

## The Dynamics of In-Work Poverty

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**Abstract** This chapter highlights the potential of a longitudinal approach to gain better insight into the dynamic patterns of working poverty. While cross-sectional research can show us the characteristics of people at risk of in-work poverty, it cannot show us how transitory or persistent in-work poverty is. A longitudinal approach can further our insight by showing the duration of in-work poverty, the typical sequence of events leading to working poverty and the patterns of exit from in-work poverty. It can furthermore show us which population groups are at risk of persistent working poverty, and how episodes of working poverty are embedded in the life course. We start this chapter with highlighting the advantages of a longitudinal approach to working poverty. In a second section we will review the existing research evidence on dynamic approaches to poverty and employment. In the third section we will introduce the research design needed to study dynamics of working poverty. This includes a discussion of the type of data necessary (socio-economic household panel data), as well as a brief overview of the relevant analysis techniques. The fourth section of the chapter includes empirical examples of the dynamics of in-work poverty.

**Author's biography:**

**Leen Vandecasteele** is a Junior Professor of Sociology at the University of Tübingen. Her research interests are in social stratification and the life course. Her publications examine mechanisms of social inequality in the life course and how these are influenced by the institutional and social context. She previously worked at the European University Institute, the University of Manchester and the University of Leuven. Her research was published in , among others, the *European Sociological Review*, *Review of Income and Wealth*, *European Societies*, *Journal of Happiness Studies*.

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## 1. Introduction

This chapter highlights the potential of the longitudinal approach for gaining a better insight into the dynamic patterns of working poverty. Most welfare states explicitly or implicitly aim to protect their citizens from life risks which may lead to poverty (Baldwin, 1990; Leisering & Leibfried, 1999), and policy interventions are often targeted at helping people escape from poverty. In this light, gaining better insight into the dynamics of in-work poverty can help policy-makers to better target risk groups. While cross-sectional research can show us which socio-demographic groups face a higher in-work poverty risk, it cannot show us how transitory or persistent in-work poverty is for these people. Furthermore, cross-sectional approaches only provide tentative evidence on the life events preceding working poverty. A longitudinal approach can deepen our insight by showing the duration of in-work poverty and its recurrence, the typical life events leading to working poverty, and the patterns of exit from in-work poverty.

Some of the questions that could be more easily addressed with longitudinal research include: do transitions into low-wage or precarious work increase the risk of in-work poverty? Or is job loss of a household member more strongly associated with a transition to in-work poverty? Are activating labour market measures increasing working poverty rates as they shift poor persons from non-working to working? Is a divorce followed by an increasing in-work poverty risk, or is working poverty rather a predictor of decreasing marital quality and divorce?

Very little previous longitudinal research focuses specifically on working poverty, and working poverty has not been systematically examined as a transitory phenomenon. However, we can gain some insights into the dynamics of working poverty from the literature on poverty dynamics. Therefore, in the next section we introduce the life course perspective on economic insecurity more generally. Subsequently, the research evidence on risky life phases for working poverty is reviewed, and a conceptual frame for the longitudinal study of working poverty is developed. In the fourth section, we will introduce the methodological design needed to study the dynamics of working poverty. This includes a discussion of suitable data sources as well as a brief overview of relevant analysis techniques. We conclude in section 5 with empirical examples of working poverty dynamics in the UK, combining data from the British Household Panel Study with the UK Longitudinal Household Survey. We include figures on the incidence of in-work poverty entry and exit as well as typical durations in each state. Furthermore, we show the determinants of working poverty entries as well as exits.

## 2. A Life Course Perspective on Economic Insecurity & Working Poverty

It is often argued that the occurrence of economic hardship should be studied dynamically over a person's life. Accordingly, the experience of a poverty spell is understood as a passage in a person's life trajectory. Such passages are often characterised by unemployment or inactivity – but not always. Our knowledge of the prevalence of economic hardship during employment phases largely stems from empirical and theoretical studies focusing on poverty and economic risk more broadly. Therefore, our considerations are rooted in general poverty research, and on the basis of the insights gained here, working poverty will be conceptualized as a dynamic phenomenon in the next section.

The dynamic and life course aspects of poverty research were first highlighted by Seebohm Rowntree (1902) in his study on poverty in the English town of York. Rowntree reported a life cycle of needs and resources for working class people. He found that a typical working class life is characterized by five alternating periods of deprivation and comparative wealth. The periods of hardship were: childhood, early middle life with childrearing and old age after retirement from work. The periods in between were characterized by relative wealth. Rowntree is also clearly aware of the longitudinal implications for the reporting on poverty figures for social policy purposes. He states that *'The proportion of the community who at one period or other of their lives suffer from poverty to the point of physical privation is therefore much greater, and the injurious effects of such a condition are much more widespread than would appear from a consideration of the number who can be shown to be below the poverty line at any given moment'* (Rowntree, 1902, pp. 169-172). Apart from Rowntree's account, for much of the 20<sup>th</sup> century, poverty researchers gave little attention to the temporal aspect of poverty. Whenever the longitudinal dimension of poverty was acknowledged, it focused on downward movements into long-term poverty or the intergenerational transmissibility of poverty. Only with the availability of mature socio-economic household panel data and the advancement of longitudinal research techniques in the 1980's has a major upsurge in attention on mobility over the life course occurred. Dewilde (2003) provides a further overview of life course theories and how they link to social exclusion and poverty.

When examining economic hardship in a life course perspective, two fundamental questions are usually addressed:

- (1) How much mobility is there into and out of economic hardship?
- (2) What are the specific life phases and life events associated with economic hardship?

