household, no worker	1.9	1.9	2.1	81.2	82.2	78.0
	(0.2)	(0.2)	(0.3)	(2.9)	(0.6)	(5.1)
Married couple household, 1+ full-time worker(s)	81.3	81.5	80.7	9.2	7.3	16.6
	(0.6)	(0.7)	(0.9)	(0.4)	(0.5)	(1.0)
'Other' household	2.0	1.8	2.5	42.5	34.3	68.0
	(0.1)	(0.2)	(0.4)	(3.6)	(3.9)	(5.7)
'Other' household, no workers	0.3	0.4	0.1	74.4	73.2	88.1
	(0.0)	(0.0)	(0.0)	(8.3)	(9.0)	(11.2)

[a]: Number of children in subgroup as a fraction of the total number of children. Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Household types defined in text. Poverty line = 60% of contemporary West German median income.

5. The dynamics of child poverty during the 1990s

Poverty has many dimensions when one takes a dynamic perspective (Ashworth *et al*., 1994). One may look at entry and exit rates and at how long each poverty spell of poverty lasts. And one may look at poverty spell repetition, counting the number of spells over some interval of time, or the total time spent poor over that interval. Given the multi-dimensional nature of poverty from a longitudinal perspective, we undertake our Anglo-German comparisons using a number of different types of calculation.

First we take time intervals spanning three consecutive years, and examine the number of times that individuals are poor over those intervals, comparing children with all persons, for example.[17] We also briefly consider an eight-year measurement 'window'. This is a more appropriate measure of the total time that individuals spend in poverty over a longer time interval. On the other hand, it has the disadvantage that it can only be calculated for individuals who are present in the panel for eight consecutive waves, and they may be an unrepresentative sample. Moreover it is harder to classify individuals since characteristics change over time. Even differentiating 'children' is not without problems, since over a long panel sequence, many children may turn 17, the start of adulthood according to our definition.

So far we have defined a child to be poor in a given year if his or her income for that year falls below the relevant poverty line. This takes no account of the fact that some households might be able to reduce the impact of low income on their consumption by drawing on past savings or borrowing against future incomes. Arguably an income measure which was some average over several years – 'smoothed income' – takes better account of economic well-being than a single year's measure (Chaudhauri and Ravallion 1994, Hill and Jenkins 2001, Jalan and Ravallion 1997, Rodgers and Rodgers 1983). It helps us to identify a 'hard core' of child poverty that would remain even if households had the ability to fully inter-temporally smooth their incomes. Another argument for using a smoothed income measure derives from the recognition that annual incomes are only imperfectly measured and that an inter-temporal averaging procedure averages out the measurement errors, producing a more accurate measure of 'true' income. We provide some comparisons of poverty rates based on three-year averaged incomes with estimates of the poverty rate for an 'average' year over the same three years. The averaging is done over the three years centred about the current year. Such estimates cannot of course be derived for the first and last years of the panel. We also use poverty-gap poverty measures.

In the last part of the chapter, we compare rates of exit from, and re-entry to, poverty between one year and the next. First we discuss estimates of conditional exit rates – the exit rates that apply in the first, the second, the third, and subsequent years of a poverty spell for individuals beginning a spell of poverty. Similarly we also calculate conditional poverty re-entry rates – the rates of entry to poverty that apply in the first, second, third, etc., year of a spell of non-poverty for individuals who have ended a spell of poverty.[18]

The conditional exit rate for a given year of a poverty spell is a 'conditional' rate because it refers only to individuals who have remained in poverty up until beginning of the year in question. This may be contrasted with the unconditional poverty exit rate, which is the

[17] A similar indicator is to be used by the British government to monitor poverty persistence among children (and other groups): see Department of Social Security (1999).

[18] It is not possible to model the risk of individuals' first entry into poverty, or first exit from poverty. This is because we do not know, consistently for both the BHPS and the GSOEP, the pre-1991 income history of people who were seen to be poor or not poor in 1991. The models analyse the length of spells in poverty among those who entered poverty after 1991; and *vice versa* for spells out of poverty.

exit rate among all persons who are poor in a given year, regardless of how long they have already been poor. Similarly, the conditional poverty re-entry rate for a given year of a poverty spell refers only to individuals who have remained out of poverty since the end of their last spell until beginning of the year in question. This rate may be contrasted with the unconditional poverty entry rate, which is the entry rate among all persons who are non-poor in a given year, regardless of whether they had ever been poor before. We finish the section with Anglo-German comparisons of unconditional poverty exit and entry rates. As we explain in Chapter 6, it is these transition rates – together with the numbers of children who are already poor – which determine whether the cross-sectional poverty rate increases or decreases from one year to the next. We shall analyse cross-national differences in poverty rates via analysis of differences in (unconditional) exit and entry rates.

5.1 Poverty persistence: number of times poor over a three year period

Table 10 shows the distribution of numbers of years poor out of three, for all children, all persons, and a range of other subgroup partitions. The results are based on the average of all the possible three-year observation 'windows' that could be derived from the eight-wave panel. Personal characteristics, such as whether a child or not, refer to characteristics measured at the second of the three annual interviews.

The first and second lines of Table 10 contrast poverty persistence among all children and all persons in the population. In both Britain and Germany, children are more persistently poor than adults are, a finding that echoes the results from each cross-section. But the differential is much greater in Britain. Almost 40 per cent of British children experienced at least one year in three of poverty over an 'average' three-year period but only about thirty per cent of all Western German children. (The corresponding statistics for all persons in each country are 30 per cent and 20 per cent.) Thus, compared to British children, not only were fewer Western German poor at a point in time, but also fewer were touched by poverty over a three year period. Observe too that some 17 per cent of British children are poor in all three years in an average three year period, whereas the corresponding figure for Western Germany is about half that (9 per cent).

The second panel of Table 10 provides breakdowns by age group. The statistics show that pre-school age children (those aged less than 6 years) have a much higher prevalence of poverty persistence than older children in Britain, but in Germany this is not the case to the same degree.[19] For example more than one fifth (21 per cent) of British pre-school children are poor three years out of three on average compared to about 15 per cent of children aged 6–16. For Western Germany the estimates are 10 per cent and 8 per cent. Another Anglo-German contrast is that the prevalence of persistent poverty (the proportion poor three years out of three) among children is, in Britain, greater than among the elderly (those aged 60+), whereas in Western Germany the prevalence rates for the two groups is much the same.

The bottom panel of Table 10 shows that rates of child poverty persistence differ markedly by household type in Britain and Western Germany. The proportion of children in lone parent households that are poor three years out of three is more than double the rate for all children in both countries. And, again in both countries, the proportions for children living in married couple households are slightly lower than the national all children proportions.

[19] Similar results were reported by Hill and Jenkins (2001) for Britain and Schluter (2001) for Germany.

Table 10. Distribution of number of years poor out of three (row percentages), Britain and Western Germany (pooled data, 1991–8)

	Number of years poor out of three							
	0		1		2		3	
	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany
All persons	70.1	78.7	11.2	9.7	8.8	5.1	9.9	6.6
All children	58.7	72.9	12.5	11.8	11.9	6.8	16.9	8.5
Age group								
0–5	53.2	70.2	12.3	13.8	13.2	6.3	21.4	9.7
6–16	61.4	74.1	12.7	10.9	11.2	7.1	14.8	8.0
17–59	77.3	81.2	9.7	9.2	6.7	4.6	6.3	5.0
60+	62.9	76.7	13.9	9.0	11.1	4.9	12.2	9.4
Child's household type								
Lone parent	20.6	35.8	14.1	20.8	22.4	19.8	42.9	23.5
Married couple	66.6	76.8	12.0	10.9	9.4	5.2	12.0	7.1
Other	35.8	51.9	18.6	14.5	23.6	25.2	22.0	8.4

Characteristics are measured at the second interview in the three year period.

The 'window' of observation is stretched to eight years in Table 11. As it happens many of the patterns observed with the three-year window are also apparent here. In particular, persistence poverty rates are much substantially higher for children in Britain compared to children in Western Germany, and in both countries persistent poverty rates are higher for children than for all persons. (Observe that in this Table, 'child' refers to individuals who were children in 1991. The sample used for the calculations therefore also included some individuals who were no longer children at the end of the observation window.) Almost 12 per cent of British children are poor seven or more years out of eight, a rate twice that in Western Germany (6 per cent).

Table 11. Distribution of number of years poor out of eight (column percentages), Britain and Western Germany (pooled data, 1991–8)

Number of times poor	All children[a]		All persons	
	Britain	Western Germany	Britain	Western Germany
0	42.9	62.2	56.3	70.1
1	11.5	11.5	10.9	10.0
2	8.9	7.5	7.5	5.2
3	7.2	4.8	5.4	4.0
4	6.8	4.6	4.6	3.2
5	4.5	2.3	3.7	2.2
6	5.8	1.4	4.2	2.1
7	5.5	4.0	3.3	1.4
8	6.9	1.9	4.1	1.8
All	100	100	100	100

Balanced panel of individuals present in all 8 waves, 1991–8; *n*(GB) = 7524, *n*(WG) = 7470. [a]: children are defined in this table as those who were children in 1991 (note that those aged 9+ years in 1991 became adults over the panel window).

5.2 Smoothed-income poverty rates

We now turn to examine how patterns of poverty differ if one uses smoothed income rather than annual income. The smoothing process means that good years may offset bad years, and one might expect the 3-year average poverty rates to be smaller than the single year ones. But will the impact differ between Britain and Germany? This depends on Anglo-German differences in how far each child's income is from the poverty line in each year, and whether small short-falls below the line are matched by small rises above the line, or whether income changes are asymmetric.

Table 12, top panel, shows first the poverty rates in an 'average' year. They were calculated for each year in a three-year window, and then averaged over the three years (pooling all three year windows in the eight year panel). The next set of estimates reports

poverty rates calculated using smoothed incomes rather than annual income. The final set of numbers expresses smoothed income poverty as a fraction of the corresponding 'average' year poverty estimate.

Table 12. Smoothed-income poverty versus annual-income poverty, by poverty measure, Britain and Western Germany (pooled data, 1991–8)

	Annual-income poverty in an average year[a]		Smoothed-income poverty[b]		Smoothed income poverty as % of average annual-income poverty	
	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany
			Poverty rate (%)			
All children	29.1	16.6	27.7	15.6	95.1	93.5
All persons	19.6	13.0	17.2	11.5	87.8	88.4
Age group						
0–5	34.7	18.0	33.7	16.0	96.9	88.8
6–16	26.4	16.0	24.8	15.4	93.9	95.8
17–59	14.1	10.8	11.8	9.4	83.9	86.9
60+	24.2	15.8	20.6	13.7	85.0	86.9
			Averaged normalised poverty gap[c] x 100			
All children	9.1	5.6	7.2	4.2	78.6	75.1
All persons	5.5	4.1	3.9	3.1	70.9	75.9
Age group						
0–5	11.3	6.3	9.1	4.9	80.2	76.7
6–16	8.0	5.3	6.0	3.9	77.4	74.2
17–59	4.4	3.6	2.9	2.6	65.7	74.2
60+	4.8	4.5	3.3	3.6	69.2	80.4

[a]: the poverty rate calculated for each year in a three-year window, averaged over the three years. [b]: the poverty rate calculated using smoothed incomes, i.e. the incomes averaged, for each person, over a three-year period. The table reports results based on data pooled from all three-wave periods between 1991–8. [c]: The average over all poor people of the short-fall between income and the poverty line, where the short-fall is normalised by the poverty line.

As it happens, corresponding estimates of poverty rates based on current year poverty and three-year average income are not dramatically different, whether taking all children together or looking at subgroups separately. This is true for both countries. Put another way, even if we were to assume inter-temporal transferability of income, the Anglo-German differences in poverty patterns noted earlier are robust: higher for children, especially young children, in Britain compared to Western Germany.

One might expect the right hand columns also to echo the results in the previous section since how large smoothed-income poverty is relative to 'average' annual poverty is another measure of poverty persistence. In fact the smoothed-income poverty relativity is

much the same in Britain as West Germany, with the notable exception of the relativity for those aged 0–5.

The bottom panel of Table 12 repeats the analysis except that now the average normalised poverty gap is used as the measure of aggregate poverty rather than the poverty rate. (The average normalised poverty gap is the average, over all people, of the short-fall between income and the poverty line, where the short-fall is normalised by the poverty line.) The statistics for annual-income poverty provide a check of the sensitivity our earlier conclusions about Anglo-German differentials, all based on the poverty rate. Our results are indeed robust. Observe that poverty is higher in Britain than in Western Germany according to the average normalised poverty gap measure too, and the differentials of nearly the same magnitude. For example, the annual-income child poverty rate is 75 percent higher in Britain than in Western Germany, whereas annual-income child average normalised poverty gap is 62 per cent higher. This robustness result also carries over to the smoothed-income poverty estimates. Child poverty is much higher in Britain than in Germany, especially among young children, regardless of which poverty measure is used.[20]

Overall, this analysis provides reassuring robustness to the results based on annual income measures and poverty rates that we focus on everywhere else in the report.

5.3 Poverty exit and re-entry rates, conditional on elapsed duration

We now consider how rates of movement out of poverty vary with how long a child has been poor, and how rates of re-entry to poverty vary with the length of time spent non-poor since the end of the previous poverty spell. With information about the duration dependence of these transition rates, one can derive estimates of the length of time spent poor for a child beginning a poverty spell, and of the length of time between poverty spells for those who have already had one. The number of years since the start of the relevant spell that we can provide estimates for is, of course, constrained by the total length of the panel. In addition, taking account of the small numbers of individuals with relatively long spells means that we were able to report estimates for spell durations only up to five years.

5.3.1 How poverty exit rates vary with duration

Table 13 provides estimates of poverty exit rates broken down by spell length, together with the associated estimates of the percentage of persons still poor one year after starting a poverty spell, two years after, and so on. We find that exit rates at each poverty spell duration are higher in Germany than in Britain in the first three years of a spell, but differences are much less after three years. This is true whether considering all children combined or all persons. (Observe that within-each country, there is no clear-cut ranking of conditional exit rates for children compared to all persons – this contrasts with the clear-cut rankings in cross-section poverty rates.)

