

POVERTY DYNAMICS IN SIX OECD COUNTRIES**Howard Oxley, Thai Thanh Dang and Pablo Antolín**

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INTRODUCTION

Poverty rates are helpful indicators of the level of poverty in a country during a specific period of time. However, they do not provide important information about the extent of mobility into and out of poverty or about the length of time people remain in poverty. Whether an individual suffers poverty over a long period of time or a short period requires different policy responses. Such information would be then important for policy makers.

The present study complements and extends previous work on trends in income distribution and poverty (Oxley *et al.*, 1999) by examining more closely the dynamics of poverty. This study uses longitudinal data sets, which provide information on individual and household characteristics over time. It examines the following subject areas for six OECD countries for which suitable longitudinal data were available (Canada, Germany, the Netherlands, Sweden, the United Kingdom and the United States):

- Flows into and out of poverty and “events” most closely associated with those transitions, such as getting or losing a job or experiencing divorce;
- Which groups make up the short and longer-term poor;
- Factors affecting the length of time individuals stay in poverty and the risk that people fall back into poverty.

These issues are examined in two ways. First, tabulations give broad orders of magnitude of the flows into and out of poverty, the characteristics of the poor, the “events” associated with these transitions, the duration of poverty spells and the extent of subsequent re-entry into poverty. Second, econometric techniques allow a more precise evaluation of the factors associated with transitions, the duration of spells and the probability of re-entry. However, while these analyses provide a useful characterisation of the nature of poverty, there is no attempt to model household and individual behaviour which underlie transitions into and out of poverty. Thus, conclusions that purport to deal with structural relationships – between poverty programmes and transitions into or out of poverty, for example – need to be drawn with great care. In addition, cross-country comparability of the data is limited, providing another reason to exercise caution in interpreting the results.

The paper is organised as follows. A summary of the main results is presented immediately below. A number of issues concerning the definition of income, poverty

and particular characteristics of the data sets are then briefly addressed. This is followed by an overview of the various factors affecting poverty transitions using some broad indicators of poverty inflows, outflows and duration across countries. The next section looks in greater detail at the factors associated with poverty transitions, followed by an examination of duration and re-entry. Additional technical material is reported in Antolín, Dang and Oxley (1999), covering data sources, methodology and more detailed results.

Main results

Key results of this study are:

- Between 12 and just under 40 per cent of the population across the six countries is touched by poverty over a six-year period, a much larger portion than would be suggested by the “static” poverty rates. Within this group, however, the majority has short spells in poverty. As spells lengthen, the probability of exit falls such that a small group of the population remains in poverty for long periods of time with little chance of exit.
- The probability of exiting poverty falls with previous experiences in poverty. At the same time, there is a high probability of falling back into poverty. Thus, for the longer-term poor, low probability of exit and high probability of re-entry tend to reinforce each other. People with six or more years in poverty (*i.e.* the longer-term poor) typically make up 2-6 per cent of the population. However, because of their long stays in poverty they represent around one-third of the total time all individuals spend in poverty (from 30 to just over 50 per cent if five or more years are considered).
- The tax and transfer system sharply reduces poverty rates, particularly as regards longer-term poverty. The difference in poverty rates pre- and post-taxes-and-transfers is smallest in the United States and largest in Sweden.
- The characteristics of households experiencing shorter spells in poverty tend to be different from those of the longer-term poor. A large share of the longer-term poor would appear to be women, lone parents and elderly single individuals. A significant share of the longer-term poor are in paid work.
- Obtaining or losing employment is particularly important for transitions into and out of poverty. Gaining employment is the main factor in reducing the length of time spent in poverty. Some aspects of this are:
 - A large share of transitions occurs when there are employment/earnings-related “events”, particularly in the case of exits from poverty. The probability of transiting into poverty is generally higher for employment-related “events” than for family-related “events”.

- Households with more than one worker are better protected from poverty and have shorter stays in poverty. Increased employment or hours worked by other household members is an important source of exit from poverty and households which get a second earner appear to shorten their poverty spells by more than households which obtain a first earner. Multiple-earner households may be capable of adjusting labour supply more easily to compensate for job loss or lower earnings of other household members.
- Separations and divorce are usually the main cause of poverty entry than marriage is for poverty exit. The length of stay for female-headed lone-parent households is significantly longer than for other household groups. Employment is usually the main channel for exit of lone-parent households from poverty and acts to reduce the average length of stay significantly.

DEFINING INCOME AND POVERTY AND THE DATA SOURCES

Definition of income and poverty

Following the methodology in OECD (1997a), the focus of attention is the individual (including children), but the unit for calculating income is the household. Individuals are assumed to receive the equivalent disposable income of the household to which they belong. Equivalent income is household disposable income – *i.e.* market income and transfers from government less direct taxes and social security payments of all household members – divided by the square root of the number of individuals in the household. The division by a number less than the size of the household is intended to take account of household economies of scale. This adjustment involves an important element of judgement but has been widely used in other international comparative studies (see Atkinson, Rainwater and Smeeding (1994) for a justification for using this equivalent scale).

To assess the direct impact of the tax and transfer system, the transitions have also been calculated, in some cases, using market income – *i.e.* disposable income plus taxes paid to government and less transfers received from government – but using the poverty threshold calculated with household disposable income. The differences in transitions give some indication of the relative importance of market income and the tax and transfer system in exits from poverty. Indirect effects, such as the impact of incentives arising from the tax and transfer system on household behaviour and, therefore, market income, could not be isolated.

The distribution of income is constructed by ranking individuals on the basis of their equivalent income. The poverty threshold was established at 50 per cent of the median equivalent disposable income, a threshold which, once again, has been

widely used in international comparative studies. Poverty rates¹ presented in OECD (1997a) indicated that using other definitions would significantly affect the level of poverty, but that the trends over time were broadly unchanged. However, where a large number of individuals are grouped in certain segments of the distribution, the pattern of poverty dynamics could be affected.²

Data sources and issues

The focus of this study is not the level of poverty, but the dynamics and persistence of poverty – *i.e.* the flows into and out of poverty and the time spent in poverty. Such work requires data sets that follow individuals through time (panels). Individuals are characterised in two ways: first, in terms of personal characteristics – for example, age, sex and education attainment – and, second, in terms of household characteristics – for example, the income of other household members and the age and employment status of the head of household. Since each individual is followed over time, these data help to identify whether “events” – such as changes in employment within the household – coincide with movements into or out of poverty. Moreover, the length of poverty spells can be determined and estimates made of the relationship between the length of spell and individual or household characteristics.

Relatively few OECD countries have sufficiently developed data sets of this kind. This gap is being rapidly filled in many countries – for example in Europe, through the Eurostat European Community Household panel – but available time spans are generally too short for the kind of analysis carried out here. For these reasons, the analysis in this study covers only six OECD countries – Canada, Germany, the Netherlands, Sweden, the United Kingdom and United States.

Several general points should be noted about these data. First, the time unit is the year, which may not be the most appropriate period for policy purposes (Blank, 1989; Ruggles, 1990; Census Bureau, 1998). Indeed, many countries base access to social assistance benefits on previous monthly income. Thus, the poverty spells of those individuals facing poverty for a month or two, but with high enough income in the rest of the year to bring annual income above the poverty line, would be missed (although one might be less concerned about such households). Ruggles (1990) estimates that using monthly rather than annual data could increase the number of poverty spells by 20-25 per cent in the United States.

Second, due to small sample sizes for those in poverty, in particular in Germany, some problems arise when the data are broken down by characteristic as smaller sub-samples increase the size of sampling error.

Third, rates of entry into and out of poverty are cyclically sensitive (Huff Stevens, 1994; Gottschalk and Moffitt, 1994). While cyclical differences are explicitly taken into account in the econometric analysis, this is not the case for the descriptive presentation presented immediately below.

The nature of the data sets differ between each of these six countries (see Antolín, Dang and Oxley, 1999, for more details). The following points are particularly important in understanding and interpreting the results presented in this paper:

- Data for Germany, the United Kingdom³ and the United States were drawn from sample household surveys, whereas tax files were the main source for Canada, the Netherlands and Sweden. For Canada, a concept referred to as “census families” was used to define households.⁴ For Sweden, all individuals 18 years old or older are considered as independent households (for tax purposes) even though they may be living physically under the same roof.⁵ The data sets based on tax files have much larger sample sizes, but information on individual and household characteristics is more limited.⁶
- The data for the United Kingdom cover only six years: 1991 to 1996. To preserve comparability with other countries, the descriptive sections were limited to the last six years of available data for all countries. Thus, in the next two sections, data cover the last six-year period for all six countries. Estimates of duration make use of all available years (Canada: 1986-95; Germany: 1984-96; Sweden: 1991-1996; the United Kingdom: 1991-96; and the United States: 1980-93).⁷
- Data for Germany and the United States were drawn from the “Panel Survey of Income Dynamic – German Socio-Economic Panel”, PSID-GSOEP Equivalent file which has adjusted the German and US panels to make income variables more comparable. They are available up to 1993 for the United States⁸ and to 1996 for Germany.
- Tax models have been used by national research teams to estimate taxes for Germany, the United Kingdom and the United States. However, for the United Kingdom, pre-tax data are used for the entire period.^{9, 10}
- For Canada, the data are not consistent over time: social assistance benefits were underestimated before 1992 because they were not taxable and hence not included when filing for tax. This appears to have a significant effect on poverty rates, even though those with no other revenue than social assistance would have incomes below the 50 per cent threshold.¹¹

THE DYNAMICS OF POVERTY OVER A SIX-YEAR PERIOD

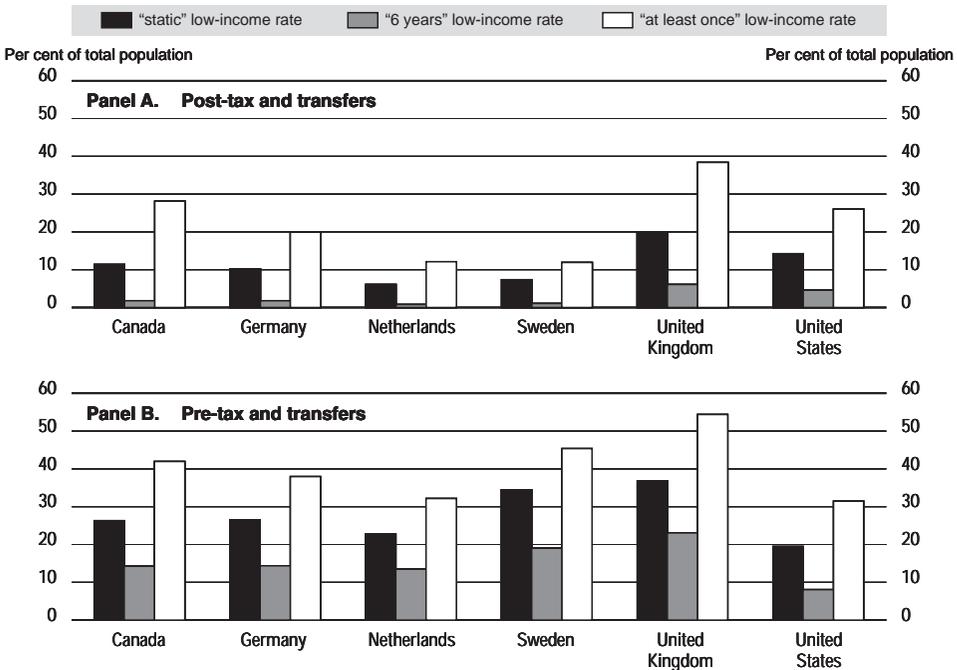
Broad patterns of poverty dynamics

The poverty rate indicates how many are poor at a point in time. However this “snapshot” masks considerable turnover among the poor and variation in the time that the poor stay in poverty. This section presents a fuller picture of poverty patterns over time for both at the level of market income and disposable income.

