

## 9. The Dynamics of Income Poverty

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### **Introduction**

As earlier chapters in this book have shown, there is a great deal of diversity across European Union (EU) countries in the distribution of employment and unemployment, the structure of households and crucially, in the manner in which the state intervenes in the nexus between the household and the labour market through the tax and welfare structure. The last chapter described how these differences influence the distribution of income in these societies and showed that states differ widely in terms of their levels of income inequality. In this chapter we extend this analysis by examining the distribution of poverty within EU states, but drawing upon the longitudinal analyses of the European Panel Analysis Group (Muffels et al., 1999; Fouarge and Muffels, 2000; Layte et al., 2000a 2000b; Whelan et al., 2001, 2003; Layte and Whelan, 2003), we also investigate the important issue of low-income dynamics.

Poverty research has shown that simply observing which individuals or households have a low income at a single point in time is seriously inadequate as a measure of their economic status, and can actually obscure the nature and causes of long-term disadvantage. Although economists have differentiated between current and longer-term or 'permanent' income for over half a century, research on poverty dynamics has only become possible in recent decades with the availability of panel surveys. Until the 1990s panel surveys were still only available for a small group of countries, but the collection of the European Community Household Panel Survey (ECHP) has now made the study of poverty dynamics possible for far more countries.

Although poverty dynamics must be seen as an essential element of analysis, this is not to underplay the importance of a great deal of cross-sectional poverty research which has given us a clear picture of the extent of and trends in income poverty across nations (Atkinson et al., 1995; Gottschalk and Smeeding, 1997). In this chapter, we present an examination of work which has taken a longitudinal perspective on poverty. We touch upon the issue of the persistence of poverty in the second section. The third

and fourth sections focus on income changes and poverty dynamics. The long-term redistribution through welfare state transfers is briefly dealt with in the fifth section, whereas the sixth section concentrates on the duration of poverty spells. Before we can do either of these things however, we first need to tackle the difficult issue of how to measure poverty; this is the focus of the first section.

### **Measuring Poverty**

Although at first glance the definition and measurement of poverty would seem simple (we all like to believe that we recognise poverty when we see it), in reality it has been the focus of a great deal of debate. In everyday use, poverty in developed countries is often seen as an inability to attain a 'decent' or 'adequate' standard of living. Since what is seen as adequate is likely to change over time and across societies, this means that the definition is essentially relative. Some researchers have argued for a more absolute notion of poverty, but relative definitions have become dominant in both academic and policy circles, a view expressed well by Piachaud (1987: 148): 'Close to subsistence level there is indeed some absolute minimum necessary for survival but apart from this, any poverty standard must reflect prevailing social standards: it must be a relative standard.' The relative poverty concept was adopted by the Council of the European Commission in their decision of 19th of December 1984: '[T]he poor shall be taken to mean persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the member state in which they live.'

Of course any such definition still needs to be operationalised and a number of different approaches have been put forward for the measurement of poverty. These approaches divide broadly along two axis: those that use objective as opposed to subjective definitions<sup>1</sup> and those that measure poverty either as deprivation or expenditure as opposed to using income (see Chapter 10). Different approaches have their merits, but the work upon which this chapter is based is an objective/indirect approach using income as the yardstick upon which resources are measured and a poverty line set at some fraction (usually 50, 60 or 70 per cent) of median income. This is also the approach taken by a number of EU Commission or EUROSTAT studies (see also Atkinson et al., 2002), although mean income was also used in some instances (Institute of Social Studies Advisory Service (ISSAS), 1990; O'Higgins and Jenkins, 1990; Hagenaars et al., 1994; Eurostat, 1999). The next chapter uses alternative measures of poverty in the form of deprivation indices and shows how these are related to the income poverty measures used in this chapter.

*Needs and resources*

At its simplest, a household's living standard can be said to be the result of the balance between the *resources* of the household and the *needs* of the household across time. The level of resources is a fairly simple concept to understand and most commonly operationalised, though not always,<sup>2</sup> as money income from different sources. The 'needs' of a household on the other hand can be more varied. The simplest example of the way that the needs of a household can vary is with the number of household members. The more people living in the household, the greater the level of resources that will be required to sustain it. But the needs of a household can also be affected by a broad range of characteristics such as the age, sex or health status of the individuals in the household to name just a few. For example, children will require a different level of resources compared to adults and older adults may need fewer resources than younger adults. Poverty then is the outcome of a longitudinal process of accumulation and erosion as the flow of resources into the household and the level of needs fluctuate. As we will go on to see in the third section, changes in poverty status over a given period may thus be the result of a change in either resources (the numerator) or demographic composition and needs (the denominator).

If we 'unpack' this simple picture further, it is quickly apparent that we also need to understand the context within which households and individuals live if we are to explain their risk of poverty. Though we can identify the characteristics of the individuals in the household that determine the level of resources available at any one point in time, these will vary depending on the context, most obviously between countries where different socio-economic structures and welfare regimes may well 'decommodify' individuals to varying degrees and smooth income flows (Esping-Andersen, 1990; Gallie and Paugam, 2000). Thus the extent to which a particular socio-economic status not only provides information about current demands or resources, but also serves as a proxy for longer-term imbalances between obligations and economic capacity, will be crucially influenced by the degree to which mechanisms that buffer the cash nexus are in place. Evidence of this effect can be found in recent research which shows that the relationship between current lifestyle deprivation and socio-economic factors influencing the level of resources available to households varies systematically across countries in a manner that is broadly consistent with welfare-regime theory (Layte et al., 2001). Moreover, the relationship between current income and lifestyle deprivation (as we will see in more detail in the next chapter) also varies in the same manner being weak in northern European countries such as Denmark, the Netherlands and Germany, moderate in Liberal welfare regimes such as the UK and Ireland and strongly related in the residual regimes of the southern European countries (see Muffels and Fouarge, 2003).

