Technical paper

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Poverty Transitions in Ireland.

An Analysis of the Longitudinal Central Statistics Office (CSO)
Survey on Income and Living Conditions (SILC), 2004 - 2015

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An Roinn
Gnóthaí Fostaíochta agus Coimirce Sóisialaí
Department of
Employment Affairs and Social Protection

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Abstract

In this report, we use Irish SILC data from 2004-2015 to examine poverty and deprivation transitions among various social risk groups – groups experiencing an increased risk of poverty due to non-class personal or family factors. Social risk groups include: lone parents, people with a disability, young adults, children, working-age adults and older adults. We exploit the longitudinal component of the data and primarily focus on cases where information is available for two consecutive waves. The report examines entry and exit rates into deprivation and poverty as well as the incidence of consistent poverty and deprivation (in both years). Lone parents emerge in all the analyses as the group most affected by poverty and deprivation. The relationship between poverty and deprivation is investigated and a modest overlap between the two is found. We also examine how different groups were affected at different times (pre and post-recession). While persistent deprivation increased with the onset of recession, the pattern for persistent poverty is less clear. Finally, an additional contribution of the paper is to examine the severity of attrition in the data, which leads to substantially reduced sample sizes and a slight underrepresentation of young adults and those with higher levels of education.

Key words: income poverty and deprivation; income poverty and deprivation transitions; social risk groups; attrition; SILC; Ireland

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List of Acronyms

AROPE	At Risk Of Poverty or Exclusion
CSO	Central Statistics Office
ESRI	Economic and Social Research Institute
EU	European Union
EU2020	Europe 2020
EU-SILC	European Union Statistics on Income and Living Conditions
NESC	National Economic and Social Council
OECD	Organisation for Economic Co-operation and Development
QNHS	Quarterly National Household Survey
SILC	Survey on Income and Living Conditions
VLWI	Very Low Work Intensity

Authors' Acknowledgements

Chapter 1: Introduction

1.1 Purpose of the paper

The purpose of this technical paper is to test the feasibility of drawing on pairs of waves of SILC to examine income poverty and deprivation transitions of different social risk groups. We will focus on the Irish SILC data for the years from 2004 to 2015.

We have the following goals:

1. Establish the feasibility of conducting dynamic analysis based on cases present in pairs of SILC waves: - what is the level of attrition and are longitudinal weights needed in order to adjust for any non-randomness in this respect?
2. Further develop the identification of social risk groups, understood as groups experiencing an increased risk of poverty due to non-class personal or family factors. The development involves examining the distinction between different types of lone parent households and between large and small families;
3. Investigate how the patterns of deprivation and income poverty transitions vary over time and across social risk groups.

Poverty is understood in terms of having a reduced access to material resources to the extent that the person cannot participate in generally valued activities or have an adequate standard of living. Income poverty and basic deprivation are the two core indicators of poverty in Ireland. Income poverty is a relative measure and involves living in a household with disposable income, after adjusting for household size and composition, below 60 per cent of the median. Basic deprivation involves being unable to afford certain basic goods and services, such as adequate food, clothing, heating for the home and basic social participation, such as having an evening out or getting together for a meal or drink with family or friends. It is also a relative measure in that we seek to capture people's exclusion from access to the goods and services that people *usually* have in the society. However, the basic set of items change more slowly than the rapid changes we can see in median incomes during a sharp recession. We use the term poverty (or poor) here to refer to the general concept

and income poverty or deprivation to refer to the measurement of the concepts using these two indicators.

1.2 Social risk groups

Building on earlier work which monitored the evolution of income poverty and deprivation for different life cycle groups (Russell, Maître and Nolan, 2010), Watson et al. (2016) developed the concept of social risk groups as encompassing groups experiencing an increased risk of poverty due to non-class personal or family factors. Social risk groups include the groups identified in NAPinclusion (2007), following NESC (2005): children, working-age adults, older adults and people with a disability, but with the addition of lone parents (Watson et al., 2016).

The conceptual understanding of social risk was developed in contrast to social class as an important principle of differentiation. Following the Weberian tradition, we could see social classes as distinguished on the basis of differing command over market resources (Goldthorpe, 2007). There are two main principles of social class differentiation. The first is that of employment status, with the distinction between employer and employee. The second relates to the nature of the employer-employee relationship, in particular the extent to which employees occupy positions of high skill or high trust which have a bearing on the extent to which their output can be monitored. Individuals are understood to possess a certain command over resources and experience varying degrees of security and prospects for advancement by virtue of their social class positions. Class affects not just the person's current situation, but their circumstances in the event of illness, disability and retirement.

Social class is not the only relevant principle of differentiation, however. In the study of poverty, certain groups have been identified as particularly at risk, including lone parents, older adults, children, the unemployed, those with low levels of education and people with a disability. Some groups could be argued to be distinguished based on class-related phenomena. Those with low levels of education and skills, for instance, could be encompassed within the class framework if we broaden the notion of assets to include not just capital but marketable skill (Wright, 1978). Other groups, such as 'the unemployed' or 'the poor' , are better considered as having in common

an outcome that results from social class or other risk processes since the experience can be of short duration in many cases (Jenkins, 2009).

Nevertheless, social class distinctions do not capture all of the principles of differentiation that are relevant to a heightened risk. Life course differences are an important element in distinguishing between groups, because of norms regarding the distribution of work across life stages and regarding the distribution of caring roles (MacMillan, 2005). The development of the European welfare state has been linked to a political commitment to smoothing out the supply of resources across the life cycle (DeWilde, 2003; Leisering and Liebfried, 1999). However, the life course perspective does not adequately encompass certain other dimensions of inequality to which the welfare state responds, such as lone parenthood and disability. Life course differences can be seen as a subset of a broader range of non-market social risks whose consequences are addressed by the welfare state.

Here we distinguish non-market challenges that are linked to:
- Life-course stage: children and people older than 'working-age';
- Personal resources: illness or disability may limit a person's capacity to work as well as involving additional costs associated with treatment, medication or disability-specific devices and aids (Cullinan, Gannon and Lyons, 2010);
- Non-work caring responsibilities: responsibility for childcare or others who have an illness or disability is likely to reduce the time available for paid work;
- Outsider status: which affects young adults who are seeking their first jobs.

These barriers could be thought of in terms of Sen's notion of 'conversion factors' (1992, pp. 26-38). For Sen, resources are only of instrumental importance whereas what a person can do or be (their level of functioning) is intrinsically important (Sen, 1989, 1993). As Hick and Burchardt (2016:75) observe, this distinction becomes important to the extent that individuals differ in the amount of resources required to achieve specific level of functioning. Sen labels these variations "conversion factors". Thus the ability to convert social class resources into the typical bundle of goods and services considered normative in a society may be qualified by a range of additional factors relating to needs and associated demands and restrictions.

We go beyond earlier work in the present analysis in further differentiating the social risk groups involving children. In the Watson et al. 2016 analysis, we already distinguished children of lone parent and children of working-age adults with a disability from other children. We will go beyond that distinction in the present analysis to distinguish children by family size (one or two children, three or more children). Family size has been shown to be an important influence on child outcomes (Fahey, 2014) and, because social welfare payments increase with family size, may also influence the returns to work (Savage et al., 2015), creating potential barriers to work (Watson et al, 2015). We will explore whether there is an important distinction between lone parents who have never married and those who were formerly married as some previous analyses had suggested that the latter were a less disadvantaged group. Finally, since age of children is associated with the need for child care, whether by the parents or others, we will include a control for age of youngest child.

1.3 The Great Recession and poverty risk

The experiences of different groups are likely to have varied over the course of the boom, recession and recovery in Ireland. Earlier work showed that during the boom years (2004-2007), poverty declined substantially, but the decline was most pronounced for older adults. Poverty among children became increasingly concentrated in lone parent families in the period. Among working age adults, unemployment and household joblessness were strong predictors of poverty. In the older age group, living alone was associated with a substantially higher risk of poverty (Russell, Maître and Nolan, 2010).

Analyses after the start of the recession have highlighted the different trajectories faced by risk groups. The increasing significance of household joblessness as a risk factor for poverty has affected working-age families and their children (Watson, Maître and Whelan, 2012). The protective role of social transfers has been important for jobless households in preventing income poverty but levels of basic deprivation have increased (Watson and Maître, 2013). During the early recession, policies to protect the basic pension rates ensured that older adults were protected from the

worst effects of the recession (Watson and Maître, 2013), but a number of changes since that time – including cuts to secondary benefits and to public sector pensions – are likely to have increased deprivation levels for older adults (Watson et al., 2016). Research has also pointed to the fact that in some respects the recession had a greater impact on groups that had been doing well beforehand (Watson, Kingston and McGinnity, 2013), but that the conclusions can differ depending on whether the focus is on relative increases in disadvantage or on absolute increases (Watson et al., 2017).

1.4 Poverty dynamics

It has long been acknowledged that the dimension of time is important in understanding poverty, both because the risk of poverty varies across the life course (e.g. Rowntree, 1901; Rank and Hirschl, 1999; Dewilde, 2003; Sandoval, Rank and Hirschl, 2009) and because poverty is an experience of varying duration (Alcock 1997; Bane and Ellwood 1986; Barnes et al. 2002; Di Prete and McManus 2000; Jenkins 1999; Fouarge and Layte, 2005). The distinction between persistent and transient poverty is important because the two have very different implications for policy (Walker, 1994). It matters whether many people experience poverty but quickly escape from it or poverty is a persistent or long-term phenomenon. An understanding of persistence is also important since an increase in cross-sectional poverty could result from a rise in the number of people becoming poor or an increase in the persistence of poverty (Burkhauser, 2001).

With the increasing availability of panel data in the last couple of decades, the dynamic aspects of poverty have received increasing attention, particularly persistent poverty because of the more serious consequences it has for a range of outcomes such as current and future labour market outcome, family behaviours/decisions, health, well-being and child development (Duncan and Brooks-Gunn, 1999; Power et al, 1999).

Poverty persistence has been measured in a number of different ways (e.g. Oxley, Dand and Antolin, 2000; Whelan, Layte and Maitre, 2003; Fritzell et al, 2012; Vandecasteele, 2009), across different numbers of years depending, at least in part,

on data availability. The EU indicator of 'persistent at-risk-of-poverty', drawing on the four-wave panel in EU-SILC, is based on being at risk of income poverty in the current wave and having been at risk of income poverty in at least two of the three preceding years (European Commission, 2015). This definition has been used in a number of European studies (Jenkins and Van Kerm, 2011; 2017). In this paper, we follow Polin and Raitano (2014), and Ayllón and Gabos (2017) who define persistence as being income poor or deprived in the current year and the previous year.

A number of studies of persistent poverty are particularly relevant here because of their emphasis on variations in persistence across countries or groups. Fritzell and Ritakallio (2010) in a study of several European countries from the 1980s to 2000 find that income poverty persistence varies across risk groups. Older adults experienced the highest rate, especially in Italy and the UK, while young adults the lowest.

Using the EU-SILC data and defining poverty persistence as being income poor in the current wave and in at least two of the three preceding years (European Commission, 2015), Jenkins and Van Kerm (2011) studied poverty persistence for 21 of the EU-27 countries. They found persistence rates varied across countries, being low in the Nordic countries but high in Ireland. Focusing on 6 of the countries in more detail, the authors found that country differences in the population composition by age and sex was a major driver of the country differences in poverty persistence.

A consistent result of the studies on the US is that income poverty risks are higher for black and Hispanic, women and those in female headed households (likely lone parents) and those with lower levels of education (cf. Cellini et al. 2008).

Overall, studies on poverty dynamics show considerable mobility in and out of poverty. For example, it has been estimated that the entry rate to income poverty is around 5 per cent across a set of western countries (Cellini et al., 2008; Valletta, 2006), while the exit rate ranges between 25 and 45 per cent (Duncan et al.; 1993; Cellini et al., 2008). Exit probabilities, however, vary according to the length of

income poverty spells. Bane and Ellwood (1986) estimated that the probability of exiting from a one–year spell is 0.45, it declines to 0.29 for two-years spell, and falls again to 0.21 for spells that last 4 years. Slightly different results have been shown by Stevens (1994) who report exit probabilities to be of 0.53, 0.36, and 0.23 respectively. These results imply that the longer the time spent in income poverty and the higher the risk of being entrapped in income poverty.

However, previous research also indicates that the majority of poverty events are of short duration and only a minority of people are poor for long periods (Devicienti, 2001; Fouarge and Layte, 2005). This implies that cross-sectional studies tend to underestimate the number of households that experience poverty over any extended period of time.

1.5 Outline of paper

In the next chapter we describe the data and the methodology adopted here, including a detailed account of the checks for attrition and a description of the social risk groups. In Chapter 3 we examine the overall level of income poverty and deprivation transitions and how these differ between social risk groups. In Chapter 4 we check whether the pattern over time has been consistent across social risk groups. In Chapter 5, we draw together the results to comment on the technical implications for research on income poverty and deprivation dynamics in Ireland using the SILC data.

Chapter 2: Data and measurement

2.1 Introduction

In this chapter, we provide an overview of the SILC survey design and data for 2004-2015. We then describe the measurement of deprivation and income poverty and the identification and size of social risk groups. We conclude the chapter with an exploration of the level of attrition between waves of the SILC survey in Ireland and the impact this has on the sample size and the representativeness of the sample.

2.2 SILC data

2.2.1 Survey design

The Survey on Income and Living Conditions (SILC) is designed to provide statistics on household and individual income as well as related indicators of living standards, poverty and inequality (CSO, 2012a, p. 87). The sample is a four-year rotating panel design, with one quarter of the sample replaced by a new random sample in each year. Within each household, every adult (aged 16 and over) is interviewed face-to-face and detailed information is also collected on the household as a whole. The sample size from 2004 to 2016 averaged 5,200 households and 13,200 individuals per year. When analysed dynamically, comparing two waves, there are a total of 73,373 observations at the individual level and about 30,000 at the household level, averaging 2,700 households and 6,700 individuals per pair of consecutive years.