Three different dimensions of poverty are shown in Figure 1 and Table 1a for the most recent six-year period:

- a) The “static” poverty rate – calculated as the share of poor people in the total population averaged over the period.
- b) The rate of longer-term poverty – calculated as the share of individuals in the total population who were poor in every year through the six-year period (*i.e.* the “6 + years in poverty” rate).
- c) The rate of those poor at least once – calculated as the share of individuals in the total population who were poor at least once through the period (the “at least once in poverty” rate).

Figure 1. Three dimensions of low income: “static” low-income rates and rates for “those always on low income” and “having experienced low income”



Note: The “static” low-income rate is the share of those below the low-income threshold in the total population in each year averaged over the period. The “6 years” low-income rate is the share of individuals who are on low income for the all 6 years as a share of the total population. The rate of persons having experienced low income is the share of those who have experienced at least one year of poverty over the six year period as share of the total population.

Source: OECD.

Table 1a. **Poverty rates, gross rates of entry and exit and the share of individuals in poverty over a six-year period**

Average over the period

		Poverty rates (percentage) ¹			Entrants into poverty ² as percentage of:			Exits from poverty ³ as percentage of:		Percentage of population ⁴	
		Beginning year	Ending year	Average over the period	Poor	Non-poor	Total population	Poor	Total population	Poor throughout the period	Poor at least once over the period
Post-tax and transfers											
Canada	1990-95	15.3	9.1	11.4	35.8	4.3	3.7	41.8	5.0	1.8	28.1
Germany	1991-96	8.5	11.3	10.2	39.6	4.2	3.8	37.0	3.5	1.8	19.9
Netherlands	1991-96	5.9	6.2	6.1	42.4	2.5	2.3	43.7	2.4	0.8	12.1
Sweden	1991-96	7.0	7.8	7.4	24.4	1.8	1.7	36.3	3.0	1.1	11.9
United Kingdom ⁵	1991-96	19.5	20.1	20.0	30.4	7.9	6.3	29.1	5.9	6.1	38.4
United States	1988-93	12.9	16.0	14.2	29.7	4.9	4.2	28.6	3.9	4.6	26.0
Pre-tax and transfers											
Canada	1990-95	24.9	27.1	26.3	18.5	6.7	4.9	17.1	4.5	14.3	42.0
Germany	1991-96	24.7	26.9	26.5	17.6	6.3	4.7	13.8	3.5	14.4	38.0
Netherlands	1991-96	22.0	23.0	22.8	15.2	4.5	3.5	12.3	2.7	13.5	32.2
Sweden	1991-96	28.6	36.4	34.5	13.9	7.6	4.9	11.6	4.1	19.0	45.4
United Kingdom	1991-96	34.7	37.5	36.8	14.4	8.8	5.5	12.3	4.6	23.1	54.4
United States	1988-93	17.4	21.9	19.5	23.9	5.8	4.7	20.4	3.8	8.3	31.5

- . Poverty rate is the number of individuals having equivalent household disposable income below 50 per cent of median equivalent household disposable income, calculated using an equivalence scale of 0.5.
 - . The total number of poor entering poverty between t and $t + 1$, averaged over the period.
 - . The number of poor in period t who exit poverty in $t + 1$, averaged over the period.
 - . The sample includes all those individuals interviewed in each of the six years.
 - . Data for the United Kingdom are less comparable to the other countries because they do not include taxes.
- source: OECD.

Table 1b. Total time over a six-year period that individuals spend in poverty¹

		Share of individuals staying in poverty 1-5+ years ² (percentage)						Share of total years spent in poverty by individuals with 1-5+ years in poverty ³ (percentage)				
		1 year	2 years	3 years	4 years	5+ years	Average	1 year	2 years	3 years	4 years	5+ years
Post-tax and transfers												
Canada	1990-95	35.9	27.0	14.4	9.2	13.5	2.4	14.8	22.1	17.7	15.2	30.3
Germany	1991-96	45.6	19.4	12.0	7.6	15.5	2.4	19.2	16.3	15.2	12.8	36.4
Netherlands	1991-96	48.1	20.6	11.9	7.7	11.6	2.2	21.8	18.8	16.3	14.0	29.1
Sweden	1991-96	41.1	21.9	13.0	8.7	15.3	2.4	16.8	17.9	16.0	14.2	35.0
United Kingdom	1991-96	26.0	19.3	13.6	13.2	27.9	3.1	8.3	12.3	13.0	16.9	49.6
United States	1989-93	33.0	18.5	11.2	10.1	27.3	3.0	11.1	12.4	11.2	13.5	51.8
Pre-tax and transfers												
Canada	1990-95	21.5	13.6	10.6	9.8	44.6	3.8	5.7	7.2	8.5	10.4	68.2
Germany	1991-96	20.6	14.3	9.9	9.2	45.9	3.8	5.4	7.5	7.8	9.6	69.8
Netherlands	1991-96	18.0	11.8	10.2	8.8	51.2	3.8	4.4	5.8	7.5	8.7	73.5
Sweden	1991-96	14.6	11.6	10.6	10.8	52.5	4.2	3.5	5.5	7.6	10.4	73.0
United Kingdom	1991-96	14.8	12.4	9.7	9.5	53.7	4.2	3.5	5.9	7.0	9.1	74.5
United States	1989-93	27.9	15.1	11.5	8.8	36.7	3.4	8.3	8.9	10.2	10.5	62.1

- The sample used includes all those individuals interviewed in each of the six years who have experienced poverty (*i.e.* those included in the last column of Table 1a).
- For example, 45.6 per cent of the poor in Germany suffered poverty for one year and 15.5 per cent for five years or more.
- The following steps were used to calculate the values in each column. First the values in each of the columns of the left hand panel were multiplied (weighted) by the number of years spent in poverty shown in the heading (distinguishing between 5 years and 6+ years). A weight of 6 was given to groups which have six or more years in poverty, thus biasing downward the last column in the right-hand panel. Second, these weighted values were summed over all years to estimate the total number of years spent in poverty by the total population. Third, the values in the columns of the right-hand panel are the results of the first step divided by the total calculated in the second step. The rows sum to 100.

ource: OECD.

Looking first at the data on a post-tax-and-transfer basis, Figure 1 shows that the poverty situation is both better and worse than the static poverty rates suggest. On the one hand, the share of individuals who are poor throughout the period is low (in the range of 1 to 6 per cent of the population). On the other, the share of the population that was in poverty at least once over the six-year period is large (between 12 and 38 per cent of the population). Thus, while poverty is a short-term “event” for many, it is a much more widespread phenomenon than shown by static poverty rates. These data also suggest that there is considerable turnover amongst the poor and this is corroborated in the second and third panels of Table 1*a*. The overall entry and exit rates¹² show that from just under 25 to just over 40 per cent of the pool of the poor turn over every year during the six-year period.¹³

Against this background, Table 1*b* shows the distribution of total time spent in poverty. The left-hand panel shows the share of individuals who, over the six-year period considered, spent from one year to five or more years in poverty,¹⁴ including repeat spells in poverty. In Germany, the Netherlands and Sweden, over 40 per cent remain poor only one year, which is higher than for Canada, the United Kingdom and the United States (26 to 36 per cent). The opposite is the case for those poor for five or more periods who make up 27 to 28 per cent of those touched by poverty for the latter two countries, compared with only around 15 per cent or below for Germany, the Netherlands and Sweden.

The right-hand panel shows the share of the total time spent in poverty by each group. To obtain this measure, the shares in the columns in the left-hand side panel are weighted by the length of time each spends in poverty (one to six years) and, then, divided by the total number of years spent in poverty by the whole population (the sum of the weighted values). This measure takes into account the fact that individuals who have been in poverty longer, weigh more heavily in the total number of person-years spent in poverty over the six-year “window”. The results show why the longer-term poor are so important for policy – those with five or more years in poverty experience as much as 50 per cent (the United Kingdom and the United States) of the time spent in poverty over the six-year period, even though this group makes up a much smaller portion of the overall population of the poor. This group tends to suffer more from poverty and – where they are entitled to support – may potentially absorb a significantly larger share of the total spending on poverty alleviation.

Table 2 examines the length of time individuals who fall into poverty may expect on average to remain there (left-hand panel) and how long they stay out of poverty once they exit (right-hand panel), again on both a pre- and post-tax-and-transfer basis and for the same six-year “window”.¹⁵ Both panels show empirical hazard rates of, respectively, exit (left-hand panel) and re-entry (right-hand panel) – *i.e.* the probability of exit from (or re-entry into) poverty at a certain period, conditional on having been in (or out of) poverty until then. For example, the exit

¹⁶

Table 2. Dynamics of poverty: empirical probabilities of exit and re-entry conditional on duration¹

		Empirical exit hazards ² (rate × 100)					Empirical re-entry hazards ³ (rate × 100)				
		1 year	2 years	3 years	4 years	Average ⁴ duration	1 year	2 years	3 years	4 years	Average ⁴ duration
Post-tax and transfers											
Canada	1990-95	55.7	41.3	38.8	35.4	1.6	16.7	9.7	7.9	7.1	2.2
Germany	1991-96	52.7	42.7	32.0	19.1	1.8	25.6	13.0	17.5	15.5	2.5
Netherlands	1991-96	59.9	49.1	37.2	34.1	1.7	16.9	11.4	7.8	6.1	2.9
Sweden	1991-96	55.9	42.1	35.7	28.3	1.9	16.0	8.5	5.8	5.4	2.1
United Kingdom	1991-96	45.4	37.0	32.3	25.8	2.0	32.8	18.2	11.0	10.0	2.4
United States	1989-93	45.6	31.9	23.1	20.2	2.0	31.8	21.5	18.3	18.6	2.4
Pre-tax and transfers											
Canada	1990-95	41.0	25.3	18.7	14.3	1.9	27.4	16.1	12.2	9.5	2.0
Germany	1991-96	35.4	24.7	17.2	17.1	2.3	29.3	10.2	6.4	3.9	2.5
Netherlands	1991-96	35.3	25.6	17.9	13.6	2.3	23.9	14.4	9.9	9.2	2.6
Sweden	1991-96	28.3	22.0	16.2	11.9	2.0	30.9	15.4	11.0	9.0	1.9
United Kingdom	1991-96	31.6	23.6	16.9	14.7	2.4	28.7	13.1	13.1	7.5	2.5
United States	1989-93	42.8	28.3	11.8	19.8	2.1	35.1	23.5	17.0	20.7	2.4

- Latest available six-year period. All spells of poverty (or spells out of poverty for those having just left poverty) whose beginning date is observed and then followed until they end are selected from the sample used in Table 1b. A spell of poverty (or spells of non-poverty in the case of re-entry) may end because the individual transits out of poverty (in the case of re-entry) or because the individual does not transit before the period ends. Therefore, the sample includes spells starting at $t + 1$, $t + 2$, $t + 3$ and $t + 4$ (e.g. in the case of Germany (1991-1996), 1992, 1993, 1994 and 1995).
 - This is calculated as the ratio of those individuals observed to leave poverty after 1, 2, 3 or 4 years in poverty over the population at risk at the beginning of the period. For example, of those who are still in poverty after 1 year, 41.3 per cent are observed to leave poverty between 1 and 2 years in Canada.
 - The re-entry hazard is calculated as the ratio of those individuals observed to fall back into poverty after 1, 2, 3 or 4 years above the poverty line over the population at risk. For example, of those who left poverty and are still above the poverty line after 1 year, 9.7 per cent will fall back into poverty in Canada between 1 and 2 years.
 - The average length of the lag is calculated by weighting the probability by the spell length and summing.
- source: OECD.

hazard in the second period is the share of individuals exiting poverty as a fraction of those (remaining) poor at the end of the first period. A fall in these hazard rates indicates that the share of those who exit or re-enter declines with the length of time spent in or out of poverty – *i.e.* in the case of exit rates, people who remain have progressively a more difficult time exiting poverty, the longer the poverty period lasts.¹⁶

Table 2 shows that the probability of leaving poverty one year after entry into poverty is around 45 to 60 per cent when the post-tax-and-transfer data is used. This probability is much higher than for pre-tax-and-transfer data (left-hand panel). The right-hand panel shows that there is considerable re-entry into poverty. The importance of re-entry confirms recent research (Gottschalk and Moffitt, 1994; Jarvis and Jenkins, 1997; Huff Stevens, 1995; and Laroche, 1997) and signals considerable recycling into and out of poverty.¹⁷ While cross-country comparisons are difficult because cyclical positions differ across the six countries, Canada, Germany, the Netherlands and Sweden stand out as having particularly high exit rates from poverty and lower re-entry probabilities (less so for Germany) over this period, while the opposite is the case for the United Kingdom and the United States. Finally, the probability of exit (and re-entry) declines as the period lengthens.