Having gained a better conceptual grasp of what shapes poverty risk, we can now go on to examine the distribution of poverty in EU states. In this section, we will be using data from the ECHP which allows us to compare poverty rates for different countries using fully harmonised data (see Chapter 1). The latest wave of the ECHP available at the time of the analysis was the fifth wave carried out in 1998 (using 158560 individuals across 13 countries)<sup>3</sup> and this is employed here using a relative income poverty line set at 60 per cent of national median equivalised household income. Later on in the text, poverty lines set at 50 and 70 per cent of median income will also be used. The equivalisation undertaken here is to take account of the differing size of households since the same level of income would lead to a lower standard of living in a household with a greater number of individuals. The 'equivalence scale' which we use here is commonly referred to as the modified Organization for Economic Co-operation and Development (OECD) scale where the first adult is given a value of 1 and all subsequent adults a value of 0.5 and all children (aged less than 14) are given a value of 0.3.

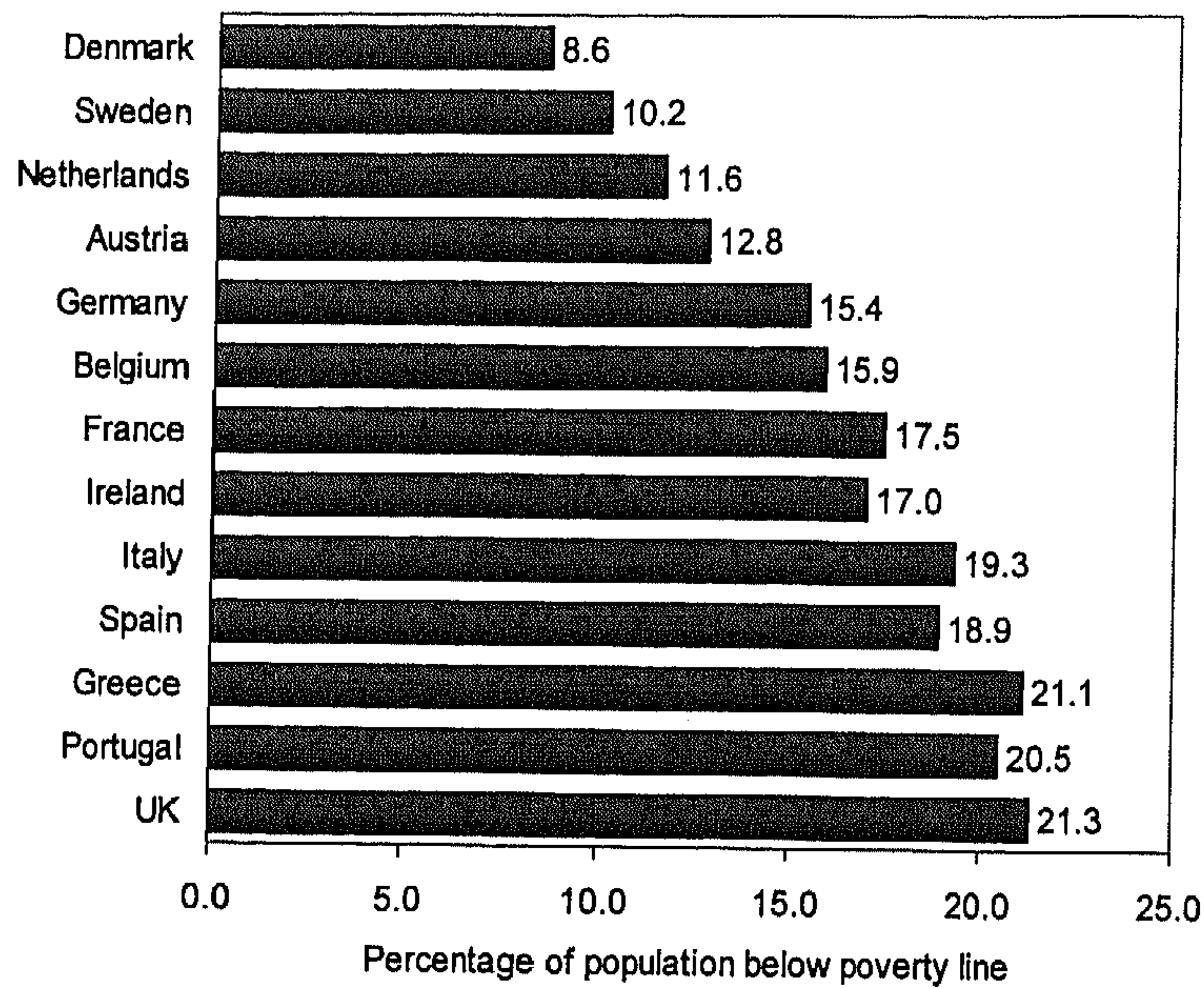
The last chapter examined the distribution of income and income inequality in EU countries and showed that levels of inequality varied widely between countries. As we are using a relative income poverty line in this section, this is also a function of the level of income inequality in a society (though in a more limited form), thus we would expect to see considerable variation between countries in poverty rates. As has already been suggested, the level of inequality within a country is strongly influenced by the welfare regime with more social-democratic welfare regimes (see Chapter 1 for an outline of the Esping-Andersen welfare-regime typology) and corporatist regimes having higher levels of taxation and greater income redistribution than both liberal and residual regimes. Given this we would expect to see higher levels of income poverty in those countries with liberal and residual regimes such as Ireland, the UK, Italy, Greece, Spain and Portugal.

Figure 9.1 shows that we do indeed see an ordering of countries in terms of poverty rates which is highly suggestive of the welfare-regime pattern outlined above. Using the typology set out in Chapter 1 we can see that both the social-democratic countries which we have data for in 1998 are at the top of the figure with the lowest income poverty rates whilst the southern European countries and particularly the UK can be found at the bottom. This ordering of countries changes little over time, even during economic cycles and does suggest that the welfare regimes in these countries contribute substantially to the extent of poverty.

Research has shown that poverty is not spread evenly across population groups. For example, it is usually found that, other things being equal, factors such as unemployment, where income from the market is lost, and single

parenthood, which restricts one's ability to work, would lead to a higher risk of income poverty (see, for example, Eurostat, 2001).

Figure 9.1 National poverty rates



Note: Poverty line defined as 60 per cent of median income.