SILC involved a two-stage sample design with both stratification and clustering. The strata are eight area types based on the Census of Population. At the first stage, 1,690 'blocks' are selected to proportionately represent the eight strata. The second stage of sampling involves the random selection of a sample of households (including two substitute households) from each block. In cases where interviewers could not secure an interview from a sampled household, they approach the two substitute households in a pre-determined order (Haase and Pratschke, 2012, p.2).[1]

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[1] From 2014, the sampling for the survey was modified to include stratification by area characteristics such as affluence / deprivation and the substitution for non-response has been more strictly controlled. The period covered by this report is 2013, however, when the older sampling system was still in place.

The SILC sample is re-weighted to ensure that it is representative of the population. After re-weighting based on the inverse of the probability of household selection (design weights), the SILC sample is calibrated to population totals by sex, age (four age categories), region (eight regions) and household composition (six categories) (Lafferty and McCormack, 2015, p. 13-14).[2]

In conducting longitudinal analysis, the issue of attrition is important. We will discuss this in detail below, after presenting the measurement of social risk groups, since we will examine whether these groups differ in the extent to which they are lost from the sample.

2.3 Deprivation and Income Poverty

We use the Irish measures of basic deprivation and income poverty in this report. Basic deprivation involves living in a household that is unable to afford 2 or more of 11 basic goods and services, such as adequate food and clothing, adequate heat for the home and the ability to socialise (see glossary for list of basic deprivation items).

Income poverty is calculated at the household level based on income from all household members and all sources. As well as weekly social welfare payments, less frequent payments are also included (such as Child Benefit, which is paid monthly, and payments such as Back to School Clothing and Footwear Allowance) along with the cash value of near-cash benefits (e.g. free electricity, gas and TV licence). Income is measured at the household level over the twelve months preceding the interview.

In constructing the indicator of income poverty, we take disposable income – the level of household income after tax and social transfers such as pension or unemployment benefits. Then, household size and composition is taken into account using an equivalisation scale. This involves an adjustment to income so that we can compare incomes of households that differ in size. The Irish national equivalisation

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[2] The age groups are 0-14, 15-34, 35-64 and 65 or over. The household types one adult, no children; 2 adults, no children; 3 or more adults, no children; one adult, 1+ children; 2 adults 1-3 children; other households with children.

scale allows a weight of 1 for the first adult in a household, 0.66 for each subsequent adult (over the age of 14) and 0.33 for each child. Equivalised income is a household's disposable income divided by the household equivalisation scale. A household is at-risk-of-poverty if its equivalised income is below 60% of the median equivalised income.

2.4 Identifying social risk groups

As described in Chapter 1, social risk groups are distinguished on the basis of differing risks of social exclusion, linked to barriers to labour market participation. Following Watson et al., 2016, we identify the groups in such a way that they are mutually exclusive. In deciding whether to include lone parents with a disability in the 'lone parent' or 'people with a disability' group, we were guided by the strength of the association with income poverty, basic deprivation and economic stress. This was stronger for lone parenthood than for disability (Watson et al., 2016). As a result, lone parenthood took precedence over disability in deciding on the classification.[3] Table 2.1 shows the categories we distinguish here, including fourteen detailed categories (the last two columns) and a more aggregated classification into six categories (the first two columns). We separate adults and children in the detailed categories for the initial analysis to check whether there are differences by family size (number of children). If larger families within each group have a higher risk of poverty, then a higher proportion of children than of adults would be affected.

2.4.1 Lone parents

The first group consists of lone parents and their dependent children, accounting for 9.3 per cent of the population. Over 99 per cent of lone parents are aged under 66, however, and 90 per cent are women. These are parents who do not have a partner (i.e. they are not married or cohabiting) and who have at least one child under the age of 18 living with them. The more detailed classification distinguishes between families of lone parents that have never married (1a and 1b) and those that were formerly married and are now divorced, separated or widowed (1c and 1d). Somewhat more than half of lone parents and their children have never married and

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[3] Only 1 per cent of the population are lone parents with a disability. This is too small a group to identify separately.

this group has been found to be particularly disadvantaged (Nolan and Watson, 1999).

Table 2.1 Definitions and average sizes across 2004-2015 of social risk groups

Aggregated Categories	Total	Detailed categories	Total
1. Lone parent family	9.3%	1a. Child of never married lone parent	3.0%
		1b. Never married lone parent	2.0%
		1c. Child of formerly married lone parent	2.7%
		1d. Formerly married lone parent	1.6%
2. Families of working age adults with disability	12.6%	2a. Child of working-age adult with disability	3.8%
		2b. Working age adult with disability	8.8%
3. Young childless adults (18-29, no children)	12.6%	3a. Young childless adults (18-29, no children)	12.6%
4. Large families (3+ children)	10.7%	4a. Children in large couple families (3+ children under 18)	6.5%
		4b. Parents in large couple families	4.2%
5. Others under 66	44.0%	5a. Children in small couple families (1-2 children)	12.0%
		5b. Others under age 66 (including parents of small families and childless adults)	32.0%
6. Adults age 66 and over	10.8%	6a. Adult age 66+, not in a couple	5.1%
		6b. Other adults age 66+, couple	5.7%
Total	100%		100%

Source: SILC data for Ireland, 2004 to 2015, weighted cross-sectional data, analysis by authors.
Note: due to rounding, the percentages may not add up to 100%.

2.4.2 Working-age adults with a disability

The presence of a disability is indicated by a question on whether, for at least the last six months, a health problem limited the person in terms of activities people usually do.[4] Working-age adults with a disability are those aged between 18 and 66 (i.e. not yet qualifying for a state pension), who are limited or strongly limited in terms of the activities they usually do. Families of working-age adults with a disability account for nearly 13 per cent of the population; 9 per cent are the adults themselves and a further 4 per cent are their resident children under the age of 18.

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[4] The question wording is "For at least the last 6 months have you been limited in activities people usually do, because of a health problem? (If limited, specify whether strongly limited or limited)."

Children are more likely than adults to be found in the vulnerable family types. Taking the figures in the final column of Table 2.1, children make up 28 per cent of the population while working-age adults (18 to 65) make up 61 per cent. Summing the percentages for children in lone parent families or families of working-aged adults with a disability, we get 9.5 per cent of the population, or about one third of children (9.5/28). Summing the figures for lone parents and working-age adults with a disability, we get 12.3 per cent of the population, or about one fifth of working-age adults (12.3/61). So, although children and adults in the same households have the same levels of poverty and deprivation (because these are measured at the household level), there are important differences in the distribution of children and adults across the household types. As we shall see in Chapter 3, this is important in accounting for life cycle differences in deprivation.

2.4.3 Other young childless adults

The next group consists of other young childless adults aged 18 to 29, that is, they do not have children and they do not have a disability. They account for nearly 13 per cent of the population.[5]

2.4.4 Other adults aged 30-65 and distinction by family size

The remaining groups shown in the rows of the table are distinguished based on whether or not they are working-age (under 66) and family size. Since, as noted above, the groups are mutually exclusive, they do not include lone parents or working-age adults with a disability.

Some exploratory analyses indicated that the risk of income poverty and deprivation tended to be greater for larger than smaller couple families, so we distinguish children and working-age adults on the basis of whether or not they are in a family with three or more children under the age of 18. About 11 per cent of the population is either a parent or a child in these large families. Children in these larger couple

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[5] Young adults with children make up only 1.5 per cent of the population – too small to analyse separately. We combine these with other working age parents, distinguishing them based on lone parenthood and numbers of children. Only 14 per cent of adults aged 18-29 have children (with 5 per cent lone parents) and only 7 per cent have a disability.

families comprise almost seven per cent of the population while adults comprise an additional 4 per cent.

Others under age 66 account for 44 per cent of the population. They include children in small couple families with 1-2 children (12 per cent of the population) and parents in these families or other childless adults under 66 (32 per cent).[6] Since these adults have similar rates of poverty and deprivation (both persistent and at a point in time) whether or not they have children, we do not distinguish them in the analysis.

2.4.5 Older adults

Adults over age 66 account for eleven per cent of the population. Finally, drawing on earlier research that indicated sizeable differences between pensioner couples and pensioners who are not in a couple (Hughes and Watson, 2005), we distinguish between older adults on this basis. Roughly half of adults over age 66 are living with a husband, wife or partner (5.7 per cent of the population) while the other half (5.1 per cent of the population) is unpartnered – either single, widowed, separated or divorced. Those over age 66 are not distinguished on the basis of presence of disability.

2.5 Attrition in SILC

The SILC survey is a rotating panel design, as noted above. A selected household is retained in the survey for four years and then replaced with a new, randomly-selected household. Prior to 2012 in the design of the Irish survey, some households were introduced to maintain a sufficient number of cases for cross-sectional analysis, but were not necessarily followed for four waves. In the years prior to 2012, therefore, the actual loss of cases between one wave and the next due to design issues was greater than 25 per cent. Because households are followed over time, it is possible that some will respond in one wave but not in the next because they refuse, cannot be contacted, are unable to respond because of illness or some other reason. This is what is meant by the problem of attrition in panel surveys.

There are two separate reasons to be concerned about attrition: First, the loss of respondents has the effect of reducing the sample size. This reduces the precision of

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[6] In all, 14 per cent of the population are parents of 1-2 children and 18 per cent are childless adults.

estimators (Jenkins and Van Kerm, 2017). From this perspective, the key concern is with the amount of attrition. Table 2.2 shows the number of cases available for different numbers of waves ending in each year in the Irish SILC data.

The number of cases available declines sharply as the number of waves increases. In 2007, for instance, there were a total of 13,691 persons in households that completed the survey. Of these, 6,990 were in households that were successfully interviewed in the previous year as well; 3,473 were in households interviewed in three consecutive waves (2005, 2006 and 2007) 1,163 were in households that completed the survey for the fourth consecutive year. Across the entire period, the size of the sample available for cross-sectional (one wave) analysis is158,345 compared to 9,126 for panel analysis across four waves. Not all of this difference is due to attrition at the fieldwork stage, however. There was no four-wave panel available for the first three waves of SILC. Some cases were lost because of the rotational panel design or because the households were introduced as substitutes to be retained for fewer than four years.

Table 2.2: Number of cases available by number of consecutive waves

Ending wave	One or more waves	Two or more waves	Three or more waves	4 or more waves
2004	14,272			
2005	15,539	6,833		
2006	14,634	7,574	3,247	
2007	13,691	6,990	3,473	1,163
2008	12,551	6,645	3,107	1,162
2009	12,641	6,213	3,116	1,050
2010	11,587	6,027	2,667	1,033
2011	11,005	5,888	2,779	904
2012	11,891	5,935	2,908	982
2013	12,663	6,259	2,932	999
2014	14,078	5,996	2,527	960
2015	13,793	8,974	3,294	873
Overall	158,345	73,334	30,050	9,126

Source: SILC 2004-2015, analysis by authors. Includes all persons. Excluding cases with inconsistent age or sex across waves.

Ireland is not alone in experiencing attrition in SILC, although the rates in Ireland are high. Jenkins and Van Kerm (2017) estimated that in the 2011 EU-SILC file the rate of attrition over 4 years (the share of individuals selected in 2008 and that dropped out in the following three years) ranged from less than 10 per cent (Romania) to almost 60 per cent (United Kingdom) across 23 countries.

The second reason for concern about attrition is that the loss of respondents may not be random. This could have the effect of reducing the representativeness of the sample over time. From this viewpoint, the key concern is the pattern of attrition or the impact of attrition on sample structure. Biasing attrition – attrition that is selectively related to the outcome variable of interest – is "the most potentially damaging and frequently mentioned threat to the value of panel data" (Fitzgerald, Gottschalk and Moffitt, 1998a:251).

For example, Cappellari and Jenkins (2002) have shown that the poor are more likely to be lost from the longitudinal sample using the British Household Panel Survey, and Vaalavuo (2015) and Jenkins and Van Kerm (2017) have identified the same process using EU-SILC. On the other hand, Watson (2003) found that countries differed in the propensity to lose poor households in the European Community Household Panel (ECHP) survey, with some countries (including Ireland) less likely to lose poor households.

In practice, both the amount and the pattern of attrition are of concern. However, while the impact of attrition on sample size is relatively transparent and easily assessed, its impact on sample structure may be more difficult to ascertain. This is why we begin this analysis by examining the impact of attrition on the key variables of interest in the present paper: income poverty, deprivation and social risk groups membership. Before drawing on the longitudinal data to examine these factors, we need to check whether those retained in later panel waves are representative of the total sample in the initial wave.

We examined the association between attrition and a wide range of individual and family characteristics: gender, age group, level of education (of adults), social class of household, household type, household size (number of children and number of

adults), income poverty, basic deprivation, consistent income poverty, social risk group (both the detailed and aggregated indicators). Rather than simply asking whether attrition was correlated with these factors, we sought to gain an understanding of the impact of attrition on the sample structure. In other words, if we compare the full sample in a given wave (the cross-sectional sample) to the subsample of these who are also present in the next wave (the longitudinal sample), would the continuing sample be different in terms of income poverty, deprivation, gender, age and other characteristics compared to the full sample? All of these characteristics of the individuals and households are measured at the first wave, since we have no information on the second wave characteristics that might change (such as work status or poverty status) unless the individuals completed the second wave survey.