These differentials in conditional poverty exit rates imply that poverty spell lengths are longer in Britain than in Germany. Among all children beginning a poverty spell, the median duration is between one and two years in both Britain and Germany. (The median

[20] One exception is that poverty among those aged 60+ is lower in Britain than Germany according to the average normalised poverty gap measure. Thus although the prevalence of poverty among the elderly appears higher in Britain than Western Germany, among those who are poor, average income short-falls are in fact smaller.

duration is the number of years after which one half of the cohort of entrants to poverty has left poverty, and one half remains.) About 44 per cent of British children entering poverty had a spell lasting at least two years, whereas for German children the figure was 38 per cent. Put another way, 27 per cent of British children beginning a poverty spell were still poor after five years compared with only 22 per cent of German children. (In Britain 73 per cent of children had left poverty after four years compared with 78 per cent in Germany.)

Table 13. Conditional poverty exit rates and proportion remaining poor, by spell duration, Britain and Western Germany

Number of years since start of poverty spell	All children[a]		All persons	
	Britain	Western Germany	Britain	Western Germany
	Conditional exit rate (%)			
1	35.4	41.6	37.5	40.1
2	32.4	35.7	30.6	30.0
3	21.3	32.2	24.4	24.4
4	13.9	7.7	15.7	15.1
5	9.2	4.8	11.3	8.6
	Percentage of entrants remaining poor			
0	100.0	100.0	100.0	100.0
1	64.6	58.4	62.5	60.0
2	43.7	37.5	43.4	42.2
3	34.0	25.5	32.8	31.9
4	29.6	23.5	27.6	27.1
5	26.9	22.4	24.5	24.7

Kaplan-Meier estimates pooling all spells over the period 1991–8 (except left-censored spells). [a]: children are defined in this table as those who were children throughout the poverty spell. Estimates for exit in the sixth year have been omitted due to small cell sizes.

5.3.2 How poverty re-entry rates vary with duration

We now turn to compare re-entry rates to poverty. The spell duration variable here refers to the length of time between poverty spells (the length of time spent not poor since the end of the last poverty spell). Table 14 summarises the estimates in the same format as Table 13.

We find that poverty re-entry rates were generally lower, and poverty recurrence times longer, for German children compared to British children, whether considering all children or all persons. And in both countries, conditional re-entry rates are greater for children than for all persons.

The results imply that the time between poverty spells for those who have already experienced a poverty spell is shorter for British children than for German children. For example five years after finishing a poverty spell, 50 per cent of German children remained non-poor (50 per cent had fallen back in) but only 40 per cent of British children (60 per cent

had fallen back in). Put another way, the median recurrence times were between two and three four years for British children and about four years for German children.

Table 14. Conditional poverty re-entry rates and proportion remaining non-poor, by spell duration, Britain and Western Germany

Number of years since end of last poverty spell	All children[a]		All persons	
	Britain	Western Germany	Britain	Western Germany
	Conditional re-entry rate (%)			
1	31.8	24.1	25.4	20.2
2	16.5	18.3	13.9	13.7
3	12.6	14.4	9.9	11.0
4	9.9	4.4	7.8	5.0
5	10.5	1.8	6.7	2.3
	Percentage of exiters from poverty remaining non-poor			
0	100.0	100.0	100.0	100.0
1	68.3	75.9	74.6	79.8
2	57.0	62.1	64.3	68.9
3	50.0	53.1	57.9	61.3
4	44.9	50.8	53.4	58.2
5	40.2	49.9	49.3	56.9

Kaplan-Meier estimates pooling all spells over the period 1991–8 (except left-censored spells). [a]: children are defined in this table as those who were children throughout the spell of non-poverty since end of last spell. Estimates for re-entry in the sixth year have been omitted due to small cell sizes.

5.4 Poverty exit and entry rates

Our final description of Anglo-German differences in poverty dynamics concerns annual poverty exit and entry rates for children. These are the unconditional transition rates and may be interpreted as a form of average over spell durations of the rates presented in previous section. The poverty exit rates are calculated simply as the number of poverty exits between one year and the next expressed as a percentage of the total number of persons who were poor in the first year (regardless of how long those people had been poor). Similarly the poverty entry rates are calculated as the number of poverty entries between one year and the next expressed as a percentage of the total number of persons who were non-poor in the first year. These unconditional rates are of particular interest because it is changes in these that drive changes in the (cross-sectional) poverty rate from one year to the next. (We explain and exploit this relationship in the next Chapter.)

Table 15 shows our estimates of poverty entry and exit rates, for all children and broken down by child's household type in the year prior to the potential transition. For reference we also show the corresponding rates for all persons at the foot of the table, and we reproduce the cross-sectional poverty rate estimates from Table 5, as we shall refer to them

again shortly (in Chapter 6). All the calculations are based on the relative poverty line (60 percent of contemporary national median income).

Table 15. Annual poverty rates and poverty exit and entry rates for children, Britain and Western Germany (pooled data, 1991–8)

Child's household type	Poverty rate (%)		Exit rate (%)		Entry rate (%)	
	Britain	Western Germany	Britain	Western Germany	Britain	Western Germany
All children	30.1	19.4	25.0	36.1	11.3	7.1
	(0.5)	(0.6)	(1.0)	(2.1)	(0.5)	(0.5)
Lone parent household	68.1	49.1	20.4	33.4	24.9	17.1
	(1.3)	(0.3)	(1.5)	(5.1)	(2.4)	(3.5)
Married couple household	22.4	16.3	27.3	36.2	9.9	6.4
	(0.5)	(0.6)	(1.3)	(2.3)	(2.4)	(0.5)
'Other' household	46.4	33.3	27.1	51.2	23.1	16.7
	(2.6)	(3.6)	(4.1)	(7.9)	(3.2)	(5.0)
All persons	*20.0*	*14.5*	*31.3*	*35.5*	*8.3*	*5.6*
	(0.2)	*(0.3)*	*(0.7)*	*(1.2)*	*(0.2)*	*(0.2)*

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Transition rates calculated as the number of poverty transitions between years *t*–1 and *t*, divided by the number of children at risk of a transition in year *t*–1 (sample restricted to individuals who are children at years *t*–1 and *t*; child's household type measured at *t*–1). Poverty line = 60% of contemporary national median income.

We find that child poverty exit rates are lower and child poverty entry rates are higher in Britain than in Western Germany, and each difference is statistically significant at the 95 percent level (row 1 of Table 15) The difference in exit rates (25 percent compared to 36 percent) is much larger in absolute terms than the difference in entry rates (11 percent compared to 7 percent), but in proportionate terms the differentials is larger for the entry rate (and more than four-tenths in both cases).

The all-children differentials in transition rates are echoed when one considers children in each of the three household type subgroups separately (though observe that the differences in entry rates have large confidence intervals). At the same time there are some cross-national similarities. For example, in both Britain and Western Germany, children from lone parent households have below (national) average poverty exit rates and above average poverty entry rates. Children from married couple households in both countries below average poverty entry rates (poverty exit rates are about average).

Another Anglo-German similarity is that in both countries – with one exception – children have lower poverty exit rates and higher poverty entry rates than all persons in the population. The exceptional case is the poverty exit rate in Western Germany which is much the same for children and all persons (36 per cent). This echoes the earlier finding that

poverty persistence (defined in terms of numbers of time poor over a period) for children and all persons was more similar in Western Germany than Britain.

We have also repeated the calculations shown in Table 15 for Eastern and Western Germany and all Germany. The results, reported in Table 27 in the Appendix, show that there is greater poverty turnover among children in Eastern Germany than in Western Germany: exit rates for children (and all persons, as it happens) are higher in Eastern Germany and so too are entry rates. The results are driven by the experience of children in married couple households. Among children in lone parent and 'other' households, poverty turnover is actually smaller in Eastern Germany than in Western Germany (exit rates are lower and entry rates higher), but these groups account for a relatively small proportion of all children.

5.5 Summary

Compared to German children, British children experience a higher degree of persistent poverty (more years poor over a three year interval), and lower poverty turnover (annual exit rates from poverty are lower and annual entry rates to poverty are higher). British children experience longer poverty spells than German children and recurrence times are shorter. Thus it appears that Germany appears to do better for its children than Britain does not only from a cross-sectional perspective but also a dynamic one.

The next chapter makes an explicit link between dynamic and cross-sectional perspectives. We explore why it is that dynamics differ and show how this information helps explain why poverty rates differ.

6. Why Anglo-German child poverty transition rates differ: a 'trigger event' analysis

6.1 Introduction

In this chapter we address the question of why child poverty rates differ between Britain and Germany using analysis of differences in rates of movement into and out of poverty, and decomposing differences in poverty transition rates into differences in the prevalence of 'trigger events' precipitating poverty transitions and differences in the chances of making a poverty transition conditional on experiencing a trigger event.[21] The lessons to be learned from our Anglo-German comparisons depend on how differences in German and British poverty patterns relate to differences in labour markets, marriage markets and welfare states. We shed light on these issues using decompositions of transition rates.

Why take a longitudinal perspective to explaining child poverty rates? If one uses a cross-section perspective, it is natural temptation to explain cross-national poverty differences in terms of differences in the prevalence of 'problem groups' such as lone parent families or workless households, etc., and differences in the risk of poverty for each group. This is precisely what we did in Chapter 4. Arguably this strategy is problematic because there are substantial movements into and out of problem groups between one year and the next – households form and split; people gain and lose jobs – so the policy target is a moving one. When constructing explanations of poverty patterns it is more natural to relate behaviour to transition probabilities rather than to the (state) probability of being poor, particularly since the factors which determine entry (or re-entry) to the ranks of the poor differ from the factors determining escape from poverty (as we show below). Recognising the relevance of the dynamic dimension to explanations of poverty also has implications for anti-poverty policy, changing its emphasis from supplementing incomes towards providing routes out of poverty and preventing falls into poverty (see Chapter 1).

The relevance of a longitudinal perspective can also be seen from consideration of the identity summarising the evolution of the poverty rate: this year's child poverty rate (h_t) is equal to last year's child poverty rate times the retention rate (one minus the exit rate, x_t), plus the entry rate (e_t) times one minus the proportion of children not poor last year. If the poverty rate is constant at some steady-state level, then it equals the entry rate divided by the sum of the exit and entry rates:

$$h_t = e_t / (e_t + x_t). \qquad (6.1)$$

Thus cross-national differences in poverty rates depend only on cross-national differences in poverty entry and exit rates if there is no trend in poverty rates in either country.

The relevance of (6.1) as an organising principle for analysis is underscored by the fact that cross-sectional child poverty rates were stable during the 1990s in both Britain and Western Germany. We demonstrated this in Chapter 3 (see Figure 2 in particular), showing that trends in child poverty rates for each country were flat, for both a relative and an absolute poverty standard.

To try and pinpoint why Britain has a higher child poverty entry rate and a lower child poverty exit rate than Western Germany, the key idea that we employ is that

[21] Although our application is to two specific countries and to children, the analytical framework is one that can also be straightforwardly used for comparisons between alternative sets of countries or to examinations of poverty trends within countries over time, and for other groups in the population.

- household income changes between one year and the next, and poverty transitions in particular, are precipitated by 'trigger events' such as changes in household members' labour market attachment and earnings, or changes in their household composition; and
- these events have different impacts on the risk of a poverty transition.

It is these two dimensions that we isolate in our decompositions. We relate differences between Britain and Western Germany in child poverty transition rates to cross-national differences in probabilities of trigger events, and differences in probabilities of a poverty transition conditional on event occurrence.[22] The trigger events considered are:

- changes in the number of workers in a child's household (working full-time and in total);
- changes in an child's household labour earnings, holding the number of workers fixed;
- movements into and out of a single-adult household; and
- changes in the number of household members, holding household type fixed.

We find that it is cross-national differences in the chances of making a poverty transition conditional on experiencing a trigger event, rather than differences in the prevalence of trigger events *per se*, which explain why child poverty exit rates in Britain are lower and poverty entry rates are higher than in Western Germany. The results point to the importance of the welfare-state-related differences as the principal source of Anglo-German differences in child poverty rates. In particular, relative to British children, German children are better protected against the consequences of adverse labour market events, and positive labour market events are reinforced to a greater extent.

The rest of this chapter is structured as follows. In Section 6.2 we set out our analytical framework. We briefly discuss in Section 6.3 what existing evidence suggests are the main sources of Anglo-German differences in child poverty transition rates, considering differences in labour and marriage markets and the welfare state. In Sections 6.4 and 6.5 we briefly introduce the data sets (already discussed in more detail in Chapter 2), explain key definitions such as the poverty line and trigger events, and recall the main Anglo-German differences in child poverty transition rates that are to be explained. The decomposition and analysis of child poverty transition rates follows in Sections 6.6 (poverty exits) and 6.7 (poverty entries). Section 6.8 provides concluding comments.

6.2 A framework for examining cross-national differences in poverty transition rates

To fix ideas, suppose that there is a set of mutually-exclusive events $j = 1,..., J$, which trigger exits from poverty. Then, among those children in a given country at risk of exit from poverty between one year and the next, the probability of exit is given by the sum of the probabilities for children that exit by each of the different events:

$$\text{pr(exit poverty)} = \sum_{j=1}^{J} \text{pr(exit poverty via event } j\text{).} \tag{6.2}$$

Each term on the right hand side can be written as the product of the probability of each event and the probability of exit conditional on event occurrence:

$$\text{pr(exit poverty)} = \sum_{j=1}^{J} \text{pr(exit poverty | event } j\text{).pr(event } j\text{).} \tag{6.3}$$

[22] Other papers using the trigger event concept include Bane and Ellwood (1986), DiPrete and McManus (2000), Duncan *et al.* (1993), Jenkins (2000), and Picot *et al.* (1999). Gottschalk and Danziger (2001) provide some decompositions of child poverty exit probabilities.