Source: ECHP (1998), authors' own calculations.

### The Persistence of Poverty

Cross-sectional poverty analysis is an effective way of examining the overall risk of poverty and the particular risk faced by specific groups. It cannot however tell us anything about the risk of experiencing persistent or long-term poverty, or recurrent poverty where an individual would move in and out of poverty repeatedly over time. Although few would welcome the experience of short-term poverty, the temporary experience of low income is much less likely than repeated or long-term exposure to low income to damage life chances and lead to serious deprivation. In this sense, it is important from both an academic and social policy perspective to understand the extent to which poverty is persistent and which groups are more likely to experience it since the extent of persistent poverty could indicate inflexibilities in the welfare system and labour market.

Although cross-sectional poverty studies reveal the groups who are at risk

of experiencing poverty, they can also be misleading. Bane and Ellwood (1986) use the example of a hospital: a survey of the patients in the hospital at one moment would produce different conclusions on who was ill than a survey over a longer period as the former would be biased towards those illnesses that caused long-term hospitalisation since the long-term ill would be more likely to be in the hospital at a single point in time. Short illnesses on the other hand would only be present for a limited period and so would be less likely to be seen. This, even though short-term illnesses may well be more frequent and make up a larger proportion of the hospital throughout. Similarly, cross-sectional poverty analysis also only points to the general characteristics of those who are poor and cannot easily unravel the processes which led to poverty, or perhaps more importantly, those processes leading from it.

In the short history of poverty dynamics research, most has been undertaken in the USA, but this situation began to change in the 1990s when income panel data became available more widely in Europe. Although first confined to analyses of Dutch, German and British data (Heady et al., 1994; Goodin et al., 1999; Fouarge, 2002; Jenkins, 2000; Jenkins and Schluter, 2003) poverty dynamics research has begun to cover more countries using the data of the ECHP. There are four types of methods used in poverty dynamics research: the N-year income to needs ratio method is based on the notion of permanent income and simply sums income over the observation period and divides this by the summed needs. The model-based approach to persistent poverty on the other hand is rather more complicated and is based on the decomposition of the income to needs ratio into permanent and transitory components allowing an estimate to be made of the level of persistent poverty (Lillard and Willis, 1978; Duncan and Rodgers, 1991; Fouarge and Muffels, 2000). The fraction of N-years in poverty approach simply counts the number of years below the poverty line over a set observation window and chooses a cut-off above which persistent poverty is said to have occurred, or creates a poverty profile combining both the length and number of poverty years (Coe, 1978; Duncan, 1984; Muffels et al., 1999; Whelan et al., 2003). Lastly, the spell-based approach uses duration models to estimate the hazard of leaving a poverty spell at given durations and for different characteristics and from this estimates the mean duration of a spell (Bane and Ellwood, 1986; Stevens, 1995; Fouarge and Layte, 2003). Note that for the purpose of such longitudinal studies, individuals are followed over time though they are assigned the income level and poverty status of the household to which they belong at each point in time.

Using panel data, research has begun to examine a number of crucial questions about the nature of longitudinal poverty: first, is poverty more common when viewed longitudinally rather than cross-sectionally? Second,

can we identify a tendency towards poverty persistence and recurrent poverty and does this vary in its extent across countries? Third and lastly, what types of events are more likely to lead to entry into and exit from poverty and does the importance of these events differ between countries and regimes?

*Table 9.1 Poverty rates over one year and over four years*

Country	Mean annual poverty rate A	Proportion experiencing poverty in any of four years B	Ratio A/B
Denmark	9.4	20.1	2.14
Netherlands	11.1	20.7	1.86
UK	21.1	36.6	1.74
Ireland	19.1	36.4	1.91
Belgium	16.6	33.2	2.00
France	17.0	28.3	1.67
Germany	15.4	23.0	1.49
Portugal	22.6	38.7	1.72
Spain	19.5	36.0	1.85
Italy	19.2	35.0	1.82
Greece	21.6	38.2	1.77

*Note:* 60 per cent median income poverty line.

*Source:* ECHP (1994–97), adapted from Layte and Whelan (2003).

Looking at the first of these questions, Layte and Whelan (2003), using the ECHP, compared mean cross-sectional poverty rates to the proportions experiencing poverty over a four-year period (1994–97) and found that poverty was indeed more common when viewed longitudinally. Their results are shown in Table 9.1. The table shows that the proportion of persons that *ever* experienced poverty between 1994 and 1997 is roughly twice the size of the cross-sectional estimate. Interestingly, although the country ordering of longitudinal poverty is similar to that of cross-sectional poverty, the country order of the ratio of the two is more variable. For example, though a far smaller proportion of Danes experience poverty in any one year, the ratio of this to those having ever experienced poverty over the four years is actually the highest of all countries. The reason for this is, as we will go on to see in subsequent analyses, that the burden of poverty is spread far more widely in Danish society (in other words a greater proportion of people experience a spell of poverty), but fewer people experience persistent poverty.

If poverty is more common longitudinally than cross-sectionally, can we also identify a tendency towards poverty persistence and recurrent poverty and does this vary in its extent across countries? Layte and Whelan (2003) also investigated this question using the fraction of N-years in poverty methodology (that is, counting the number of years poor over their four-year observation period) and found that persistent poverty varied greatly across countries. Using an extension of this methodology, Fouarge and Layte (2003) examined the extent to which poverty was recurrent as well as persistent. Rather than simply counting the number of years that individuals were below the poverty line, Fouarge and Layte used this information, plus the number of discrete 'spells' of poverty to compute a poverty typology, or profile, defined as follows:

- the persistent non-poor: never poor during the accounting period;
- the transient poor: poor only once during the accounting period;
- the recurrent poor: poor more than once, but never longer than two consecutive years; and
- the persistent poor: poor for a consecutive period of at least three consecutive years.