Poverty dynamics before and after taxes and transfers

The tax and transfer system can affect poverty transitions in various ways:

- Transfer payments (or reduced taxes) will initially limit the fall into poverty where net taxes and transfers are generous enough to keep the household above the poverty threshold – for example, when individuals receive age pensions on becoming retired or insurance benefits on falling unemployed.
- The tax and transfer system can also result in earlier exit of those having fallen into poverty – for example, there may be delays before disability pensions are granted or older unemployed workers in poverty may receive an age pension large enough to bring them out of poverty on reaching retirement age.
- Finally, as pointed out in OECD (1997), the differences in the tax and transfer systems themselves may affect pre-tax-and-transfer income. For example, generous age-related pensions in Germany may have allowed individuals to withdraw permanently from the labour force, or unemployment benefits may lengthen the period of job search of those of working age.¹⁸

A comparison of the top and bottom panels of Tables 1a, 1b and 2 and Figure 1 suggests that the tax-and-transfer system has a substantial impact on the level of poverty, the time spent in poverty and on the rate of exit from poverty.¹⁹ The left-hand panel of Table 1a confirms the results of OECD (1997) that taxes and transfers sharply reduce the pool of the poor in all six countries – defined in terms of the same poverty threshold. Not surprisingly, the effect is smallest in the United States

while, in Germany, the Netherlands and Sweden, the difference between poverty rates before and after taxes and transfers is more than three times as large. A comparison of the top and bottom panels of Figure 1 shows the particularly marked effect of tax transfers on the long-term poor. Tax and transfers reduce the long-term poverty rate by 12-13 percentage points in Germany, the Netherlands and Canada; the decline was larger in the United Kingdom and Sweden and much smaller in the United States.

Comparing the pre- and post-tax-and-transfer data in Table 1*b* shows that, in all countries, the share of those remaining in poverty over the longer term is smaller after taxes and transfers. On a pre-tax-and-transfer basis, the share of total time spent below the poverty threshold over a longer period rises to between two-thirds and three-quarters of the total time all individuals spend on poverty (Table 1*b*, right panel). The rate at which individuals exit from poverty falls less sharply when moving from a pre-tax-and-transfers to a post-tax-and-transfer basis (although, once again, this is less the case for the United States) (Table 2, bottom panel).

One interpretation of these results is that the tax and transfer system both reduces poverty and shortens poverty stays as well. This effect could result from an increase with the size of income-support programmes or from increased targeting – the reduction of poverty in Table 1*a* is as large in the United Kingdom as is in Sweden – possibly because targeting is likely to lead to greater behavioural response for a given level of expenditure. However, changes in household behaviour in countries with more generous transfer systems could, in principle, also lead to an increase in the degree of poverty and the length of poverty stays on a pre-tax and transfer basis, though there is limited evidence to support this hypothesis in the data presented here. In any case, cross-country comparisons need to be treated with caution, as cyclical differences have not been taken into account.

The characteristics of the poor by length of spell

Variations in family and labour-market characteristics across the longer-term poor, shorter-term poor and non-poor may provide some guidance in the formulation of anti-poverty policies. However, they do not imply that these differences have caused longer or shorter stays in poverty. Table 3 compares the share of individuals with specific characteristics across four groups for all countries: the total and the non-poor populations, the short-term poor (individuals experiencing only one year in poverty over the period) and the long-term poor (individuals who are poor for at least six years).

Several broad patterns appear from Table 3 although they do not necessarily apply to all countries in all cases:

- First, the following groups tend to be over-represented among the longer-term poor: those living in female-headed households, in single-adult

Table 3. **Characteristics of the non-poor, shorter-term poor and longer-term poor**

Per cent share of persons with a specified characteristic in each group

Household characteristics	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹
	Canada				Germany				Netherlands			
					100.0	80.5	5.5	1.8				
Head gender												
Head male	83.7	87.9	70.6	72.4	75.4	79.2	57.5	21.4	80.1	83.0	50.3	50.7
Head female	16.3	12.1	29.4	27.6	24.7	20.8	42.5	78.6	19.9	17.0	49.7	49.3
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Work attachment												
No worker	18.3	13.6	45.3	36.4	18.5	15.2	44.6	75.4	29.8	27.8	41.2	74.5
One worker	31.2	27.9	42.3	43.9	39.3	37.3	48.9	21.3	34.8	34.7	43.3	22.0
Two workers	39.0	44.3	11.3	17.9	34.8	39.2	3.1	3.3	34.8	36.9	15.2	3.4
More than two workers	11.5	14.2	1.1	1.8	7.4	8.3	3.4	0.0	0.6	0.6	0.3	0.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Family type³												
Single adult, no children	19.4	16.1	34.3	24.9	14.4	12.2	25.7	30.2	15.1	14.2	29.7	9.1
Two adults, no children	30.1	32.4	15.5	26.7	41.0	43.6	31.5	18.4	27.7	29.8	11.9	4.4
Single adult, children	4.4	2.1	11.3	11.6	2.7	1.6	10.9	29.4	6.4	4.2	20.1	37.7
Two adults, children	31.5	32.4	33.2	29.2	33.6	34.3	24.8	19.5	48.4	49.4	36.2	48.2
Large families	14.6	16.9	5.7	7.6	8.3	8.3	7.1	2.4	2.4	2.4	2.2	0.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age of household head												
Young-age head	28.3	25.0	38.2	28.6	12.7	10.3	22.8	29.7	6.5	5.6	16.8	14.8
Prime-age head	34.0	35.7	34.8	33.4	45.7	47.3	41.7	33.8	52.9	52.0	53.2	68.8
Older-working-age head	21.8	22.6	21.6	22.0	26.7	27.7	17.6	10.5	23.8	24.6	18.1	12.8
Retirement-age head	15.9	16.7	5.4	16.0	14.9	14.6	17.9	26.0	16.8	17.8	12.0	3.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Education level⁴												
Low education					28.3	26.0	31.0	29.4				
Middle education					52.2	52.7	58.7	64.0				
Higher education					19.5	21.3	10.3	6.6				
					100.0	100.0	100.0	100.0				

Table 3. **Characteristics of the non-poor, shorter-term poor and longer-term poor** (*cont.*)

Per cent share of persons with a specified characteristic in each group

Household characteristics	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹	Total population ¹	Non-poor ¹	Poor 1 year ²	Always poor ¹
	Sweden				United Kingdom				United States			
					100.0	61.6	5.6	6.1	100.0	74.0	3.7	4.6
Head gender												
Head male	64.3	65.8	51.4	53.8	67.7	74.3	53.7	38.4	79.5	87.0	62.8	25.4
Head female	35.7	34.2	48.6	46.2	32.3	25.8	46.3	61.6	20.5	13.0	37.3	74.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Work attachment												
No worker	14.9	14.2	21.1	52.5	25.0	10.7	42.7	91.0	10.7	6.6	17.5	50.0
One worker	37.3	33.9	66.1	42.0	27.2	26.6	33.9	9.0	32.3	29.1	57.3	41.5
Two workers	47.8	51.8	12.7	5.6	36.1	46.4	19.6	0.0	42.4	47.6	21.3	6.9
More than two workers					11.7	16.3	3.8	0.0	14.6	16.8	3.9	1.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Family type³												
Single adult, no children	33.9	29.7	46.0	80.0	10.9	6.2	18.1	40.5	12.3	10.6	21.7	21.2
Two adults, no children	25.5	27.9	8.3	4.9	42.8	49.9	43.2	14.6	29.8	34.4	21.1	8.2
Single adult, children	5.6	5.0	29.5	6.1	4.6	1.1	6.1	21.7	8.1	3.8	14.8	45.7
Two adults, children	34.9	37.3	16.2	8.9	32.4	35.3	21.3	17.3	35.5	37.7	27.8	13.4
Large families					9.2	7.6	11.3	6.0	14.3	13.6	14.6	11.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Age of household head												
Young-age head	21.5	17.6	41.0	35.6	15.5	13.3	17.6	23.5	19.7	15.7	30.5	35.8
Prime-age head	46.0	47.9	43.2	32.7	47.7	53.6	39.9	23.4	51.7	55.3	43.3	37.5
Older-working-age head	18.5	19.9	8.5	12.1	20.4	22.0	23.0	11.6	19.1	20.6	14.7	12.0
Retirement-age head	14.0	14.7	7.2	19.5	16.4	11.1	19.2	41.5	9.4	8.3	11.5	14.7
	100.0	100.0	100.0	100.0	100.0	100.0	99.7	100.0	100.0	100.0	100.0	100.0
Education level⁴												
Low education	36.8	36.6	32.0	56.3	33.1	24.4	34.7	63.9	18.9	12.2	26.4	58.2
Middle education	42.5	41.6	49.6	34.7	36.9	38.0	38.9	29.1	36.9	35.5	41.1	30.5
Higher education	20.7	21.8	18.3	8.9	30.0	37.6	26.4	7.0	44.2	52.4	32.5	11.4
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

ote: For definitions see Antolin, Dang and Oxley (1999), Annex 1, Section 1. Characteristics refer to the household head.

. Characteristics defined at the beginning of the period.

. Individuals who are poor in only one year over the period, excluding first and last year.

. Young, prime-age, older-working-age, and retirement-age refer respectively to households with a head below 30, between 31 and below 50, between 51 and 65, and above 65 years old.

. Low education is less than higher school; middle is completed high school and higher is more than high-school education.

ource: OECD.

households with children (except in Sweden), in households headed by an individual of retirement age (except in Canada and the Netherlands) or by an young individual (except in Canada),²⁰ in households where the head has lower education (Germany excluded²¹), and in households where there is no worker (and also one worker in Canada, Sweden and the United States). The concentration of the longer-term poor among these groups probably reflects the fact that many of these conditions, when they occur, tend to last for a long time: for example, in the United Kingdom, lone-parenthood lasts, on average, for around six years (McKay, 1998) and for, older people, incomes change little over time, such that those in poverty tend to stay there for a long period (Census Bureau, 1998).

- Second, there are significant differences between the shorter and the longer-term poor and, on some characteristics, the short-term poor appear to be closer to the non-poor than to the longer-term poor. In particular, the short-term poor have a considerably larger share of households with at least one earner and are less concentrated among households which are headed by women, single adults, lone parents and the less educated. Thus, they appear to come from a wider span of the population.
- Finally, key characteristics of the longer-term poor tend to differ across countries: in both Germany and the United States, women-headed households and lone parents appear particularly important. However, in the United States around 50 percent of the longer-term poor belong to households with at least one worker, as compared with only around 25 per cent in Germany.²² In Canada, over 60 per cent of the long term poor belong to households with at least one worker. In the United Kingdom, key features are the concentration of the longer-term poor in non-working households, female-headed households, among households headed by an elderly person and among single adults. Sweden does not seem to have a strong concentration of long-term poverty on lone parents households, and the Netherlands does not appear to have a long-term old-age poverty problem.