By similar arguments, one can relate the probability that an at-risk child will enter poverty due to a set of mutually-exclusive trigger events $k = 1,..., K$, to the probabilities of each event and the probability of poverty entry conditional on event occurrence:

$$\text{pr(enter poverty)} = \sum_{k=1}^{K} \text{pr(enter poverty | event } k\text{).pr(event } k\text{).} \qquad (6.4)$$

It follows that the cross-national differences in child poverty exit rates can be decomposed into a weighted sum of cross-national differences in event prevalence probabilities and cross-national differences in event-conditioned poverty transition probabilities:

$$\Delta\text{pr(exit poverty)} = \sum_{j=1}^{J} \Delta\text{pr(exit poverty | event } j\text{).}w_j + \sum_{j=1}^{J} \Delta\text{pr(event } j\text{).}z_j \qquad (6.5)$$

where Δ is the cross-national difference operator, $w_j = \theta.\text{pr(event } j)_{WG} + (1-\theta).\text{pr(event } j)_{GB}$, $z_j = (1-\theta).\text{pr(exit poverty|event } j)_{WG} + \theta.\text{pr(exit poverty|event } j)_{GB}$, and $0 \leq \theta \leq 1$. A similar expression can be derived for cross-national differences in poverty entry rates.

In our empirical application we focus our discussion on the various Δ terms *per se*, rather than provide exact numerical disaggregations using (6.5) and its poverty entry rate counterpart. There are three reasons for this. The first is that it is difficult to compile an exhaustive set of mutually-exclusive trigger events. A number of events may occur simultaneously and, although one could treat each joint occurrence as a separate event, there are practical limits to implementing this. An alternative might be to define a set of mutually-exclusive events using a pre-defined hierarchy of event 'importance' (cf. Bane and Ellwood 1986), but the assumptions required are debatable. Our response to these issues is to focus on a subset of the most important events and to look at each of these one at a time, but also to examine an important joint event (changes in labour market attachment combined with household formation/dissolution). Second, and related, with this strategy we can also compare cross-national differences in probabilities that children are born poor – equation (6.3) only refers to the experience of existing children.

The third reason for focusing on decomposition components is that it is important to calculate these separately for different groups of children at risk of a poverty transition. (For example the outcomes and processes affecting exits from poverty by children in lone parent households differ from those for children in married couple households – (re)marriage is a potential route out of poverty for the former group but not the latter.) Aggregation of within-group differences over at-risk subgroups would be possible in principle, but the value-added is relatively low. The strengths of our analytical approach derive from its transparent focus on the sources of the differences within each group.

The decompositions help to uncover the relative importance of the three key types of institution – labour market, marriage market, and welfare state – in explaining cross-national poverty differences.[23] The effects of differences in labour market or marriage market institutions (for example differences in the nature and extent of active labour market policies, or differences in matrimonial law) will be revealed most obviously through differences in the probabilities of the relevant trigger events. By contrast, differences in welfare states will be most obviously revealed by cross-national differences in income changes among those experiencing particular event. The primary goal of western welfare states is to directly modify

[23] Arguably differences in the health of the national macro-economy are another potential source of poverty differences. Our prior, however, is that macroeconomic differences reveal themselves primarily through labour market differences (which we do examine).

the outcomes associated with various events using cash transfers (social assistance and social insurance benefits, and taxes).[24]

6.3 Anglo-German differences in child poverty transition rates: some priors

Existing evidence provides mixed suggestions about why Britain has lower child poverty exit rates and higher child poverty entry rates than Germany does. The reasons are that some factors offset each other, the sources of the stylised facts are diverse, and the information does not necessarily refer to families with children.

6.3.1 Differences in the prevalence of labour market and demographic trigger events

Consider first the relative prevalence of labour market and demographic trigger events. Britain is typically cited as having a more 'flexible' labour market than Germany, and greater turnover between employment and unemployment. See for example Nickell (1997). On this basis one might expect that earnings mobility among persons not changing jobs to be greater in Britain than Germany, but this may not be so: it is now well-established that Germany has higher earnings mobility than the USA (Burkhauser *et al*., 1998; Schluter and Trede, 1999). One expects higher rates of both job loss and job gain in Britain than Germany, but this has ambiguous implications for poverty. Higher risks of job loss lead to higher poverty entry rates, other things equal, but higher risks of job gain lead to higher poverty exit rates.

A similar argument applies to marriage market events – again existing evidence suggests that turnover is higher in Britain.[25] But higher risks of divorce and separation are consistent with a higher child poverty entry rate, whereas a higher marriage risk is consistent with a higher child poverty exit rate. Fertility rates are lower in Germany than in Britain (Eurostat, 2000), a factor contributing to a smaller proportion of children born into poverty.

6.3.2 Differences in financial consequences for those experiencing trigger events

The expected Anglo-German contrast is more clear cut if one considers the financial consequences associated with trigger events, but here too there are factors that complicate conclusions. The standard view is that the German welfare state provides a better financial cushion against adverse events such as job loss than the British welfare state (at least over the short-term). For instance Germany provides earnings-related unemployment insurance and unemployment assistance whereas in the UK unemployment insurance is flat-rate.

Estimated income replacement rates vary, depending on assumptions about, for instance, household composition, work record and earnings levels. The OECD recently calculated that in 1997 an unemployed married couple with two children would receive, if on unemployment insurance, a net income out of work that was 73 percent of net income at work (assuming average earnings), whereas the replacement rate for the corresponding UK family would be 64 percent (OECD, 1999). Ditch *et al.* (1996: 74) estimate the net replacement rate in 1995 for a couple at half average earnings with one child aged two to be 93 percent in

[24] Of course the different incentive structures arising from a particular welfare state may also lead to differences in the likelihood of trigger events.

[25] The number of legal marriages per 1000 people in 1995 was 5.3 in Germany (East and West) but 5.5 in the UK, and the number of divorces per 1000 people were 2.1 and 2.9 respectively (Eurostat, 2000).

Germany and 62 percent in the UK. For a couple with two children, the corresponding ratios were 101 percent and 69 percent.

Just as a high replacement ratio may be taken as evidence that one country provides a better cushion against adverse events such as unemployment, a high ratio also suggests that the financial returns to the average unemployed person from taking a job are lower. If this disincentive effect is sufficiently effective, then the only people who take jobs will be those with sufficiently high financial gains from taking a job. In this case the probability of moving out of poverty conditional on taking on more work is likely to be higher in the high replacement ratio country (Germany rather than Britain in this case).

Large negative income changes associated with divorce and separation have been documented for a range of countries. Burkhauser *et al*. (1990, 1991) drew attention to similar impacts in Germany and the USA, and Jarvis and Jenkins (1997a) reported findings for Britain that were in the same range. The most plausible explanation for cross-national similarities is that gender inequalities in the labour market and home that are common across countries are more important than differences in structure and coverage of the welfare state (see Holden and Smock 1991 for elaboration). Whether the positive income effects associated with (re)partnering by a lone mother are larger in Germany or Britain is also not clear. On the one hand, the German tax system provides strong financial rewards to marriage especially through its income-splitting rules (the UK has independent taxation of men and women). On the other hand, these rewards also provide an incentive for a married woman not to work. If (re)partnering is with someone with low labour attachment (and who remains so), then the reduction in the risk of poverty associated with (re)partnering may be relatively low.

In sum, the most clear cut hypotheses about Anglo-German differences are:

- the probability of job gain, and the associated conditional probability of exiting poverty, are each higher in Britain than Germany (having offsetting impacts on differences in the overall poverty exit rate).
- the probability of job loss, and the associated conditional probability of entering poverty, are each higher in Britain than Germany (having reinforcing impacts on differences in the overall poverty exit rate).
- the probability of household formation is higher in Britain than Germany (contributing to a higher poverty exit rate), but
- the probability of household dissolution is also higher in Britain (contributing to a lower poverty exit rate).

The evidence concerning Anglo-German differences in the conditional probabilities of poverty transition associated with demographic changes is less clear cut. Overall, the fact that there are many factors potentially at work, some of which may offset others, underlines the need for a systematic disaggregated analysis.

6.4 Data and definitions

6.4.1 The data and sub-samples

We use data from survey years 1991–8 of the BHPS and GSOEP, as described in detail in Chapter 3. The German sample for each year consists of those individuals resident in Western Germany in that year. The definition of income (and equivalence scale) and poverty line(s) are exactly as described earlier.

We repeated our analysis based on the leading case two-parameter using the three other two-parameter equivalence scales and it turned out that our conclusions about Anglo-

German differences were not affected at all. The results are therefore not reported in the main text: see Tables 28–30 in the Appendix.

For both fraction-of-median-based absolute and relative poverty lines, child poverty rates are higher in Britain than Germany – i.e. the poverty line corresponds to a higher percentile of the income distribution in Britain than Germany. One might therefore argue in this case that the nature of the population at risk of a poverty transition is rather different in each country, thereby introducing non-comparability into the analysis. To address this concern we also repeated our analysis using a low-income threshold equal to the twentieth percentile of the all-persons income distribution in each country in each year, thus ensuring that exactly 20 percent of persons were poor. The effect was to narrow estimated cross-national differentials in many decomposition estimates, but the general tenor of our conclusions was not altered. See Tables 31–33 in the Appendix for details.

Given a definition of the poverty line, we define a poverty entry as a change in income from being above the line in one year to below the line in the subsequent year. A poverty exit is a change in income from below the line to above the line. Arguably these definitions are over-sensitive to small changes in income for individuals close to the poverty line, and may pick up 'non-genuine' poverty transitions. To check the robustness of our results, we redefined poverty exits as an income increase from below the poverty line to at least 10 percent above the poverty line, and a poverty entry as an income fall from above the poverty line to at least 10 percent below the poverty line. The change in definition reduced the estimated magnitude of each poverty transition statistic, for both countries, but did not change the cross-national pattern of differences and thence our conclusions. See Tables 31–33 in the Appendix for details.

6.4.2 The definition of trigger events

Trigger events were identified from year-on-year changes in demographic and labour market characteristics of each child's household. For example, 'demographic' events include a change in household size (conditioning on no change in household type), and entry to and departure from a lone parent household. 'Labour market' events include a change in the number of workers (full-time and in total), and a change in real (unequivalised) household labour earnings of at least 20 percent conditioned on there being no change in the total number of workers in the household.[26] Our aim was to distinguish between job gains and losses and 'pure' earnings changes, where the latter are driven primarily by changes in the annual work hours of household members that did not involve job change(s). The threshold of 20 percent was chosen to ensure that transitory earnings variations were not counted as events. Each event is considered independently, one at a time, though we also consider some jointly occurring events.

6.4.3 The reference periods for income, household characteristics, and trigger events

Age, sex, and thence household type and composition, are variables measured at the date of interview in each survey year, i.e. typically in the Autumn for BHPS respondents (October is the modal interview month) and in the Spring for GSOEP respondents (March is the modal interview month). The reference period over which annual household income (and labour

[26] The distinction between 'demographic' and 'labour market' events should not be pushed too far. Since our labour market measures are defined at the level of the household (to match the definition of income), changes in household composition may also effect the number of workers.

earnings) are calculated is, for the BHPS, the 12 months up to the 1st of September of the survey year (for example from 01.09.96 to 31.08.97 for survey year 1997) and, for the GSOEP, the reference period is the calendar year prior to the survey year. In both surveys, household incomes are derived by aggregating the incomes of all the household members present at the time of the interview (incomes of members who left during the year are not counted).

There is therefore a potential mismatch in timing between demographic events over the year *t*–1 to *t* and changes in annual income.[27] In particular the reference period for annual income for households surveyed in year *t* partially overlaps the survey date at year *t*–1. As a result, authors such as Burkhauser *et al.* (1986), Burkhauser *et al*. (1990, 1991), and DiPrete and McManus (2000), have taken events measured between interviews at *t*–1 and *t* and compared them with annual household incomes at years *t*–1 and *t*+1. The problem with this convention is that calculations of incomes at *t*+1 may be based on a different set of individuals than those present at *t* – there is substantial flux in household membership over time. Hence the income change calculation may reflect this subsequent change rather than the trigger event of interest.[28] Observe too that trigger events relating to arrivals and departures of household members already have some impact on year *t* income, because household incomes are calculated only for the individuals forming the household at the year *t* interview.

In our view, therefore, the appropriate choice of observation window width for income changes is not clear cut (and may depend on the particular event under consideration). In order to check the robustness of results, we considered income changes both between years *t*–1 and *t*, and between years *t*–1 and *t*+1. The largest differences between corresponding statistics are likely to arise in the changes in poverty risks estimated to be associated with significant changes in household composition, as with a household split forming a lone parent household. In this case, the very immediate income change – typically precipitate – is likely to differ from the net change in circumstances over even a slightly longer period (during which eligibility for government transfers or child support is established). By contrast changes in income between *t* and *t*–1 are better matched with the changes between *t* and *t*–1 in household labour earnings or the number of workers in the household – these variables have the same reference period, by construction.

6.5 Anglo-German differences in child poverty transition rates

The cross-national differences that we seek to explain are precisely the differences that are set out in Table 15 at the end of the preceding chapter. Recall that we showed that child poverty exit rates are lower and child poverty entry rates are higher in Britain than in Western Germany, and that the all-children differentials in transition rates are echoed when one considers children in each of the three household type subgroups separately.

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[27] This potential mismatch problem is endemic in panel comparisons based on annual income measures. An alternative would be to use current income measures (income round about the time of the interview) as there would then be a close correspondence between the income reference period and household composition. Current income measures are not available for the full 1991-8 period for the GSOEP.

[28] Of course these adjustments (and subsequent ones) and their associated income outcomes are of also of interest, but that is a separate issue from the one addressed here – which concerns the income change associated with a given trigger event. Whatever the case, income changes between *t*-1 and *t* or between *t*-1 and *t*+1 are short-term changes rather than longer-term ones. Cf. DiPrete and McManus who also consider cross-national differences in 'the rate of subsequent events that cause the original effect to intensify or decay' (2000: 3) in their US-Germany comparison of income mobility. They used observation window widths of two, three, five and seven years.