The full comparison table is shown in the Appendix (Appendix Table A2.1), while the results are summarised for key variables in Table 2.3. To summarise: when we focus on transitions between two waves, the only characteristics that had a sizeable association (amounting to more than 1 per cent of the total) with attrition were age and education. There are no sizeable differences in basic deprivation, income poverty or consistent poverty between households in the cross-sectional and longitudinal samples.

For instance, of those present in the initial wave, 12 per cent are young adults but this has fallen to 9 per cent among those completing two waves of the survey. The figures for those with further or higher education are 28 per cent in the initial wave and 26 per cent among those completing the second wave. The figures by detailed social risk group in the appendix show that among young adults, it is the young childless adults that tend to be lost.

Attrition had only a minor association with other individual and family characteristics – gender, social class of household, household type, household size, membership of other social risk groups. In particular, the association with income poverty, deprivation and consistent poverty was not strong enough to alter the distribution of these variables in the continuing sub-sample compared to the original full sample.

Table 2.3: Sample structure of longitudinal cases in first wave and second waves in SILC, 2004 to 2015 (unweighted).

	A. All cases	Longitudinal cases	
		B. In 2+ waves	
	%	%	B-A
Age group			
Age under 18	26%	27%	1%
18-29	12%	9%	-3%
30-39	12%	12%	0%
40-49	14%	14%	0%
50-64	18%	19%	1%
65-69	5%	6%	0%
71+	13%	14%	1%
Education (if over 16)			
Education -Lower 2nd or less	43%	45%	3%
Upper 2nd level, Technical etc.	30%	29%	-1%
Further /Higher Education	28%	26%	-2%
Poverty Status of household			
Not income poor	83%	83%	0%
Income poor	17%	17%	0%
Not deprived	80%	80%	0%
Basic dep	20%	20%	0%
Not consistently poor	93%	93%	0%
Consistently poor	7%	7%	0%
Social risk group (aggregated)			
Lone parent	3%	3%	0%
Child of LP	5%	5%	0%
Adult < 66, disability	9%	9%	0%
Child of adult < 66, disability	4%	4%	0%
Other children	17%	17%	1%
Other adults 18-29	10%	8%	-3%
Other adults 30-65	35%	35%	1%
Other adults 66+	17%	18%	1%

Source: SILC 2004-2015, analysis by authors on unweighted data. Includes all persons.

The greater attrition of young adults can be understood both in terms of this being a group that is difficult to engage in surveys – because they spend a lot of time outside the home – and also in terms of being a group that is likely to be mobile (Uhrig,

2008). People who change address are more difficult to trace in a panel survey, especially in countries like Ireland where there is no register of persons and addresses.

If the period were extended beyond two waves, as shown in Appendix Table A2.1, the impact of attrition becomes more substantial. For instance, of those present in four waves, only 6 per cent are adults aged 18-29, compared to 12 per cent in the first wave before any inter-wave attrition has occurred.

The consequences of the non-randomness in attrition could be managed, at least to some extent, if individual characteristics that are associated with attrition are observable. This can be done by adjusting estimates via appropriate weights which permit to make the sample available after attrition representative of the initial sample, and thus of the population.

On the other hand, if attrition is associated with unobservable characteristics that are also associated with poverty, the consequences of attrition for estimates are less manageable. We seek to minimise the problem in the present case by limiting the analysis to two waves.

In the analysis reported here we focus on two-wave dynamics. This maximises the cases available for analysis and also minimises the impact of attrition, compared to a longer panel extending for three or four waves. Cases included in the analysis are those for whom we have information for two consecutive waves. Note that a person may appear in the sample more than once if they completed the survey in more than two waves. For instance, someone present in the survey in four waves from 2004 to 2007 would be included in the dynamic analysis for the 2004-2005 years, 2005-2006 years and 2006-2007 years. In each case, apart from income poverty, deprivation and consistent poverty, other characteristics are measured in the first wave in each pair. So, for the 2006-2007 analysis, economic status, age, education and so on would be measured in 2006.

2.6 Weights for longitudinal analysis

No longitudinal weights are routinely provided with the Irish SILC Research Microdata File. These weights would calibrate the completed sample to the structure of the relevant population and adjust the sample distribution for cases lost due to attrition. For instance, if the proportion of young adults in the sample were reduced by attrition, longitudinal weights could be used to restore the sample to representativeness. We use the cross-sectional weights from the second wave in each pair. By restoring the later year to population representativeness, the second wave weights go part way towards what we would require from longitudinal weights. For instance, in analysing the data for the 2004-2005 pair of waves, we use the weights for the 2005 wave because these already incorporate some element of adjustment for the disproportionate loss of some cases such as younger adults and the over-representation of older adults (see Appendix Table A2.2 for illustration).

Although not routinely provided with the Irish SILC data, the CSO provided longitudinal weights for 2012 to 2015 so that we could test their impact. We conducted a comparison of the performance of the longitudinal weight to that of the second wave weight for these years. Did the longitudinal weight do a better job in adjusting the sample structure to control the effects of attrition by observable characteristics such as age and education? The comparison indicated that there was little difference between the longitudinal and wave 2 weights in adjusting the sample structure (see Appendix Table A2.3). For instance, the full Wave 1 sample had 14 per cent of adults aged 18-30. The longitudinal weights and second wave cross-sectional weights applied to the sample followed to the second wave both resulted in 12 per cent in this age group. Similarly, the wave 1 sample had 35 per cent of adults with Further or Higher education. The longitudinal weights adjusted this to 33 per cent but the second-wave weights adjusted this to 35 per cent – a closer match to the initial figure from the full sample.[7]

A further check was conducted by comparing the income poverty and deprivation rates for social risk groups for the 2012 to 2015 period with the two different sets of

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[7] This is consistent with our earlier finding that attrition did not substantially change the sample profile so that the cross-sectional weights do most of the 'work' in calibrating the sample to population totals.

weights. All differences were small (all were within plus or minus three percentage points) and within margins of error.

In order to include all the available pairs of waves then, from 2004 to 2015, we conducted the analysis here using the wave 2 cross-sectional weights.

2.7 Summary

In this section we described the methodology of the study. The study draws on the longitudinal SILC data, focusing on transitions across pairs of waves between 2004 and 2015. We used the Irish national indicators of basic deprivation and income poverty. Social risk groups are identified based on characteristics that are likely to make the household vulnerable to poverty, such as lone parenthood, disability and large family size, as well as life cycle stages (children, young adults, working-age adults and older adults). Our checks on attrition pointed to a relatively modest impact of attrition over two waves on the structure of the sample in terms of observable characteristics (gender, age group, level of education, social class, household size and living arrangements), social risk group, poverty (basic deprivation and income poverty). The strongest patterns were the tendency to lose younger adults and those with higher levels of education. We analysed the data using the second-wave cross-sectional weights which we established to be similar to the longitudinal weights in the extent to which they corrected for any bias associated with attrition.

Chapter 3: Deprivation and Income Poverty Dynamics

3.1 Introduction

In the next section, we describe the overall level of movement into and out of income poverty and deprivation over the period from 2004 to 2015; the overlap between persistent income poverty and persistent deprivation and the rates of income poverty and deprivation dynamics by social risk group.

3.2 Overall income poverty and deprivation dynamics

3.2.1 Dynamics between two waves

Figure 3.1 shows the overall pattern of poverty, as measured by deprivation income poverty, when we compare two waves. The top panel shows the figures for deprivation while the bottom panel shows those for income poverty. Across the bottom of the charts is shown the pair of years pair (e.g. 2004-05 refers to the pair of years 2004 to 2005). The final bar refers to the average across pairs of years. We distinguish between three groups:

- Those persistently poor (i.e. in both waves)
- Those entering poverty (i.e. not in wave 1 but become poor in the second wave), and
- Those exiting poverty (i.e. poor in the first wave but not in the second wave).

Those who were not poor in either wave make up the remaining, and largest, group. The size of this group is the gap between 100 per cent and the combined height of the other three groups. The combined height of the bars (including those persistently poor, those entering and those exiting poverty) shows the percentage of the population poor at either wave. Taking the last bar in each chart, which shows the average over the period, the combined height is 28 per cent for deprivation and 23 per cent for income poverty. On average over the period, 28 per cent of individuals were deprived in either wave and 23 per cent were poor in either wave. Of those deprived in either wave, about half were persistently deprived (14/28) and about 43 per cent were persistently income poor (10/23). The line in the chart shows the overall level of deprivation in the second wave from the cross-sectional data, which follows the same pattern over time as the combined height of those deprived in both waves or in either wave.

The level of deprivation had been declining in the boom years, but rose sharply during the recession, peaking in 2013-14 before beginning to decline again. We see a broadly similar pattern for persistent deprivation, dropping from 9 per cent to 8 per cent in the boom years, increasing to 21 per cent in 2012 and 2013 before dropping back to 19 per cent in 2014-2015. The chart also shows that the percentage entering deprivation increased sharply in the recession, from only 3 per cent between 2006 and 2007 to 9 per cent in each pair of years from 2009-2010 to 2012-2013.

Figure 3.1: Deprivation and income poverty dynamics, 2004 to 2015
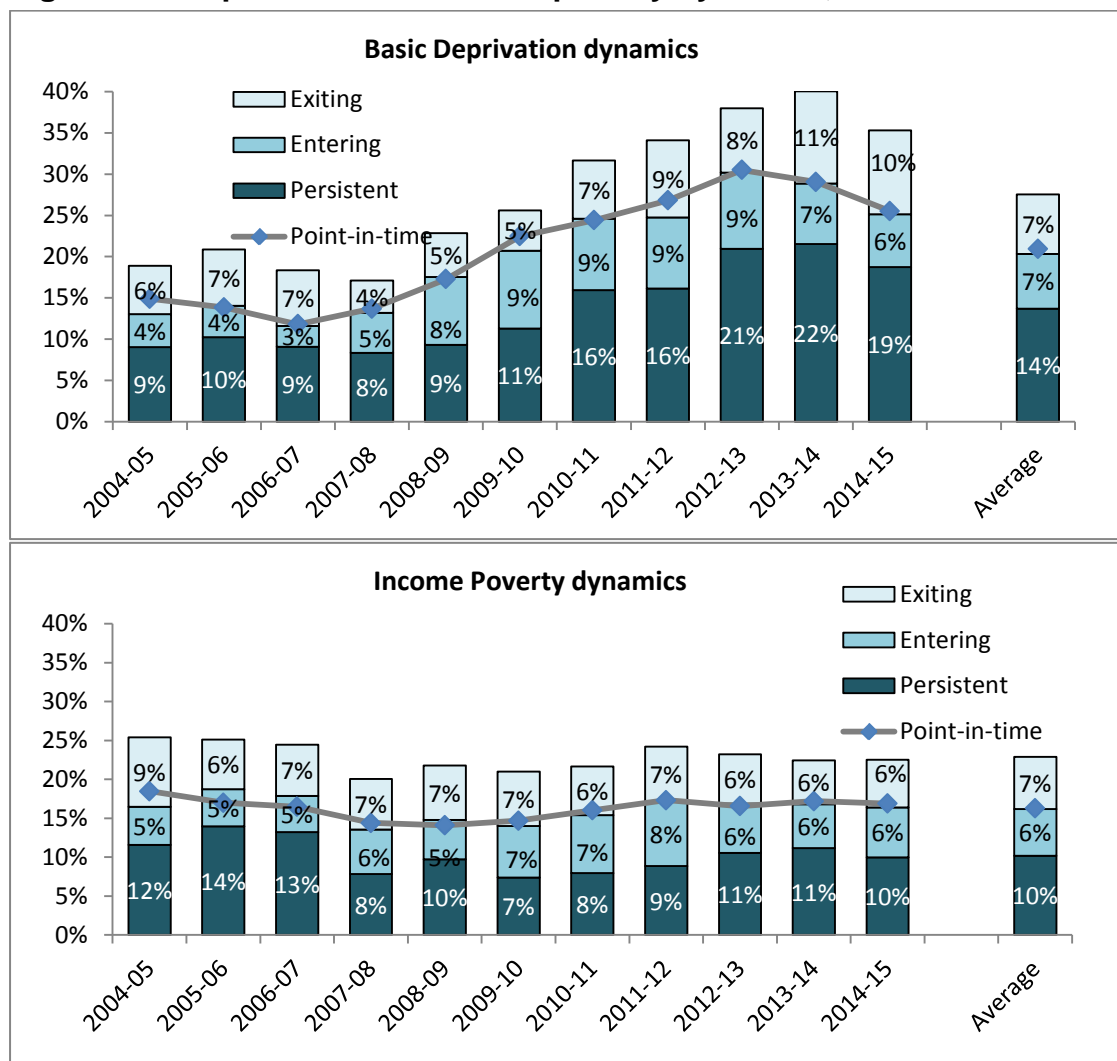
Source: SILC 2004-2015, analysis by authors. Line shows the cross-sectional rates for Wave 2.

The percentage of people exiting deprivation was lowest in 2007, partly because the population of those who were deprived was at its lowest at this point. The percentage of people exiting deprivation rose during the recession, peaking at 11 per cent in 2013-2014. There was a huge increase in the overall level of deprivation

during the recession, so there were more people who might potentially exit from that state. By 2013-2014, the percentage of people exiting deprivation was, once again, higher than the percentage entering deprivation.

The pattern for income poverty shares the same general shape, but is much more muted. Because the fall in incomes with the recession was so widespread, the median income and income poverty threshold fell[8]. As a result, the increase in income poverty with the recession was not as great as might be expected based on changes in nominal incomes and standards of living. Moreover, as the income poverty threshold fell, social transfers became more effective at keeping individuals and families above the income poverty threshold. The levels of persistent income poverty, which had been at 12-14 per cent in the boom years, actually fell after the start of the recession and reached a low of 7 per cent between 2009-2010. In early recovery, persistent income poverty levels were 10-11 per cent. At no time during the recession did they reach the higher figures observed between 2004 and 2006.