### ***Mobility into and out of economic hardship***

The patterns of mobility into and out of poverty are important to consider as they tell us something about the impact poverty is likely to have. If the period of income loss is relatively short and people move out of poverty again relatively quickly, then this period can feasibly be bridged by relying on savings, debt, family support or reduced spending. However, people's resources deplete after a while and the longer or more frequently a family needs to live from an income under the poverty line, the more severe its impact on their living standard will be.

In the USA, Bane and Ellwood adopted an innovative approach by taking periods or spells of poverty as the unit of analysis (Bane & Ellwood, 1986). Their results show that most of the people who ever become poor will only remain so briefly, while at the same time the majority of people in poverty at a given time will have long spells of poverty before they escape. In Europe, most poverty spells are short, but a substantial share of the people experiencing poverty go through repeated spells (Fouarge & Layte, 2005).

Another reason for examining the typical poverty durations and mobility patterns is to consider the distribution of economic risk in the society. If the amount of mobility into and out of poverty is high and poverty durations are short and not recurrent, the experience of poverty is widespread in society. This demonstrates that a relatively large share of the population has experienced a poverty episode, but most episodes were short. Alternatively, poverty mobility may be high and poverty episodes short but the same people may experience repeated poverty episodes. In this scenario, and also if poverty spells are mainly long, poverty is concentrated among certain social groups. Concentrated poverty is often seen as the most problematic for policy makers, as the level of disadvantage and inequality is larger. On the other hand, a high cross-sectional poverty rate is often seen as less problematic if poverty durations are short. It could also be argued that following Rawl's principle of distributional justice, short poverty durations for a larger share of the population are preferable (Rawls, 1971).

When we assess poverty dynamics and the rate of mobility people experience, we have to be aware of the possibility of measurement error in large surveys, i.e. when respondents' poverty status is not correctly reported due to, for instance, an error in the income recorded by the study. It has been shown that such measurement error in particular waves of a longitudinal study leads to an overestimation of poverty mobility rates (Whelan and Maître, 2006, Breen and Moisio, 2004, Rendtel et al., 1998). Especially the number of poverty exits seems to be overestimated, which implies that the poverty length would be generally underestimated.

### ***Life events and life phases associated with economic hardship***

Besides studying the duration and recurrence of poverty spells, socio-economic researchers are also interested in the typical life course events associated with poverty entry or exit. Temporary and long term poverty spells are studied within a person's biography. Accordingly, previous research has shown that some life course events such as divorce, the birth of a child, or the loss of a job are associated with the movement into and out of poverty (Fouarge & Layte, 2005; Giesselmann & Goebel, 2013; Kohler et al., 2012; Vandecasteele, 2011; Vandecasteele, 2012; Vandecasteele, 2015; Whelan, Layte, & Maitre, 2003). The relevant life course events can be classified as either *employment situation changes* or *household composition changes*. They are seen as so-called *triggers* for poverty experiences. DiPrete and McManus (2000) show the poverty entry and exit effects of changes in employment status - from work to no work and opposite - and, especially for women, of partnership changes, such as union formation, dissolution or widowhood (Andress, Borgloh, Bröckel, Giesselmann, & Hummelsheim, 2006; Bröckel & Andress, 2015). Other triggering life events occur when a child starts his/her own household and when new persons enter the household (baby, partner, etc.) (Fouarge & Layte, 2005; Jenkins, 1999). Furthermore, it has been shown that some life events are not a poverty risk for most people, but they may trigger the latent poverty risk of people with certain disadvantages, such as a low education level, a lower social class or female gender (Vandecasteele, 2010; Vandecasteele, 2011). For instance, whereas childbirth does not entail a poverty risk for most families, people from lower social classes and lower educational levels face an especially large increase in their poverty risk upon the birth of a child (Vandecasteele, 2011). Similarly, whereas divorce does not significantly increase the poverty risk for men, women experience a clear disadvantage in their heightened poverty rates after divorce, when the income of their partner is no longer shared to the same extent with the family (Andress et al., 2006; Vandecasteele, 2011). Women and people with low educational levels and lower social classes also suffer more long-term poverty consequences from divorce (Vandecasteele, 2010). Underlining the importance of the institutional context, poverty trajectories after life events have also been shown to differ between welfare states (DiPrete & McManus, 2000; Vandecasteele, 2010).

Besides trigger events, we can also determine life phases in which individuals face larger economic risk. Risk periods for poverty are, among others, young adulthood, retirement, unemployment, lone parenthood and periods of sickness (Barnes, Heady, & Middleton, 2002; Biewen, 2006; Leisering & Leibfried, 1999; Whelan et al., 2003).

### *Life events and life phases associated with working poverty*

For *working* poverty, empirical evidence with longitudinal data on its transitory nature or triggering events is rather scarce. There are, however, some cross-sectional studies which indicate the life phases during which people face a higher working poverty risk. Reviewing the literature, we can distinguish between socio-demographic and labour-related phases during which people face a heightened risk of working poverty. Important socio-demographic risk factors for working poverty are living in a household with many children, and being a single parent or divorcee (Andress, 2008; Brady, Fullerton, & Cross, 2010; Crettaz, 2013; Fraser, 2011; OECD, 2009). The main labour market risk factors for working poverty are receiving a low wage (Goerne, 2011), being employed on a temporary or part-time basis (Gutierrez, Ibanez, & Aroa, 2011), being self-employed (Gutierrez, Ibanez, & Aroa, 2011; Lohmann, 2008), and having a low work intensity at the household level (Goerne, 2011). The vulnerable phases in the life course can be studied with the help of conceptual frameworks for the determinants of working poverty, which often distinguish between (1) low wage, (2) weak household level labour force attachment and (3) mismatches between household resources and household need (Crettaz, 2013; Lohmann, 2009).