The profile approach makes it possible to distinguish between short single spells of poverty and recurrent poverty, as well as looking at persistent poverty of three or more years. Using five waves of the ECHP, Fouarge and Layte (2003) found that the majority of people in all countries avoid poverty completely over the five-year period, but the proportion varied considerably across countries (see Table 9.2).<sup>4</sup> More interestingly however, if persistent poverty was defined as experiencing three or more years in poverty,<sup>5</sup> it ranged widely from 3.5 per cent in Denmark to over 18 per cent in Portugal. The data further show that the pattern of recurrent poverty was very similar to that found for persistent poverty with the social-democratic countries having lower levels than the corporatist states, which themselves performed better than the liberal and residualist states. For example, whereas Denmark and the Netherlands had recurrent poverty rates of around 6 per cent, France and Germany had rates of around 8 per cent. The liberal states of Ireland and the UK had higher rates of around 11 per cent whereas the residualist states of Greece, Spain and Italy had rates of between 12 and 15 per cent. Only Portugal failed to fit the regime typology with recurrent poverty rates of around 10 per cent. Table 9.3 also underlines the fact that the social-democratic and corporatist regimes spread the risk of poverty more widely across society compared to the liberal and residualist with relatively high proportions experiencing transitory poverty. The comparative level of persistent



poverty between countries appears to be fairly robust using different income poverty lines and different techniques – Fouarge and Muffels (2000) found that persistent poverty was higher in the UK compared to Germany and the Netherlands using the model-based estimates of persistent poverty methodology outlined earlier.

*Table 9.2 Poverty profiles in Europe (row percentages)*

Country	Never poor	Transient poor	Recurrent poor	Persistent poor
Denmark	77.4	13.2	6.0	3.5
Netherlands	77.9	9.6	6.1	6.4
UK	61.4	13.4	11.1	14.1
Ireland	63.8	10.7	10.6	14.9
Belgium	63.9	13.4	10.8	11.9
France	68.4	10.4	7.9	13.3
Germany	73.4	11.1	7.7	7.8
Portugal	58.8	13.7	9.5	18.1
Spain	60.0	13.5	15.1	11.4
Italy	62.1	12.6	12.3	13.2
Greece	58.5	13.9	12.4	15.2
Europe	66.2	12.0	10.1	11.7

*Note:* 60 per cent median poverty line.

*Source:* ECHP (1994–98), reproduced from Fouarge and Layte (2003).

In an attempt to quantify this tendency to persistence, Layte and Whelan (2003) compared the proportions experiencing different numbers of years poor to the proportions that would be expected *if* the experience of poverty in any one year, based on the cross-sectional average over the same period, was independent in each year. The approach thus asks whether – net of the average level of poverty across the period – the experience of poverty is more concentrated on some individuals rather than others. Their results show that on the basis of independence, we would expect a far lower proportion of people in every country to avoid poverty than we actually observed in Table 9.1, around 50 per cent lower in most countries with figures ranging from around 30 per cent in Denmark to 48 per cent in Ireland, Greece and Portugal. The corollary of this difference is that far fewer people experience one or more years of poverty than would be expected. However, it is the difference in the actual

persistent poverty experienced when compared to that expected that is striking. Across the countries the expected proportion experiencing three or more years of poverty is never more than 34 per cent of the actual proportion and in Denmark this drops to just 17 per cent. Their results show that far fewer people experience any poverty and far more experience persistent poverty than we would expect given cross-sectional poverty rates. This suggests that there is some 'inertia' to the experience of poverty that tends to lead to multiple, rather than single years in poverty.

*Table 9.3 Influences on the risk of being persistently poor: households of working age (ordered logit regression coefficients)*

Number of children	0.252
Single parent	0.831
No-one employed	1.087
Low education	0.658
Head of the household loses job	0.257
Head of the household finds job	-0.359

*Notes:* Selected coefficients from an ordered logit model.  
All coefficients are significant at the 1 per cent level.  
A positive (negative) coefficient indicates an increased (decreased) risk of persistent poverty.

*Source:* ECHP (1994–98), adapted from Fouarge and Layte (2003).

#### *Explaining the persistence of poverty*

So far, we have seen that welfare-regime types are important in determining the degree of both persistent and recurrent poverty in a country and that both vary widely between regime types. For example, Ireland, the UK and the southern European countries show high rates of persistent poverty, particularly when compared to countries such as Denmark, the Netherlands and Germany. But what individual and household characteristics are more likely to lead to persistent poverty? To examine this question Fouarge and Layte (2003) applied multivariate analysis to estimate the effect of different covariates on the probability of being in each of the poverty profile groups described above. The approach used recognises that there is an order to the categories with recurrent poverty being a worse outcome than transient poverty, and persistent poverty a worse outcome than recurrent poverty.

Four types of variables were included in the model which were likely to be important factors characterising the different profiles: personal and household characteristics (age, sex, marital status, household composition,

number of children, marital status); socio-economic characteristics (education level, labour market participation at the household level, health situation); household formation events (divorce or separation) and lastly, labour market events (increase or decrease in the number of employed adults in the household or in the number of hours worked). The variables were measured at the beginning of the observation period, and thus did not change across time (apart from those variables measuring change in status across the period).

In order to gain a better understanding of the labour market events associated with poverty spells, the analysis was limited to individuals living in a household where both the head and the partner – if any – were of working age (aged 16 to 64).

These models showed that a number of factors are predictive of longer and more frequent spells of poverty. In terms of personal and household characteristics, being a single parent and having a larger number of adults and children in the household were both predictive of longer and more frequent poverty, as we would expect given our previous analyses in this chapter. The employment status of the household members was found to be an important predictor of the long-term poverty risk. This is also true for the education level: lower levels of education for the head of household is associated with a larger probability of experiencing long-term poverty, even after correction for employment status. Single people who were unemployed were particularly at risk of experiencing frequent or persistent poverty spells. The importance of the variables was underlined by the addition of variables expressing change in the employment status of household members which showed that the head of the household losing a job contributed significantly to an increase in the risk of recurrent and persistent poverty (and vice versa).