6.6 Trigger events and movements out of child poverty

We analyse exits from poverty by children in lone parent households separately from those by children in married couple households. The 'demographic' trigger events considered are a fall in the child's household size – this corresponds, for example, to an older sibling becoming non-dependent or leaving home – plus, for the former group, leaving a lone parent household (for example by (re)marriage of the custodial parent). The other trigger events analysed are labour market ones: an increase in the number of workers, full-time workers in particular, and increases in labour earnings with no change in the number of workers.

6.6.1 Exits from poverty by poor children in lone parent households

The estimates for poor children from lone parent households are shown in Table 16. The first row of the table shows the exit rates for this group as a whole over a one year interval (t–1 to t) – as shown earlier in Table 15 – whereas the second row shows the exit rate for the period t–1 to t+1.). With a longer observation window exit rates are slightly higher in both countries, but the cross-national differential persists. The remaining rows of Table 2 report the estimates of the two types of statistics for five trigger events: pr(event) defined over the period t–1 to t, and pr(poverty exit|event) for each of the two observation periods. Decreases in household size are very rare, so we do not consider this event further.

We look first at the cross-national differences in the probability of trigger events. Table 16 shows that the chances of moving out of a lone parent household over a one year interval are larger in Britain than Western Germany (17 percent compared to 13 percent). The cross-national relativity is reversed, however, for the chances of gaining a full-time worker. In Britain the probability is about 0.09 but almost 0.15 in Western Germany.[29] On the other hand, the probability of the joint occurrence of these two events is much the same in the two countries, 5–6 percent. Put another way, of those children with gains in the number of full-time workers, in Britain the majority also moved out of a lone parent household, whereas a minority did in Western Germany. The most striking cross-national difference in trigger event occurrence is in the prevalence of an increase in real household labour earnings, experienced by almost two-thirds of British children, but only about one half of Western German children. Both estimates are much larger than the probability of increases in the number of full-time workers. Thus it appears that, in both countries, increases in annual work hours (for already-working households) are more common among poor lone parent households than are moves into full-time work.

When we consider the probabilities of exit from poverty conditional on having experienced a trigger event, we find that cross-national differences are relatively small for departures from lone parenthood, though the estimates themselves are quite high in each country: just under one half. When the observation period is extended a further year, a cross-national differential appears, with the conditional poverty exit rate becoming markedly higher for Western Germany than Britain.

[29] Here, and throughout the table, some caution is required in drawing conclusions about the statistical significance of the differences: for example for each of the two events cited so far, the asymptotic 't'-ratio for the cross-national difference is less than two. Standard errors for the German estimates are relatively large (note the relatively small sample size).

Table 16. Poverty exits by poor children in lone parent households (pooled data, 1991–8)

	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
pr(not poor at *t*) [a]	20.4	(1.5)	33.4	(5.1)
pr(not poor at *t*+1) [b]	25.8	(1.9)	43.7	(6.0)
Household size fell				
pr(event)	1.3	(0.4)	0.0	(-)
pr(not poor at *t*|event)	3.1	(3.1)	-	(-)
pr(not poor at *t*+1|event)	17.7	(12.7)	-	(-)
Left lone parent household				
pr(event)	17.0	(1.5)	12.6	(2.4)
pr(not poor at *t*|event)	46.0	(4.7)	48.6	(9.1)
pr(not poor at *t*+1|event)	40.8	(5.2)	56.6	(9.0)
Gained full-time worker(s)				
pr(event)	8.9	(1.1)	14.6	(3.8)
pr(not poor at *t*|event)	74.1	(5.0)	82.2	(8.9)
pr(not poor at *t*+1|event)	65.3	(6.5)	68.1	(10.9)
Both of above				
pr(event)	6.0	(1.6)	5.3	(1.5)
pr(not poor at *t*|event)	83.5	(5.0)	91.7	(7.9)
pr(not poor at *t*+1|event)	65.3	(6.5)	75.6	(10.6)
Labour earnings increased by 20% or more (number of workers unchanged)				
pr(event)	65.2	(1.9)	50.0	(5.6)
pr(not poor at *t*|event)	11.1	(1.5)	32.3	(7.2)
pr(not poor at *t*+1|event)	17.3	(2.0)	48.0	(8.2)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Expressions pr(.) are defined in the main text. Events refer to changes between years *t*–1 and *t*. [a]: Poverty exit refers to change in poverty status between years *t*–1 and *t*. [b]: Poverty exit refers to change in poverty status between years *t*–1 and *t*+1. Sample restricted to individuals who were children at years *t*–1 and *t*, and poor children in lone parent households at year *t*–1. Total (unweighted) number of children at risk of poverty exit = 1668 (Britain), 394 (Western Germany). Poverty line = 60% of contemporary national median income.

The size of these effects is, however, dwarfed by the reductions in poverty risk that are associated with an increase in the number of full-time workers: the conditional exit probability in this case is some 74 percent in Britain and even higher in Western Germany, 82 percent. Extension of the observation period moderates these estimates somewhat, to a probability of around two-thirds in both countries. Experience of both events increases the conditional poverty exit rates, as expected, though by less in Britain than Western Germany. By contrast, increases in household labour earnings have a much smaller association with poverty exits, particularly in Britain. About one third of the German children experiencing this event left poverty over the same period (almost one half if we look a year later), compared to only 11 percent of British children (or 17 percent a year later).

Assembling the evidence from the decompositions, we conclude that there are several related reasons why poverty exit rates for children in poor lone parent households are higher in Western Germany than Britain. In Germany the likelihood of a move into full-time work is higher, and when this does occur, it has a greater poverty reduction impact than in Britain. Increases in labour earnings due to increases in work hours among already-working households are relatively common in both countries (though more so in Britain than in Germany), but the associated poverty reduction is somewhat smaller in Britain. Thus the cross-national difference in child poverty exit rates appears to be explained more by the differences in what happens to income conditional on more work, rather than more work per se. Other factors such as the rate of departure from lone parenthood (higher in Britain) or the positive financial consequences of re-partnering – about the same in both countries – are less important.

This in turn suggests the key importance of the German tax and benefit system for reinforcing the income impact of more work – whether through longer hours for already-working parents, or by taking up a job. In this light, the results suggest that recent British active labour market policies such as the New Deal for Lone Parents, intended to increase employment rates, will indeed have an anti-poverty effect, particularly if they increase the proportion of lone parents working full-time, but these policies will be significantly reinforced if the rewards from working are also increased. Thus other recent British policy initiatives in the late 1990s that raised the benefits paid to parents working full-time (first via Family Credit and, since October 1999, the Working Family Tax Credit) are measures likely to reduce the cross-national differential in child poverty exit rates in future. The national minimum wage, introduced in October 1999, is likely to make a positive contribution as well but, given the relatively low rate at which it was set, the in-work benefit initiatives are likely to have a larger impact.[30]

6.6.2 Exits from poverty by poor children in married couple households

Anglo-German differences in poverty exit rates for poor children in married couple households are large: around 27 percent in Britain compared with about 36 percent in Western Germany. This differential remains if the observation period is extended a further year (the exit rates are then 36 percent and 42 percent respectively). See Table 17 which also displays probabilities broken down by types of trigger event.

Decreases in household size are again so rare that they can play virtually no role in explaining the cross-national poverty exit rate differential. The fraction of children in households with an increase in the number of workers is one third higher in Britain than in

[30] See Piachaud and Sutherland (2001, 2001a).

Western Germany (20 percent compared with 15 percent). There is an even larger differential in the prevalence of increases in the number of full-time workers: the rate in Britain is 15 percent, whereas it is one in ten in Western Germany, fifty percent smaller. Much more common in both countries are increases in household labour earnings among already-working households and, as for poor lone parent households (Table 2), the proportion is higher in Britain than in Western Germany, 41 percent compared with 32 percent. Other things equal, these differences would lead to higher poverty exit for Britain which of course is not the actual case. Working in the opposite direction are the cross-national differences in the financial consequences of the trigger events.

Among Western German children with an increase in the number of household members working, one half also exit poverty, but among British children experiencing the same event, the fraction is only 40 percent. The cross-national differential is similar when children with an increase in the number of full-time workers are considered. Some 57 percent of Western German children in this group also leave poverty, but only 50 percent of British children. As the observation window is extended one year further, these differentials increase: the British estimates remain much the same but the proportion of non-poor German children increases. The cross-national difference in the reduction in poverty rates associated with an increase in household labour earnings among already-working households is particularly striking. Almost two-thirds of German children experiencing this event leave poverty after a year (63 percent), but less than one third of British children (28 percent). Another year later the cross-national differential is smaller but still large (the proportions non-poor are 57 percent and 36 percent respectively).

Overall, the estimates shown in Table 17 suggest that, as was the case for children in lone parent households, Anglo-German differences in child poverty arise from differences in the financial consequences associated with events rather than differences in event prevalence. Indeed, by themselves the latter would imply higher exit rates in Britain. The potential importance of policies recently introduced in Britain, such as the Working Family Tax Credit – available to all low-income working parents, not only lone parents – is again underlined.

Table 17. Poverty exits by poor children in married couple households (pooled data, 1991–8)

	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
pr(not poor at *t*) [a]	27.3	(1.3)	36.2	(2.3)
pr(not poor at *t*+1) [b]	35.6	(1.6)	42.4	(2.6)
Household size fell (and remain in married couple household)				
pr(event)	1.7	(0.4)	2.2	(0.5)
pr(not poor at *t*|event)	34.2	(10.6)	37.9	(10.8)
pr(not poor at *t*+1|event)	75.0	(8.0)	55.7	(13.0)
Gained 1+ worker(s)				
pr(event)	20.1	(1.3)	15.1	(1.7)
pr(not poor at *t*|event)	41.0	(3.4)	50.0	(6.0)
pr(not poor at *t*+1|event)	42.5	(3.9)	62.7	(6.4)
Gained 1+ full-time worker				
pr(event)	15.4	(1.2)	10.9	(1.4)
pr(not poor at *t*|event)	50.0	(4.2)	56.5	(6.6)
pr(not poor at *t*+1|event)	51.8	(4.6)	63.0	(6.9)
Labour earnings increased by 20% or more (number of workers unchanged)				
pr(event)	40.8	(1.7)	32.0	(2.5)
pr(not poor at *t*|event)	28.3	(2.3)	62.9	(4.2)
pr(not poor at *t*+1|event)	36.2	(2.9)	56.8	(5.1)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Expressions pr(.) are defined in the main text. Events refer to changes between years *t*–1 and *t*. [a]: Poverty exit refers to change in poverty status between years *t*–1 and *t*. [b]: Poverty exit refers to change in poverty status between years *t*–1 and *t*+1. Sample restricted to individuals who were children at years *t*–1 and *t*, and poor children in married couple households at year *t*–1. Total (unweighted) number of poor children at risk of poverty exit = 3,410 (Britain), 2,464 (Western Germany). Poverty line = 60% of contemporary national median income.

6.7 Trigger events and movements into child poverty

We now turn to consider entries to poverty. We only analyse what happens to non-poor children from married couple households as sample numbers for non-poor children in other household types are small. The estimates are reported in Table 18. The first row shows that poverty entry rates among all children in the at-risk group are higher in Britain than Western Germany (10 percent compared with 6 percent) and this differential is slightly larger still if a two-year interval is used (12 per cent compared with 6 percent).

To what extent can cross-national differences in trigger event prevalence account for these differences? The probability of a decrease in household size (but no change in household type) – arising for example via birth of an additional sibling – is about one-twentieth in both countries. The chances of joining a lone parent household are very slightly higher in Britain than in Western Germany, but the probability is small in both cases (3 percent compared with 2 percent), so this factor cannot be responsible for the difference in poverty entry rates. Moreover the incidence of falls in household labour earnings (for example because of working hours reductions that do not involve job loss itself) is the same in both countries, 8 percent. But what does play a marked role are differences in job loss rates. In Britain almost one fifth (18 percent) of children experienced a decrease in the number of workers, and about the same proportion a decrease in the number of full-time workers (17 percent). These estimates are roughly twice the corresponding fractions for Western Germany, 9 percent and 8 percent respectively.

Turning now to the poverty outcomes for children experiencing the various trigger events, we see that the choice of the observation period for income change now makes a noticeable difference to the conclusions that might be drawn (compared to the exit rate decompositions). For both countries, extension of the interval from one year to two leads to a reduction in the proportion entering poverty and for all the trigger events (with the exception of increases in household size, and newborn children – discussed below). Although the conditional poverty entry rate associated with each trigger event is broadly similar in the two countries, the fall in entry rate with lengthening the observation period is greater for Germany, thereby revealing a cross-national differential in entry rates after two years.

Among children moving into a lone parent household between the interviews in years t–1 and t, for example, about 60 percent of children enter poverty between income years t–1 and t, in both countries. But the poverty entry rate for the interval t–1 to t+1 is about 48 percent for British children, twice the corresponding entry rate for German children (24 percent). It seems that there is a sharp short-term reduction in income associated with family dissolution in both countries, but after a period of adjustment in which circumstances improve, the net effect is that greater protection against poverty is provided to German children relative to British children. A similar pattern arises with the loss of one or more workers from the household (whether full-time or not), though the poverty risks involved are somewhat smaller. Approximately one fifth of children enter poverty in the short-run in both countries, but if the two-year observation window is used, the entry rate is around 13 percent in Western Germany but still one fifth in Britain. As expected, the interval-length effect is more muted for the estimates of poverty entry rates for children who experience decreases in household labour earnings, but it remains the case that protection against joining the ranks of 'working poor' households is less in Britain than in Western Germany.