The impact of the relationship between the income poverty threshold and the rate of social transfers can be seen in Figure 3.2. The figure shows the income poverty threshold (the dashed lines) and the basic rate of social transfers (taken as the rate of Unemployment Assistance/Jobseeker Allowance) for two types of household: a one person household over age 25 and a family consisting of two adults and two children. The assumption is made that one adult in the latter household are claiming Jobseeker Allowance in their own right, and claims an adult dependent allowance in respect of the second adult and a child dependent allowance in respect of each of the two children. The figures also include Child Benefit. The chart shows that the gap between the income poverty threshold and the rate of social transfer payment narrowed during the boom years, before widening again after 2013 when the income poverty threshold increased. The income poverty rate, therefore, was influenced by movements in the income poverty threshold relative to the rates of social transfers as well as by actual changes in household real incomes. In addition, as the proportion of the population depending on social transfers rises – driven mainly by rising

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[8] See Table SIA12 at www.cso.ie.for changes in nominal median income between 2004 and 2015. The poverty threshold is 60 per cent of the median disposable household income, adjusted for household size and composition (1 for first adult; 0.66 for subsequent adults; 0.33 for children).

unemployment – the median income moves closer to the social transfer payment rates.

Figure 3.2: Relationship between nominal income poverty threshold and Jobseeker Benefit social transfer rates, 2004 to 2017
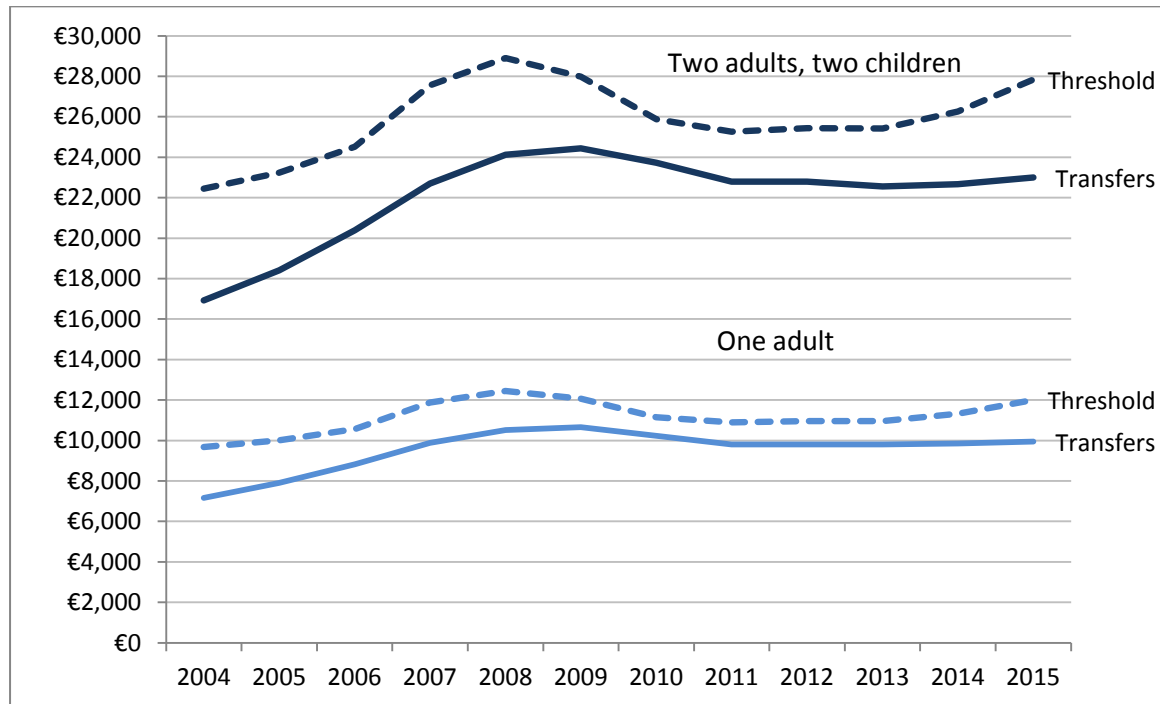
Source: SILC 2004-2015, from www.cso.ie for income poverty threshold. Department of Social Protection rates booklets for social transfers which are those for Unemployment Assistance/Jobseekers Allowance.

From 2010, a lower rate of social protection payment was introduced for unemployed adults under age 25 who did not have a dependent child and the rate was cut further in 2011. From 2011 to 2015 the rate was €100 per week for a young adult aged 18-21 and €144 per week for a young adult aged 22-25 compared to €188 per week for adults over age 15 (or those under 25 with dependent children).

3.2.2 Dynamics between four waves

Although the bulk of this report will focus on poverty dynamics over two waves, we take a moment to briefly examine how much movement in and out of poverty and deprivation there is over four waves—the maximum length of the panel in SILC. As noted earlier, the sample size is rapidly reduced as we extend the analysis beyond two waves, so we illustrate the level of deprivation and income poverty dynamics for the population as a whole rather than for different social risk groups. These figures should be treated with caution because of the small sample size for some of the

breakdowns and because attrition over the longer period of four waves may have compromised the representativeness of the sample.

For illustrative purposes, we present in Figure 3.3 the overall income poverty dynamics over four waves. Note that we combine the data for the period from 2009 to 2015, and make use of the longitudinal weights provided by the CSO. There are four four-year periods: 2009-2012, 2010-2013, 2011-2014 and 2012-2015. The four year period is therefore a rolling period for end-years 2012-2015. In that period, when we observed individuals over four years, just over half were not deprived in any of the years; 14 per cent were deprived in just one wave; 9 per cent in just two waves and 10 per cent in just three waves and 11 per cent in all four waves.

The figures are very similar for income poverty, but slightly higher (67 per cent) for never being income poor and considerably lower (5 per cent) for being income poor in all four waves.[9] The figures for income poverty are remarkably close to those reported by Maître, Russell and Watson (2011, Table 2) for the 2005 to 2008 period; that study found 66 per cent never income poor; 12 per cent income poor in one wave; 10 per cent income poor in two waves; 8 per cent income poor in three waves and 5 per cent income poor in four waves.

Another way to look at the figures is to ask how much of the deprivation at the first wave was persistent. That is, of those who were deprived in the first wave, how many were deprived for just one year and how many were deprived for all four years? The number of cases is smaller here (1,004 deprived in the first wave and 734 income poor in the first wave). This, combined with the use of weights, means that the margins of error are wide (about plus or minus 6 per cent for income poor/deprived in one wave only and about plus or minus ten per cent for income poor/deprived in 2+ or 3+ waves). Of those poor in wave one, only a minority (between one in seven and one in five) were poor in that wave only and between one third and one half were poor for three or more consecutive waves. Although the rate of persistence in the sample seems higher for deprivation than for income poverty,

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[9] These differences between deprivation and income poverty, though small, are statistically significant when tested using robust standard errors to adjust for clustering and weighting.

the differences are within the margins of error. This means that we cannot be sure that the differences we observe in the sample are found in the population.

Figure 3.3: Illustrative deprivation and income poverty dynamics observed over four waves, 2012 to 2015
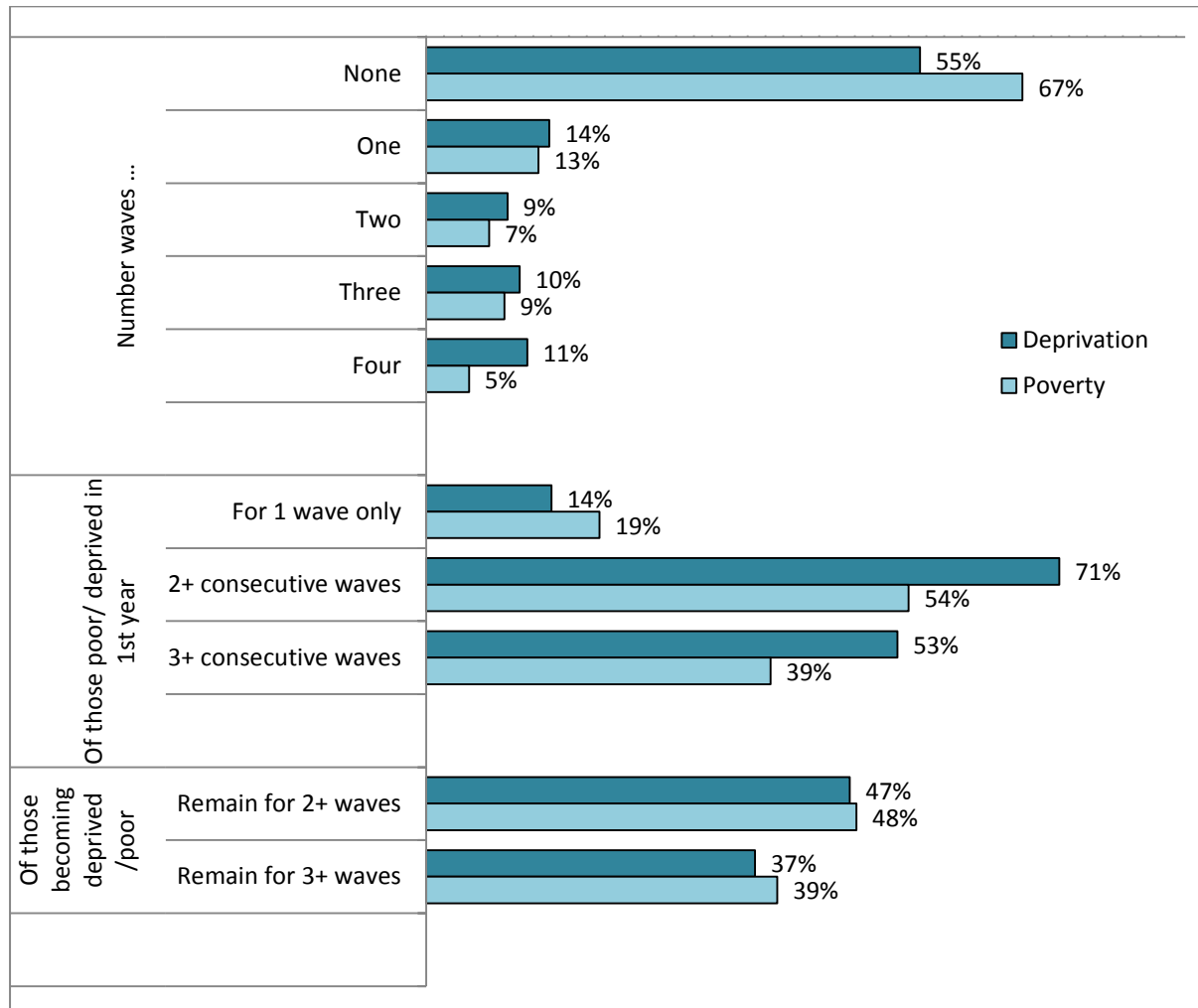
Source: SILC 2009-2015, cases available in four consecutive waves, analysis by authors. Weighted by longitudinal weights provided by CSO. N cases for number of waves income poor or deprived = 3,762; for deprived in first wave, 1004; for income poor in first wave, 734; for becoming deprived in wave 2 or 3, 652; for becoming income poor in wave 2 or 3, 522; for becoming deprived in wave 2, 431)

Now the population that is income poor or deprived in a given wave is made up of those in the midst of an extended spell of income poverty or deprivation and those who have just entered that state.[10] We might expect there to be greater persistence among those who were already income poor or deprived for a number of years at the first interview. Although we cannot identify this group in the first wave, we can check the extent of persistence among those entering poverty in the second or third wave

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[10] In other words, our observation of their deprivation or income poverty is 'left censored' because we do not know their status in the previous wave.

and ask whether they were still poor one year later. That is, of those who entered deprivation in wave 2 or wave 3, what percentage were still deprived in the next wave? As shown in the third panel of Figure 3.3, the patterns are fairly similar for deprivation and income poverty. Of those becoming income poor or deprived in the second or third wave, about half remain income poor or deprived for at least one more wave. Of those becoming income poor or deprived in the second wave, about one third remain deprived or income poor for at least two more waves. The differences between deprivation and income poverty are not statistically significant. The margins of error here are about plus or minus 12 per cent for remaining income poor for 2+ waves and plus or minus 17 per cent for remaining income poor for 3+ waves.[11]

3.3 Are the persistently deprived and the persistently income poor the same people?

We know that the overlap between income poverty and basic deprivation are imperfect. There are many reasons why a household might be income poor in a period but not deprived, such as having lost a job but being able to maintain living standards using savings, drawing on extended family resources, having very low costs (such as owning the home outright). There are also reasons why a family may be deprived but not income poor, such as having unusually high expenses (perhaps linked to illness or disability), accumulated debt, coming from a period of extended unemployment. However, is it the case that persistent income poverty and persistent deprivation have a higher degree of overlap than these indicators measured at a point in time? We might expect this to be the case, since several of the reasons for mismatch postulated above involve a period of change in income.

For the purpose of this analysis, we return once again to the wave-on-wave comparisons, taking two waves at a time. Figure 3.4 shows the overlap between basic deprivation and income poverty, depending on whether we focus on the cross-sectional picture (first two bars) or longitudinal income poverty and deprivation (the last three bars). The top panel expresses the deprivation rate as a percentage of

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[11] We have fewer cases for examining persistence over three or more waves, because we only observe three plus waves for those becoming poor or deprived in wave 2.

those who are income poor or not income poor while the bottom panel expresses the income poverty rate as a percentage of those who are deprived or not deprived.