### **Changes in Needs and Changes in Income**

So far we have addressed the first two of the questions outlined at the beginning of this chapter and now have a reasonably clear picture of the way that persistent poverty rates differ from cross-sectional poverty rates and how this varies by the measure used and country observed. The national context and individual and household characteristics are, as we have already seen, of undoubted importance in shaping the experience of poverty, but the two are likely to interact in complex ways since different regimes treat individuals and households in very different manners depending on their circumstances and history. In this section we adopt an ‘incidence’-based approach to see which factors explain poverty transitions, how this varies by country and what this tells us about the interaction between welfare regimes and individual

characteristics. In doing this, we seek to answer the third of the questions set out in the second section: what type of events are more likely to lead to entry into and exit from poverty and does the impact of these events differ between different countries?

In answering this question we need to move away from the analysis of individuals to the analysis of transitions – of which a particular individual may have several<sup>6</sup> – so that we can understand what factors are more likely to lead to poverty transitions. Thus, rather than following a single individual for the observation period we need to look at the characteristics of a person or household the year before and after a poverty transition as this will tell us which factors are implicated in poverty transitions.

In doing this however, it is necessary to think more deeply about how different ‘events’ can lead to poverty transitions.<sup>7</sup> For example, we know that certain characteristics make a person more likely to experience poverty such as having a low education or having a larger than average number of children, but these are general risk factors and not the ‘triggering’ event that leads to poverty. Instead we need to look at the specific changes in a person’s life, or in their household that leads them into poverty. This sounds simple enough, but such events may themselves actually be highly complex and difficult to analyse. For example, a person may become poor because the income of their household fell and this in turn occurred because the number employed in the household fell. Yet the separation or divorce of the married partners in the household and the exit of one employed adult may have triggered this train of events.

In attempting to clarify some of this complexity, we can follow Layte and Whelan (2003) in dividing transition events into those associated with changes in the resources numerator and those more associated with the needs, or demographic denominator of poverty status. Change in either of these factors could lead to a poverty transition. Remember that for the purpose of longitudinal research, individuals are assigned the equivalised income of the household to which they belong at the time of interview. So a change in this measurement can be caused either by a change of income or a change in household composition affecting the needs of the household. Layte and Whelan examined whether resources or needs were the primary reason for poverty transitions by cross-tabulating the two variables after they had been grouped into decreasing, increasing or unaltered categories. Change in the level of resources in the household was measured as change in the household’s net income,<sup>8</sup> whereas change in ‘needs’ was measured as any change in the household equivaliser itself, that is, the number of adults and children in the household weighted by the ‘modified OECD’ equivalence scale.

Rather than show all the possible categories of this cross-classification, Table 9.4 gives the results of those that cover the overwhelming majority of transitions for the 11 countries of the ECHP database for transitions into 70 per cent median income poverty between 1994 and 1997. What is immediately clear is that the majority of transitions occur because of decreases in income rather than increases in the level of needs, varying between 54 per cent in Ireland and 77 per cent in Denmark and Spain. The impact of changes in the level of needs only becomes important when accompanied by income decreases, this category making up between 9 per cent of transitions in Denmark and 24 per cent in Ireland.

*Table 9.4 Transitions into poverty by changes in income and needs (row percentages)*

Country	Income < and needs same	Income < and needs >	Both same	Income same and needs >	Other
Denmark	76.9	9.4	12.5	0.3	1.0
Netherlands	56.7	16.9	20.9	4.1	1.4
UK	62.9	22.7	10.5	1.1	2.8
Ireland	53.9	23.7	12.5	4.2	5.7
Belgium	72.0	16.3	8.7	1.0	2.0
France	68.1	15.0	11.3	2.4	3.2
Germany	75.8	12.8	9.5	1.1	0.9
Portugal	70.0	14.0	8.6	2.8	4.7
Spain	76.7	13.4	6.4	1.2	2.3
Italy	75.3	14.5	6.4	1.3	2.4
Greece	71.2	16.3	7.8	2.0	2.8

*Note:* 70 per cent median poverty line.

*Source:* ECHP (1994–97), from Layte and Whelan (2003).

Is the same pattern true of movements out of poverty? Table 9.5 shows a comparable table to Table 9.4, except that this time we examine transitions out of 70 per cent income poverty. If anything, the dominance of changes in income is clearer here than in Table 9.4 with between 54 per cent of Danish exits and 80 per cent of Greek exits stemming from income changes alone. In fact, in Denmark over 23 per cent of transitions from poverty occur where income increases, but the level of needs is increasing as well.

Table 9.5 Transitions out of poverty by changes in income and needs (row percentages)

Country	Income > and needs >	Income > and needs same	Income > and needs <	Both same	Other
Denmark	23.3	54.1	16.1	6.5	0.0
Netherlands	6.6	79.0	13.3	1.1	0.0
UK	7.9	73.5	17.5	1.1	0.0
Ireland	17.1	60.1	21.2	1.3	0.3
Belgium	10.6	75.0	10.4	3.7	0.3
France	6.4	71.3	19.1	2.9	0.3
Germany	4.1	75.5	14.1	6.0	0.3
Portugal	6.4	74.3	16.7	2.4	0.2
Spain	8.2	75.7	13.2	2.4	0.5
Italy	8.4	77.5	10.4	3.0	0.7
Greece	6.5	80.0	12.7	0.7	0.1

Note: 70 per cent median poverty line.

Source: ECHP (1994–97), from Layte and Whelan (2003).

### Income Changes and Exits from Poverty

If transitions both into and from poverty tend to be more strongly associated with changes in income rather than demographic changes, are different sources of income of greater importance across countries and if so what does this tell us about the effects of welfare regimes? Layte and Whelan (2003: 90) outlined three hypotheses on these issues:

*Hypothesis 1:* Different welfare regimes influence the bundle of incomes, 'the income package' that individuals and households receive. Given the more generous and greater provision of transfers in social-democratic and employment-centred regimes we would expect that a smaller proportion of transitions will be due to changes in state transfers in subprotective and liberal regimes as compared to employment-centred and particularly social-democratic regimes.

*Hypothesis 2:* On the other hand, the order of regimes will be reversed in terms of the importance of earnings in poverty transitions with earnings being of greatest importance in subprotective regimes since a greater proportion of households' income packages in these states is made up of earnings.