The findings from cross-sectional analyses are partly also confirmed by the scarce empirical evidence on working poverty transitions: Gutierrez et al. (2011) show that demographic events in the households of working persons are associated with a high risk of entering working poverty in modern economies. In line with studies on poverty transitions mentioned in the previous section, their analysis reveals that a decrease in the number of earners and an increase in the number of children in the household are risk factors for poverty transitions of working persons. Giesselmann (2009; 2015) specifically analyzed the in-work poverty risk of labour market entrants and re-entrants. He found that these groups face a larger in-work poverty risk than other employees<sup>1</sup>. Thus, in line with cross-sectional research on working-poverty determinants, this suggests that labour market entries into low paid jobs constitute an important transition into working poverty.

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<sup>1</sup> While there is a generally disproportional WP risk for entrants and re-entrants, the extent to which these two groups differ seems to depend on country characteristics: in Germany, a country with strong employment protection legislation (EPL) and a rather centralized bargaining system, entrants to the labour market are at a higher working poverty risk than re-entrants. In the UK, a country with rather weak EPL and unionization, re-entrants from unemployment are at substantially higher risk than entrants from the educational system (Giesselmann 2015).

In summary, poverty is a phenomenon which is, historically and still, highly dynamic on the individual level. Research has shown that poverty transitions are often triggered by critical life events and therefore are linked to specific life phases. While transitions to unemployment or inactivity are associated with poverty transitions, other events trigger poverty for people who remain employed. Typically, such events are related to household composition changes like childbirth, divorce, household formation and partner's unemployment. Additionally, changes in the work situation may lead to the onset of a working poverty spell. In the next section, we will further explore such dynamics and conceptualize working poverty as a longitudinal phenomenon.

### 3. Conceptualizing Working Poverty as Longitudinal Phenomenon

The number of studies treating working poverty as a dynamic, transitory phenomenon is still limited and a clear conceptualization of working poverty as a dynamic phenomenon has not yet been established. This conceptualization is specifically relevant, as working poverty is a bi-dimensional construct, referring to both the individual level (*employment*) and the household level (*poverty*). The complexity of this construct translates into different types of transitions in the longitudinal perspective. Therefore, the starting point of conceptualizing working poverty as a dynamic phenomenon is to disentangle these different types of transitions in a conceptual framework. In this section, we introduce the concepts we need to study working poverty in a dynamic perspective.

As mentioned earlier in the text, there are different types of events defining a movement into working poverty<sup>2</sup>. This stems from the bi-dimensionality of the concept of working poverty, combining *individual labour market status* on the one hand and the *household's economic resources* on the other. See Chapter 2 in this Handbook for a further discussion of this issue. Figure 11.1 shows the 4 different possible combinations of the binary variables *employment* and *poverty*.

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<sup>2</sup> An *event or transition* involves the movement from one state to the next between two consecutive time points. Many researchers use the concepts event and transition interchangeably – which we do here too. Sometimes a distinction is made between the two whereby an event is defined as a more or less abrupt change while a transition is less abrupt in that it constitutes a change that follows a social norm or institutionalized pattern, such as a transition from work to retirement (Dewilde, 2003).



	Household is ...	
Person is ...	(1) Not Poor	(2) Poor
(A) Not Working	Not Working, Not Poor	Not Working, Poor
(B) Working	Working, Not Poor	Working Poor

Figure 11.1 Dimensions of Working Poverty

Only one of these constellations (Cell B2) is defined as working poverty. The other three, therefore, can be the initial condition for a transition into working poverty: a person can be *non-poor working* (Cell B1), *non-working & poor* (Cell A2) or *both non-poor and non-working* (Cell A1) prior to the event. Similarly, people can move to these 3 other positions after a spell of working poverty. The bi-dimensionality of the cross-sectional concept of working poverty thus leads to a multitude of possible transitions into and out of working poverty. The differentiation between the initial states is fundamental for understanding the mechanisms leading to working poverty.

Figure 11.2 illustrates how the bidimensionality of working poverty translates into different types of transitions in the longitudinal perspective. Between years one and two, the person experienced a transition to *working poverty* from *working non-poverty*; between years four and five, the person experienced a transition from *working poverty* to *non-employed poverty*. between years five and six, the person experiences a shift from *non-employed poverty* to *working poverty*, and between years 7 and 8 the person experiences a transition from *working poverty* to *working non-poverty*. As the person never experienced *non-employed non-poverty* during the observational window, a transition from this state into working poverty is not observed here.

Household	Individual	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8
Non-Poor	Working	Dark Blue	Grey	Grey	Grey	Grey	Grey	Grey	Dark Blue
	Not working	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey	Light Grey
Poor	Working	Light Grey	Dark Blue	Dark Blue	Dark Blue	Light Grey	Dark Blue	Dark Blue	Light Grey
	Not working	Light Grey	Light Grey	Light Grey	Light Grey	Dark Blue	Light Grey	Light Grey	Light Grey

Figure 11.2 Example of an In-Work Poverty Trajectory

*Life events* leading up to such poverty entries and exits have been successfully employed in the context of poverty transition research (see, for example: Giesselmann & Goebel, 2013; Kohler et al., 2012; Vandecasteele, 2011), and can easily be extended to research on working poverty. In line with the identified risk-factors for working poverty, hypotheses on triggering events might refer to the *individual labour market position* (change of occupational status, shift to low wage work), the *household composition* (childbirth, divorce) or the *household's labour supply* (partner's job loss/change). While work events often coincide with household events, some in-work poverty episodes are more clearly linked to either the work or the household status. Working poverty researchers address questions like: do divorced persons have a high risk of working poverty as they are no longer able to pool their labour income with other incomes on the household level? Are activating labour market measures increasing working poverty rates as they shift poor persons from non-working to working in the low paid sector? Such questions clearly demonstrate that the type of transition is not only relevant for correctly specifying the transitions, but also for interpreting the mechanisms leading to working poverty. They show how important it is to distinguish between the different transitions and stress the significance of the longitudinal perspective on working poverty. Life-course events which trigger working poverty will typically be associated with one of the three specific origin states illustrated in Figure 11.1: while one might assume *labour market entry and re-entry events* to carry a risk for a transition from *non-working poverty* into *working poverty*, *labour market transitions* (like transitions into low wage or atypical employment) and *household events* associated with changes in households needs or resources will typically be associated with a high transition risk from *working non-poverty* to *working poverty*. The identification and description of the type of

transitions is therefore an appropriate starting point for more complex longitudinal life course designs.