FACTORS ASSOCIATED WITH POVERTY TRANSITIONS

This section examines whether transitions may be linked to certain “events” which can propel households into poverty or permit them to exit. An initial question regarding poverty transitions concerns the size of the income changes when transitions occur. Small movements in the income of households clustered near the poverty thresholds may lead to many transitions into and out of poverty, but these

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may not be economically or socially significant. Antolín, Dang and Oxley (1999) show that the number of poverty transitions which result from relatively small changes in income around the poverty line are very small.²³

“Events” and transitions

Poverty transitions can result from changes in income and in household demography and, very often, such “events” occur at the same time.²⁴ For example, changes in household size (such as the arrival of a child) affect individual equivalent incomes because total household income is spread among more household members. Alternatively, in the case of separations or divorce, economies of scale are lost as two new households are set up even if the two adults do not change their labour-market status; and, in cases where the mother takes legal responsibility for the children, the income of the original household is not always re-allocated in line with the respective needs of the two new households. The material presented in this section provides a clearer picture of factors which accompany transitions. But the results do not purport to “explain” poverty transitions: changes in both income and household size are, themselves, driven by a number of inter-related decisions about household labour supply, household formation and fertility, as well as government tax and transfer policies.²⁵

Table 4 provides some broad indications about which income components are key to transitions. Transitions into and out of poverty are broken down according to the income component which showed the largest change at the time the transition occurred.²⁶ As can be seen, cases where the change in employment income was biggest make up the largest share of total transitions (except in the Netherlands), suggesting that labour-market developments are crucial for understanding movements into and out of poverty. There is some difference across countries in the importance of “public transfers” and “other market income” (which includes private pension income, capital income and private transfers). Cases where transfers contribute most to the total income change are more important in all countries but the United States. In Canada and the Netherlands, transfers are the single most important change. In the Netherlands, taxes contribute to a larger extent than in the other countries.

Which “events” have households experienced when they enter and exit poverty?

Table 5 explores in more detail the importance of changes in family structure and in the labour market which are associated with poverty transitions.²⁷ For the purposes of this analysis, the total number of transitions is broken down into three broad categories. (Further detail on category definition is presented in Antolín, Dang and Oxley, 1999.)

Table 4. **Frequency of poverty-related events by income component**

Events as a per cent share of transitions into and out of poverty

	Canada	Germany	Netherlands	Sweden	United Kingdom	United States
Total population						
Transitions into poverty: Income components with the largest change at time of transition						
Earnings of head	25.6	54.3	22.8	50.3	45.0	56.7
Earnings of spouse	16.7	11.5	9.5	5.2	12.5	9.2
Other earnings	15.4	2.2	6.1	0.5	3.1	7.4
Capital and other market income	9.0	9.9	12.2	13.8	4.9	14.5
Transfers	28.5	21.4	23.6	24.0	34.1	7.8
Taxes	4.8	0.1	20.3	3.9	..	0.9
Non-identified	0.0	0.4	5.6	2.4	0.4	3.6
Sub-total: earnings-related	57.7	68.1	38.4	55.9	60.5	73.2
Transitions out of poverty: Income components with the largest change at time of transition						
Earnings of head	38.1	46.9	22.6	52.4	36.8	60.7
Earnings of spouse	10.0	11.2	8.4	3.1	12.1	11.3
Other earnings	5.9	2.9	9.1	0.4	5.1	6.6
Capital and other market income	5.2	10.3	14.7	9.0	5.0	10.8
Transfers	38.9	27.9	27.0	30.6	40.9	7.9
Taxes	1.0	0.5	14.7	2.6	..	1.4
Non-identified	1.0	0.3	3.6	2.0	0.0	1.4
Sub-total: earnings-related	54.0	61.0	40.1	55.8	54.0	78.5
Working-age population ¹						
Transitions into poverty: Income components with the largest change at time of transition						
Earnings of head	22.1	59.5	24.4	53.4	54.5	63.0
Earnings of spouse	18.4	12.0	9.8	5.5	15.2	10.1
Other earnings	16.6	2.2	6.4	0.5	3.0	6.4
Capital and other market income	9.0	8.5	10.0	11.5	1.4	9.5
Transfers	29.3	17.5	24.3	24.0	25.7	7.8
Taxes	4.6	0.2	19.3	2.7	..	0.7
Non-identified	0.0	0.2	5.9	2.4	0.3	2.6
Sub-total: earnings-related	57.0	73.7	40.6	59.4	72.7	79.4
Transitions out of poverty: Income components with the largest change at time of transition						
Earnings of head	44.4	51.4	24.7	54.5	44.9	64.4
Earnings of spouse	11.8	12.3	9.2	3.2	15.2	12.0
Other earnings	6.0	3.2	9.6	0.4	5.6	6.2
Capital and other market income	4.0	9.1	11.2	7.8	2.0	7.9
Transfers	31.7	23.0	27.2	30.2	32.3	7.4
Taxes	1.0	0.6	14.3	2.0	..	1.2
Non-identified	1.0	0.4	3.8	2.0	0.0	0.9
Sub-total: earnings-related	62.2	66.9	43.5	58.0	65.7	82.6

Note: The income changes were constrained to be of the same sign as the change in total income (except taxes). The change in the components was then computed and the component with the largest change was identified with the transition. Covers most recent six-year period of available data.

1. Refers to individuals belonging to households with a working age head.

Source: OECD.

Table 5. Frequency of “events” associated with poverty transitions

Per cent share of total transitions

		Entries		Exits	
		Total population	Working-age population ¹	Total population	Working-age population ¹
Canada	Transitions by type:				
	Employment/earnings-related	26.1	28.1	38.4	44.4
	<i>of which:</i> Change in employment accompanied by increasing needs	0.1	0.1	0.2	0.3
	Family structure-related	19.0	20.4	16.1	28.1
	Other factors (no change in employment or family status) ²	37.9	33.7	28.2	19.7
	<i>of which:</i> Unemployed	13.3	7.1	19.4	10.3
	Employed	24.6	26.6	8.8	9.4
	Unidentified	17.0	17.8	17.3	7.8
Germany	Transitions by type:				
	Employment/earnings-related	47.5	51.5	47.5	52.4
	<i>of which:</i> Change in employment accompanied by increasing needs	8.3	9.0	1.3	1.5
	Family structure-related	23.9	24.3	13.1	14.5
	Other factors (no change in employment or family status) ²	23.1	18.2	32.1	25.4
	<i>of which:</i> Unemployed	16.0	10.5	20.1	13.1
	Employed	7.1	7.7	12.0	12.3
	Unidentified	5.5	6.0	7.3	7.7
Sweden	Transitions by type:				
	Employment/earnings-related	50.4	53.3	51.0	53.1
	<i>of which:</i> Change in employment accompanied by increasing needs	11.5	12.4	0.5	0.6
	Family structure-related	16.1	15.9	11.6	11.8
	Other factors (no change in employment or family status) ²	28.5	25.8	32.4	30.3
	<i>of which:</i> Unemployed	9.6	6.1	9.0	6.3
	Employed	18.9	19.7	23.4	24.0
	Unidentified	5.0	5.0	5.0	4.8
United Kingdom	Transitions by type:				
	Employment/earnings-related	28.3	35.2	41.6	52.5
	<i>of which:</i> Change in employment accompanied by increasing needs	4.7	6.2	1.1	1.4
	Family structure-related	23.8	26.9	8.3	9.4
	Other factors (no change in employment or family status) ²	37.1	24.4	41.4	27.1
	<i>of which:</i> Unemployed	32.8	19.2	35.4	19.7
	Employed	4.3	5.2	6.0	7.4
	Unidentified	10.8	13.5	8.7	11.1

Table 5. **Frequency of “events” associated with poverty transitions** (cont.)

Per cent share of total transitions

		Entries		Exits	
		Total population	Working-age population ¹	Total population	Working-age population ¹
United States	Transitions by type:				
	Employment/earnings-related	53.7	57.4	63.9	66.6
	<i>of which:</i> Change in employment accompanied by increasing needs	10.1	11.1	2.9	3.0
	Family structure-related	24.1	25.3	12.5	13.5
	Other factors (no change in employment or family status) ²	13.9	8.4	11.4	7.7
	<i>of which:</i> Unemployed	9.6	3.8	6.8	2.8
	Employed	4.3	4.6	4.6	4.9
Unidentified	8.3	8.9	12.2	12.2	

Note: See Antolin, Dang and Oxley (1999), Annex 1, Section 2, for description. Covers most recent six-year period of available data.

1. Refers to individuals in households with a working-age head.

2. Households which were employed or unemployed in both periods. Largely transfer-related.

Source: OECD.

- Transitions associated with employment/earnings-related “events” including changes in employment status, hours worked and wage rates. Cases where employment changes occurred at the same time as changes in household needs are also included and this sub-category is indicated separately.²⁸
- Transitions associated with family-structure-related “events” – mainly cases related to separation/divorce, partnerships/marriage and children or other family members forming new households.
- Transitions associated with other “events” – which covers all transitions where there were no change in either or employment/earnings or family-status “events”. These were mainly cases where there were large changes in transfer payments.

Table 5 indicates that transitions which were concomitant with employment/earnings-related “events” made up the largest group, with the exception of entries into poverty for Canada and the United Kingdom, where “other” transitions among the already unemployed/retired households and changes in family structure weigh heavily. A comparison of the two columns indicates that the role of employment/earnings is more marked at the level of the population living in households with a working-age head, as this group excludes a large number of the retired and this difference is particularly marked for the United Kingdom. Further, the importance of employment/earnings-related “events” is even more marked for exits where they

make up around 50 per cent (Germany, Sweden, the United Kingdom) to over 60 per cent (the United States) of all exits for those in households with a working-age head. In contrast, family-status-related “events” are relatively more important for entries than for exits. Finally, “other” transitions for the unemployed – which appear largely related to the transfer payments – are largest in the United Kingdom and smallest in the United States. These differences may reflect transfer systems – *e.g.* for United States, unemployment insurance coverage is low and the duration of benefits short and, hence, there are few transitions where transfers make up the largest component of the total change in income. Alternatively, it may reflect the fact that unemployment rates are lower in the United States.

Table 6 cross-tabulates these three categories by family type for the population living in households with a working-age head²⁹ to show better where “events” are concentrated. Family characteristics in the top row are defined for in the period the individuals are in poverty – *i.e.* after the transition into poverty for entrants and before the transition out of poverty for exits.³⁰

The first and second rows for each country show, respectively, the share of each family type in total transitions and in the total population. A comparison of these two rows suggests that, Sweden excepted, lone-parent households experience higher rates of both exit and entry than would be expected on the basis of their share in the population. This is also the case for single-adult households without children, again, in all countries but Sweden. Looking at the pattern of entries across family types, a large share of poor single-adult households, both with and without children, have entered poverty because of family-structure-related changes or because of transfer-related changes while unemployed (included in “Other factors”), although this is less so in the United States where the share of lone-parent households is larger and the majority of these work (see Burniaux *et al.*, 1998). In Sweden, on the contrary, employment-related events are the single most important factor for entries. Exits from poverty for single households with and without children are mainly dominated by employment – many of those suffering a household breakdown tend to exit from poverty by finding jobs or working longer hours and relatively few exit through finding another partner.³¹ This group makes considerable effort to become self-supporting.