*Hypothesis 3:* The third hypothesis centres on the importance of different types of individuals in households and how this may vary across states given greater 'familialism' in residualist welfare states combined with high employment protection for 'insider' groups who tend to be older males. Given this, we hypothesised that changes in the incomes of the main earner in the household will be more important in the residualist states of southern Europe compared to all other types with liberal and employment-centred regimes being moderate in this respect.

We can examine evidence on the first two of these hypotheses in Figure 9.2. Because of space limitations, rather than show data for both entry into poverty and exit from poverty, here we focus solely on exits as the patternings in terms of the hypotheses at issue are very similar across entry and exits. As such, Figure 9.2 shows the proportion of transitions from poverty made up by changes in different types of household incomes (only transitions where income is changing). There is a clear differentiation between the countries, and, more importantly, the groups of countries in terms of the importance of social welfare transfers and incomes from earnings. Whereas in Denmark 20 per cent of transitions from poverty are as a result of increases in social welfare payments, this type of income is implicated in only 8 per cent of transitions in Greece, 4 per cent in Spain and 2 per cent in Portugal. The Netherlands, Belgium, France, Ireland and the UK making up an intermediate group. With Denmark our representative of the social-democratic regime and the southern European states the subprotective, this patterning clearly supports Hypothesis 1, although the usual definition of Italy as a subprotective state could be questioned given the importance of social welfare in poverty exits.

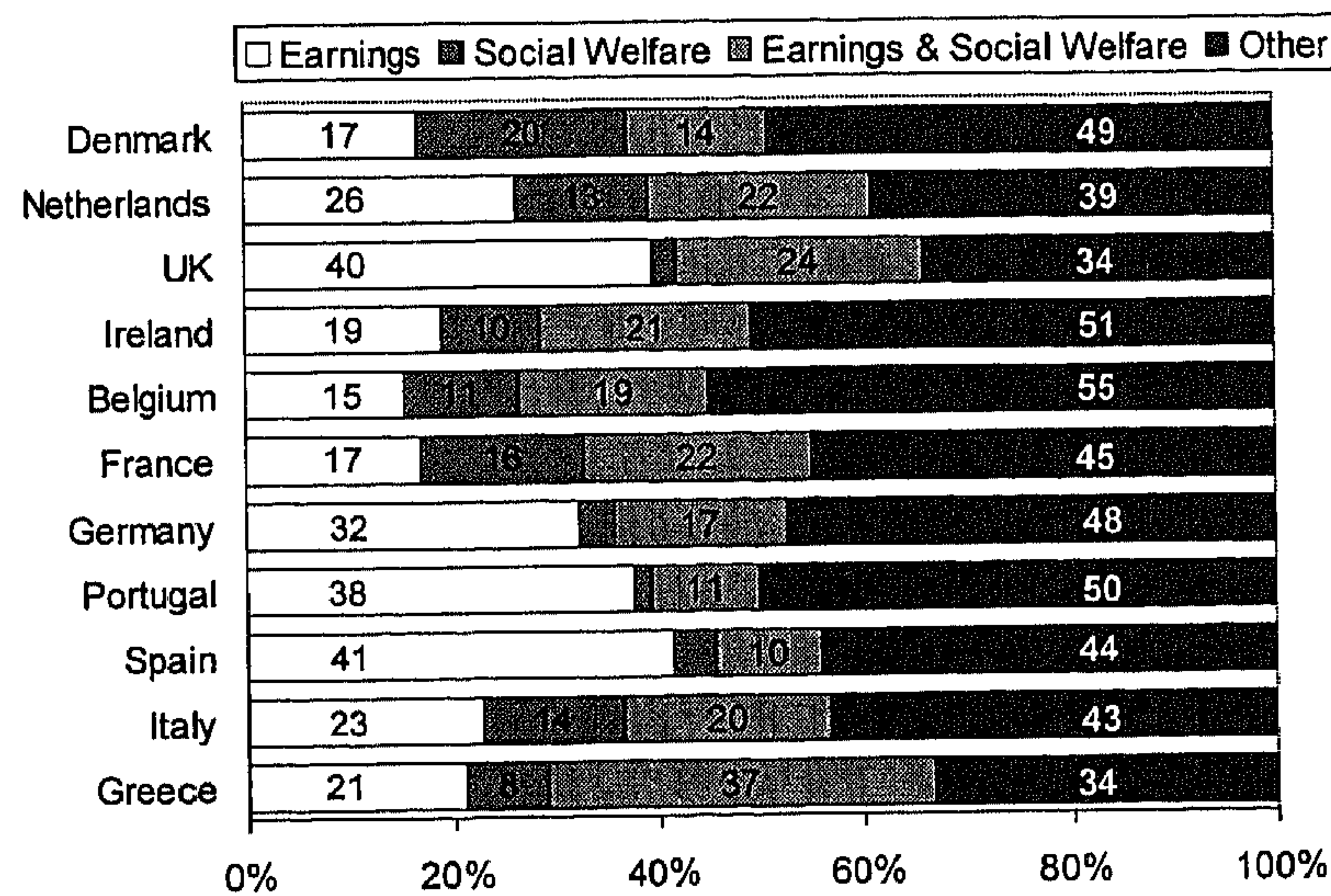
When we turn to the importance of earnings across states we see almost the opposite picture with earnings increases making up around 40 per cent of all transitions out of poverty in Spain and Portugal, whereas earnings are implicated in only 17 per cent of Danish exits. On the other hand, earnings are of more importance in the Netherlands at almost 26 per cent of transitions out of poverty, a higher figure than France and Belgium and Ireland.

The differential importance of earnings across the countries for exits from poverty is less clear than for social welfare, though earnings play a smaller role in Denmark and Belgium and an important part in Spain and Portugal, both as we might expect. Against expectations, earnings increases have a larger role in the Netherlands and the UK, particularly when combined with some form of social transfer.