Table 18. Poverty entries by non-poor children in married couple households (pooled data, 1991–8)

	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty entry				
pr(poor at *t*) [a]	9.9	(0.5)	6.4	(0.5)
pr(poor at *t*+1) [b]	11.7	(0.5)	6.3	(0.5)
Household size rose (but remained in married couple household)				
pr(event)	6.0	(0.3)	4.8	(0.3)
pr(poor at *t*|event)	18.0	(2.4)	9.0	(1.6)
pr(poor at *t*+1|event)	20.2	(2.6)	11.0	(2.3)
Joined lone parent household				
pr(event)	3.2	(0.3)	1.6	(0.2)
pr(poor at *t*|event)	61.8	(4.1)	58.9	(7.2)
pr(poor at *t*+1|event)	48.4	(4.7)	23.6	(5.9)
Lost 1+ worker(s)				
pr(event)	18.0	(0.6)	8.7	(0.5)
pr(poor at *t*|event)	23.0	(1.6)	20.0	(2.5)
pr(poor at *t*+1|event)	21.9	(1.7)	12.7	(1.8)
Both of above				
pr(event)	1.9	(0.2)	1.4	(0.2)
pr(poor at *t*|event)	64.7	(5.0)	65.1	(6.9)
pr(poor at *t*+1|event)	49.4	(5.7)	23.8	(6.3)
Lost 1+ full-time worker(s)				
pr(event)	17.0	(0.6)	8.3	(0.5)
pr(poor at *t*|event)	22.0	(1.6)	21.5	(2.6)
pr(poor at *t*+1|event)	20.5	(1.8)	12.8	(1.5)
Labour earnings fell by 20% or more (number of workers unchanged)				
pr(event)	8.4	(0.4)	8.0	(0.5)
pr(poor at *t*|event)	27.7	(2.5)	19.3	(2.6)
pr(poor at *t*+1|event)	27.1	(2.7)	12.7	(1.8)
Children newborn at *t*				
pr(household with newborn) [c]	4.3	(0.1)	1.0	(0.1)
pr(poor at *t*|newborn child) [d]	27.2	(1.5)	25.9	(5.9)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Expressions pr(.) are defined in the main text. Events refer to changes between years *t*–1 and *t*. [a]: Poverty exit refers to change in poverty status between years *t*–1 and *t*. [b]: Poverty exit refers to change in poverty status between years *t*–1 and *t*+1. Sample restricted to individuals who were children at years *t*–1 and *t* and non-poor children in married couple households at year *t*–1. Total (unweighted) number of non-poor children at *t*-1 at risk of poverty entry = 11,630 (Britain), 12,682 (Western Germany). [c]: Proportion of married couple households at *t* containing a newborn child. (The German figure is an under-estimate – see text.) [d]: Proportion of newborn children at *t* who were poor at *t*. Poverty line = 60% of contemporary national median income.

The last two rows of Table 18 provide information about the contributions to the child poverty rate by children born into already poor households. (All the calculations reported so far were based on samples of children already present in the household at year *t*–1.) It appears that the proportion of households with a newborn child in an average year is rather higher in Britain than in Western Germany: just over 4 percent compared to just 1 percent. This is, however, an over-estimate of the true differential arising from the way these children are identified in the surveys.[31] In addition the proportion of newborn children that were born into poor households is much the same in both countries, about one quarter. Both sets of statistics suggest that differences in fertility and the experiences of newborn children contribute little to Anglo-German differences in child poverty rates.

Overall, the picture for child poverty entries is not symmetric to that of poverty exits. In particular the greater prevalence of trigger events in Britain relative to Western Germany (for most events) now contributes to the cross-national differential in the poverty transition rate rather than offsetting it. The other main difference from the exit rate analysis is that the largest conditional poverty entry rate is for the trigger event 'joining a lone parent household', whereas the largest conditional poverty exit rate is associated with increases in the number of full-time workers. These results are consistent with earlier research about the population as a whole for the USA (Bane and Ellwood 1986) and Britain (Jenkins 2000) showing that the impact of 'demographic' events was greater for poverty entries than for poverty exits.

What the entry rate decomposition analysis shares with the exit rate analysis, though, is the finding of the Anglo-German differential in the financial changes associated with given events, and this suggests once more the important role of the German welfare state. The German tax and benefit system provides better protection to children's incomes against adverse events than the British system does, not just better reinforcement of positive events. This is unsurprising given greater role played by social insurance rather than means-tested social assistance in the German welfare state.[32] The greater demographic and labour market turnover in Britain brings these effects more into play in the context of poverty entries – intensifying the effects of welfare state differences – rather than offsetting them as for exits. Recent British active labour market initiatives have concentrated on increasing movements from unemployment into work and making work pay (see earlier). Our results for poverty entries highlight a potential payoff to policies in Britain that prevent job loss and promote job retention rates for those individuals who already have or get a job.

6.8 Concluding comments

Our aim has been to provide a longitudinal perspective on why child poverty rates are higher in Britain than in Western Germany. We argued that it was relevant to rephrase the question in terms of poverty transition rates: why are child poverty exit rates lower, and child poverty entry rates higher, in Britain than in Western Germany? To address these issues we have used

[31] Newborn children are those aged zero in year *t*. Age in the GSOEP is calculated as survey year minus birth year (birth month data is not available, as it is in the BHPS). But GSOEP interviews are typically occur in March each year, and BHPS interviews in October, so the chances of observing a newborn child (as defined) are lower in the GSOEP than in the BHPS.

[32] But the greater role of social insurance cannot be the full story. As DiPrete and McManus (2000) and others have pointed out, eligibility among lone parents is relatively low: means-tested social assistance is particularly important for this group (as in Britain). Generosity of payments aside, greater income protection for children in households that split in Germany also comes from larger child support payments from the non-coresident parent.

a form of decomposition analysis, comparing cross-nationally the prevalence of events that trigger poverty (changes in household composition and household labour market attachment or earnings) and the chances of making a poverty transition conditional on experiencing a trigger event. It turns out that is the latter type of difference that is the most important, for both poverty exits and poverty entries. Consistent with the arguments rehearsed in Section 6.2, these findings reflect differences between the German and British welfare states, in particular the German one providing a greater cushion against adverse events and better reinforcement of positive events. Differences in the prevalence rates of trigger events do, of course, also play a role; a notable example being the greater risk of job loss in Britain compared to Western Germany.

These conclusions are robust to adjustments for errors in measurement of poverty transitions, and changes in the definition of the poverty line and in the equivalence scale used to adjust income for differences in needs. We have also raised questions about the appropriate reference period over which to measure the income changes associated with trigger events, an issue that has received insufficient attention in previous work. As it happens, the choice does affect some estimates (notably those for lone parent households), but the patterns of Anglo-German differentials remain robust.

7. Long-term effects of child poverty? Educational choice in West Germany

7.1 Introduction and motivation

In this chapter we move to consider child poverty dynamics from a long-term point of view, seeking to analyse the extent to which income differences in childhood, and low income in particular, are associated with differences in outcomes in later life. More specifically we focus on the choice of school type at age 14 in West Germany – the country for which we have sufficiently long a panel to yield data about children from birth through to age 14.

Parental financial resources are commonly believed to be strongly correlated with children's educational attainment. This view is supported by evidence which reveals that it is especially the early years which determine long term developments. Financial deprivation during these important formative years is therefore thought to affect child outcomes adversely (see Chapter 1). Having more money might play several roles in this transmission mechanism, ranging from increasing the ability to purchase goods which provide the child with a stimulating environment (such as books), to being a measure of the stability of the parental environment. Poor children not only suffer from the lack of material goods but often are exposed to higher levels of stress. Developmental progress in the early years may be hindered by the induced lack of the 'readiness to learn'. If this financial mechanism is the principal one operating in practice, the optimal policy response is simple redistribution: the poor child would, after the intervention, be similar to its non-poor peer in all relevant aspects.

An alternative hypothesis, however, focuses directly on parents in terms of parenting skills, their ability and educational background. Accordingly, financial resources play no special role over and above their association with parental background. What matters is the value parents place on education and their active learning support. The policy implication of this alternative transmission mechanism is very different: direct income redistribution will not work, whereas resources directed at improving parenting skills and educational support will.

We shed some light on these alternative hypotheses using educational choice data from West Germany. The educational outcome measure that we have data for is 'school type at age 14'. The German system has three separate strands. The 'Gymnasium' leads to the qualification (after a total of 13 years of schooling) entitling the pupil to enter university. Pupils at 'Hauptschule' leave school at age 16 and typically proceed onto a vocational training track (the German system of formal three or four year apprenticeship coupled with regular school attendance at special training colleges). Finally, 'Realschule' also terminates formal schooling at age 16 but provides a more academically demanding schooling than Hauptschule. Pupils typically proceed to enter vocational training colleges, or move to a Gymnasium. Note that German schools do not charge fees, being publicly funded and typically well resourced. Private schools are uncommon, and, unlike in countries such as the UK, the best schools are in the public sector.

In view of these separate institutions and educational paths, the school type chosen at age 14 has long-term consequences. Hence the variable 'school type at age 14' is a key measure of longer-term educational attainment. Since school choice and progress within the system is typically perceived to be meritocratic rather than depend on financial resources (ignoring the issue of opportunity costs), this system is an suitable testing ground to examine the role of money in determining educational attainment. Since career paths are mapped out at

such an early age, the study of this specific German key child outcome variable offers the prospect of making a valuable addition to the existing evidence (largely based on US data) which is mainly focused on total years of education and test score outcomes.

A cross-tabulation of children's school type at age 14 and their contemporaneous household income is reported in Table 19. This lends weight to the first hypothesis that we outlined above. The table shows a strong income gradient in education choice. Only 15 per cent of children attending Gymnasium come from the poorest fourth of the income distribution, whereas 46 per cent come from the richest fourth. This 31 per cent differential is substantial. Similarly, of all children in the poorest fourth of incomes, only 20 per cent attend Gymnasium, whereas 60 per cent of all children in the richest fourth do.

Table 19. School type at age 14 and contemporaneous income quartile group, row percentages (column percentages in parentheses)

School type	Quartile group of household income of child at age 14				
	1	2	3	4	Total
Hauptschule	30	32	24	14	100
	(46)	(49)	(38)	(22)	(39)
Realschule	30	25	29	16	100
	(34)	(29)	(33)	(18)	(28)
Gymnasium	15	17	22	46	100
	(20)	(22)	(30)	(60)	(33)
Total	25	25	25	25	100
	(100)	(100)	(100	(100	(100)

Our goal is to answer the question of whether the strong income gradient in these correlations persists once we have adequately controlled for parental background and their educational inputs. Our results, as we shall show, suggest that the answer is a resounding 'no': the conditional income effect is about 6–8 per cent, i.e. substantially less the 31 per cent effect reported in Table 19. Moreover, the income effect depends on income level in a non-linear way: we find that the income effect for children with below average income is, in fact, non-existent. Only among children with higher childhood incomes do we observe a positive income effect that may compensate for the relative lack of parental educational qualifications. Our second substantive finding concerns the timing of periods of low income versus high income receipts during childhood: income in the early years of childhood appears to play a larger role than contemporaneous income in the determination of the educational choice at age 14. That said, although early childhood income is relatively more important than contemporaneous income, the association of income with educational choice (controlling for other factors) is small.

Most authors have used linear models that relate child outcomes to income, and parental educational attainment, and a range of other 'control' variables. (See the survey by Haveman and Wolfe, 1995). Duncan *et al.* (1998) consider educational outcomes such as

'years of completed schooling' and 'high school completion'. They find (as we do) that income affects child outcomes non-linearly, and that early income is relatively more important than contemporaneous income. Blau (1999) considered a model of cognitive scores. Currie and Coles (1993) and Levine and Zimmerman (2000) analysed the effect of the incidence of maternal welfare receipt on child birth weight and cognitive scores. By contrast, Cameron and Heckman (2000) examined on the probability of attending college. There are some previous studies considering countries other than the USA. For example Ermisch and Francesconi (2000) analyse educational attainment in the UK, where this is measured in terms of the probability of attaining A-levels. The nature of their reduced form model means that they exclude income from their model's reduced form, and hence their results do not permit a cross-national comparison of income effects. Büchel *et al.* (2001) considered child outcomes in Germany as measured by the 'school type at age 14' – i.e. exactly the same variable as we study. Much of their analysis is confined to documenting facets of the high raw correlation between income and school choice (as illustrated by Table 19). By contrast we examine the correlation between income in children and school choice in greater detail, while aslo controlling for a range of other factors.

The rest of this chapter is organised as follows. In section 7.2 we discuss the nature of the model that we shall estimate. Section 7.3 contains a description of the data. In Section 7.4 we present our estimation results and use them to analyse the relative importance of the income effect and the parental background effect for choice of school type. Section 7.5 concludes.

7.2 The econometric model

We seek to estimate a reduced form model of a parent's child outcome demand function. Our interest is in the conditional income effect, i.e. the association between income and outcomes, controlling for the impact of other relevant factors. Consequently, as in any textbook demand function, the explanatory variables in the regression model should not include any variables that are subject to the choice of the parent or the child (so-called 'endogenous' variables). If they are included, then one cannot undertake conduct comparative static exercises such as the study of income effects (this point has been forcefully re-iterated by Blau, 1999). Underpinning the empirical model is the concept of a child outcome production function, that relates output and inputs, such as income and the quantity and quality of parental involvement in the child's education. From this interpretation, higher income affords more readily quantifiable inputs such as books, but also increases factors providing a more conducive learning environment, such as more space and less stress, and thus a greater readiness to learn. We do not attempt to distinguish between these interpretations – that would require a 'structural' model – rather we remain agnostic and let the data 'speak for themselves'.