A key difference across countries is the much larger share of transitions out of poverty which appear to be transfer-related (included in “Other factors”) in Germany, to a lesser extent in Canada, and, particularly, in the United Kingdom. Transfer-related transitions appear to be more frequent in households with no children in the UK and in single adult households – with and without children – in Germany.³²

Table 6. **Frequency of “events” associated with poverty transitions: by family type^{1, 2}**

		Per cent share of total transitions				
		Single adult, no child	2 adults, no children	Single adult, children	2 adults, children	
		Entries				
Canada	Share of family type in total sample	17.9	42.0	3.4	36.7	
	Share of family type in total transitions	23.3	28.5	11.8	36.5	
	Transitions which were:					
	Employment/earnings-related <i>of which:</i> Change in employment accompanied by increasing needs	20.4	31.7	13.3	34.9	
	Family structure-related	..	0.0	0.0	0.3	
	Other factors (no change in employment or family status) ²	30.0	14.5	54.6	7.5	
	<i>of which:</i> Unemployed	44.8	34.4	20.1	29.7	
	Employed	12.6	9.1	7.8	0.6	
	Unidentified	32.2	25.3	12.3	29.1	
	Unidentified	4.8	19.4	12.0	27.9	
Germany	Share of family type in total sample	8.8	38.4	2.3	50.4	
	Share of family type in total transitions	18.5	25.3	11.2	45.0	
	Transitions which were:					
	Employment/earnings-related <i>of which:</i> Change in employment accompanied by increasing needs	33.8	55.6	23.5	69.0	
	Family structure-related	..	7.0	1.3	14.9	
	Other factors (no change in employment or family status) ²	41.9	24.4	51.3	11.4	
	<i>of which:</i> Unemployed	21.5	14.4	21.9	11.8	
	Employed	18.4	10.5	19.1	6.1	
	Unidentified	3.1	4.0	2.8	5.6	
	Unidentified	2.8	5.6	3.3	7.8	
Sweden	Share of family type in total sample	60.5	4.0	22.0	13.5	
	Share of family type in total transitions	52.3	4.7	26.9	16.1	
	Transitions which were:					
	Employment/earnings-related <i>of which:</i> Change in employment accompanied by increasing needs	55.0	39.1	56.9	45.2	
	Family structure-related	..	4.9	39.4	9.1	
	Other factors (no change in employment or family status)	5.4	28.6	26.6	29.0	
	<i>of which:</i> Unemployed	39.6	32.3	16.5	25.8	
	Employed	8.9	3.9	3.8	1.4	
	Unidentified	30.7	28.4	12.7	24.3	
	Unidentified	..	..	..	..

Table 6. **Frequency of “events” associated with poverty transitions: by family type^{1, 2} (cont.)**

Per cent share of total transitions

		Single adult, no child	2 adults, no children	Single adult, children	2 adults, children	
		Entries				
United Kingdom	Share of family type in total sample	10.4	40.6	4.3	44.7	
	Share of family type in total transitions	23.6	27.3	12.8	36.4	
	Transitions which were:					
	Employment/earnings-related	12.2	32.4	15.4	53.6	
	<i>of which:</i> Change in employment accompanied by increasing needs	..	2.4	2.0	11.4	
	Family structure-related	48.6	21.5	62.2	9.3	
	Other factors (no change in employment or family status)	31.2	29.5	16.0	20.5	
	<i>of which:</i> Unemployed	29.7	25.8	13.7	14.7	
	Employed	1.4	3.6	2.3	5.8	
	Unidentified	8.0	16.7	6.4	16.5	
United States	Share of family type in total sample	9.5	24.7	10.1	55.7	
	Share of family type in total transitions	16.4	17.1	21.1	45.3	
	Transitions which were:					
	Employment/earnings-related	46.3	62.1	37.1	69.0	
	<i>of which:</i> Change in employment accompanied by increasing needs	..	7.7	5.5	17.6	
	Family structure-related	33.8	18.6	50.7	12.5	
	Other factors (no change in employment or family status)	16.9	10.4	6.7	6.3	
	<i>of which:</i> Unemployed	11.7	6.7	3.3	1.1	
	Employed	5.2	3.7	3.4	5.2	
	Unidentified	3.0	8.9	5.5	12.2	

“Events” and the probability of transitions

The frequencies shown in Tables 5 and 6 show which “events” are associated with transitions but do not show whether those experiencing an “event” are more likely to enter or exit poverty. A number of transitions occur where there is no change in either employment or work attachment and, at the same time, changes in employment and family status can happen without any associated poverty transitions. Table 7 presents estimates of which “events” are more highly correlated with the movements into and out of poverty using logit models. The estimating equations

Table 6. **Frequency of “events” associated with poverty transitions: by family type^{1, 2} (cont.)**

Per cent share of total transitions

		Single adult, no child	2 adults, no children	Single adult, children	2 adults, children	
		Exits				
Canada	Share of family type in total sample	17.9	42.0	3.4	36.7	
	Share of family type in total transitions	23.4	31.2	11.7	33.7	
	Transitions which were:					
	Employment/earnings-related	30.2	29.2	22.3	58.2	
	<i>of which:</i> Change in employment accompanied by decreasing needs	..	..	..	..
	Family structure-related	26.5	7.1	40.8	8.5	
	Other factors (no change in employment or family status) ²	37.1	39.4	29.0	11.2	
	<i>of which:</i> Unemployed	29.6	30.4	17.3	2.7	
	Employed	7.5	9.0	11.7	8.5	
	Unidentified	6.2	24.3	7.9	22.1	
Germany	Share of family type in total sample	8.8	38.4	2.3	50.4	
	Share of family type in total transitions	19.2	22.5	10.4	47.8	
	Transitions which were:					
	Employment/earnings-related	51.2	53.9	47.2	66.0	
	<i>of which:</i> Change in employment accompanied by decreasing needs	..	0.5	..	2.5	
	Family structure-related	17.5	12.9	25.0	11.1	
	Other factors (no change in employment or family status) ²	24.8	22.1	23.6	14.7	
	<i>of which:</i> Unemployed	21.4	17.1	18.3	8.2	
	Employed	3.4	5.1	5.3	6.5	
	Unidentified	6.5	11.1	4.2	8.2	
Sweden	Share of family type in total sample	60.5	4.0	22.0	13.5	
	Share of family type in total transitions	69.5	3.2	16.7	10.7	
	Transitions which were:					
	Employment/earnings-related	58.6	30.7	41.0	41.8	
	<i>of which:</i> Change in employment accompanied by decreasing needs	..	..	..	5.4
	Family structure-related	3.5	27.4	30.5	31.1	
	Other factors (no change in employment or family status) ²	37.9	41.9	28.5	27.1	
	<i>of which:</i> Unemployed	6.8	5.5	7.1	2.2	
	Employed	31.1	36.4	21.4	24.9	
	Unidentified	..	..	..	..

Table 6. Frequency of “events” associated with poverty transitions: by family type^{1, 2} (cont.)

Per cent share of total transitions

		Single adult, no child	2 adults, no children	Single adult, children	2 adults, children	
		Exits				
United Kingdom	Share of family type in total sample	10.4	40.6	4.3	44.7	
	Share of family type in total transitions	20.6	28.0	11.5	39.9	
	Transitions which were:					
	Employment/earnings-related	38.3	40.7	72.2	57.3	
	<i>of which:</i> Change in employment accompanied by decreasing needs	..	1.4	..	2.1	
	Family structure-related	8.1	10.4	0.0	12.0	
	Other factors (no change in employment or family status)	49.0	32.7	24.6	17.7	
	<i>of which:</i> Unemployed	44.4	28.0	18.1	10.9	
	Employed	4.6	4.7	6.5	6.8	
	Unidentified	4.5	16.2	3.2	12.9	
United States	Share of family type in total sample	9.5	24.7	10.1	55.7	
	Share of family type in total transitions	13.9	13.9	20.3	51.9	
	Transitions which were:					
	Employment/earnings-related	71.5	60.3	63.5	67.9	
	<i>of which:</i> Change in employment accompanied by decreasing needs	..	2.3	..	4.9	
	Family structure-related	8.0	17.7	22.9	10.1	
	Other factors (no change in employment or family status)	15.7	10.4	7.3	5.6	
	<i>of which:</i> Unemployed	8.8	6.4	3.3	0.6	
	Employed	6.9	4.0	4.0	5.0	
	Unidentified	4.8	11.6	6.3	16.4	

1. Refers to individuals in households with a working-age head.

2. Household characteristics are defined in the period after entry into poverty and the period before exit.

Source: OECD.

included, as right-hand-side variables: *a*) employment and family-related “events” underlying Tables 5 and 6 which occurred at the time of the transition; and *b*) a number of control variables defined in the period before transition occurred.³³ The coefficients represent the impact of the various “events”, other factors held constant, on the probability of exit and entry, relative to a reference person who has had no change in household and family status. A higher value indicates a higher chance of a poverty transition when an “event” occurs; point estimates should be interpreted

Table 7. "Events" associated with entry into and exit from poverty:
 logit estimates

Entry	Canada	Germany	Sweden	United Kingdom	United States
Variables					
Intercept	-2.21**	-2.82**	-3.32**	-2.29**	-2.79**
No change in employment status and family status	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Employment status change/no change in family status					
Loss of all workers	2.34**	2.81**	1.94**	1.65**	2.32**
Loss of some but not all workers	0.71**	0.76**	0.92**	0.03	1.35**
One worker fall in hours	..	2.03**	..	1.03**	1.69**
More than one worker fall in hours	..	0.15	..	-1.48**	0.18
Other change	-0.31**	-0.78**	0.58**	0.05	-0.45**
Change in family status/no change in employment status					
Separations/divorce (spouse becomes head)	..	2.74**	0.37**	0.72**	1.14**
Child becomes head	..	2.38**	..	0.47*	1.59**
Other becomes head	..	1.89*	..	0.67*	-0.25
Arrival of children	..	0.01	1.36**	0.89**	0.39**
More members	..	1.38**	1.15**	-0.42	1.16**
Less members	..	0.04	0.08	0.37*	-0.13
Simultaneous changes in employment and family status					
<i>Loss of all workers</i>					
Separations/divorce (spouse becomes head)	..	5.36**	2.38**	3.75**	3.95**
Child becomes head	..	5.62**	..	5.05**	..
Other adult becomes head	..	..	..	4.57**	2.68**
Arrival of children	..	3.71**	..	2.23**	3.13**
More members	..	4.02**	..	..	..
Less members	..	3.36**	2.70**	2.46**	3.13**
<i>Loss of some but not all workers</i>					
Separations/divorce (spouse becomes head)	2.08**	2.91**	2.08**	1.12**	3.34**
Child becomes head	..	2.57**	..	1.03**	2.79**
Other adult becomes head	..	3.22**	..	-0.28	1.28**
Arrival of children	1.04**	1.45**	0.36*	-0.43	1.60**
More members	0.88**	2.03**	..	..	1.87**
Less members	0.76**	0.80**	1.35**	0.43**	0.83**
<i>One worker fall in hours</i>					
Separations/divorce (spouse becomes head)	..	1.80	..	2.85**	4.40**
Child becomes head	..	5.62**	..	3.12*	4.27**
Other adult becomes head	..	..	..	..	1.51
Arrival of children	..	3.21**	..	..	3.42**
More members	..	3.92**	..	..	1.87**
Less members	..	2.65**	..	2.33**	2.05**

Table 7. "Events" associated with entry into and exit from poverty: logit estimates (cont.)