Next to poverty transitions, researchers also study poverty *spells* and *trajectories*. A *spell* shows us the duration of an episode, of for instance working poverty. The spell approach has become an influential way of studying poverty dynamics (Bane & Ellwood, 1986). It is used as the basis of analysis in event history analysis or survival analysis (see below). In Figure 11.2, the first in-work poverty spell spans three year (yr2 - yr4) and the second in-work poverty spell spans two years (yr 6 - yr7). A trajectory on the other hand, is a pathway characterized by a movement across states of, for instance, employment across successive years. It is defined by a sequence of life events and transitions, and changes in state that are more or less abrupt (Elder, 2009). A trajectory is thus a sequence of life events and spells. In Figure 11.2, the sequence of in-work poverty entry, duration and exit can be defined as that person's in-work poverty trajectory.

#### **4. Longitudinal Research on Working Poverty in Practice**

In the previous section, we have conceptualized working poverty as a transitory, longitudinal phenomenon. This section introduces the appropriate methodological design for longitudinal working poverty analysis. This includes an overview of the type of data necessary as well as a brief discussion of relevant longitudinal analysis techniques and their potential in the context of working poverty.

##### ***Longitudinal Data***

As mentioned earlier in this volume, the measurement of working poverty combines information from two levels: information on individual employment and on household resources. Consequently, we need data from a socio-economic survey which gathers employment and socio-demographic information on individual persons as well as their household context. In order to measure working poverty as a longitudinal phenomenon, this information has to be collected continuously or repeatedly, preferably in regular intervals. Within large scale longitudinal surveys, it has become standard to collect information on households' resources on a yearly basis—we will discuss the problems arising from this relatively long interval below. Additionally, information pre-dating the time of interview is sometimes collected retrospectively within surveys; such a retrospective survey is, for example, conducted in the context of the SHARE project (Börsch-Supan et al. 2011). However, life-

course events (like transitions from inactivity to employment) are subject to misreporting in the context of retrospective surveys. Complex socio-economic outcomes relevant to detect poverty, like household income, are subject to even more severe memory biases (and therefore usually not collected within retrospective or calendrical surveys). While register data (from tax institutions or insurance) might help produce more complete life-history biographies, such data is only available for limited number of (northern European) countries (Verma 2007). To sum up: while monthly or continuous measurements of socio-economic living conditions would be preferable to study and describe (working-)poverty dynamics, most available data sources stem from prospective surveys with yearly measurement intervals. Such data is usually called (socio-economic) *household panel data*.

Fortunately, many of the scientifically available socio-economic household data are provided in panel format. Examples of established socio-economic panels are the Socio-Economic Panel in Germany (SOEP) (Wagner, Frick, & Schupp, 2007), the Panel Study of Income Dynamics (PSID) in the United States, or the British Household Panel Survey (BHPS) (University of Essex, 2010), and its successor, the UK Household Longitudinal Study ‘Understanding Society’ (University of Essex, 2015). Furthermore, the cross-national European Union Statistics of Income and Living Conditions (EU-SILC) might also be regarded as a potentially useful data source for longitudinal working poverty analyses (Eurostat, 2005). However, that survey only followed persons up to four years. This restricts the scope for life-course analyses and sharply contrasts the observational windows offered by the above-mentioned country-specific socio-economic household panels, which cover up to 30 years. While these, in turn, are not primarily designed to conduct cross-country research, they are generally suitable for international comparisons because of similar designs. Furthermore, the CNEF initiative improves cross-national comparability further by providing harmonized formats, equivalent concepts, variable names and documentation in a cross-national equivalent file (Frick, Jenkins, Lillard, Lipps, & Wooden, 2007).

The next part of this chapter illuminates the concrete techniques used to analyse working poverty from a life-course or longitudinal perspective on the basis of household panel data. After this, we will turn to the problems of such data and their relevance in the context of research on in-work poverty.

### ***Longitudinal Analysis Techniques***

The life course perspective on working poverty leads to questions regarding the entry into and exit out of working poverty, its duration or its association with critical life events. These kinds of questions rely on the proper identification of working poverty transitions, as conceptualized in section 3. Therefore, *transition analyses* can be regarded as the basic longitudinal technique in the context of WP-research. *Transition analyses* can reveal the likelihood of entering or exiting working poverty from/to different other states, e.g. transitions from *working poor* to *working non-poor* or from *working poor* to *employment exit*. This shows us the yearly inflow and outflow from/to working poverty to/from different non-working poverty states. Furthermore, relevant life events and determinants of transitions into and out of working poverty can be examined.

*Duration analyses* can be regarded as the counterpart to such transition analyses, addressing the stability of working poverty on the individual level from a different angle. *Duration* or *survival analysis* explicitly models the duration someone is in the state of working poverty and the different exit patterns (Allison, 2014). This design defines persons to be at risk of escaping working poverty as soon as they enter *in-work poverty*. One can then empirically model the duration until a transition out of that state occurs, and see how the exit probability is affected by a given a set of covariates (for example: changes in household composition or changes in labour market status).