The first two bars of the top panel show the deprivation rate by income poverty status measured at a point in time. So 16 per cent of those not income poor are deprived compared to 42 per cent of the income poor. Those who were income poor were 2.6 times more likely to be deprived than those not income poor (42 divided by 16 per cent). There is clearly a relationship between income poverty and deprivation, but it is not a perfect one.

The last three bars show the deprivation rate by income poverty status over two waves. Of those not income poor in either wave, 11 per cent were deprived in one wave and 9 per cent were persistently deprived. This increases to 22 per cent and 25 per cent, respectively, among those income poor in either wave and to 23 per cent and 35 per cent, respectively, among those income poor in both waves. The rate of persistent deprivation is 3.7 times higher among those persistently income poor than among those not income poor in either wave. This is a stronger relationship than we observed for income poverty and deprivation measured at either wave. It is still far from perfect, however – we still observe a large area of non-overlap. Among those income poor in both waves, about two in five (42 per cent) were not deprived in either wave.

The conclusions we would draw from the lower panel of Figure 3.4 are similar. This part of the chart shows the income poverty rate by whether or not the person was deprived. We again see a stronger overlap where the person is persistently deprived than where the person is deprived at a point in time, but the overlap is very far from perfect. Those who were persistently deprived were 4.24 times more likely to be persistently income poor than those not deprived in either wave (25 per cent divided by 6 per cent), compared to a ratio of 2.8 times for income poverty and deprivation measured at a point in time (34 per cent and 12 per cent).

The results here show that although there is a somewhat stronger overlap between income poverty and deprivation when measured longitudinally rather than at a single point in time, the overlap remains limited. The modest overlap between income

poverty and deprivation is a well-known phenomenon. Rather than being seen as a problem, it should be seen as confirmation that multiple measures are needed to measure the complex phenomenon of income poverty.

Figure 3.4: Overlap between basic deprivation and income poverty
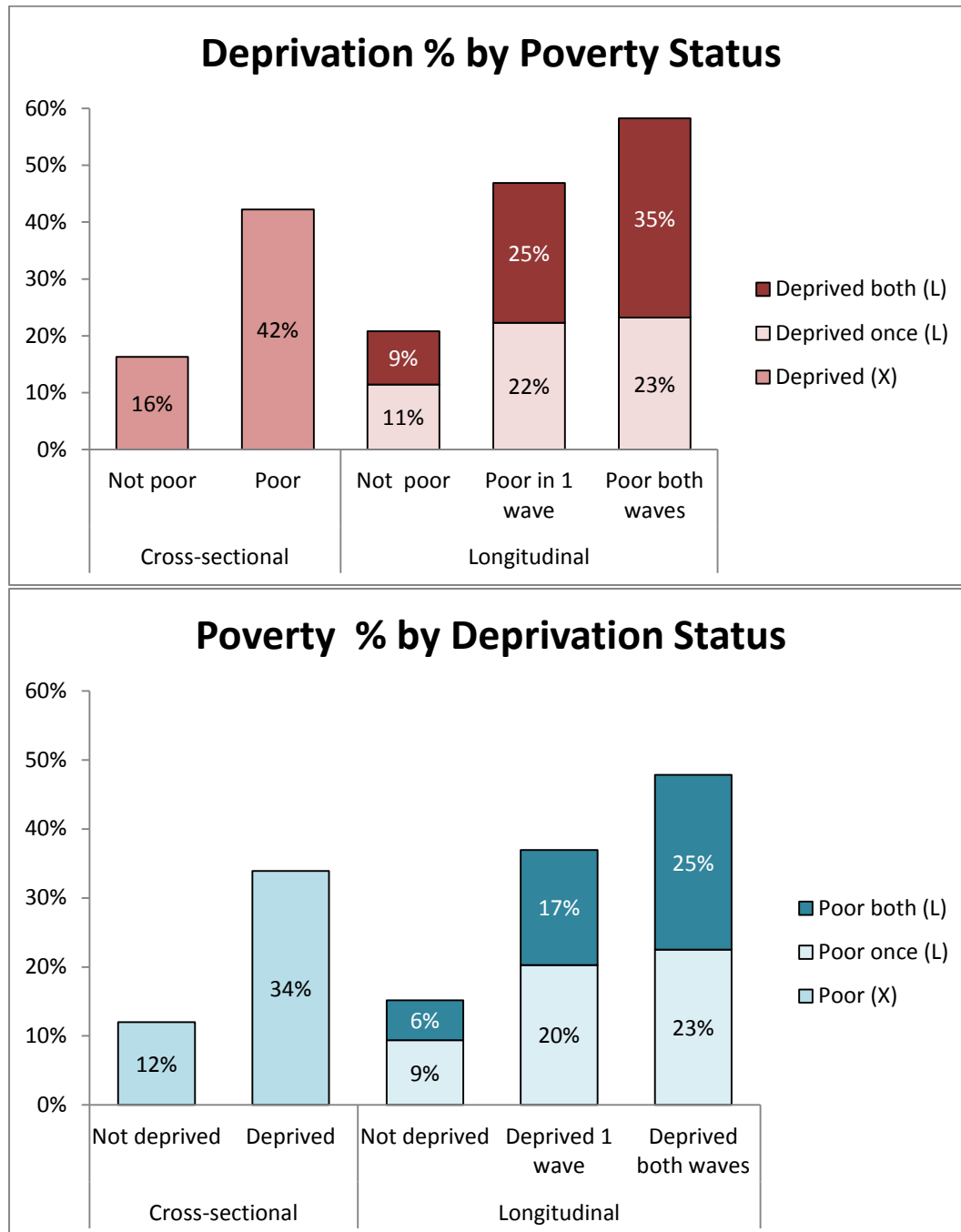
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Margins of error are approximately 1-2 per cent for the cross-sectional analysis (with the higher figure for those income poor/deprived); margins of error for the longitudinal analysis are approximately 1 per cent for never income poor/deprived; 3 per cent for income poor/deprived in one wave and 3-4 per cent for income poor deprived in both waves. Number of cases is 158,345 for the cross-sectional analysis and 73,368 for the two-wave longitudinal analysis.

3.4 Deprivation and income poverty dynamics by social risk group

We now turn to the pattern of deprivation and income poverty dynamics by social risk group. As described in the previous chapter, social risk groups are groups that differ in their capacity to meet their material needs in the market for reasons linked to barriers to labour market participation.

3.4.1 Deprivation in either wave and deprivation in both waves

Figure 3.5 shows the rate of deprivation in either wave (any deprivation) and deprivation in both waves (persistent deprivation) by social risk group. In general, the rate of any deprivation and of persistent deprivation follow the same pattern across groups, with the highest levels among lone parent families and families of working age adults with a disability and the lowest rates among older adults.

We see a significantly higher rate of both any deprivation (68 vs. 47 per cent) and persistent deprivation (41 vs. 28 per cent) for children of never-married lone parents than for those of formerly married lone parents. This is in keeping with our expectations and findings from other research that formerly married lone parents tend to be a more advantaged group in terms of personal resources such as education (Nolan and Watson, 1999). The children of never married lone parents have significantly higher rates than the lone parents themselves, reflecting the higher deprivation rates in larger families of this type.

Among working-age adults with a disability, the rates of both persistent deprivation and deprivation in either wave are similar to those for formerly married lone parent families. The fact that the rates are similar for adults and children in these family types suggests that there is no association with family size: if the risk of persistent deprivation were higher in larger families, a higher proportion of children than of adults would be affected because of the different distributions of children and adults across families of different sizes, as discussed in Chapter 2.

The next highest levels of deprivation are found in large families with three or more children under age 18, at about 30 per cent for deprivation in either wave and 15 per

cent for deprivation in both waves. These rates are significantly higher than for children in families with 1-2 children (22 per cent for any deprivation and 10 per cent for persistent deprivation).

The rate of deprivation is higher for young single adults than for other working-age adults and their families at 24 per cent vs. 19 per cent for any deprivation and 12 per cent vs. 9 per cent for persistent deprivation. This is consistent with the reduction in Jobseekers Allowance payable to this group after 2010, as discussed in Chapter 3.

Figure 3.5: Deprivation in either wave and persistent deprivation by social risk group, 2004-2015
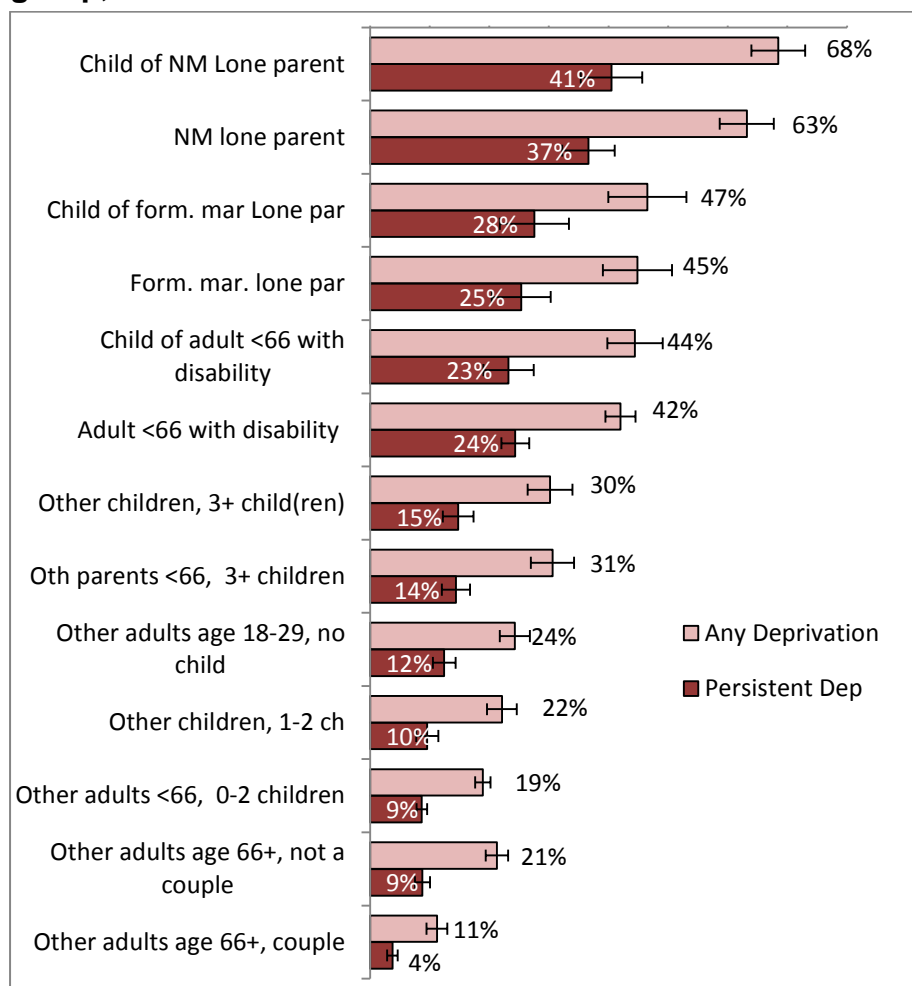
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Error bars show the margins of error estimated using robust standard errors. Commentary on the significance of differences in the text are based on more precise significance tests, however.

We see a marked distinction within the older adults depending on whether we are dealing with an unpartnered adult (single, divorced, separated or widowed and not

living with a partner). Those over age 66 and *not* in a couple have similar rates of deprivation and persistent deprivation to other working age adults and their families (21 per cent and 9 per cent respectively, the differences are statistically significant at p=.04, but small in magnitude). Couples over the age of 66 have by far the lowest deprivation rates with 11 per cent for deprivation in either wave and 4 per cent for persistent deprivation.

The above analysis of deprivation has pointed to the need to have a more nuanced understanding of groups at risk of deprivation. It is not enough to distinguish between life-cycle stages, although we do see an overall tendency for deprivation rates to be highest for children and lowest for older adults. Children in small couple families not affected by disability do not differ in deprivation risk from working age adults over 30 (also not affected by either disability or lone parenthood). In the older age group, it makes a difference whether the person is living in a couple household or is unpartnered.

3.4.2 Income poverty in either wave and income poverty in both waves

In Figure 3.6 we turn to the pattern of income poverty at the 60 per cent of median threshold by social risk group. Again, we look at being income poor in either wave (any income poverty) and being income poor in both waves (persistent income poverty). We have seen already that the overall level of income poverty in 2004-2015 is lower than the overall level of deprivation. Apart from the differences in levels, there are many similarities between the charts for income poverty and deprivation. Both show a higher level of disadvantage among those in lone parent families or families affected by working-age disability and a lower rate among older adults. Both also show a higher rate in large rather than small families, for children than adults in never-married lone parent families, and between older adults in couple and non-couple households.

Some of the patterns we saw for deprivation are not found for income poverty however. In particular, the lower rate of disadvantage of formerly married lone parent families than never married lone parent families is not seen for income poverty. As a

consequence, lone parent families as a group show significantly higher levels of income poverty than families affected by working-age disability. In the case of deprivation, this gap was found only for never-married lone parents.

Another difference between income poverty and deprivation is in the relative rates for working age adults with no children or in small families, on the one hand, and unpartnered older adults, on the other. While these groups did not differ significantly in terms of deprivation, the rate of income poverty is significantly higher for the unpartnered older adults (21 per cent vs. 16 per cent). This applies only to income poverty in either wave, however. The difference is not significant for persistent income poverty (7 per cent of older adults and 6 per cent of working age adults).