The child outcome that we focus on is the type of school chosen at age 14. This outcome is therefore a categorical variable. Moreover, school type is naturally ordered from lowest to higher in the order Hauptschule, Realschule and Gymnasium: the ordering is associated with a progressively more challenging academic education and increasingly better career prospects. Let the school type at age 14 of child j in family i be denoted by x_{ji}. The covariates included in the regression are variables summarising the demographic structure of the family, Z_{ji}, income covariates Y_{ji}, and parental educational qualifications E_i. Suppose that there is a latent index describing school type on some underlying continuum

$$x_{ji}^* = x_{ji} + e_{ji} \tag{7.1}$$

where the observable index is

$$x_{ji} = \beta_1' Z_{ji} + \beta_2' Y_{ji} + \beta_3' E_i \,. \tag{7.2}$$

Assuming that the disturbance term (e_{ji}) has a logistic distribution, we estimate the following probabilities:

$$\begin{aligned} \Pr(\text{school type = Hauptschule}) &= \Lambda(-x_{ji}) \\ \Pr(\text{school type = Realschule}) &= \Lambda(\kappa_1 - x_{ji}) \\ \Pr(\text{school type = Gymnasium}) &= 1 - \Lambda(\kappa_2 - x_{ji}) \end{aligned} \tag{7.3}$$

where the ancillary parameters satisfy $1 < \kappa_1 < \kappa_2$ and $\Lambda(.)$ denotes the cumulative logistic distribution function. Hence we estimate an ordered logit model.

The income effect (derived from estimates of β_2) may be biased upwards by the presence of an unobserved family specific or child effect, α_{ji}, such as ability, so that the true latent index is given by $x_{ji}^* = \alpha_{ji} + x_{ji} + e_{ji}$. The commonly-used estimation strategy of using variations in outcomes amongst siblings to difference out any family-specific effect ($\alpha_{ji} = \alpha_i$) is not feasible in our case because the sample size is too small. Instead, we have also estimated a random effects model.[33] It turned out, however, that we could not reject the hypothesis that that the variance of the Normally distributed random effect was not statistically significantly different from zero. The results from this model are therefore not reported here.

7.3 The data

We base our analysis on the German Socio-Economic Panel (GSOEP), using data from the first wave in 1984 through to the 1997 interview wave. As in the rest of the paper the measure of income used is household net (post-tax post-benefit) income, assumed to be shared equally amongst household members – but not equivalised, as we wish to examine the effects of differences in money income. (Difference in household composition are controlled for directly.

Our unit of analysis is the child. We have divided childhood into three stages, roughly corresponding to key developmental and schooling stages: the 'early years' (when aged 0–5 years), the 'middle years' (ages 6–10), and the 'contemporaneous years' (age 11+). For each child, we have averaged household income during these periods. We use measures of income from each of the three stages of childhood in our analysis because since we wish to study the importance of the timing of periods of low income. Table 20 shows that the income levels at different childhood stages are not highly correlated, the reason being that income mobility in Germany is relatively high.[34]

[33] The presence of child or family specific effects poses substantial problems for non-linear models. As Arellano and Honoré (2000) observe: 'Since little is know about how to deal with fixed effects other than the ones discussed above, it is often appealing to make assumptions on the distribution of the individual effects' (p.70).

[34] Similar correlations are reported by Duncan *et al.* (1998) for the USA. For detailed studies of income mobility in the USA and Germany, see e.g. Burkhauser *et al.* (1998) and Schluter and Trede (1999).

Table 20. Correlations between household income of child during the three childhood stages[a]

Corr(early childhood income, middle childhood income)	0.77
Corr(early childhood income, contemporaneous income)	0.61
Corr(middle childhood income, contemporaneous income)	0.79

[a]: Early childhood is ages 0–5 years; middle childhood is ages 6–10; contemporaneous refers to ages 11-14.

In order to maximise sample size, we selected the sample according to the following rule: a child must have at least one income observation in all three childhood stages. (Hence, a child in the sample is not necessarily born in 1984 and present in every single wave.) The sample selection rule yields a sample of 520 children. About one half (51 per cent) of these were present in the panel for 14 years. A further 24 per cent were present 13 years, and 19 per cent were present 12 years. Some 3 per cent were present for 11 years and 2 per cent for 10 years.

The third key explanatory variable in the ordered logit regressions is the highest educational qualification attained by the child's mother and father. For each, we defined five categories, in ascending order of value: no qualification, Hauptschule or Realschule, more advanced school leaving qualifications such as graduation from Gymnasium, apprenticeship, and finally university degree (or equivalent). Table 21 shows the proportion of children whose parents fall into the various categories.

Table 21. Parental educational qualifications (column percentages)

Highest educational qualification	Father	Mother
No qualifications	7	12
Haupt- or Realschule	7	15
Other	12	12
Apprenticeship	60	56
University	13	5

Table 22 reports the sample means of the covariates used in our regressions.

Table 22. Sample summary statistics

	Mean	(Standard deviation)
Household income:		
Household income, child aged 0–5 years	53150.50	(20268.22)
Household income, child aged 6–11 years	63336.54	(25305.19)
Household income, child aged 11+ years	72756.03	(31068.29)
Household demographics:		
Child's sex is female	0.49	(0.50)
Father's age at child's birth	30.7	(6.31)
Mother's age at child's birth	26.9	(5.29)
Number of children	2.03	(1.01)
Ever in lone parent household	0.108	(0.31)
Guest-worker household	0.330	(0.47)
Father's highest educational qualification:		
Haupt- or Realschule	0.071	(0.257)
Other	0.125	(0.331)
Apprenticeship	0.602	(0.490)
University	0.129	(0.335)
Mother's highest educational qualification:		
Haupt- or Realschule	0.150	(0.357)
Other	0.115	(0.320)
Apprenticeship	0.570	(0.496)
University	0.050	(0.218)

Calculated using unweighted data.

7.4 Estimation Results

The estimates of the ordered logit model are reported in Table 23.[35] The regressors include general family control variables, such as the age of the parents at the birth of the child, the number of children in the family when the child is aged 14, and dummy variables summarising whether the child belongs to a guest-worker family, and whether the child ever lived with a lone parent. The income variables are defined for each of the three childhood stages (early, middle, and contemporaneous). The parental educational qualification variables background covariates measure parental background. Blau (1999) has argued that parental wage rates are also legitimate regressors in models of this kind since they reflect the opportunity cost of parents' time, relevant to choices about how much time to devote to their child's education. As it happens, the coefficient estimates on parental wage rate variables were not statistically significant when these variables were included as regressors, and therefore we have not reported the estimates of these models. Similarly, we also included as a regressor a variable summarising whether the child's mother ever worked during the child's life up to age 14, in order to capture some preference heterogeneity amongst mothers. Again, this indicator turned out to be statistically insignificant and so the estimates from this model are not reported.

In order to facilitate the interpretation of the estimates of the model's β parameters and the 'income effect' in particular, we have computed marginal effects for each of the covariates. The marginal effects are calculated as $\partial[\text{Prob}(\text{school type} = i)]/\partial X_j$ for each continuous regressor X_j and for each dummy variable are calculated as the difference Prob(school type = i| dummy = 1) – Prob(school type = i| dummy = 0). In both cases all covariates are evaluated at their sample mean. Note that the marginal effects sum to zero across school types.

The general household controls exhibit marginal effects of the expected sign, but none of the coefficient estimates were statistically significant. The probability of attending Gymnasium is higher for children of older fathers, lower for children ever with a lone parent, and for children from guest-worker households.

The coefficients on the income variables reveal that the timing of low income periods is crucial. Average income over the period while the child is aged 6–11 has no statistically significant association with the choice of school type. The estimate of the coefficient on income during early childhood (ages 0–5) is nearly twice as large as the one for contemporaneous (age 11–14) income but is, however, not significant at conventional levels. The income effects have the expected signs. In particular, increases in income during early childhood have a positive effect on the probability of attending Gymnasium, a effect that is nearly twice the size of the marginal effect of contemporaneous income. Duncan *et al.* (1998) reported similar results for the USA concerning the importance of the timing of income receipt for the case where the child outcome variables were 'years of education' and 'high school completion'.

[35] We also estimated a binary logit model that focused exclusively on whether the child attends Gymnasium or not (i.e. collapsing categories used in the ordered logit model). The estimates imply similar effects of income on outcome, and so are not reported here.

Table 23. School type at age 14 (ordered logit model estimates)

Covariate	Coefficient (Std. Error)	Marginal effects[a]		
		Hauptschule	Realschule	Gymnasium
Income variables:				
Average income for child ages 0-5	1.19E-05	-2.70E-06	1.20E-07	2.50E-06
	(6.89E-06)			
Average income for child ages 6-11	1.46E-06	-3.30E-07	1.50E-08	3.10E-07
	(7.79E-06)			
Average income for child ages 11+	6.98E-06	-1.60E-06	7.30E-08	1.50E-06
	(5.23E-06)			
Household demographics:				
Child's sex is female	0.144			
	(0.174)			
Father's age at child's birth	0.009918	-2.20E-03	1.00E-04	2.10E-03
	(0.021301)			
Mother's age at child's birth	-0.01731	3.90E-03	-1.80E-04	-3.70E-03
	(0.026363)			
Number of children	-0.18322	0.041	-1.90E-03	-0.039
	(0.095727)			
Ever in lone parent household	-0.14369	0.033	-2.70E-03	-0.030
	(0.292361)			
Guestworker household	-0.20445	0.046	-3.20E-03	-0.043
	(0.285674)			
Father's highest educational qualification:				
Haupt- or Realschule	0.08867	-0.02	4.10E-04	0.019
	(0.560617)			
Other	0.623296	-0.127	-0.015	0.143
	(0.452638)			
Apprenticeship	0.953808	-0.217	0.023	0.194
	(0.444332)			
University	2.302193	-0.343	-0.176	0.519
	(0.557068)			
Mother's highest educational qualification:				
Haupt- or Realschule	0.691268	-0.141	-0.018	0.159
	(0.422787)			
Other	0.929157	-0.179	-0.038	0.218
	(0.404539)			
Apprenticeship	0.826081	-0.186	0.015	0.171
	(0.382892)			
University	1.763222	-0.271	-0.143	0.414
	(0.665613)			
Ancillary parameters:				
κ_1	1.669298			
	(0.872642)			
κ_2	3.144482			
	(0.879615)			

N = 520. Log likelihood = -496.49. $\chi^2(16) = 143.44$. Pseudo-$R^2 = 0.1262$.

[a]: The marginal effects are calculated as $\partial[\text{Prob(School Type} = i)]/\partial X_j$ for each continuous regressor X_j and for each dummy variable are calculated as the difference Prob(School Type = *i*| dummy = 0) – Prob(School Type = *i*| dummy = 1). The reference category for father's and mother's education is 'no qualifications'.

Parental educational qualifications, a measure of parental background, play the clearest role in determining choice of school type. Note that the coefficients and hence the marginal effects have to be interpreted with respect to the reference category, namely 'no qualification'. (Transitivity arguments do not apply: the effect of changing paternal educational qualifications from, say, apprenticeship to university can only be quantified if the former is also the reference category.) Table 24, discussed in the next section, provides results for a range of cases in which the reference category has been permuted. The general message is, however, the same: the higher the parental educational attainment, the higher is the chance of the child attending Gymnasium. For instance, compared to the child with a father with no qualification, the child of a father with a university degree has a 52 per cent higher chance of attending Gymnasium. Similar comments apply to the effect of maternal educational background.

7.5 Income versus parental educational qualifications

In order to focus on the relative importance of income during early childhood and parental background for the determination of the child's school type, we now concentrate on the highest ranking school type, Gymnasium. We re-estimated the model dropping the other income variables, and derived the marginal effects for income with a range of different educational backgrounds chosen as the reference category. Table 24 focuses on the marginal effect when father's education changes.[36]

Table 24. The effect of changing father's highest educational qualification on the probability of the child attending Gymnasium

Father's highest educational attainment	Pr(school type = Gymnasium)				
None	base	–0.026	–0.118	–0.173	–0.306
Other	0.027	base	–0.097	–0.155	–0.298
Haupt- or Realschule	0.143	0.113	base	–0.074	–0.280
Apprenticeship	0.201	0.177	0.077	base	–0.327
University	0.552	0.531	0.435	0.354	base

The marginal effects of the dummy variables (father's highest educational qualification) are calculated as the difference Prob(school type = Gymnasium| dummy = 0) – Prob(School Type = Gymnasium| dummy = 1).

The table reveals substantial marginal effects associated with differences in father's educational qualifications. Compared to children with fathers with no educational qualifications, children with a father who had a university degree have a probability of attending Gymnasium some 55 per cent higher. Unsurprisingly, this effect is reduced when the reference category increases in educational attainment, but it remains substantial: there is

[36] As a consequence of re-estimating the model with fewer covariates, the previous 52 per cent marginal paternal background effect increased to 55 per cent.

a 35 per cent difference in the outcome probability between children with fathers having passed apprenticeships and the ones having university degrees.

Family income and parental educational attainment are undoubtedly correlated, so that the appearance of both covariates in the child outcome equation will reduce the background effect. On the other hand, income should appear in the outcome equation in its own right, since it is a input in the production of the child outcome. Since our interest in income has been prompted by the question as to the role of money (over and above its association with parental background), we have also estimated a standard 'first stage' equation to predict household income, the residuals of which were then used as regressors in the outcome equation (the 'second stage').[37] Table 25 reports the marginal effects calculated for alternative reference categories. The effects of differences in parental educational qualifications are now larger. For instance, the probability of the child attending Gymnasium is now 60 per cent higher for children with father with degrees compared to fathers with no qualification, an increase of 5 percentage points over the result of Table 24.

Table 25. The effect of changing father's highest educational qualification on the probability of the child attending Gymnasium (reduced form model)[a]

Father's highest educational attainment	Pr(school type = Gymnasium)			
None	base	–0.023	–0.119	–0.175	–0.320
Other	0.024	base	–0.101	–0.159	–0.314
Haupt- or Realschule	0.145	0.118	base	–0.075	–0.304
Apprenticeship	0.203	0.182	0.078	Base	–0.383
University	0.595	0.578	0.489	0.413	Base

The marginal effects of the dummy variables (father's highest educational qualification) are calculated as the difference Prob(school type = Gymnasium| dummy = 0) – Prob(school type = Gymnasium| dummy = 1).
[a]: Estimates derived from reduced model including residuals from estimation of a first-stage income equation (see text for details).