Next to analysing transitions and durations, one can also focus the analysis on the work-poverty trajectory as a whole. With exploratory techniques such as *sequence analysis* (Abbott, 1995; Aisenbrey & Fasang, 2010) one can establish patterns in the data and determine the most typical sequences of work – poverty status people experience over time. Other clustering techniques such as *latent class analysis* have also been used to analyse poverty trajectories over time (Vandecasteele, 2010).

Finally, a well-known property of empirical longitudinal designs is their potential to control for unobservable heterogeneity and to validate causal interpretations by focusing on individual change (Baltagi, 2005). This property naturally applies also in the context of working poverty research: life-course designs following the WP-risk around critical life-events automatically exploit this benefit. It shall be noted, however, that many scholars who use longitudinal data structures are not explicitly concerned with transitions, dynamics or the general conceptual framework of the life-course approach (see Giesselmann et al. 2015). Instead, the benefits of

longitudinal data are often boiled down to its provision of better counterfactuals than cross-sectional reference groups and therefore better estimates for causal effects (Brüderl 2015).<sup>3</sup>

### ***Data-related Problems in Longitudinal Analyses on Working Poverty***

Panel data are complex and can pose many challenges and pitfalls in the processes of surveying, managing and analysing. An overview on such issues is provided in the introductory chapter of Andreß et al. (2013). In this section, we want to focus on some specific methodological challenges of panel data in the context of working poverty research.

While *yearly* panel data offer us fairly detailed measures of the changeability of income and work status, transition rates and the effect of life events could be underestimated if people move into or out of work poverty in between measurements.

Another problem relates to the follow-up of respondents over the waves of a longitudinal study. *Panel attrition* occurs when originally sampled households drop out of the study between waves (Krell et al, 2015; Vandecasteele & Debels, 2007). If the likelihood of such drop-outs is related to the socio-economic status and specifically households in the low-income strata drop out of the survey between waves, transitions into working poverty might be underreported. Furthermore, some panel studies (specifically those based on register instead of survey data) restrain from following individuals across households: in the European Study of Income and Living Conditions, for example, after a household dissolution (due to separation or new household formation), the person leaving the household drops out of the gross sample. As changes in the household composition are major reasons for WP transitions, such transitions are then completely eliminated from the data and become invisible to the researcher: as a consequence, the number of transitions into working-poverty is likely to be underestimated. Organizations providing panel data often address such problems and provide specific weights that work against different processes of panel attrition (Kroh 2014).

A *measurement* problem related to working poverty in the EU-SILC was identified by Lohmann (2011), who found inconsistencies in the identification of working versus non-working persons in countries providing register data: Often, persons who, according to the survey, are gainfully

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<sup>3</sup> Correspondingly, the most important multivariate method to analyse longitudinal data, the fixed effects regression, does not explicitly model or explain transitions and dynamics. However, it systematically uses such dynamics to construct within-estimators with superior statistical properties compared with standard OLS-estimates (Allison, 2009; Giesselmann & Windzio, 2014). In the example of Figure 11.2 above, for instance, a fixed effects regression would examine how on average the time spent in working poverty differs from the years not in that state on the basis of specified explanatory variables.

employed are reported as having no earnings in the register data. This phenomenon increases the risk of misclassifying working poverty as non-working poverty. From a longitudinal perspective, it conceals shifts in the employment status and consequently bears the danger of underreporting transitions into working poverty.

## 5. Research Example

In this section, the concepts and methods introduced above will be illustrated on the basis of a research example of the British Household Panel Study and the UK Household Longitudinal Study ‘Understanding Society’. By merging these datasets together, we have yearly longitudinal panel data spanning from 1991 to 2012. The UK represents a prototypical liberal welfare regime: having comparatively low degrees of decommodification and labour market regulation, it is characterized by a large low-wage sector. Furthermore, its labour market configuration serves as a model for policy transformations in many modern economies towards an increased market orientation (Clasen 2011). Welfare states with low transfer rates and a large number of atypical, unregulated jobs offer strong incentives to (re-)enter precarious employment (Giesselmann 2015). Consequently, there are a lot of labour market dynamics on the individual level, and one would expect relatively high WP transition rates.

A poor worker is defined as a person who is in gainful employment and lives in a household with an income below 60% of the year-specific median. Employment is measured on the basis of current employment status, whereby persons in full-time education, parental leave, pensioners, persons only marginally employed (<10hrs. per week) and persons under 18 and over 64 are seen as not employed. Household income is measured on the basis of a question on the current net household income, and weighted with the modernized OECD-scale to account for the number of adults and children in the household. We excluded transitions that only entail a negligible income change and defined a transition into and out of working poverty as a transition that entails a minimum 10% decrease/increase in the equivalized household income.

In a first step, we examine transitions between the different combinations of work and poverty. We first focus on the people in employment who are not poor (Figure 11.1, Cell B1). In Figure 11.3, we present transitions into working poverty for this group. These transition rates are calculated on the basis of all consecutive observation years (called  $t0$  and  $t1$ ) between 1992 and

2012. Thus, these rates reflect the *conditional likelihood* of a transition into working poverty within one year, given a person is working and their household is not in poverty. A second trend in the graph shows the likelihood of the same group of making a transition to unemployment. The risk of working poverty was contrasted with the unemployment entry risk because unemployment is usually regarded as a large, if not the largest economic risk faced by workers. Figure 11.3 shows that the risk for a non-poor working person of moving into either one of the precarious states *unemployment* or *working poverty* lies, on average, at around 5.5% between 1992 and 2012 in the UK. We see that in the early 1990s an unemployment entry was indeed the slightly larger risk for workers than an entry into working poverty. However, this pattern reversed in the mid-1990s: From 1995 onwards, employed people face a larger risk of entering working poverty than of losing their job. The difference in the likelihood of these events has increased since then; while the risk of an entry into working poverty almost doubled from 2.25 to 4per cent between 1994 and 2012, the conditional yearly risk to experience a transition into unemployment remained constantly under 2.5 per cent in this period.