Figure 3.6: Income poverty in either wave and persistent income poverty by social risk group, 2004-2015
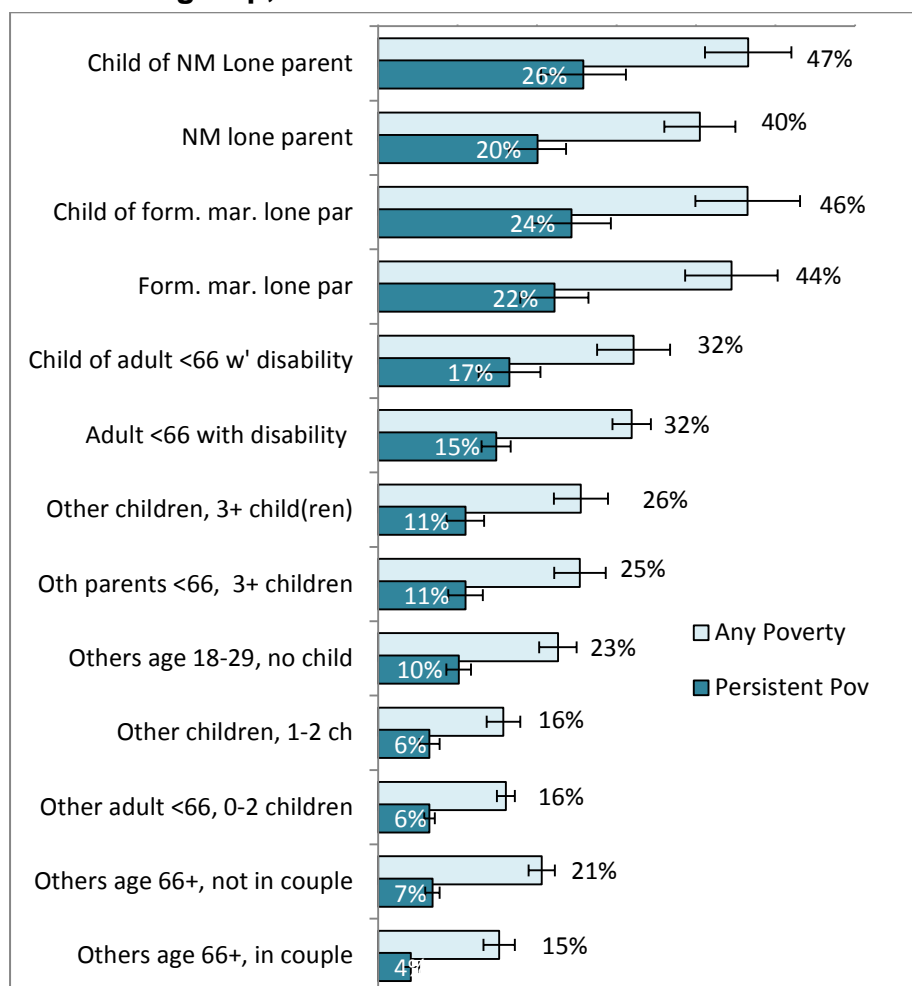
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Error bars show the margins of error estimated using robust standard errors. Commentary on the significance of differences in the text are based on more precise significance tests, however.

3.4.3 Ratio of persistent poverty to poverty in either wave

Apart from the differences between groups in the rate of both income poverty and deprivation, it is also the case that the groups with the higher risk have the higher persistence. This can be seen in Figure 3.7 which shows the proportion of deprivation and income poverty in either wave that is persistent. That is, for those who are income poor or deprived in either the first or second wave, what proportion are income poor or deprived in both waves.

Figure 3.7: Ratio of persistent poverty to poverty in either wave, 2004-2015

Group	Deprivation	Poverty
Child of NM Lone parent	59%	56%
NM lone parent	58%	50%
Child of form. mar. lone par	59%	52%
Form. mar. lone par	57%	50%
Child of adult <66 w' disability	52%	51%
Adult <66 with disability	58%	47%
Other children, 3+ child(ren)	49%	43%
Oth parents <66, 3+ children	47%	43%
Others age 18-29, no child	51%	45%
Other children, 1-2 ch	43%	41%
Other adult <66, 0-2 children	46%	40%
Others age 66+, not in couple	41%	33%
Others age 66+, in couple	34%	27%
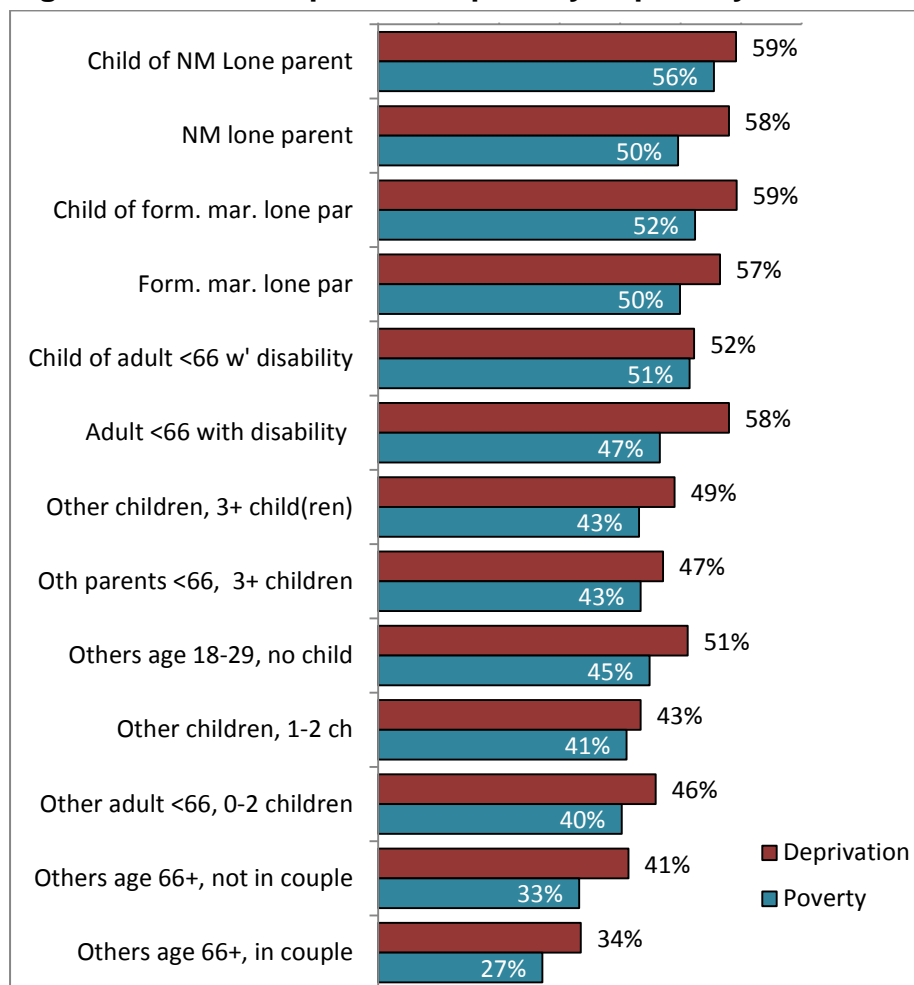
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors.

The chart shows that there is a tendency for persistence to be somewhat greater for deprivation than for income poverty and for the rate of persistence to be lower for children and parents in small families or childless adults (43 to 46 per cent for

deprivation and 40-41 per cent for income poverty for adults and children, respectively)[12], for older unpartnered adults (41 per cent for deprivation and 33 per cent for income poverty) and is lowest of all for older couples (34 per cent and 27 per cent). Tests of significance showed that compared to working age adults who are childless or have small families, persistence is higher for lone parent families and families where a working age adult has a disability and is lower for older couples.

3.4.4 Role of Social Risk factors in accounting for life-cycle differences

The significance of lone parenthood, working-age disability and family size in accounting for the broad differences between working-age adults and children are illustrated in Figures 3.8. We focus on persistent deprivation. These figures are based on a statistical model (Appendix Table 3.2) that examines the association between persistent deprivation and the three broad life-cycle stages, successively controlling for lone parenthood, family size (having 3 or more children) and working-age disability, young adulthood and being a couple aged 66 and over. Using the statistical model, we estimate the probability of being persistently deprived for children and for older adults compared to working age adults. The overall difference is 4.4 percentage points *higher* for children and 7.3 percentage points *lower* for older adults compared to working age adults, as shown in Figure 3.8. The adjusted gap we would expect to see if the different age groups were similarly affected by the social risk factors are shown in the chart next.

Taking account of living in a lone parent family would reduce the gap between children and working age adults by about one half, as shown in the top panel of Figure 3.8. Larger family size also has a very substantial impact on the comparison between children and working-age adults. The combined impact of lone parenthood and larger family size reduce the gap between children and working age adults to one sixth of its original size. This is because a higher proportion of children than of adults are in lone parent families and larger families. Working-age disability has a smaller impact, since working age adults with a disability have fewer children. When this is added to the model, the gap is reduced to about one tenth its original size.

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[12] The rates are similar for parents of one to two children and childless adults aged 30-65.

When it comes to the gap between working-age and older adults, lone parenthood and family size play a small part, but it is working-age disability that is more significant, reducing the gap from 7.3 percentage points to 5.6 percentage points, or about three quarters of its original size. The higher deprivation rate of young adults makes a small additional contribution to explain the working-age/older age persistent deprivation gap. The final control in the figure illustrates the fact that most of the gap between working-age and older adults is due to the lower persistent deprivation of older couples. When we take account of the lower deprivation rate of older couples than of unpartnered older adults, in addition to the other factors named above, the gap is reduced to about one fifth of its original size.

Figure 3.8: Explaining the persistent deprivation gap between broad life cycle stages by social risk factors, 2004-2015
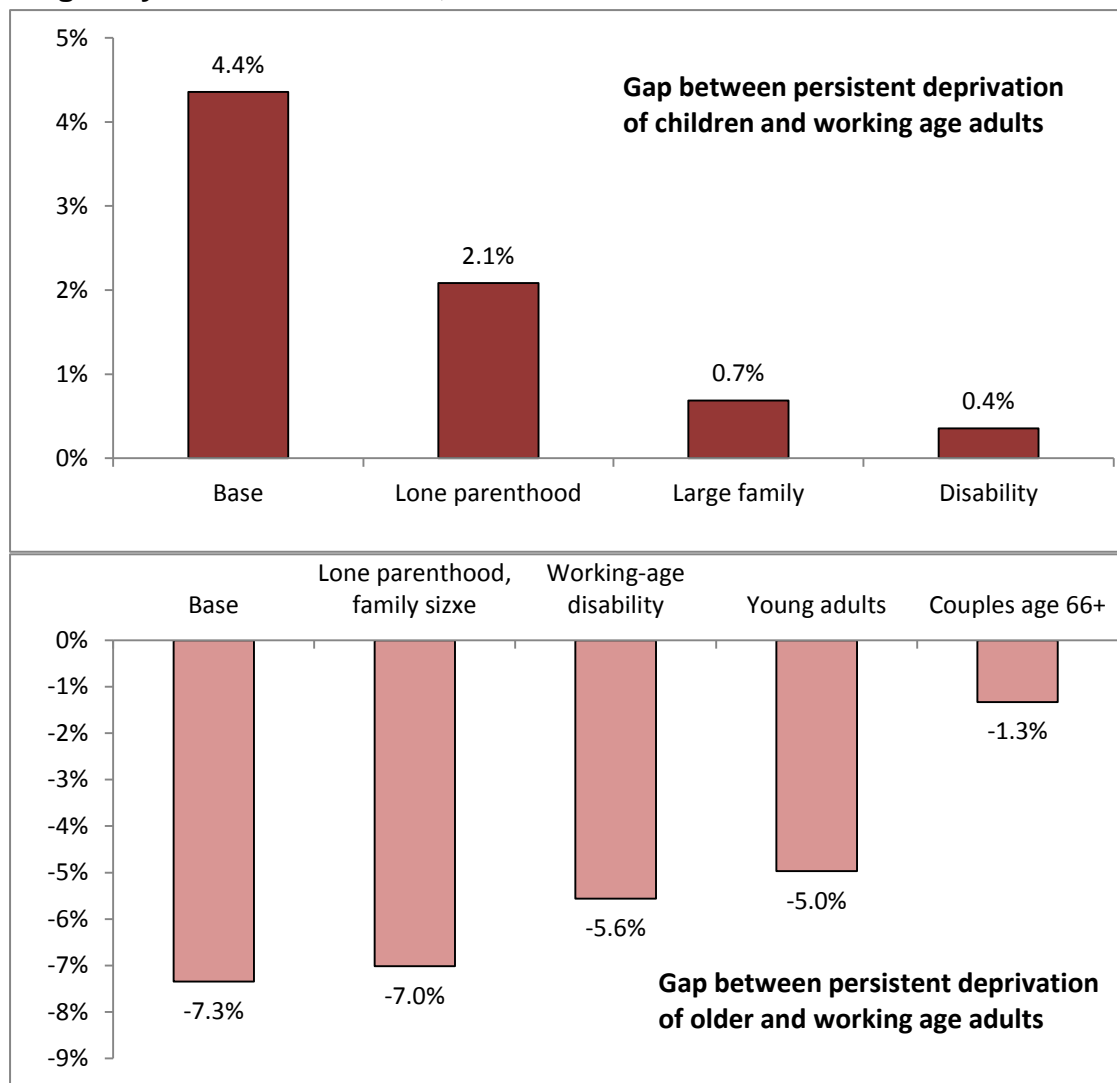
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors based on models in Appendix Table A3.2.

In other words, the higher persistent deprivation rates of lone parents, larger families and families affected by working-age disability accounts for over 90 per cent of the gap in persistent deprivation between working age adults and children. In this comparison between working-age and older adults, it is working-age adults who have the higher deprivation rate. A more important factor in accounting for this gap is working-age disability (accounting for 25 per cent of the gap). When the lower persistent deprivation risk of older couples is taken into account, the remaining gap between working-age and older adults is reduced to about one fifth of its original size.