Entry	Canada	Germany	Sweden	United Kingdom	United States
<i>More than one worker fall in hours</i>					
Separations/divorce (spouse becomes head)	..	5.45**	..	..	2.75**
Child becomes head	..	..	..	..	1.29**
Other adult becomes head	..	..	..	..	1.12
Arrival of children	..	..	..	..	0.14
More members	..	..	..	..	0.98*
Less members	..	2.65**	..	..	-1.05
<i>Other change in employment</i>					
Separations/divorce (spouse becomes head)	..	0.83	-0.61**	0.83**	1.48**
Child becomes head	..	0.45	..	0.25	1.64
Other adult becomes head	..	0.29	..	1.99**	-1.47**
Arrival of children	..	0.73	1.14**	0.66**	0.28
More members	-0.76**	-0.84	-1.39**	-0.68**	0.02
Less members	0.18	-0.01	0.96**	1.10**	-0.22
<i>Control variables</i>					
Young-age head	0.31**	0.45**	0.75**	0.31**	0.47**
Prime-age head	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>base</i>	<i>Base</i>
Older working-age head	-0.18**	-0.37**	-0.75**	-0.09	-0.12*
Retirement-age head	-0.71**	-0.17	-1.09**	0.62**	0.27**
Low-education head	..	1.12**	0.50**	0.62**	1.37**
Mid-education head	..	0.62**	0.24**	0.33**	0.63**
Higher-education head	..	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Never poor	-1.43**	-2.21**	-1.83**	-2.25**	-1.73**
One year in poverty	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Two years in poverty	0.54**	0.30	0.38**	0.20*	0.67**
Three years in poverty	..	0.84**	0.64**	1.05**	0.90**
Period (t; t + 1)	0.37**	0.15	0.59**	1.18**	0.49**
Period (t + 1; t + 2)	0.21**	0.41**	0.16**	0.96**	0.26**
Period (t + 2; t + 3))	0.13**	0.33**	0.08**	0.56**	-0.05
Period (t + 3; t + 4)	0.09**	0.19*	-0.04	0.36**	0.25**
Period (t + 4; t + 5)	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Score¹	26 509⁺	6 066⁺	60 042⁺	6 580⁺	10 778⁺
Schwartz criterion²	7 264	9 888	175 389	15 711	21 367
N	661 740	37 870	1 207 441	36 106	57 263

* Significant at 5 per cent confidence level.

** Significant at 1 per cent confidence level.

+ Significant with a p-value of 0.0001.

.. Information not available.

1. The score statistic gives a test for the joint significance of the explanatory variables in the model.

2. The Schwartz criterion is primarily used for comparing different models for the same data. In general, when comparing models, lower values of this criterion indicates a better model.

Additional models and methodology are to be found in Antolin, Dang and Oxley (1999), Annex B.

Table 7. "Events" associated with entry into and exit from poverty: logit estimates (cont.)

Exit	Canada	Germany	Sweden	United Kingdom	United States
Variables					
Intercept	-0.15**	0.15	-0.11**	-0.25**	-0.80**
No change in employment status and family status	..	Base	Base	Base	Base
Employment change/no change in family status					
From zero to at least one worker	0.72**	0.53**	-0.11**	0.45**	0.39**
Additional workers in working households	1.05**	0.99**	1.20**	1.12**	1.61**
One worker increase in hours	..	1.96**	..	0.12	1.53**
More than one worker increase in hours	..	-0.47**	..	0.33	2.01**
Other change	-0.39	-0.20	-0.85**	0.64**	-0.06
Change in family status/no change in employment status					
Head female becomes spouse	0.83**	..	1.21**	0.01	0.31
Child becomes spouse	..	..	..	1.29**	0.94
Other becomes spouse	..	1.69**	..	..	-0.17
Arrival of children	-0.04	0.25	0.19	-0.26	-0.40
More members	0.33*	..	..	0.28	-0.48
Less members	0.53**	0.57	0.62**	0.75	1.36**
Simultaneous changes in employment and family status					
<i>From zero to at least one worker</i>					
Marriage (head female becomes spouse)	1.97**	0.30	1.62**	-0.28	2.38**
Marriage (child becomes spouse)	..	..	..	1.43	..
Marriage (other becomes spouse)	..	2.00**	..	..	2.16**
Arrival of children	0.43	0.05	..	..	0.84
More members	1.82**	..	..	3.92**	0.58
Less members	0.88**	0.63	1.15	..	1.28*
<i>Additional work in working households</i>					
Head female becomes spouse	2.72**	-0.13	3.22**	0.88*	3.56**
Child becomes spouse	..	..	..	..	3.37**
Other becomes spouse	..	..	..	..	2.41**
Arrival of children	0.68*	..	-0.70	..	1.89**
More members	1.73**	2.38*	..	..	1.36**
Less members	1.38**	-1.18	1.57**	..	2.59**
<i>One worker increase in hours</i>					
Head female becomes spouse	..	..	..	..	..
Child becomes spouse	..	..	..	..	..
Other becomes spouse	..	..	..	..	1.81
Arrival of children	..	0.83	..	..	0.92*
More members	..	..	..	..	..
Less members	..	..	..	..	..

Table 7. "Events" associated with entry into and exit from poverty: logit estimates (cont.)

Exit	Canada	Germany	Sweden	United Kingdom	United States
<i>Two workers increase in hours</i>					
Head female becomes spouse	..	..	..	..	3.49**
Child becomes spouse	..	..	..	..	..
Other becomes spouse	..	..	..	..	3.24**
Arrival of children	..	..	..	..	2.24**
More members	..	..	..	..	..
Less members	..	..	..	..	2.74**
<i>Other change in employment</i>					
Head female becomes spouse	..	..	0.17	0.95**	0.68
Child becomes spouse	..	..	..	0.62	0.67
Other becomes spouse	..	..	..	..	-0.10
Arrival of children	..	..	0.78	1.09**	-0.13
More members	..	..	..	0.07*	2.45**
Less members	..	..	-0.62	-0.07**	0.43**
<i>Control variables</i>					
Young-age head	0.12**	-0.19	-0.46**	-0.39**	-0.05
Prime-age head	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Older working-age head	0.0	-0.06	0.16**	0.23**	0.53**
Retirement-age head	0.72**	-0.11	0.94**	-0.18*	0.10
Low-education head	..	-0.27	-1.07**	-0.48**	-0.75**
Mid-education head	..	-0.24	-0.14**	-0.34**	-0.37**
Higher-education head	..	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Never poor	<i>Base</i>	<i>Base</i>	..	<i>Base</i>	<i>Base</i>
One year in poverty	-0.47**	-0.64**	<i>base</i>	-0.20**	-0.58**
Two years in poverty	-0.66**	-1.13**	0.16**	-0.80**	-1.18**
Three years in poverty	-0.86**	-1.39**	0.33**	-0.92**	-1.08**
Period (t + 1; t + 2)	-0.03	-0.34*	0.42**	-0.14	-0.09
Period (t + 2; t + 3))	-0.10*	0.48**	0.28**	0.07	0.40**
Period (t + 3; t + 4)	..	0.34**	0.16**	0.24**	0.20**
Period (t + 4; t + 5)	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Score¹	3 015 +	358 +	5 757 +	572 +	2 234 +
Schwartz criterion²	38 754	3 737	60 261	9 983	13 335
N	30 290	1 430	50 368	2 889	3 477

* Significant at 5 per cent confidence level.

** Significant at 1 per cent confidence level.

+ Significant with a p-value of 0.0001.

.. Information not available.

1. The score statistic gives a test for the joint significance of the explanatory variables in the model.

2. The Schwartz criterion is primarily used for comparing different models for the same data. In general, when comparing models, lower values of this criterion indicates a better model.

Additional models and methodology are to be found in Antolin, Dang and Oxley (1999), Annex B.

with some caution. The first two sets of coefficients concern cases where employment-related and family-related “events” occurred singly; the remainder show results in cases where employment- and family-related “events” occurred at the same time.

The main conclusions from these estimates are:

- The employment-related change (no change in family-related “events”) most likely to lead to a transition into poverty is when the household loses all workers though the risk of transition is also significant, if less important, in the case of the loss of an additional worker or reduced hours.
- Family-related “events” (no change in employment status) generally entail a lower probability of entry than for employment-related “events”.³⁴ However, the probability of entry increases sharply for all categories of family-related “events” if there is also a loss of job or reduced hours. Put another way, the risk of poverty entry when an employment-related “event” occurs is lower if there is a stable household environment.
- As regards employment-related “events” and poverty exits, a second earner is generally associated with a higher probability of exit than the move from no worker to one worker. This is consistent with results from the literature which show that most individuals who lose jobs have lower earnings in their next job, in particular if they are displaced workers (Farber, 1993; Fallick, 1996; Antolín, 1999), making it more difficult for households to move above the poverty threshold, particularly where there is a single earner. This also confirms the results in OECD (1998) that getting a job is often only a first step – albeit an important one – towards poverty exit.
- The probability of exit from poverty through marriage is high in Canada, Sweden and the United States, but occur in relatively few cases.

HOW LONG DO PEOPLE STAY IN POVERTY?

An examination of transitions into and out of poverty leads, naturally, to the related question of how long people stay in poverty. As argued previously, poverty may be even more serious when heavily concentrated on individuals who either experience long periods of poverty or who cycle back and forth into and out of poverty, thereby spending more time in poverty than a single spell would suggest. To shed some light on these issues, this section examines some main determinants of poverty duration as well as the probability of re-entry.

Data and methodology

For this part of the study, the full time period of the panel data sets (see the second section) were used (rather than the last six years) to create the sub-sample

for estimation. The sub-sample was restricted to all poverty spells where the beginning date could be observed, thus excluding poverty spells in progress whose length was unknown. Because all spells with an observed beginning date are included, an individual can have several spells. Each spell is followed over time until it ends, which can occur because the individual moves out of poverty, because the individual drops out of the sample, or because the panel ends before the individual transits. Using multiple spells per individual allows previous spells to be controlled for and, thus, a better understanding of poverty dynamics. For re-entry, the working sub-sample included all spells out of poverty where the beginning can be observed, and these episodes were then pooled in a manner analogous to spells of poverty.

For each country, the exit (or re-entry) probabilities were estimated using a logit specification controlling for duration of the spell (or period out of poverty), calendar year, and individual and household characteristics.³⁵ This permits the differences in spell length to be associated with certain individual or household characteristics: the estimated parameters indicate which groups have a higher or lower probability of exit (or re-entry) and, hence, a shorter or longer average duration in (out of) poverty. The impact of previous spells of poverty on exit and re-entry rates was also examined, potentially correcting for some unobserved heterogeneity.

What determines the length of time people stay in poverty?

Two estimation approaches were used to measure the impact of the various factors on duration of poverty. First, the characteristics were defined at the time the individual entered poverty, thus assuming that, either, these characteristics largely determine subsequent duration, or they did not change over the period. This approach addresses the question of whether the probability of exit (or re-entry) is conditioned by factors existing at the time the poverty spells began. For example, if a person has a job but falls into poverty (*e.g.* through reduced wages or hours worked), the poverty spell may be shorter than where an individual became poor while unemployed. Second, the characteristics were allowed to vary over time so as to pick up the effects of changes – such as getting a job – on duration, thus supplementing the information in the preceding section. Results from the two approaches are broadly similar but those presented in the tables are drawn from the second set of estimates.

The results shown in Tables 8, 9 and 10 are presented relative to the reference person, defined as a single, prime-age, male household head with high-school education, no dependant children and who was not working at the time the poverty spell began. These results were calculated using the logit equations for the duration of poverty spells, which take into account previous poverty spells.³⁶

Table 8 shows the hazard rates for poverty exit for the reference person. They show that the estimated probability of leaving poverty falls as the spell lengthens,

Table 8. Estimates of exit rates from poverty by length of time spent in poverty¹

Length of time below the poverty line	Canada 1986-1995		Germany 1984-1996		Sweden 1991-1996		United Kingdom 1991-1996		United States 1980-1993	
	Probability of exiting poverty	Share of those remaining in poverty								
1 year	0.50	0.50	0.50	0.50	0.51	0.49	0.36	0.64	0.41	0.59
2 years	0.45	0.27	0.42	0.29	0.33	0.33	0.25	0.48	0.34	0.39
3 years	0.40	0.17	0.35	0.19	0.18	0.27	0.17	0.40	0.28	0.28
4 years	0.35	0.11	0.28	0.13	0.09	0.24	0.11	0.36	0.22	0.22
5 years	0.30	0.07	0.22	0.10	0.04	0.23	0.07	0.33	0.18	0.18
6 years	0.26	0.06	0.17	0.09					0.14	0.16
7 years	0.22	0.04	0.13	0.08					0.11	0.14
8 years	0.19	0.03	0.10	0.07					0.08	0.13
9 years			0.07	0.06					0.06	0.12
0 years			0.05	0.06					0.05	0.12

These estimates are obtained from the estimated results of the probability of leaving a poverty spell conditional on the length of time already spent in poverty (see Antolin, Dang and Oxley, 1999, Section 3). These results correspond to a prime-age individual, single, with high-school level of education (with no disabilities or health problems). The first column in each panel shows the probability of leaving poverty conditional on having been in poverty in the previous period. Taking the value for the fourth period in Germany as an example, the probability of exiting poverty having already been in poverty for three years is 0.28. The second column shows for each period the share of those who became poor using the probabilities in column 1. After four years, the share of individuals remaining in poverty in Germany is 0.13.