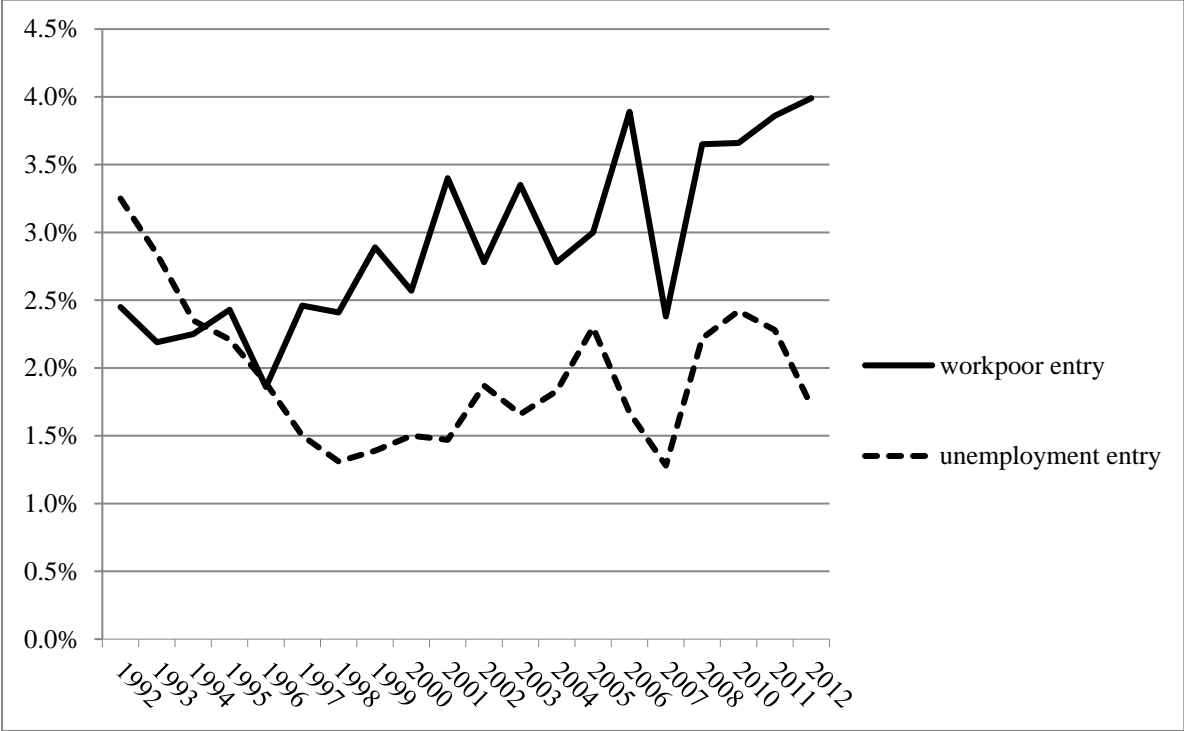


Figure 11.3 Risk of work poor entry compared to unemployment entry risk at t1 for non-poor workers (t0); BHPS, Understanding Society, 1992-2012, weighted

Besides workers, unemployed people can also enter working poverty. Therefore, in Figure 11.4, we present the likelihood for unemployed people to enter working poverty compared to entering non-poor employment. We see that, overall, the likelihood to enter non-poor employment is higher than the risk of entering working poverty. However, a comparison of Figure 11.3 and



Figure 11.4 shows that the likelihood to enter in-work poverty is higher for people in unemployment than it is for non-poor workers.

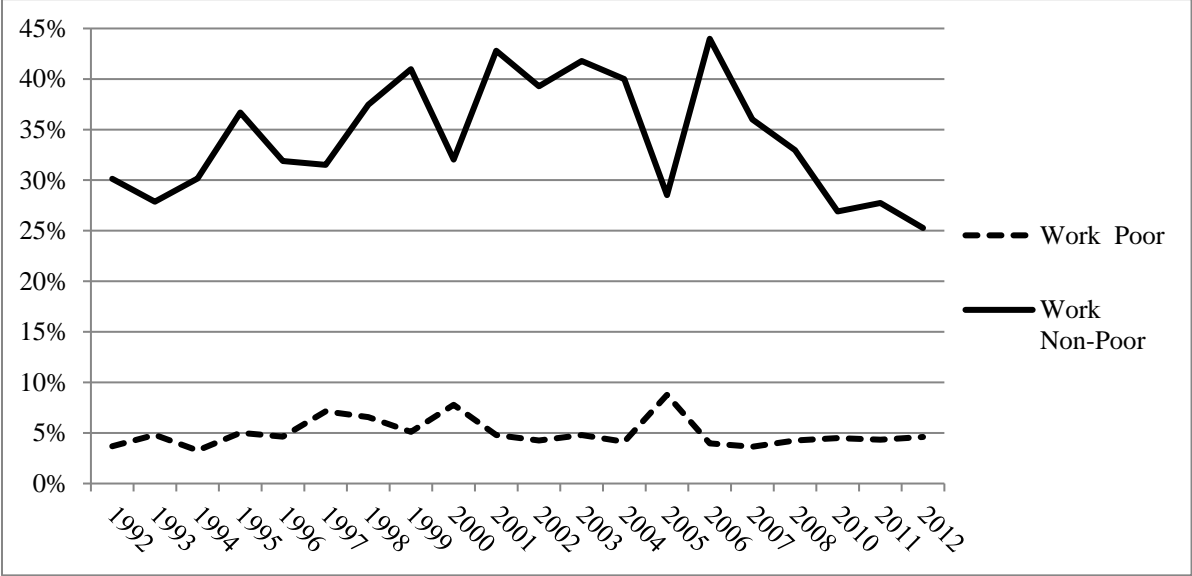


Figure 11.4 Risk of workpoor entry compared to work non-poor entry at t1 for unemployed people (t0); BHPS, Understanding Society, 1992-2012, weighted