3.5 Summary

In this chapter we presented mainly descriptive results showing the overall level of movement into and out of poverty between 2004 and 2015, focusing mainly on transitions between pairs of waves. Poverty was measured by the two Irish national indicators: basic deprivation and income poverty and, in general, these showed very similar results across social risk groups. About half of those poor in either of a pair of waves were persistently poor. The rate of poverty was higher for lone parent families and families of adults with a disability. These groups also had a higher rate of persistent poverty and their poverty was more likely to be present in two waves rather than in just one of the waves. We saw that the lowest risk of poverty was found among older couple families and their poverty was also less likely to be persistent.

The number of cases is reduced when we examine change over four waves, so we provided a picture of persistence over four waves for the total population only. Focusing on the period from 2009 to 2015, we saw that 45 per cent of people had experienced deprivation in at least one wave and one third had experienced income poverty in at least one wave. The proportion experiencing deprivation and income poverty that persisted over four waves was much lower, however, at 11 per cent and 5 per cent, respectively. This indicates that there was a great deal of movement into and out of poverty. Of those deprived in the first wave, about one half remained

deprived for all four waves in which they were observed (the figure was 39 per cent for income poverty).

To examine the overlap between deprivation and income poverty we again focused on transitions or persistence between pairs of waves. We found a greater overlap between persistent deprivation and persistent income poverty than between income poverty and deprivation measured at a point in time. Nevertheless, the overlap was far from perfect, indicating that the two indicators are capturing different aspects of the complex phenomenon of poverty.

Using a statistical model, we examined the contribution of social risks (such as lone parenthood, disability, large family size, young adulthood) to the differences in persistent deprivation between children, working age adults and older adults. The higher risk of persistent deprivation associated with lone parenthood and large family size account for a substantial proportion of the differences in risk between children and working age adults, because higher proportions of children than adults are in families affected by these vulnerabilities. The lower persistent deprivation rate of older couples than of older unpartnered adults accounted for a substantial proportion of the gap in persistent income poverty between working age adults and older adults. The income poverty risk associated with disability in the working years also accounted for a proportion of this gap.

Chapter 4: The Recession and Persistent Poverty

4.1 Introduction

In this chapter we examine whether there is an interaction between period and the deprivation dynamics of different groups. In other words, did the recession affect the social risk groups differently?

There are several reasons why we might expect the recession to have a greater impact on vulnerable group such as lone parents and working-age adults with a disability. Because of the barriers they face to labour market participation, we might expect that their capacity to remain in employment is reduced. So when there are cuts in working hours, earnings or redundancies, we might expect these groups to be more affected. Further, since these groups have a lower employment rate to begin with, anything that compromises the state's capacity to supplement their income through the social protection system – such as austerity measures – is likely to disproportionately affect them. Finally, vulnerable groups tend to be more reliant on public services, especially health and housing. Any reduction in services – including increases in waiting periods – is likely to disproportionately affect these groups and may be evident here in a higher risk of deprivation to the extent that they seek to provide for their needs through the private market.

4.2 The Economic and Policy Context

It is worth looking more closely at the impact of the recession on households in order to better understand the changes affecting the different social risk groups. Figure 4.1 illustrates the two main ways in which the recession may have impacted on households: through the fall in employment and through changes in the social protection system. As can be seen, the unemployment rate had been at particularly low levels in the boom years, at just over 4 per cent between 2004 and 2007. It rose sharply to peak at almost 15 per cent in 2012 before beginning to decline again. It stood at 9.5 per cent in 2015. From the perspective of employment, then, the main shock was in 2008 and 2009 with a slower rise between 2010 and 2012.

The other figures in the table show the trend in social protection payments over time. The figures are based on the means tested payments and show the trend in real terms (i.e. controlling for inflation), compared to the means-tested state pension in 2004, which is indexed at 100. The state pension had been rising in the boom years and into the early years of the recession, reaching a level in 2010 that was 29 per cent higher than in 2004. The basic state pension rate was not cut after the start of the recession, but its value in real terms was eroded somewhat by the return of inflation after 2010 so it stood in 2015 at 23 per cent higher than in 2004. The changes in the pension rate were rather modest, however. The rate in 2015, in real terms, was higher than it had been at the start of the recession in 2008.

Figure 4.1: The boom, recession and recovery – unemployment rate and social protection rate
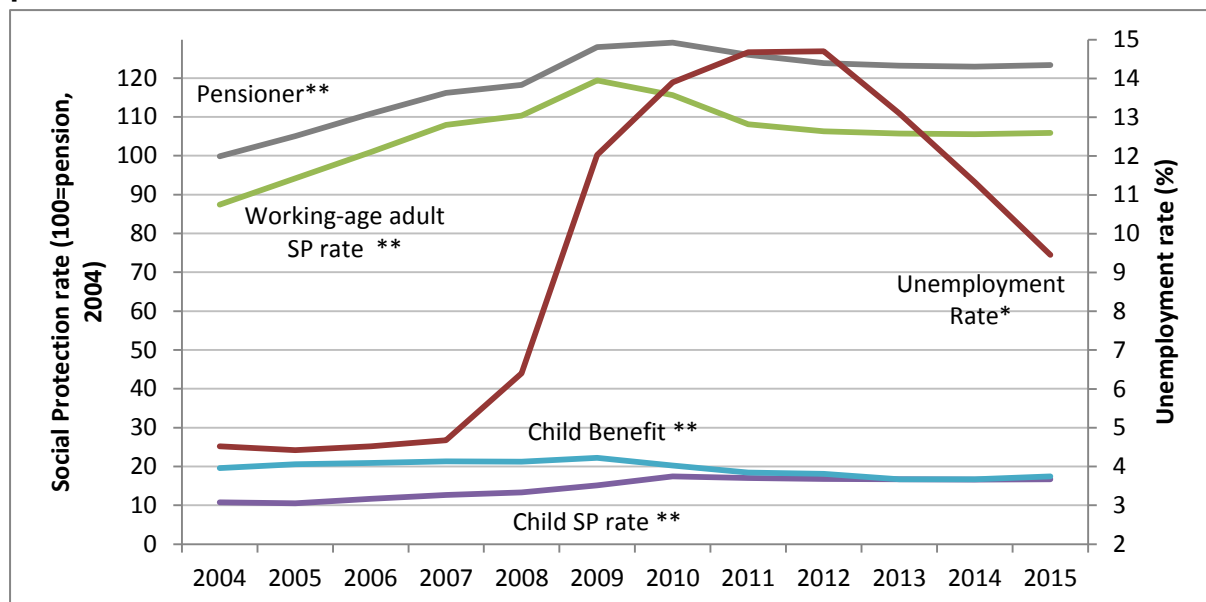
Source: Central Statistics Office (www.cso.ie) for unemployment rate and Consumer Price Index; Department of Social Protection Rates Booklets for relevant years for maximum social welfare rates in nominal terms Social Protection rates are shown as real values in relation to the maximum means-tested rate for pensioners in 2004. Unemployment rate is the CSO Seasonally Adjusted Annual Average Standardized Unemployment Rate (Table LRA04).

The rate of social protection for working age adults (job-seeker allowance and the adult part of one parent family allowance) had been at a lower level than the pension – about 88 per cent of the pension rate in 2004. The rate increased during the boom years and into the early recession, peaking at about 119 per cent of the 2004 pension rate in 2009. The social protection rate for working age adults was cut in the 2010 budget and again in 2011. In real terms, it was about the same as the 2007

rate had been but was eroded in subsequent years by the return of inflation. Rates were cut for unemployed adults under age 21 in 2009 and for all childless adults under 25 in 2010.

There are two components to the main social protection payments affecting children: the universal child benefit and the child social protection allowance paid to adults receiving social protection payments (such as One Parent Family payment or Jobseeker Allowance). In 2004, Child Benefit stood at about 20 per cent of the pension rate while the child allowance was a little over 10 per cent. The rate of child benefit remained relatively stable in real terms between 2004 and 2009. It was cut in the 2010 budget and the fall was partly compensated by an increase in the child allowance in order to protect families dependent on social welfare. A further cut was introduced in 2010, this time with no compensatory increase for welfare-dependent families. The impact was even greater for larger families because of a reduction in the payment with respect to the third and subsequent children in 2012, bringing the initially higher rate down to the same level as for the first and second child. Another change in 2012 was the reduction in the Back-to-School Allowance – again affecting families with children – and the Fuel Allowance payable in the colder months to welfare recipients across the age range (Nolan and Maître, 2017).

There were also a number of changes to taxes and other charges as well as cuts in services. Taxes were increased from 2009 by means of reductions in allowances and reliefs. New income levies (later combined into the Universal Social Charge) were introduced in 2009 and a pension related levy was brought in for public sector workers. At the same time, the social insurance 'ceiling' was raised. A Household Charge was introduced in 2012 for all households (Nolan and Maître, 2017).

4.3 Social Risk Groups for the trend analysis

To take advantage of the longitudinal data, we focus on persistent deprivation and income poverty here. We separate the time from 2004 to 2015 into four periods: boom (2004-05 to 2006-07), early recession (2008-09 to 2009-10), late recession (2010-11 to 2011-12) and recovery (2012-13 to 2014-15). Since the number of cases for certain groups is small, and we are breaking them into four periods, we combine

certain social risk categories here, to give a total of six groups. We combine small groups (such as the different types of lone parent families) while maintaining the distinction between the groups with a higher risk of deprivation and income poverty (especially lone parent families and families affected by working-age disability) and others. The six groups are:

- Lone parents and their children under age 18;
- Working age adults with a disability and their children under age 18
- Large families (parents and children in families with 3 or more children)
- Young adults (single adults between age 18 and 30)
- Others under age 66 (small families with one or two children and single working-age adults)
- Adults age 66 and over.

We present the descriptive results here. These are accompanied by commentary on the results of statistical tests (shown in Appendix Tables A4.1 and A4.2) of whether the change over time was different compared to that of the reference group of other adults aged 30-65.

4.4 The recession and social risk groups

4.4.1 Persistent deprivation

We begin with basic deprivation because, of the two national poverty measures, this one better captures the change in circumstances of individuals and families with the recession. The discussion refers to Figure 4.2 and also draws on Appendix Table 4.1 and a range of statistical tests to check whether the patterns over time were statistically significant for the different groups.

All social risk groups experienced an increase in persistent deprivation over the period, with the largest increase occurring between early (2008-2009) and late (2010-2012) recession. In fact, for no group was there a significant increase between the boom and early recession and for two groups, lone parents and large families, there was a significant decline in this period. These were two groups that experienced an important reduction in deprivation during the boom years so that the

average for the boom was higher than the average for the first two years of the recession. As we saw in Figure 4.1, the rate of social protection payments to families with children rose very sharply in nominal terms in the boom years and continued to rise through the first two years of the recession. This is reflected in the fall in persistent deprivation between the average across the boom years and the figures for the early recession well as deprivation measured at a point in time (see Appendix Figure A4.1).

The rate of persistent deprivation was highest for lone parent families in all four periods with working-age adults affected by disability (and any of their children) the next highest group. The persistent deprivation rate for these groups – as for all of the others shown in Figure 4.2 – rose in the late recession and again in early recovery. Because of the drop between the average figure for the boom years and the early recession for lone parent and large families, the late recession figure for these two groups is not significantly higher than the boom level, but the figure in the recovery years is higher than in the boom.

Figure 4.2: Persistent deprivation by social risk group by period
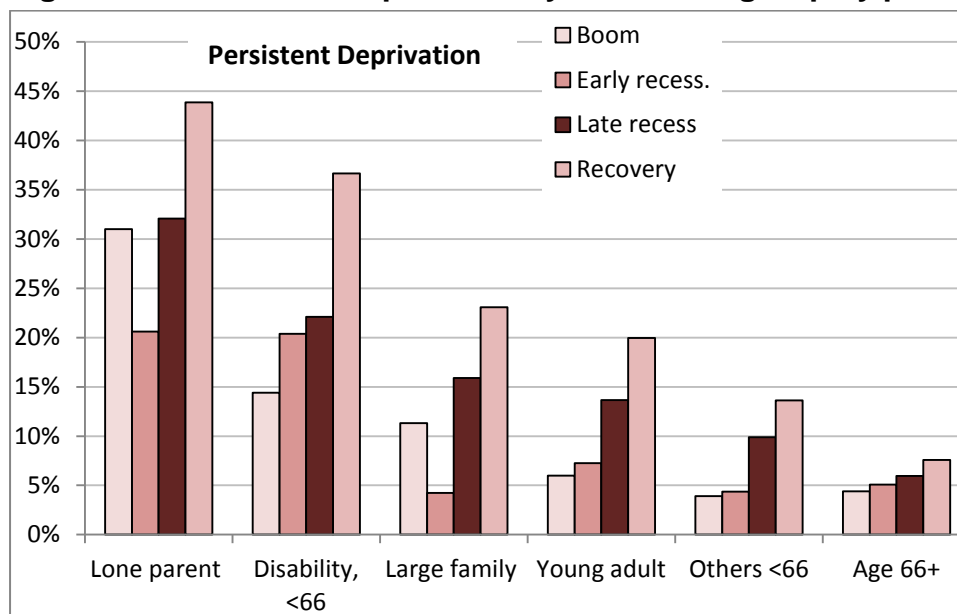
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors.

The pattern of change over time for the other working-age groups – young adults and the reference group of others under age 66 – is very similar to that of working-age families with a disabled adult. This involved little change between the boom and

early recession (the difference is not statistically significant) and a significant rise in the late recession that has not begun to decline in early recovery. In fact, apart from large families and older adults, the increase in persistent deprivation between the late recession and early recovery was statistically significant.