Table 9. **Percentage of people remaining in poverty¹**

	No-one employed			Head employed			Head and some other family member employed		
	1 or more years	4 or more years	10 or more years	1 or more years	4 or more years	10 or more years	1 or more years	4 or more years	10 or more years
Canada									
reference person ²	54.7	14.6	4.3	48.4	9.6	2.1	43.2	6.6	1.0
Alternative characteristics									
old age person (65+)	41.5	5.7	0.8	35.5	3.3	0.3	30.9	2.0	0.1
two or more adults households with children	57.4	17.2	5.7	51.1	11.7	2.9	45.9	8.1	1.5
Germany									
reference person ²	55.5	19.0	10.1	38.6	6.1	1.8	27.8	2.1	0.3
Alternative characteristics									
single parent households	64.4	29.4	18.8	47.6	11.8	5.0	35.8	4.8	1.3
previous poverty experience	61.1	25.2	15.1	44.1	9.3	3.5	32.6	3.5	0.8
high growth scenario (GDP growth rate = 3%)	51.8	15.9	7.9	36.7	5.2	1.4	26.3	1.7	0.2
Sweden									
reference person ²	54.9	31.6		43.1	18.8		36.9	13.2	
Alternative characteristics									
low educational attainment	57.2	34.4		45.4	21.1		39.1	15.1	
high educational attainment	53.0	29.4		41.3	17.1		35.2	11.8	
single parent household	55.7	32.6		44.0	19.6		49.4	25.4	
previous poverty experience	67.0	47.4		55.9	32.9		36.0	12.4	
high growth scenario (GDP growth rate = 3%)	53.9	30.4		42.2	17.9				
United Kingdom									
reference person ²	60.7	31.3		42.4	12.3		29.0	4.1	
Alternative characteristics									
single parent households	64.5	36.3		46.4	15.6		32.3	5.7	
previous Poverty experience	68.7	42.4		51.1	20.2		36.7	8.2	

Table 9. **Percentage of people remaining in poverty¹ (cont.)**

	No-one employed			Head employed			Head and some other family member employed		
	1 or more years	4 or more years	10 or more years	1 or more years	4 or more years	10 or more years	1 or more years	4 or more years	10 or more years
	United States								
reference person ²	58.1	20.7	10.4	52.9	15.5	6.7	44.4	8.9	2.8
Alternative characteristics									
low educational attainment	62.6	25.9	14.6						
high educational attainment	47.2	10.8	3.9						
non-white	64.4	28.3	16.6						
non-white with low education	68.6	34.1	21.9						
single parent households	62.7	26.1	14.7	57.6	20.2	10.1			
previous Poverty experience	63.0	26.5	15.0	58.0	20.5	10.3	49.5	12.5	4.9
high growth scenario (GDP growth rate = 3%)	56.7	19.2	9.3				43.0	8.0	2.4
the worst hit person ³	76.4	47.0	34.6	72.5	40.2	27.7			

- 1. Calculations based on the logit estimates of a duration model of the time spent in single poverty spells by individuals who fall into poverty (see Antolin, Dang and Oxley, 1999, Section 3). Taking the value in the fourth row, third column as an example, the percentage of people who are still in poverty after ten years is 10.1 in Germany, the reference person when no-one is employed in the household.
- 2. The reference person is a prime-age male, with high-school level of education, who is head of household, single, with no dependent children and not working at the time of falling into poverty.
- 3. Belonging to a female-headed, single-parent household, non-white with low education and previous poverty spells.

Table 10. Average duration in poverty according to certain household characteristics

	Average duration
	Index
Canada	
Reference person	100.00
The head is employed	89.73
Head + someone else employed in the household	81.93
Old age person (65+)	79.52
A household with two adults or more and children	104.61
Germany	
Reference person	100.00
The head is employed	77.31
Head + someone else employed in the household	64.62
Single parent households (female head)	111.64
The individual has suffered one previous spell in poverty	107.36
No one employed, previous spell in poverty, one adult (female) with children	117.99
Sweden	
Reference person	100.00
With low educational attainment	104.08
With high educational attainment	96.82
The head is employed	80.66
Head + someone else employed in the household	71.50
Single parent households (female head)	101.49
Previous poverty experience	122.41
Previous experience in poverty, low education and female headed family with no other adults and with children	129.19
United Kingdom	
Reference person	100.00
The head is employed	85.16
Head + someone else employed in the household	72.42
Single parent households (female head)	102.61
Previous experience in poverty	105.42
No one employed, previous spell in poverty, one adult (female) with children	107.51
United States	
Reference person	100.00
With low educational attainment	106.28
With high educational attainment	84.75
Non-white person	108.82
Low educated and non-white	114.50
The head is employed	92.69
Head + someone else employed in the household	80.86
Single parent households (female head)	106.42
Two or more adults without children	92.82
Two or more adults with children	92.98
Head employed, someone else employed, and household with two adults or more and no children	67.37
One other previous experience in poverty	106.85
Disabled	105.48
Previous experience in poverty, non-white, low education and female headed family with no other adults and with children	124.78

Note: The *Reference person* is a prime-age male, with high school level of education, who is head of household, single, with no dependent children and not working at the time of falling into poverty. Average duration is calculated as an index number because differences in the period of coverage across countries vitiates cross-country comparisons of estimated levels. However relative comparisons according to individual characteristics are still possible.

indicating that exit becomes more difficult the longer a person stays in poverty. This could be due either to duration dependence because long periods in jobless poverty lead to changing attitudes towards work or erosion of human capital, or a sorting process where those best able to exit do so, leaving a pool of individuals with increasingly “adverse” characteristics. While no explicit tests were carried out to try and distinguish between these two alternatives, controlling for previous poverty spells may go some way towards correcting for unobserved heterogeneity.³⁷ Because sample lengths differ across countries, durations are not directly comparable, in particular as regards Sweden and the United Kingdom.

To demonstrate the impact of the different characteristics of households on expected poverty duration, Table 9 presents the percentage of people remaining in poverty after one year, four years and ten years (where data are available) according to different characteristics which are of key significance. In addition, Table 10 shows the changes in the average estimated duration for the reference person in each country for key characteristics. The results for average duration (Table 10) are in index form because sample lengths differ across countries – 100 represents the average estimated duration for the reference person in each country.

Table 9 shows, for the reference person (first line, left-hand panel) that more than 50 per cent of those who fall into poverty and who do not obtain a job remain in poverty after one year, with around 10 per cent remaining in poverty for at least ten years for Germany and the United States. The impact of the labour-market status within the family on the length of time spent in poverty can be assessed by comparing the first panel with the middle and right-hand panels. Correspondingly, the impact of different individual characteristics, family type, the cycle and previous poverty experience are shown by comparing rows for individuals with that of the reference person (line 1 for each country in the left-hand panel) with the other combinations of characteristics indicated in the column and row headings. The main policy-relevant results are:

- Employment by the head of household and by a second wage-earner in the household significantly reduces poverty persistence. The percentage of people remaining in poverty after a year falls by 5-6 percentage points in Canada, and the United States, 12 percentage points in Sweden and by about 17-18 percentage points in the United Kingdom if the head becomes employed. More substantial effects occur if a second member of the household becomes employed. The index for average expected duration (Table 10) falls when the head and someone else become employed by around 20 per cent for Canada and the United States, 36 per cent for Germany, 29 per cent for Sweden and 28 per cent for the United Kingdom.
- Lone-parent households appear to have significantly longer spells when compared with the reference person. However, when the head becomes

employed in lone-parent households, the share experiencing longer-term poverty falls sharply, again emphasising the importance of employment.³⁸

Other results shown in Tables 9 and 10³⁹ suggest, as well, that:

- Those having experienced previous poverty spells tend to suffer longer spells of poverty – except in Canada – possibly picking up some unobserved personal or household characteristics;
- Lone parents do remain longer in poverty than other family groups, except in Canada.
- While the impact of the economic cycle on poverty duration is statistically significant – indicating that the length of poverty spells is shorter for people who fell into poverty in periods of strong economic growth – the size of the effect (“high-growth scenario”) is quantitatively small over the period considered;⁴⁰
- Those who are in poor health or disabled suffer longer spells of poverty, but the evidence is only statistically significant for the United States;⁴¹
- There is only weak evidence that children and people in retirement tend to suffer longer poverty spells in all four countries.⁴² In Canada and Sweden old age people are more likely to have shorter spells than other age groups;
- Higher levels of education of the household head or of the individual shortens the length of poverty spells, but the evidence is strong only for the United States;⁴³
- Women, taken by themselves and after controlling for lone-parenthood, do not have longer spells;
- In the United States, non-white households tend to have significantly longer poverty spells: average duration is 10 per cent higher for these groups;
- The results for Canada differ somewhat from the other countries. The importance of employment in reducing poverty persistence is also clear in the Canadian case. But certain groups (lone parents and people with previous poverty experiences) which are worst off in the other four countries are not so in Canada.

Three main conclusions can be drawn from the results presented in Tables 9 and 10. First, despite differences in poverty rates across countries, factors associated with longer or shorter poverty spells are quite similar across the four countries. Second, access to employment reduces significantly the length of poverty spells and this impact strengthens with the increase in the number of workers in the household. Finally, certain groups (single-headed households, people with previous poverty experience, and in the United States, non-white and low-educated groups as well) suffer longer spells of poverty, even when they have access to employment. The extent of this effect is illustrated for the United States in the last line which shows the outcome when these various characteristics are combined:

Table 11. Estimates of poverty re-entry by length of time spent out of poverty¹

Length of time below the poverty line	Canada 1986-1995		Germany 1984-1996		Sweden 1991-1996		United Kingdom 1980-1993		United States 1991-1996	
	Probability re-entry into poverty	Share of those remaining above the poverty line	Probability re-entry into poverty	Share of those remaining above the poverty line	Probability re-entry into poverty	Share of those remaining above the poverty line	Probability re-entry into poverty	Share of those remaining above the poverty line	Probability re-entry into poverty	Share of those remaining above the poverty line
1 year	0.16	0.84	0.17	0.83	0.20	0.80	0.18	0.82	0.23	0.77
2 years	0.12	0.74	0.14	0.71	0.10	0.72	0.15	0.70	0.12	0.68
3 years	0.09	0.67	0.11	0.63	0.05	0.69	0.12	0.61	0.06	0.63
4 years	0.06	0.63	0.09	0.57	0.02	0.67	0.10	0.55	0.03	0.61
5 years	0.04	0.60	0.07	0.53	0.01	0.67	0.08	0.51	0.02	0.61
6 years	0.03	0.58	0.06	0.50			0.06	0.48		
7 years	0.02	0.57	0.05	0.48			0.05	0.46		
8 years	0.02	0.56	0.04	0.46			0.04	0.44		
9 years			0.03	0.45			0.03	0.43		
10 years			0.02	0.44			0.02	0.42		

These estimates are obtained from the estimated results of the probability of re-entering poverty conditional on the length of time already spent out of poverty (see Antolin, Dang and Oxley, 1999 Section 3). These estimates are for the reference person – defined as a single, prime-age individuals, with high-school education and no disabilities – and results would differ for a person with different characteristics. The first column in each panel shows the probability of re-entering poverty conditional on having been out of poverty in the previous period. Taking the value for the fourth period in Germany as an example, the probability of re-entering poverty having already been out of poverty for three years is 0.09. The second column shows for each period the share of those who remain out of poverty using the probabilities in column 1. After four years, the share of individuals remaining out of poverty in Germany is 0.57.