The third of the hypotheses from Layte and Whelan (2003) stated above centred on the importance of different types of individuals in households and how this may vary across states. Given greater 'familialism' in residualist

welfare states combined with high employment protection for ‘insider’ groups – who tend to be older males – we hypothesised that changes in the incomes of the main earner in the household will be more important in the residualist states of southern Europe compared to all other types with liberal and employment-centred regimes being moderate in this respect.

Figure 9.2 Transitions out of poverty by type of increase in income



Note Poverty line defined as 70 per cent of median income.  
 Source: ECHP (1994–97), adapted from Layte and Whelan (2003).

Looking at entry and exit patterns across countries, the patterns indeed seem to support the hypothesis that the household head’s earnings will have a greater role in the subprotective states. The household head’s earnings making the largest contribution are Greece, Italy and Spain, though Ireland follows close behind, whilst the lowest proportion is found in Belgium and Germany.

**The Duration of Poverty Spells**

In the previous section, we changed the focus of analysis from descriptions of years in poverty to one based on transitions to look at the processes leading to and from poverty. What this perspective could not do, however, was examine the extent to which the probability of exit changed over the duration of the poverty spell. One of the central concerns of both researchers and policy



makers is the speed at which people leave poverty, since longer spells of poverty are likely to be far more damaging in terms of deprivation and economic strain experienced. One method of looking at poverty durations is through exit probabilities, but to do this we need to move to a 'spell-centred' mode of analysis. Whereas in the last section we simply examined transitions from poverty, regardless of the duration in poverty, here duration is our prime interest. However, because we can only observe spells of poverty through the window of five years of ECHP data, some of these spells will already have begun before ('left-censored'), or still be ongoing at the end of the observation period ('right-censored'). We avoided 'left-censoring' by only examining spells which began after the first year of the panel. We controlled for right-censoring and derived estimates of duration using the transition rate. These are calculated by dividing the number of exits or transitions from poverty in each year by the population at risk of exiting, that is, the number still poor. This means that sample sizes are quite large for the first year, but become steadily smaller and thus less reliable the longer the spell period. Unfortunately, the short run of years available in the ECHP data prevent us from offering an analysis of the true distribution of poverty durations since no spell can be more than three years long if completed, or four years if censored (using currently available data). However, it is useful to compare the durations derived from the exit probabilities between countries. Note that in Chapter 7 similar methods are applied to the study of exit from unemployment.

Table 9.6 from Fouarge and Layte (2003) shows the overall exit probabilities for the ECHP sample of poverty spells at each year of their duration. The figures show that the overall exit probability for all EU countries included in the table (first row) falls quickly between the first and second years of poverty from 46 per cent to 31 per cent, but then the rate of decrease slows so the exit rate is 24 per cent by the third year (remember there are no transitions after the third year to calculate exit probabilities from).

Cumulating these results we can see that 72 per cent of the people just beginning a spell of poverty will have left after three years. Interestingly, these results are very close to those found by Bane and Ellwood (1986), who found that the exit probabilities in their US sample were 45 per cent in the first year, 29 per cent in the second and 25 per cent in the third. Luckily they had access to the Panel Study of Income Dynamics (PSID) panel survey which has 12 years of usable poverty data and so they were also able to estimate long-run transition rates. Using this data they found that exit probabilities carried on decreasing after the third year reaching just over 7 per cent by the eighth year. Given the similarity in exit rates between these European findings and the US results found by Bane and Ellwood (1986), we

could use their extrapolations of a mean poverty spell duration of 2.7 years. Later work by Stevens (1995: 18) has adjusted this estimate using multiple rather than single spells of poverty for the same person and found that the average poverty spell over a 15-year observation window is four years.

It is likely that exit probabilities also differ between countries in the EU and applying the same welfare-regime theory employed throughout this chapter, we could envisage seeing a particular pattern. Fouarge and Layte (2003) offered this hypothesis:

*Hypothesis 4:* The social-democratic countries will have higher initial exit rates, but lower levels of incentives will lead to sharply falling exit rates from poverty as duration increases. In liberal and southern regimes on the other hand, low initial exit rates compared to corporatist and social-democratic countries will be maintained leading to roughly similar poverty durations across different regimes.

*Table 9.6 Exit rates from 60 per cent median income poverty by spell duration 1994–98 (percentages)*

Country	Spell length		
	1 year	2 years	3 years
Europe	46.0	31.3	23.7
Denmark	55.2	37.0	19.2
Netherlands	47.7	23.3	24.6
UK	41.7	27.2	34.5
Ireland	47.2	28.2	25.4
Belgium	47.9	25.9	17.9
France	42.8	32.8	14.0
Germany	47.6	33.0	15.7
Portugal	40.5	29.9	32.7
Spain	49.7	32.5	22.0
Italy	48.6	37.2	16.9
Greece	24.1	29.7	25.9

*Source:* ECHP (1994–98), adapted from Fouarge and Layte (2003).

Table 9.6 also shows the country-specific exit probabilities. Although there are differences in the exit rates in the table, the overall spread of rates is actually quite small with only 15 per cent separating the highest and lowest rates and seven of the countries being within 8 per cent of each other (though

the Danish rate in the first year is clearly higher than in the other countries). After one year of poverty, the Danish exit rate of 55 per cent is 6 percentage points higher than the next highest rate in Spain. At the other end of the scale Portugal, the UK and Greece have the lowest exit rates – the Portuguese rate being less than three-quarters of the Danish rate. However, as the duration of poverty lengthens, the country order changes quite substantially with the Dutch rate falling by 51 per cent, the Belgian rate by 46 per cent and the Irish rate by 40 per cent between the first and second years. Similarly, between the second and third years, the French rate drops by over 55 per cent so that whereas in Denmark approximately 77 per cent of those entering poverty will have left by the third year, in the Netherlands this rate is 70 per cent, in Belgium 68 per cent and lowest in France at 67 per cent. Interestingly, the slower decrease in the exit probability in Portugal means that after three years, 72 per cent of those who entered a spell of poverty will have left, the fourth highest rate. What implications do the results from this section have for our hypotheses in this chapter?