We turn to the discussion of the income effects, having now controlled for parental educational background. Table 26 reports the predicted probabilities of the child attending Gymnasium given different levels of early childhood income, setting all covariates other than income at their sample means. If we also set early childhood income at its sample mean value, then the predicted probability of attending Gymnasium is 0.31. As a benchmark for judging the magnitude of income effects, recall that the unconditional effect, reported in Table 19 was 31 per cent when moving from the 25th to the 75th percentile of the income distribution.

To compare the effects on outcomes of being 'poor' rather than 'rich', we can examine comparing what would happen were early childhood income to be reduced or increased by one standard deviation. The resulting income effect is 12 percentage points, i.e. 39 per cent minus 24 per cent. Note, however, that the income change involved in generating

[37] The regressors included all covariates appearing in equation (7.2) together with age squared, and the estimation method was Ordinary Least Squares. Denoting the residuals from this income equation R_{ji}, the observable index becomes $x_{ij} = \beta_1' Z_{ji} + \beta_2' R_{ji} + \beta_3' E_i$ rather than as in (7.2).

this change is substantial, and would place a poor child substantially below the 25th percentile of the income distribution (but above a conventional poverty threshold such as half mean income), and a rich child substantially above the 75th percentile.

Table 26. Income effects on Prob(school type = Gymnasium), by early childhood income levels and model

Early childhood income value	Prob(school type = Gymnasium)	
	Linear index model	Spline model
Mean	0.31	0.31
Mean – 1 std. dev.	0.24	0.31
Mean + 1 std. dev.	0.39	0.42
25th percentile	0.26	0.31
75th percentile	0.34	0.37

A less dramatic income change involves comparisons of children at 25th and 75th percentiles of the income distribution, and makes the results comparable to those reported in Table 19. The implied income effect is 8 percentage points, i.e. 34 per cent minus 26 per cent. This is the key finding in this paper. The unconditional correlations reported in Table 19 suggested substantial income effects. The unconditional income effect on the probability of the child attending Gymnasium is 31 per cent. But when parental educational background is controlled for, the income effect falls to 8 per cent.

The income effect discussed so far has been derived from a model in which income contributes linearly to the child outcome index of equation (7.2). However, this may be an excessively strong simplification in that the effect of changes in income may differ for children in low income families compared to children in rich families. In order to investigate this possibility, we re-estimated models in which early childhood income was summarised using splines so as to allow for non-linear effects. We estimated a model based on a spline with a single knot at mean income (other modelling strategies such as income group dummies or separate regressions yield similar insights). Some income effects from the spline model are reported in Table 26.

We find evidence of non-linear effects of income. For early childhood incomes below the mean, the income coefficient is not statistically different from zero, but for incomes above the mean it is 3.19×10^{-5} (with a standard error of 8.6×10^{-6} and statistically significant). This estimate implies that the income effect for children with below-average income is non-existent, together with a concomitant strengthening of the parental background effect. For children with above-average incomes the income effect is higher than is implied by the linear index model. The relative parental background effect is somewhat weakened in that high income compensates for lower parental educational attainment: children with above-average early childhood income whose fathers obtained an apprenticeship are more likely to attend Gymnasium than their peers with below average income. In terms of the 25th and 75th percentile comparisons, the overall income effect is 6 per cent, i.e. 37 per cent minus 31 per cent. The non-linearity, however, cannot be ignored: the income effect is zero for income changes from an income equal to the 25th percentile to mean income.

7.6 Conclusion

We have found that early childhood income is more important than contemporaneous income for the choice of school type at age 14, but the income effect conditional on parental education is small. The large unconditional income effect is therefore a potentially misleading estimate of the true size of the impact of income during childhood. These results for Germany are consistent with a growing body of evidence, mainly based on US data. This consistency suggests that, despite cross-national institutional differences in education and welfare provision, the transmission mechanisms linking parental background, family income during the period of early childhood, and the child's educational outcomes are similar.

What are the specific implications of our findings for Germany? Low income *per se* appears to be no barrier to attendance at the school type with the best career prospects, *viz* the Gymnasium. However, more worrisome is the strong parental background effect. The lower that parental educational attainment is, the lower are the child's chances of attending Gymnasium. This is the mechanism which gives rise to the poverty effect in the form of large unconditional raw correlations. Many poor parents have relatively low educational qualifications.

8. Summary and conclusions

This report has produced a number of robust findings about the nature of child poverty in Britain and Germany. We have confirmed that, relative to German children, British children experience higher poverty rates and that this can be related back to higher poverty entry rates and lower poverty exit rates. British children experience longer poverty spells and shorter times out of poverty between poverty spells. More generally, poverty persistence is greater for British children than for German children.

In seeking explanations for these patterns, we have drawn on two complementary perspectives, the cross-sectional and the longitudinal one. Using the former we have shown that the Anglo-German differences in child poverty rates can be explained in terms of differences in the relative size of 'problem groups' and higher poverty rates within groups. In Britain there are relatively more children in families without work (including a greater fraction of children in lone parent families). Among these groups – indeed among all groups – child poverty rates are higher than in Germany.

This explanation was complemented and substantially extended by the trigger event analysis of differences in child poverty from a longitudinal perspective. As in the cross-section analysis, we drew attention to the roles played by differences in labour markets and 'demography'. (For example in Britain there are greater flows into and out of employment, and a greater prevalence of household formation and dissolution.) But, in addition, the methodology enabled us to say more conclusively than before how differences in the British and German welfare states were related to differences in child poverty rates. We conclude that, relative to the British tax and benefit system, the German system provides both better protection to children's incomes against adverse events and better reinforcement of positive events.

These substantive findings may not be surprising to many readers, having been foreshadowed by earlier empirical studies and simple comparisons of eligibility and generosity of the two welfare states. We would emphasise the value of our results nonetheless. Ours is the first study that has compared Anglo-German differences in child poverty in such a systematic manner along a number of dimensions, while using properly comparable data and a range of sensitivity checks.

Can Britain learn from Germany about how to protect children from poverty, and are there cautionary lessons for Germany from the British experience – as we asked in the Introduction (Chapter 1)? The answers are clearly affirmative.

The questions are particularly relevant given the UK government's avowed intention to substantially reduce, and eventually eliminate, child poverty. The New Labour government's strategy has not been to move towards a German model. Instead the British approach has had three components (Piachaud and Sutherland, 2001, 2001a). First, policies have been introduced that alter incomes directly, through the tax and benefit system: the amount of money paid in respect of children has increased in, for example, both the universal child benefit and also in the child allowances paid as part of other means-tested benefits and tax credits. Second, there have been active labour market policies. 'Welfare to work' measures to promote paid work have been emphasised as a means to help people to return to or find paid work (for example the New Deal for Lone Parents) and also to make work pay (particularly through the Working Families Tax Credit, introduced in October 1999 to replace Family Credit). The third component of the anti-poverty strategy has been tackling long-term

disadvantages through a number of diverse measures (for example the Sure Start programme in disadvantaged areas and the national child care strategy).

Will these measures enable the UK government to meet its stated child poverty reduction targets according to plan? Recent assessments (Piachaud and Sutherland, 2001, 2001a) point to some notable success so far, suggesting that by 2002 these policies may have reduced the number of poor children by 1 million. But on the other hand, this would leave about 2 million children still poor. Piachaud's and Sutherland's micro-simulation analyses suggest that changes in tax and benefit policies have by far the greatest effect in reducing child poverty over this period compared to policies promoting work. These findings suggest that the role that active labour market policies can play should not be over-sold as a means to reduce child poverty. (They may help meet other societal goals – but that is a different issue.)

By definition it will take a relatively long time before it is possible to assess the impact of the measures to reduce long-term disadvantage. Nonetheless our research reported in Chapter 7, with findings consistent with much other international research, does underline the relevance of this component of the UK governments strategy to help children. Differences in family background (measured for example by parental educational qualifications) are indeed associated with differences in child outcomes, even when other factors have been controlled for. Family income during childhood in particular appears to play a significant role, albeit a relatively small one relative to other factors. And it is income during early childhood rather than at other childhood stages that is most important. Overall our results for Germany (consistent with evidence from elsewhere) point to the relevance of early childhood interventions, and not just towards improving financial resources but other aspects such as the home and learning environment more generally.

It is unlikely that the UK government will change course and embrace, say, a more German-like strategy to protecting children against poverty. But Germany's relative success does remind us that alternative approaches may work. This is not to argue that the German system is perfect. We have not considered other alternatives (for example a Scandinavian model) and, in any case, one needs to assess welfare state performance for all citizens, not just children. And Germany might also learn something from its own experience. Note our finding of how in Eastern Germany at the beginning of the 1990s, children were no more at risk than all persons of being poor (the risk was universally high). But after re-unification, by the end of the 1990s, child poverty rates for children in Eastern Germany were higher than the all-person rate, as in Western Germany (though the differential was still somewhat smaller than that for Britain). It would be interesting to unravel the reasons for this trends and how they were related to changes in institutions.

9. References

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10. Appendix

Table 27. Annual poverty rates and poverty exit and entry rates for children for all Germany, Western and Eastern Germany (pooled data, 1992–8)

Child's household type	Poverty rate (%)			Exit rate (%)			Entry rate (%)		
	All	Western	Eastern	All	Western	Eastern	All	Western	Eastern
All children	20.9	19.4	25.7	36.7	35.8	39.0	7.1	6.9	7.7
	(0.6)	(0.6)	(1.0)	(1.7)	(2.3)	(2.1)	(0.4)	(0.5)	(0.7)
Lone parent household	50.5	49.4	56.5	31.5	34.2	22.0	16.8	17.2	15.1
	(2.7)	(3.3)	(2.9)	(4.3)	(5.5)	(3.8)	(3.2)	(3.8)	(3.5)
Married couple household	17.4	16.4	22.8	38.1	35.4	44.9	6.5	6.2	7.3
	(0.6)	(0.7)	(1.0)	(1.9)	(2.5)	(2.4)	(0.4)	(0.5)	(0.7)
'Other' household	42.5	34.3	68.0	39.4	53.0	19.5	15.4	16.5	9.0
	(3.6)	(3.9)	(5.7)	(6.7)	(8.2)	(7.2)	(4.8)	(5.5)	(5.4)
All persons	*16.0*	*14.5*	*21.4*	*31.3*	*35.4*	*44.0*	*8.3*	*5.6*	*6.5*
	(0.3)	*(0.3)*	*(0.5)*	*(0.7)*	*(1.4)*	*(1.3)*	*(0.2)*	*(0.2)*	*(0.4)*

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Transition rates calculated as the number of poverty transitions between years *t*–1 and *t*, divided by the number of children at risk of a transition in year *t*–1 (sample restricted to individuals who are children at years *t*–1 and *t*; child's household type measured at *t*–1). Poverty line = 60% of contemporary Western Germany median income.

Table 28. Poverty exits by poor children in lone parent households (pooled data, 1991–8), by equivalence scale

Pr(not poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
$\alpha = 0.7, \beta = 0.75$	25.8	(1.9)	43.7	(6.0)
$\alpha = 0.7, \beta = 0.5$	20.2	(1.5)	29.2	(4.4)
$\alpha = 0.5, \beta = 0.75$	25.4	(1.7)	40.2	(5.8)
$\alpha = 0.5, \beta = 0.5$	24.0	(1.6)	30.5	(4.6)
Household size fell				
$\alpha = 0.7, \beta = 0.75$	3.1	(3.1)	-	(-)
$\alpha = 0.7, \beta = 0.5$	6.5	(4.8)	-	(-)
$\alpha = 0.5, \beta = 0.75$	3.4	(3.5)	-	(-)
$\alpha = 0.5, \beta = 0.5$	3.4	(3.5)	-	(-)
Left lone parent household				
$\alpha = 0.7, \beta = 0.75$	46.0	(4.7)	48.6	(9.1)
$\alpha = 0.7, \beta = 0.5$	55.3	(4.6)	48.4	(8.9)
$\alpha = 0.5, \beta = 0.75$	52.5	(5.0)	50.3	(9.8)
$\alpha = 0.5, \beta = 0.5$	55.7	(4.7)	51.2	(9.6)
Gained full-time worker(s)				
$\alpha = 0.7, \beta = 0.75$	74.1	(5.0)	82.2	(8.9)
$\alpha = 0.7, \beta = 0.5$	75.5	(4.5)	81.9	(8.7)
$\alpha = 0.5, \beta = 0.75$	77.3	(5.0)	87.4	(8.7)
$\alpha = 0.5, \beta = 0.5$	76.2	(4.7)	83.7	(8.9)
Both of above				
$\alpha = 0.7, \beta = 0.75$	83.5	(5.0)	91.7	(7.9)
$\alpha = 0.7, \beta = 0.5$	86.8	(3.9)	91.7	(7.9)
$\alpha = 0.5, \beta = 0.75$	86.6	(4.4)	100.0	(-)
$\alpha = 0.5, \beta = 0.5$	87.2	(4.0)	100.0	(-)
Labour earnings increased by 20% or more (number of workers unchanged)				
$\alpha = 0.7, \beta = 0.75$	11.1	(1.5)	32.3	(7.2)
$\alpha = 0.7, \beta = 0.5$	10.2	(1.4)	31.1	(7.0)
$\alpha = 0.5, \beta = 0.75$	14.5	(1.8)	41.9	(8.7)
$\alpha = 0.5, \beta = 0.5$	15.0	(1.9)	32.7	(7.3)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty exits refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 16. Equivalence scale = $[(\text{number of adults}) + \alpha*(\text{number of children})]^{\beta}$. Poverty line = 60% of contemporary national median income.