35 per cent of individuals belonging to a non-white, low-educated female-headed household with previous poverty spells would remain in poverty after ten years compared with 10 per cent for the group represented by the reference person. If the lone parents were employed, the share of those remaining in poverty after ten years would fall to 28 per cent.

Re-entry into poverty

The preceding paragraphs have described how long people remain in poverty. But people may fall back into poverty after exiting, making the duration of single spells a poor guide to assess total time spent in poverty. To measure the magnitude of this effect, the risk of falling back into poverty, conditional on the time spent above the poverty line, was also estimated using the same methods as for spells of poverty.

Table 11 shows the probability of returning to poverty, conditional on time spent above the poverty line (*i.e.* the hazard rate of re-entry) and the share of individuals who remain above the poverty line (*i.e.* the survival rate). Thus, in Germany, for example, after one year out of poverty, around 17 per cent of those previously poor would be back into a new spell of poverty. Of those who remain out of poverty for two years, 14 per cent would fall back into poverty during the next year. Taking a longer-term view, around 50 per cent of individuals would have been back into poverty at least once over a ten-year period.

The factors that affect the length of time an individual will remain out of poverty are basically the same as those which explain the length of time an individual remains in poverty, but with the opposite sign.⁴⁴ Therefore, an individual who has characteristics associated with long spells in poverty (those living in single-parent households, who have previous poverty spells, are low-educated (the United States) and who have low levels of employment) would face shorter spells out of poverty with a high risk of cycling back across the poverty threshold.

CONCLUSION

Panel data provide more complete information about poverty and permit a finer analysis of factors associated with entry and exit from poverty and the length of stay. One of the regularities of the results is that the factors that are important for poverty dynamics seem much the same across countries (except for the greater importance of certain household and individual characteristics, such as education and race, in the United States), even though static poverty rates can vary considerably. This limited evidence suggests that the underlying economic and policy forces driving poverty may have a great deal in common across countries, despite

sometimes large institutional differences. In this context, the important role of labour markets for entry into and, particularly, exit from poverty should be highlighted, even though family-related “events” are also important for entries. Further, getting a job reduces the expected length of time spent in poverty, even though it may not lead to immediate poverty exit. While transfer payments can make a considerable difference in the level of poverty they tend to play a less important role in poverty exits, although this is less the case for Germany and the United Kingdom. Another important insight is that a large share of the population is touched by poverty – partly reflecting the normal randomness of labour-market and other life-course “events”. This suggests that the benefits of existing transfer systems which “insure” against income loss may be more widely spread than commonly thought. Finally, certain groups (*e.g.* lone parents) tend to have longer spells in poverty and, in the event of exit from poverty, are more likely to fall back. As a result, they face a higher risk of long-term poverty. With the longer-term poor experiencing between 30 and just over 50 per cent of the total time spent in poverty, the potential budgetary (not to mention human) cost of poverty is concentrated within such groups. While the distinction between shorter- and longer-term poor is necessarily arbitrary, different policies may be appropriate for these groups. Within this context, particular attention may need to be given to lone-parent households and the working poor.

NOTES

1. Defined as the head-count ratio or the ratio of the poor to the total population.
2. For example, Jarvis and Jenkins (1997) find rather significant differences for the United Kingdom between a relative poverty threshold and a threshold fixed in real terms due to a rather large number of individuals who lie near the authors' chosen poverty thresholds.
3. Data do not include Northern Ireland. Readers should note that country references in this report have been to the United Kingdom even though the sample only covers Great Britain.
4. This includes "husbands and wives (common law or legally married) with or without their never-married children, lone parents and their never-married children, with everyone else being a non-family person". Thus there can be several census families living in the same household – e.g. a divorced daughter with a child living with her parents would be classified as belonging to a separate household.
5. Because those becoming 18 form a new household, but the person is often still living with his or her family and has no independent income, this shows up as an increase in the number of poor and in more poverty transitions. In the analysis, the cases in which people became 18 during the sample period, were controlled for by either dropping them of the sample or adding dummies to identify them in the econometric analysis.
6. In addition, it was not possible to trace children over time for Canada, for example, as they formed new households.
7. Complete results were not available for the Netherlands at the time of going to print.
8. This means that, for the United States, the effects of recent increases in the generosity of the Earned Income Tax Credit (EITC), as well as increases in the federal minimum wage, cannot be seen.
9. There is a more general question as to whether estimated tax data should be used at all, because in complex tax systems it becomes more difficult to accurately assess the tax liability of individual households. While this problem may be less severe for comparisons of static distributions of income (as there is likely to be some averaging of the errors across individuals), it may induce more serious errors in the measurement of transitions in individual data used here.
10. Given that the tax schedule is linear over the range where the poverty line appears, experts in the United Kingdom have suggested that the differences between pre- and post-tax results are likely to be small.
11. This could occur because someone may receive market income for part of the year and take up social assistance for the remainder, such that the total income is above the poverty line for the year as a whole.
12. Overall rates of entry and exit include, respectively, all individuals falling into poverty at time t or exiting poverty between t and $t + 1$ as a share of the population in period t . The inflows and

outflows vary over the cycle and the data presented here are averages over the six-year period. These data consider the entire sample of those interviewed every year – and hence are “overall” exit rates.

13. The data also show differing patterns of exits and entries over the period across countries. Poverty rates rose in all countries except Canada. (However, the fall there probably reflected a discontinuity in the data).
14. In the table, 5+ is the sum of five and six years or more spent in poverty.
15. This table only includes individuals where the start of a spell can be identified – *i.e.* the beginning of a poverty spell in the case of exits (left-hand panel) and exits from poverty in the case of re-entry (right-hand panel). The left/right censoring means that the numbers in the table are upper bounds.
16. This can reflect either a declining probability of exit, the longer people stay in poverty, for example, because of wastage of their human capital or from a sorting process in which those with the best chances of exiting exit first.
17. The following is an example of the combined effect of results for exit and re-entry in Table 2. The left-hand panel shows that between 46 per cent (the United States) and 60 per cent (Netherlands) of those entering poverty would have left by the end of the first year. On the basis of information in the right-hand panel, between 31.5 per cent (Sweden) and 64 per cent (the United States) of these individuals would have fallen back into poverty for at least one year in the following four years.
18. In some cases, cross-country variation in the difference between pre- and post-tax-and-transfer rates may reflect institutional differences in pension arrangements. In the United States, a larger share of pensions are employer-related than in Germany, thus raising US incomes before tax and transfers. In this case, poverty rates pre-tax-and-transfers for the retired would be lower in the United States than in Germany, all else held equal.
19. As shown by Figure 1, the pre-tax-and-transfer poor population is larger than the post-tax-and-transfer population, and includes: *a)* all those poor on a post-tax-and-transfer basis (but most of whom will now have a lower pre-tax-and-transfer income); and *b)* all those who are kept out of poverty by the tax-and-transfer system. They are thus not the same sample.
20. Whereas low income is a reasonable proxy for low living standards and hence poverty for most groups, it becomes less so when households are differentiated by age, as consumption of imputed income from owner-occupation is lower for younger age groups.
21. This may reflect the fact that the education attainment variables (which refer to the head of household) may be a poor measure of total human capital. This may be particularly the case in Germany, where on-the-job training and apprenticeships may make up a larger share of total investment in skills. This may lead to an overestimate of the share of individuals with skills corresponding to “low education”.
22. However, the problem of the working poor appears more severe in the United States where there is a non-negligible share of two-earner households who were poor through the period.
23. The range used by Antolin, Dang and Oxley (1999), often used in studies of this kind to eliminate noise (see for example Ducan *et al.*, 1993), is 10 per cent above or below the poverty line.
24. Note that household equivalent income is defined as total household income divided by the square-root of household size and that equivalent income can be affected by changes in the numerator and denominator (see Antolin, Dang and Oxley, 1999).
25. The range of possible combinations can be illustrated by the following examples: while an individual might become poor due to decline in household income following the loss of the job of

the household head, the same individual might then exit poverty if other household members get jobs. Households may choose to have children only when they have high enough income, but in other cases, the arrival of children can lead to withdrawal of the main child-carer from the labour force.

26. The income changes were, first, constrained to include only those with the same sign as the change in total income (the opposite sign for taxes). The change in these components of income were then computed and the component with the largest change was identified with the transition.
27. Data for the Netherlands are not available from this table onwards at the time of going to publication.
28. These only include cases where there is a change in household size but not in the household head.
29. Antolín, Dang and Oxley (1999) present the data for the whole population in Table A3. Considering the total population rather than the population in households with a working-age head affects the results for single-adult and two-adult households without children, two groups with large shares of retirement-age households. These data suggest that the retirement-age households are much less affected by employment changes but face a larger share of transfer-related transitions. This difference is less marked for the United States, where a larger share of retirement-age households work.
30. While household characteristics could be defined before the transition into poverty or after they leave, the advantage of this approach is that it identifies the characteristics of poor households more clearly.
31. In Canada, a large share of exits of lone parents appear associated with changes in family status. Employment related events are particularly important for these two groups – single households only – in the United States.
32. Tables 5 and 6 show that a large share of transitions into poverty appears to be transfer related (included in “Other factors”) in Canada and Sweden. For Sweden this appears to be related to the loss of student grants for young people and unemployment benefits. In the latter case, this appears to reflect cases where in one earner household, the spouse or other members exhaust their unemployment benefits. In both countries results also reflect the fact that in tax data all individuals receiving earnings are treated as employed.
33. See footnotes to Table 7. See Antolín, Dang and Oxley (1999) for a full description of the control variables, methodology and detailed estimates. Control variables are defined in time t for transitions that occur between t and $t + 1$. Note that this approach differs from the analysis of poverty transitions where, for poverty entries, the characteristics are defined in $t + 1$.
34. There are significant cross-country differences in the coefficients associated with individual family-related “events”. Probabilities of entry on divorce, separations or children setting up households appear higher in Germany and the United States relative to other family-related “events” than they do in the United Kingdom or Sweden. Needs-related effects appear more important in cases where there are additional children in the United Kingdom, while additional adults in the household appear more important in the other two countries.
35. Antolín, Dang and Oxley (1999) provide further methodological detail.
36. Antolín, Dang and Oxley (1999) report the estimated equations. Results for Sweden are available from the authors.
37. Huff Stevens (1995) finds that, for the United States, duration dependence is important even after controlling for heterogeneity. These tests suggest that effects such as the deterioration of

human capital as the spell lengthens or changing attitudes to work or other effects may be present.

38. Canadian results do not show that people in lone parent households remain longer in poverty than other family groups. Social policies in Canada seem to target lone-parent households.
39. The estimated equations, reported in Antolín, Dang and Oxley (1999), point to all these results.
40. The estimating equation included the growth rate of real GDP as a control variable. The impact of the cycle was estimated by considering a 3 per cent growth rate and recalculating the values for the individuals remaining in poverty.
41. Health variables are self-reporting evaluations which are always somewhat problematic. In the case of the United States a variable controlling for whether the individual was disabled was used.
42. Bane and Ellwood (1986) suggest that children in poverty may also have difficulty in escaping poverty possibly because they tend to belong to larger families or, in a growing number of cases, to lone-parent households. Retired people, once they become poor, may also remain so for long periods because they most often do not have the option of returning to work. The results do not provide strong evidence supporting these hypotheses.
43. While the results point in this direction in Germany and the United Kingdom, they are not statistically significant (see Antolín, Dang and Oxley, 1999).
44. However, the cycle does not seem to have any effect on the re-entry probability. Huff Stevens (1994) found the same for the United States. This may reflect that those who combine high levels of re-entry and previous poverty spells are probably at the bottom of the employment ladder and are likely to find jobs only where there are extremely low levels of unemployment.

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