In many respects the results from this descriptive analysis are congruent with our fourth hypothesis. It is clear that Denmark, our prime social-democratic country, has the highest initial exit rate, although the Netherlands, the other representative of the social-democratic regime, has a more average transition rate around the same range as the corporatist countries of France, Germany and Belgium. Greece, Portugal and the UK have low initial exit rates, but Italy, Ireland and Spain all have rates close or greater than the corporatist countries. However, as hypothesised, we do see large decreases in the exit rates of the social-democratic and corporatist countries after the first year with the Dutch, Belgian and French rates dropping quickly whilst the liberal and southern regime rates tend to be maintained. These patterns mean that after three years, the proportions who have left poverty are very close across countries with only 10 per cent separating the highest and lowest rates and nine countries being with 7 per cent of each other.

### **Conclusions**

This chapter has drawn on the work of the European Panel Analysis Group to offer an examination of the dynamics of income poverty across EU states. Poverty analysis is now well developed, but until comparatively recently, poverty research tended to be cross-sectional in nature, even though poverty itself is far from a static phenomenon. Until the mid-1990s, the analysis of poverty dynamics was restricted to Germany, the Netherlands, Great Britain and the USA because these were the only countries with suitable survey data. However, the recent availability of five waves of the ECHP data set makes it possible for the first time to examine poverty dynamics processes across a

number of countries. This chapter has asked three basic questions: first, to what extent is poverty a more common experience when viewed longitudinally rather than cross-sectionally? Second, can we identify a tendency towards poverty persistence and does this vary in its extent across countries? Third and lastly, what type of events are more likely to lead to entry into and exit from poverty and does the impact of these events differ between different countries?

In terms of the first question, we saw that poverty is experienced by a far higher number of individuals when viewed longitudinally rather than cross-sectionally. Thus, using 60 per cent of median income poverty, the ratio between the longitudinal and cross-sectional numbers was between 1.5 and 2.1. However, though more people experience poverty than when compared to cross-sectional figures, if we extrapolate from the mean cross-sectional poverty line to an *expected* experience of poverty on the basis of independence between years in poverty, what we actually see are far fewer people experiencing poverty and a polarisation of persistent poverty. This is important since it suggests an 'inertia' to the experience of poverty that can 'trap' individuals and households, but the effect varies between countries with those from more social-democratic and employment-centred regimes being less polarised and closer to expectations based solely on probability theory.

The difference in the polarisation of poverty across countries was just one confirmation in the chapter of the welfare-regime typology set out in Chapter 1. Not only did liberal and residual regimes tend to increase the risk of persistent poverty, they also increased the risk of recurrent, or repeated poverty as shown by the analysis of the poverty profiles set out in Fouarge and Layte (2003). The analysis of the poverty profiles also showed that individual and household characteristics too were very important in determining the risk of persistent and recurrent poverty with demographic characteristics such as being a single parent, or being in a household with larger numbers of adults and children all contributing to an increased risk. However, the greatest increase in risk came from socio-economic variables such as the employment status and level of education of the individuals in the household. These analyses described the factors leading to persistent and repeated poverty, but did not uncover the factors implicated in transitions into and from poverty. By disaggregating transitions into and from poverty in the fourth section by the 'events' leading to transition we found that changes in the level of income were of vital and prime importance. However, we hypothesised that the sources of income and the person responsible in the household would differ dramatically across countries given different regime characteristics and these hypotheses were confirmed by analysis. Similarly, when we turned to the interaction of individual and household characteristics with regime type in the last section we found that changes in both the ability

of the household to generate resources and the level of need led to transitions into and from poverty, though the patterning by regime was clearer for factors affecting resources.

We also used transition rates to examine how country context and poverty duration impacted on exit from poverty. Applying welfare-regime theory once again we found that the social-democratic states such as Denmark had higher exit rates than liberal or residual states, but this patterning was not as strong as in previous sections. From the point of view of income redistribution, it has been shown that notwithstanding the success of the liberal regime reducing medium-term poverty, both pre- and post-transfer poverty rates are found to be highest there. However, it is generally true that welfare state policies are more egalitarian in the longer term.

The availability of truly comparative longitudinal income information opens up areas of analysis that were unimaginable before, and allow us to begin to disentangle the role of different factors in producing disadvantage and particularly the role of the institutions and regulations of state. Across the EU there are a variety of different types of welfare arrangements which influence the life chances and standard of living of citizens in different ways and which often effect citizens in different ways depending on their characteristics.

A major lesson drawn from the research by the European Panel Analysis Group relates to the great added value of longitudinal data at the micro level. Whereas cross-sectional poverty studies can only tell us who is in poverty at a single point in time, longitudinal data on income allows us to study and explain movements in and out of poverty over time and to see to what extent poverty is a long-term and persistent experience rather than a temporary situation. Being able to understand what factors influence the probability of experiencing a longer spell of poverty is crucial not only for an academic understanding of how different individual and household characteristics interact with varying socio-economic systems and institutions, but also for the development of more effective social policy interventions.

## Notes

1. 'Objective' definitions use information about the population in question whereas 'subjective' definitions make use of the opinions of the population.
2. Though income consumption measures and 'direct' measures of household resources are also used (Whelan et al., 2001).
3. The version of the ECHP used does not include data for Luxembourg and Finland for 1998.
4. The table includes only the 11 ECHP countries for which income information is available for all five waves.
5. The European Commission has accepted a definition of persistent poverty based upon being currently poor and being poor in two of the previous three years (though not necessarily the

- last). This is very much a cross-sectional definition of persistent poverty and thus we do not adopt it here.
6. Unfortunately it is not possible to control for censoring using this approach, thus, as in the first section of the analyses in this chapter, here we use a balanced panel of those in the ECHP database from 1994 to 1997 weighted appropriately.
  7. As we are using relative income poverty lines it is also possible that a person could enter or leave poverty without any form of change if median income and thus the poverty line moves around them. Income measures are also prone to random fluctuation that can also lead to poverty transitions.
  8. To minimise the influence of random error in income change, Layte and Whelan (2003) took only changes of 10 per cent or more in income as indicative of change.

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- \* Direct output from EPAG's *DynSoc* research programme (see page 268).