Table 29. Poverty exits by poor children in married couple households (pooled data, 1991–8), by equivalence scale

Pr(not poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
$\alpha = 0.7, \beta = 0.75$	27.3	(1.3)	36.2	(2.3)
$\alpha = 0.7, \beta = 0.5$	31.6	(1.5)	35.1	(2.7)
$\alpha = 0.5, \beta = 0.75$	31.1	(1.5)	35.1	(2.5)
$\alpha = 0.5, \beta = 0.5$	34.5	(1.7)	35.6	(2.8)
Household size fell (and remain in married couple household)				
$\alpha = 0.7, \beta = 0.75$	34.2	(10.6)	37.9	(10.8)
$\alpha = 0.7, \beta = 0.5$	34.8	(11.2)	20.4	(7.8)
$\alpha = 0.5, \beta = 0.75$	34.2	(10.6)	37.8	(11.1)
$\alpha = 0.5, \beta = 0.5$	31.3	(10.4)	27.5	(11.2)
Gained 1+ worker(s)				
$\alpha = 0.7, \beta = 0.75$	41.0	(3.4)	50.0	(6.0)
$\alpha = 0.7, \beta = 0.5$	46.4	(3.7)	54.2	(6.9)
$\alpha = 0.5, \beta = 0.75$	46.1	(3.6)	48.6	(6.4)
$\alpha = 0.5, \beta = 0.5$	48.0	(3.9)	56.7	(7.1)
Gained 1+ full-time worker				
$\alpha = 0.7, \beta = 0.75$	50.0	(4.2)	56.5	(6.6)
$\alpha = 0.7, \beta = 0.5$	55.3	(4.5)	74.7	(6.6)
$\alpha = 0.5, \beta = 0.75$	55.0	(4.3)	62.2	(7.1)
$\alpha = 0.5, \beta = 0.5$	60.5	(4.5)	75.5	(7.1)
Labour earnings increased by 20% or more (number of workers unchanged)				
$\alpha = 0.7, \beta = 0.75$	28.3	(2.3)	62.9	(4.2)
$\alpha = 0.7, \beta = 0.5$	28.0	(2.4)	60.0	(4.4)
$\alpha = 0.5, \beta = 0.75$	27.9	(2.4)	59.0	(4.2)
$\alpha = 0.5, \beta = 0.5$	32.5	(2.3)	59.3	(4.6)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty exits refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 17. Equivalence scale = $[(\text{number of adults}) + \alpha^*(\text{number of children})]^{\beta}$. :Poverty line = 60% of contemporary national median income.

Table 30. Poverty entries by non-poor children in married couple households (pooled data, 1991–8), by equivalence scale

Pr(poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty entry				
$\alpha = 0.7, \beta = 0.75$	11.7	(0.5)	6.3	(0.5)
$\alpha = 0.7, \beta = 0.5$	9.5	(0.4)	4.8	(0.4)
$\alpha = 0.5, \beta = 0.75$	9.6	(0.4)	5.3	(0.4)
$\alpha = 0.5, \beta = 0.5$	8.9	(0.4)	4.4	(0.4)
Household size rose (but remained in married couple household)				
$\alpha = 0.7, \beta = 0.75$	18.0	(2.4)	9.0	(1.6)
$\alpha = 0.7, \beta = 0.5$	15.9	(2.4)	6.9	(1.4)
$\alpha = 0.5, \beta = 0.75$	17.6	(2.5)	5.9	(1.4)
$\alpha = 0.5, \beta = 0.5$	12.3	(2.0)	5.9	(1.3)
Joined lone parent household				
$\alpha = 0.7, \beta = 0.75$	61.8	(4.1)	58.9	(7.2)
$\alpha = 0.7, \beta = 0.5$	67.7	(3.9)	60.7	(6.9)
$\alpha = 0.5, \beta = 0.75$	58.9	(4.0)	56.5	(7.1)
$\alpha = 0.5, \beta = 0.5$	64.0	(3.9)	57.5	(7.1)
Lost 1+ worker(s)				
$\alpha = 0.7, \beta = 0.75$	23.0	(1.6)	20.0	(2.5)
$\alpha = 0.7, \beta = 0.5$	22.9	(1.6)	18.1	(2.4)
$\alpha = 0.5, \beta = 0.75$	22.0	(1.6)	17.6	(2.4)
$\alpha = 0.5, \beta = 0.5$	22.0	(1.5)	17.9	(2.4)
Both of above				
$\alpha = 0.7, \beta = 0.75$	64.7	(5.0)	65.1	(6.9)
$\alpha = 0.7, \beta = 0.5$	71.8	(4.7)	66.9	(6.7)
$\alpha = 0.5, \beta = 0.75$	60.1	(5.1)	61.9	(7.2)
$\alpha = 0.5, \beta = 0.5$	66.8	(4.8)	65.6	(6.8)
Lost 1+ full-time worker(s)				
$\alpha = 0.7, \beta = 0.75$	22.0	(1.6)	21.5	(2.6)
$\alpha = 0.7, \beta = 0.5$	22.3	(1.6)	20.5	(2.5)
$\alpha = 0.5, \beta = 0.75$	20.9	(1.6)	20.3	(2.6)
$\alpha = 0.5, \beta = 0.5$	20.5	(1.6)	20.7	(2.6)
Labour earnings fell by 20% or more (number of workers unchanged)				
$\alpha = 0.7, \beta = 0.75$	27.7	(2.5)	19.3	(2.6)
$\alpha = 0.7, \beta = 0.5$	26.4	(2.5)	14.4	(2.0)
$\alpha = 0.5, \beta = 0.75$	26.1	(2.4)	16.2	(2.1)
$\alpha = 0.5, \beta = 0.5$	24.8	(2.4)	12.1	(1.7)
Children newborn at *t*				
$\alpha = 0.7, \beta = 0.75$	27.2	(1.5)	25.9	(5.9)
$\alpha = 0.7, \beta = 0.5$	24.3	(1.4)	22.2	(6.0)
$\alpha = 0.5, \beta = 0.75$	25.5	(1.5)	22.8	(6.0)
$\alpha = 0.5, \beta = 0.5$	22.9	(1.4)	20.6	(6.0)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty entries refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 18. Equivalence scale = $[(\text{number of adults}) + \alpha*(\text{number of children})]^{\beta}$. Poverty line = 60% of contemporary national median income.

Table 31. Poverty exits by poor children in lone parent households (pooled data, 1991–8), by poverty line type

Pr(not poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
Relative poverty line[a]	25.8	(1.9)	43.7	(6.0)
Relative line, transitions adjusted[b]	15.4	(1.3)	25.7	(4.5)
Absolute poverty line[c]	24.0	(1.6)	29.8	(4.5)
Poorest quintile line[d]	20.3	(1.5)	25.4	(3.9)
Household size fell				
Relative poverty line[a]	3.1	(3.1)	-	(-)
Relative line, transitions adjusted[b]	3.1	(3.1)	-	(-)
Absolute poverty line[c]	3.1	(3.1)	-	(-)
Poorest quintile line[d]	3.1	(3.1)	-	(-)
Left lone parent household				
Relative poverty line[a]	46.0	(4.7)	48.6	(9.1)
Relative line, transitions adjusted[b]	40.5	(4.6)	41.2	(8.8)
Absolute poverty line[c]	51.9	(4.9)	47.2	(9.1)
Poorest quintile line[d]	48.4	(4.8)	36.4	(7.9)
Gained full-time worker(s)				
Relative poverty line[a]	74.1	(5.0)	82.2	(8.9)
Relative line, transitions adjusted[b]	68.0	(5.4)	71.3	(10.5)
Absolute poverty line[c]	79.8	(4.6)	82.2	(8.9)
Poorest quintile line[d]	74.6	(5.0)	70.9	(9.7)
Both of above				
Relative poverty line[a]	83.5	(5.0)	91.7	(7.9)
Relative line, transitions adjusted[b]	77.6	(5.7)	79.1	(10.9)
Absolute poverty line[c]	90.7	(3.7)	91.7	(7.9)
Poorest quintile line[d]	84.3	(4.7)	73.9	(10.8)
Labour earnings increased by 20% or more (number of workers unchanged)				
Relative poverty line[a]	11.1	(1.5)	32.3	(7.2)
Relative line, transitions adjusted[b]	7.6	(1.3)	27.5	(7.1)
Absolute poverty line[c]	13.2	(1.7)	31.1	(7.0)
Poorest quintile line[d]	10.7	(1.5)	26.8	(5.9)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty exits refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 5. [a]: Poverty line = 60% of contemporary national median income (as in Table 16). [b]: As (a), except poverty exit requires income to rise at least 10 percent above the poverty line. [c]: Poverty line = 60% of 1991 British median income. [d]: Poverty line = twentieth percentile of contemporary national income distribution for all persons.

Table 32. Poverty exits by poor children in married couple households (pooled data, 1991–8), by poverty line type

Pr(not poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty exit				
Relative poverty line[a]	27.3	(1.3)	36.2	(2.3)
Relative line, transitions adjusted[b]	19.9	(1.2)	22.9	(2.0)
Absolute poverty line[c]	30.2	(1.4)	35.9	(2.4)
Poorest quintile line[d]	28.1	(1.4)	29.0	(1.8)
Household size fell (and remain in married couple household)				
Relative poverty line	34.2	(10.6)	37.9	(10.8)
Relative line, transitions adjusted	32.7	(10.6)	26.1	(9.7)
Absolute poverty line	40.6	(10.8)	36.5	(10.3)
Poorest quintile line	35.5	(10.4)	36.2	(8.4)
Gained 1+ worker(s)				
Relative poverty line	41.0	(3.4)	50.0	(6.0)
Relative line, transitions adjusted	31.2	(10.6)	36.0	(5.8)
Absolute poverty line	45.0	(10.8)	53.5	(5.7)
Poorest quintile line	42.0	(10.4)	41.4	(4.8)
Gained 1+ full-time worker				
Relative poverty line	50.0	(4.2)	56.5	(6.6)
Relative line, transitions adjusted	39.8	(4.0)	44.9	(6.6)
Absolute poverty line	53.8	(4.3)	56.2	(6.4)
Poorest quintile line	51.1	(4.2)	55.5	(5.5)
Labour earnings increased by 20% or more (number of workers unchanged)				
Relative poverty line	28.3	(2.3)	62.9	(4.2)
Relative line, transitions adjusted	21.9	(2.1)	45.4	(4.9)
Absolute poverty line	29.3	(2.4)	63.7	(4.7)
Poorest quintile line	28.8	(2.3)	57.8	(4.1)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty exits refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 17. [a]: Poverty line = 60% of contemporary national median income (as in Table 17). [b]: As (a), except poverty exit requires income to rise at least 10 percent above the poverty line. [c]: Poverty line = 60% of 1991 British median income. [d]: Poverty line = twentieth percentile of contemporary national income distribution for all persons.

Table 33. Poverty entries by non-poor children in married couple households (pooled data, 1991–8), by poverty line type

Pr(poor at *t*|event), by event	Britain		Western Germany	
	%	(s.e.)	%	(s.e.)
All children at *t*–1 at risk of poverty entry				
Relative poverty line[a]	11.7	(0.5)	6.3	(0.5)
Relative line, transitions adjusted[b]	7.1	(0.4)	3.9	(0.4)
Absolute poverty line[c]	9.0	(0.4)	7.0	(0.5)
Poorest quintile line[d]	9.9	(0.5)	8.4	(0.6)
Household size rose (but remained in married couple household)				
Relative poverty line[a]	18.0	(2.4)	9.0	(1.6)
Relative line, transitions adjusted[b]	14.0	(2.4)	4.6	(1.2)
Absolute poverty line[c]	17.9	(2.4)	9.7	(1.6)
Poorest quintile line[d]	18.2	(2.4)	15.3	(2.3)
Joined lone parent household				
Relative poverty line[a]	61.8	(4.1)	58.9	(7.2)
Relative line, transitions adjusted[b]	55.5	(4.1)	54.4	(7.4)
Absolute poverty line[c]	59.0	(4.0)	60.9	(7.2)
Poorest quintile line[d]	62.5	(4.1)	59.1	(7.9)
Lost 1+ worker(s)				
Relative poverty line[a]	23.0	(1.6)	20.0	(2.5)
Relative line, transitions adjusted[b]	18.3	(1.5)	15.9	(2.4)
Absolute poverty line[c]	21.5	(1.5)	20.3	(2.5)
Poorest quintile line[d]	23.0	(1.6)	22.1	(2.6)
Both of above				
Relative poverty line[a]	64.7	(5.0)	65.1	(6.9)
Relative line, transitions adjusted[b]	59.1	(5.2)	60.0	(7.3)
Absolute poverty line[c]	62.7	(5.1)	67.0	(6.8)
Poorest quintile line[d]	65.8	(5.0)	66.0	(7.5)
Lost 1+ full-time worker(s)				
Relative poverty line[a]	22.0	(1.6)	21.5	(2.6)
Relative line, transitions adjusted[b]	17.9	(1.5)	18.0	(2.6)
Absolute poverty line[c]	20.4	(1.6)	22.5	(2.6)
Poorest quintile line[d]	22.1	(1.6)	23.3	(2.8)
Labour earnings fell by 20% or more (number of workers unchanged)				
Relative poverty line[a]	27.7	(2.5)	19.3	(2.6)
Relative line, transitions adjusted[b]	20.0	(2.3)	11.1	(1.7)
Absolute poverty line[c]	25.2	(2.4)	21.1	(2.7)
Poorest quintile line[d]	28.0	(2.5)	25.5	(2.9)
Children newborn at *t*				
Relative poverty line[a]	27.2	(1.5)	25.9	(5.9)
Relative line, transitions adjusted[b]	27.2	(1.5)	25.9	(5.9)
Absolute poverty line[c]	26.0	(1.5)	26.1	(5.9)
Poorest quintile line[d]	27.5	(1.5)	33.4	(5.7)

Standard errors (adjusted for repeated observations per household per year) are shown in parentheses. Events and poverty entries refer to changes between years *t*–1 and *t*; pr(event) estimates as in Table 18. [a]: Poverty line = 60% of contemporary national median income (as in Table 4). [b]: As (a), except poverty entry requires income to fall at least 10 percent below the poverty line. [c]: Poverty line = 60% of 1991 British median income. [d]: Poverty line = twentieth percentile of contemporary national income distribution for all persons.