In a similar manner, Figure 11.5 illustrates exit patterns from working poverty. In order to measure these, we focus on the people who are working-poor at t0 (Figure 11.1, Cell B2) and examine the likelihood of a transition into working non-poverty (Figure 11.1, Cell B1) or non-working (Figure 11.1, Cells A1 and A2). We see that between 1992 and 2012, the yearly likelihood of exiting from working poverty into working non-poverty remains around 50 per cent. Thus, about half of all working persons in poverty at a given time-point escapes from poverty within one year. Furthermore, a transition to working non-poverty is far more likely than a work exit for a poor worker. The latter event has a continuously low conditional likelihood of below 20 per cent.

From Figures 11.3 and 11.5 combined, we can conclude that, for workers, income swings are more likely associated with working poverty transitions than with transitions into and out of work. In this light, it is surprising that a major portion of poverty literature has focused on transitions into and out of employment, while there is little attention for transitions into and out of poverty for employed persons.

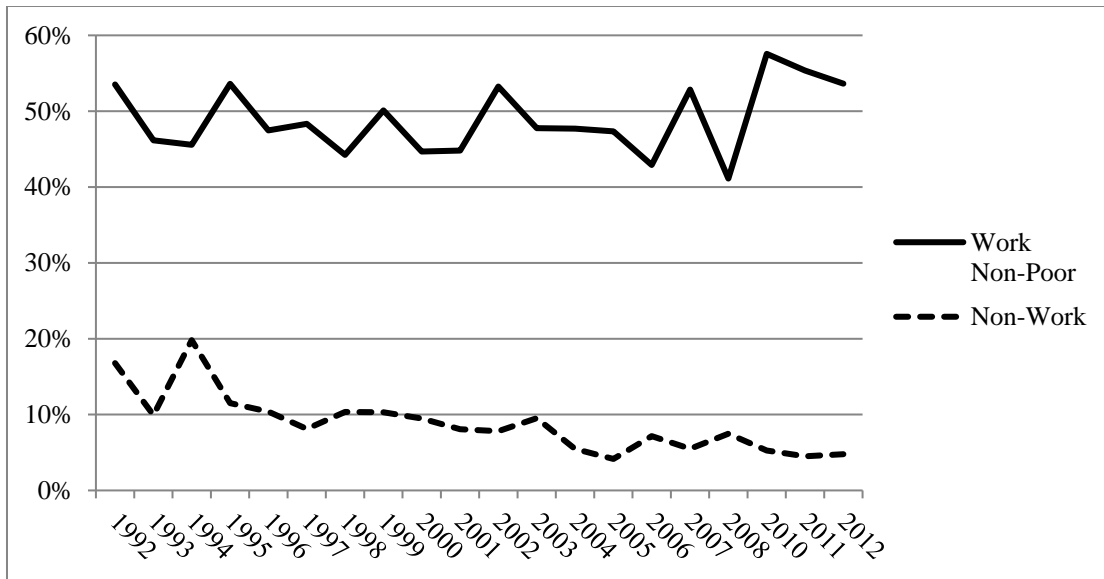


Figure 11.5 Exit Patterns from Working Poverty (t1) for people in working poverty (t0); BHPS, Understanding Society, 1992-2012, weighted

The high transition rate from working poverty to non-poverty illustrated in Figure 11.5 suggests that most working-poor episodes are rather short. It does not reveal, however, the average duration of a working poverty spell. Therefore, we next aim to find out whether in-work poverty spells are typically short or long. Table 11.1 shows the distribution of poverty spells according to their length in number of years. It can reveal whether in-work poverty is concentrated in a small population section (if spells are usually long), or whether it is a more widespread but transitory experience. We examined all spells of working poverty that started between the year 1991 and the year 2004. Table 11.1 shows the distribution of the duration of a spell of in-work poverty for different sub-populations. Among all socio-demographic groups, the share of long working poverty episodes is rather small: in general, only 6 per cent of all working poverty spells last more than 3 years. This finding from the spell analysis emphasizes the finding of our transition analyses: working poverty appears to be a highly transitory phenomenon, and is probably confined to certain, short phases within the life-course, related to certain triggering events - at least in the UK. There are some differences according to the socio-demographic groups: single people generally have faster exit rates, while divorced people take longer to escape from working poverty. The latter may have to do with labour market restrictions due to the inability to take up a better-paid job for the parent with custody over the children. In countries with more generous alimony, better child-care infrastructure and generally more elaborated labour market re-integration programs, therefore, we would assume the consequences of divorce on the WP-risk to be less severe.

Table 11.1 Average number of years of in-work poverty spell (spell start 1991 – 2004); BHPS, Understanding Society, 1991-2012, weighted

	<b>General</b>	<b>Men</b>	<b>Women</b>	<b>With Partner</b>	<b>Widowed</b>	<b>Divorced</b>	<b>Never Married</b>	<b>Age 25-40</b>	<b>Age 41-55</b>
<b>1</b>	71%	69%	74%	70%	71%	67%	81%	69%	72%
<b>2</b>	17%	16%	17%	17%	19%	21%	12%	19%	15%
<b>3</b>	7%	8%	5%	8%	0%	5%	4%	7%	6%
<b>4+</b>	6%	6%	4%	6%	10%	7%	3%	5%	7%

Next, we explore the determinants of and triggering life-course events for transitions in and out of working poverty in more detail. We use logistic regressions to model entry into working poverty and exit out of working poverty. A further question is to what extent specific life events are associated with working poverty. We examine the effect of changes in the individual employment situation, changes in the household employment situation and changes in the number of children in the household, which is a demographic event. We use a simple regression framework here, but we account for the longitudinal aspect of working poverty by explicitly modelling transitions on the level of the dependent and independent variables. Within this analysis, a transition into working poverty is defined as a transition from *working non-poverty* to *working poverty* (see Figure 11.2, transition at year 2), whereas a Work-Poor Exit is a transition from working poverty out of that state (Figure 11.2, transitions at years 5 & 8). The results for the working poverty entry risk for workers shows that household-level factors as well as individual employment situation and changes therein affect the working poverty transition risks. Firstly, a decrease in the worker’s hourly pay of 10% or more significantly increases their work-poor entry risk. Furthermore, the number of employed people in the household is relevant; the more there are, the lower the risk of working poverty entry and the higher the chance of working poverty exit. Also, an increase in the number of employed people in the household additionally decreases the risk of entering work poverty, while a decrease in the number of employed people in the household increases that risk. The higher the number of children in the household, the higher the risk of working poverty entry. However, an increase in the number of children in the household does not increase but rather decreases the risk of entering work-poverty. This finding requires further exploration, but perhaps the increased need in the household due to child birth is in most households compensated by increased earnings and labour force attachment. Further risk groups for working poverty entry are older workers and divorced/separated. When it comes to the determinants of escaping working poverty, a decrease in the hourly pay reduces the chance of an escape. While the presence of more employed people in the household increases the chance of exiting working poverty, a change

in the number of employed people has no significant effect. The same is true for the number of children. People with more children in the household are less likely to escape from working poverty, but a change in the number of children in the household does not have an additional effect. Furthermore, older workers are less likely to escape from working poverty, as are divorced/separated and single people. The latter could be subject to variation across welfare regimes. Similarly, the high transitory risk of older workers and single earners might be specific to contexts with low levels of decommodification, low degrees of employment protection and weak bargaining systems (Lohmann/Marx 2008)—institutional features, which well-developed usually protect older workers from precarious labour market outcomes (Giesselmann 2014, 2015).

Table 11.2 Logistic Regression of Determinants of Work-Poor Entry and Work-Poor Exit (Odds ratios)

	Work-Poor Entry	Work-Poor Exit
Decrease in hourly pay (10% or more)	4.871*** (0.160)	0.334*** (0.023)
Number of employed people in household	0.466*** (0.013)	1.397*** (0.054)
Change of number of employed people in household	0.766*** (0.021)	1.010 (0.044)
Number of kids in household	1.353*** (0.021)	0.881*** (0.018)
Change of number of kids in household	0.874*** (0.035)	1.038 (0.053)
Female	1.007 (0.032)	1.280*** (0.059)
Age	1.006*** (0.002)	0.974*** (0.002)
Marital status (Ref. Has a partner)		
Widowed	0.946 (0.133)	1.122 (0.200)
Divorced/separated	1.178** (0.063)	0.798** (0.056)
Single	1.052 (0.052)	0.800** (0.055)
<u>Constant</u>	0.052*** (0.005)	3.535*** (0.468)
Number of observations	137,594	9,492
Log likelihood	-18142	-6043.537
Pseudo R <sup>2</sup>	0.1013	0.0507

Standard error in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 6. Summary and Outlook

In this chapter, we conceptualised working poverty as a longitudinal, dynamic phenomenon. We dealt with the complexities of such a conceptualisation, which originates in the bi-dimensional notation of working poverty. Based on findings from life-course research on poverty and cross-sectional working poverty analyses, we also emphasized the significance of the longitudinal approach in research on working poverty.

With working poverty as an outcome, transitions are more complex than for other binary characteristics, in that they can originate from different combinations of individual employment and household poverty statuses: an entry into working poverty can occur both from a situation of joblessness as well as for workers who previously had a household income above the poverty line. Longitudinal data allows us to identify origin locations of people who entered working poverty and exit destinations for people who exit from working poverty.

Some analyses on the basis of longitudinal BHPS and UKHLS data revealed that working poverty is a highly transitory phenomenon, which more likely affects specific socio-demographic groups and is linked to certain triggering events. We furthermore found that for workers, fluctuations in the household income while remaining employed are more likely than transitions into and out of work. For working people, the risk of falling into poverty while working is higher than the risk of job loss. For the working poor, climbing out of poverty is more likely than leaving employment.

Our analyses, however, leave room for further research: first, our analysis of triggering events focused only on a few of these. We showed that an hourly pay decrease and changes in the household and employment context of individuals are associated with the likelihood of transitioning in and out of poverty for employed persons. Other changes in the employment status on the individual level, though, such as a shift to low-wage employment or a change of employer, were left out of our analyses. The same goes for possible determinants of a transition from non-working to working poverty, like a labour market (re-)entry. Furthermore, research is needed to establish how measurement error in the poverty status of one wave could overestimate poverty dynamics. And hence, methodological innovations and improved data quality will be needed to help establish true state dependence of the poverty state. Thirdly, our analyses were restricted to one country, and therefore did not model the influence of contextual characteristics on (a) the transitory nature of working poverty and (b) on the triggers of working poverty transitions. One could, for example, assume that a high degree of decommodification

decreases the risk of a working poverty transition related to household events, while heavily regulated and closed employment systems increase the average duration of working poverty spells. Such questions could be empirically addressed on the basis of cross-country studies, either by using country characteristics as macro-variables within the context of multilevel analyses, or by comparing a few countries systematically according to their patterns and determinants of working poverty transitions - appropriate datasets have been introduced in section 4 of this chapter. Furthermore, our analysis of working poverty durations could be expanded within an event history design, systematically modelling the determinants of a fast (re-)entry into non-working poverty.

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