The change over time is very modest for older adults, and this group also experienced the lowest level of persistent deprivation. Compared to the boom level, only the level in the recovery years is significantly higher, though the difference is small.

The higher rate in the recovery years may seem paradoxical, given the fall in unemployment from 2013 onwards. It is not purely an artefact of the focus on persistent deprivation, however. As can be seen in Appendix Figure A4.1, it is also seen in the cross-sectional analysis of deprivation at a point in time. The higher rate in the recovery is consistent with the erosion of savings and the accumulation of debt in households during the recession. Although the immediate income position of many households may have improved as they move into employment, there is likely to be a lag before they can comfortably afford many of the goods and services that comprise the basic deprivation indicator.

4.4.2 Persistent income poverty

We now turn to the pattern over time for persistent income poverty and the figures are shown in Figure 4.3 for the different social risk groups. As seen earlier in Chapter 3, the income poverty rate did not change as much as we might have expected with the recession. This is because it is measured with respect to median incomes and when median incomes themselves are falling, the relative income poverty rate does not necessarily capture the fall in purchasing power associated with household income changes in the period.

As a result, as can be seen from Figure 4.3, the general picture is one of persistent income poverty rates that were lower in the recession than in the boom years for most groups.

For the two most vulnerable groups, lone parent families and families of working age adults with a disability, there was a significant drop between the boom period and at least one of the recession periods. In lone parent families, the rate in the late recession was significantly lower than the rate in the boom years but the difference between the boom and early recession or recovery was not statistically significant. In families of a working age adult with a disability, the rate was lower in all other periods than the boom years.

In the recession and early recovery, the rate of persistent income poverty was very close for large families and for families affected by working-age disability in the – though the rate was significantly higher for the latter group in the boom years. The differences between the periods are not statistically significant for large families.

Figure 4.3: Persistent income poverty by social risk group by period
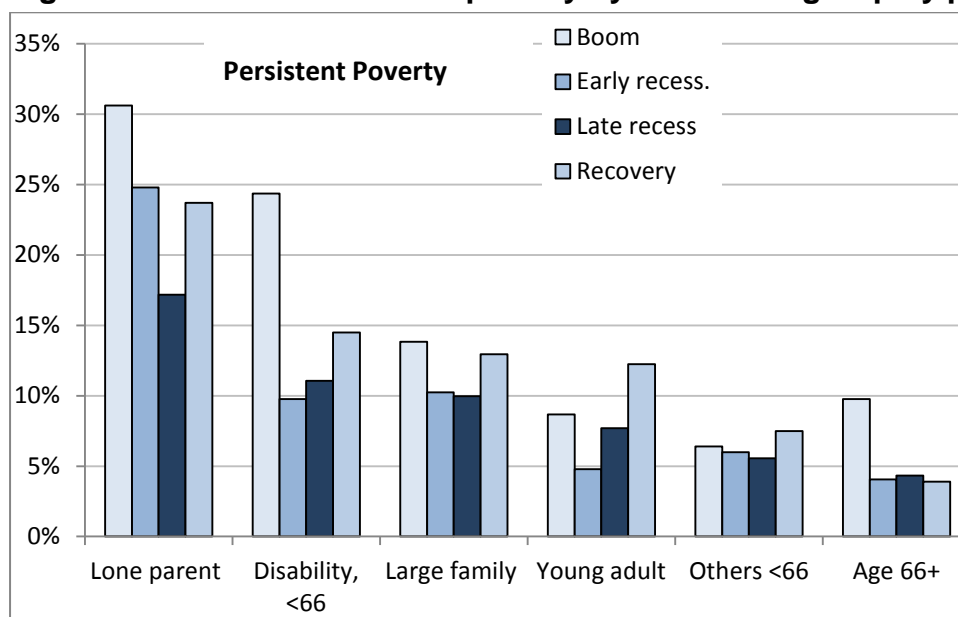
Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors.

Young adults experienced a significant fall in persistent income poverty between the boom and early recession but the late recession and early recovery periods did not differ significantly from the boom. This is in contrast to their steady increase in deprivation over the period.

For the largest group – others under age 66 (which includes small families and single adults) – the persistent income poverty rate in the early and late recession and the recovery years is not significantly different from the boom.

The persistent income poverty rate of older adults tended to be the lowest across these groups, especially in the late recession and early recovery. Their persistent poverty rate was significantly higher in the boom than in the recession or early recovery. The paradoxical drop can be understood in terms of the falling poverty threshold combined with rising State Pension rates up until 2009 and a more modest decline thereafter than was found for working-age social protection payments.

4.5 Summary

This chapter focused on how the recession affected the different social risk groups asking, in particular, whether there is evidence of a higher level of persistent deprivation and persistent income poverty during the recession that disproportionately affected the vulnerable groups.

Apart from older adults, all social risk groups experienced a substantial increase in deprivation over the course of the recession. The increase in persistent deprivation was particularly marked for most of the groups in the late recession. The fact that rates remained high into the recovery period is consistent with the expectation of a lag between recovery in terms of employment and recovery in terms of household living standards arising from the erosion of savings and / or the accumulation of debt during the recession.

The magnitude of the increase in persistent deprivation is quite sensitive to the starting point, which complicates the comparison between groups. In particular, the rate of deprivation had been falling rapidly in the boom years for some groups (lone parents, larger families) so that the average persistent deprivation rate between 2004 and 2007 was higher than the rate in the early recession. A different picture of how the social risk groups fared relative to one another in the recession would emerge depending on whether the starting point was taken as the boom years or the early recession years. A different picture would also emerge depending on whether

the focus was on relative or absolute change in risk. For instance, the persistent deprivation rate for families affected by disability increased from 14 per cent to 37 per cent between the boom and recovery, representing an increase in relative terms of 2.6 times but in absolute terms an increase of 23 percentage points. This compares to a relative increase of 3.5 times for others under age 66 (from 4 to 14 per cent) – a higher relative increase but a lower absolute increase of ten percentage points. In other words, when groups begin from very different starting points, there is no easy answer to the question about who fared worse in the recession.

The impact of the recession was less clear for income poverty. The combined effect of a falling poverty line as incomes collapsed and the sustained support of social transfers, particularly before the cuts of 2010, meant that the most vulnerable groups experienced either a fall in persistent income poverty compared to the boom (lone parents and families affected by disability) or little change over the period (large families, young adults, others under age 66). For most groups, this pattern is also found when we focus on point-in-time income poverty (see Appendix Figure A4.2). An exception is young adults, where the increase over the period is clearly seen in the cross-sectional figures but, because of the smaller number of cases, the increase during the recession in persistent income poverty is not statistically significant.

Chapter 5: Conclusions and Implications

5.1 Introduction

The goal in this technical paper was to examine the issues involved in using the Irish SILC data in studying poverty dynamics. In the process, we sought to further develop the measurement of social risk groups and investigate how the patterns of income poverty and deprivation transitions vary over a period of profound economic turbulence and across social risk groups.

5.2 Using Irish SILC data for dynamic analysis

Our investigation of attrition in the Irish SILC data indicated that it had a major impact on sample size and that the rate of attrition was substantially higher among young adults and those with higher levels of education. This means that the sample in later waves underrepresented young adults and those with higher levels of education. The reduction in sample size resulted partly from the design of SILC as a rotational panel and partly from attrition at the fieldwork stage. The two-wave sample was about half the number of cases available for cross-sectional analysis and the four-wave sample that was less than ten per cent as large.

On the positive side, there was little evidence of a substantial impact of attrition over two waves by initial income poverty or deprivation status, by social class, by household type (apart from 'living with parents' which is associated with young adulthood) or by other social risk characteristics such as lone parenthood and disability.

We need to caution that we were not able to assess the extent of attrition on the basis of characteristics we did not observe in the first wave, particularly those associated with transitions such as getting or losing a job, forming a family, retiring and so on. These may be associated with a change in income poverty or deprivation status and with changing address. We know that those who change address are less likely to be successfully interviewed in the second wave. The net effect of attrition associated with transitions is likely to be an underestimation of the extent of change in income poverty or deprivation between waves.

In order to maximise the number of cases available for analysis and minimise the impact of attrition, we focused on transitions between pairs of waves in this paper and we pooled the sample over time. We used the cross-sectional weight from the second wave which we established to perform as well as the longitudinal weights in adjusting the sample by age group and level of education – the two characteristics with the strongest link to attrition.

5.3 Overall persistence of income poverty and deprivation

Since we focus on transitions between two waves, persistent poverty refers to poverty that is present in two waves. We began by examining the trends over time in the persistence of poverty as measured by the two Irish national indicators of basic deprivation and income poverty. We know from earlier research that deprivation did a better job than income poverty of capturing the falling living standards associated with the recession. This is because it directly measures what people are able to afford to have or to do. Income poverty, on the other hand, was affected by the poverty threshold which fell in line with incomes in general during the recession. If the median income itself is falling, then a household might seem to be 'less poor' in one year than the previous year simply because the income poverty line fell. Because of this difference between deprivation and income poverty in the period from boom to recession to recovery, we saw a clear rise and then a fall in deprivation but a much more muted pattern for income poverty which fell in the early recession and rose only a little in the later recession, remaining high in the early recovery years when the income poverty line was rising in line with overall incomes.

We see a similar pattern with persistent income poverty and deprivation, with persistent deprivation clearly rising with the recession before falling back in 2014-15. Persistent income poverty, on the other hand, fell from 14 per cent in 2005-2006 to 7 per cent in 2009-2010 before rising to 10-11 per cent between 2012 and 2015.

On average over the period, about half of those who had been deprived in either wave of each pair were deprived in both waves with a slightly lower level of persistence for income poverty (43 per cent).

It is well known that there is a limited overlap between direct (e.g. deprivation) and income-based measured of income poverty (Whelan, Layte & Maitre, 2003). Here, we checked whether the overlap was greater when we examine persistent income poverty and persistent deprivation than when we focus on both measured at a point in time. We found that the overlap was indeed greater for persistent poverty and deprivation, but that the overlap was still imperfect.

5.4 Social risk groups

Building on earlier work, we distinguished social risk groups that differ in their capacity to meet their material needs through the market for reasons linked to barriers to labour market participation. These include lone parents, people with a disability, children and those beyond retirement age. As noted above, we examined a more detailed set of social risk groups in this report than we had considered in earlier work. Among lone parents, we distinguished between never married and formerly married (i.e. widowed, divorced, separated) lone parents. Among couple families, we distinguished those with three or more children from those with one or two children. Among older adults, we distinguished those living with partners and those who were unpartnered.

These additional distinctions proved important, as was particularly evident when we focused on deprivation. Lone parent families were the group with the highest risk of deprivation both at a point in time and cross-sectionally. The levels were significantly higher for never-married lone parents (63 per cent for 'any deprivation') than for formerly married lone parents (45 per cent), with the level for working age adults with a disability being close to the latter (42 per cent).

We also found a higher risk of deprivation for those in larger families (30 per cent for deprivation in either wave) than for children in small families (22 per cent) or other working-age adults (19 per cent). The rate was slightly higher for young single adults (24 per cent). Among older adults, the rate of deprivation in either wave was substantially higher for those who were unpartnered (21 per cent) than for those living with a partner (11 per cent).

Some of the patterns we observed for deprivation were not found in the case of income poverty, such as the distinction between never married and formerly married lone parents. We still observed the difference between large and small families, however, and between unpartnered and partnered older adults.

In general, the same groups were at higher risk of persistent deprivation and income poverty as were at higher risk of cross-sectional deprivation and income poverty. The persistence of deprivation and income poverty – that is, the percentage of deprivation/income poverty in either wave that is present in both waves – also tended to be higher for these vulnerable groups.

We examined the significance of social risk factors such as lone parenthood, working-age disability, larger family size, the challenges of being a young adult and being an unpartnered older adult in accounting for the broad life cycle differences in persistent deprivation. The impact of these factors accounted for the bulk of the gap in persistent deprivation between children and working age adults (18 per cent vs. 13 per cent, respectively). Most of the reduction was due to the fact that a higher proportion of children than of adults are found in lone parent and larger families. Much of the gap in persistent deprivation between older adults and working age adults (6 per cent and 13 per cent, respectively) is linked to the much lower deprivation rate of older couples, the higher deprivation rate of young adults and the impact of working-age disability.

Overall, the analysis pointed to the usefulness of examining the significance of social risk factors associated with normative roles and responsibilities in accounting for differences in the risk of income poverty and deprivation. The analysis allowed us to identify some of the factors accounting for differences in risk by broad life cycle stage. Although group membership does not 'explain' the greater risk of income poverty and deprivation, it does point to where to look for explanations. In particular, it highlights the fact that the higher deprivation rate of children than of adults is largely a result of the higher proportion of children than of adults in lone parent and large families.

5.5 The Great Recession

The analysis in this paper was based on data collected between 2004 and 2015, stretching from the last of the boom years to a point where the Great Recession was beginning to recede and unemployment was falling very rapidly. The recession led to an increase in economic stress among groups that had hitherto been relatively protected, such as those in the intermediate social class and middle-income deciles (Whelan and Maître, 2008). The impact of the recession on families came largely through two routes: the reduction in employment and the cuts to social protection in response to the fiscal crisis. The sharpest cuts to employment occurred in the early recession, in 2008 and 2009, while the cuts to social protection happened in the late recession, 2010 and 2011.

We used a less detailed classification of social risk groups for this analysis to maintain an adequate number of cases. We combined the two types of lone parent families and combined adults and children within the same family types, but retained the distinction between younger (aged 18 to 30), working-age (aged 30-65) and older (aged over 66) adults. We also combined the two groups of older adults (partnered and unpartnered). This led to six groups: lone parent families; families where a parent has a disability; large families; young adults; others under age 66 (including children in small families, their parents and other adults) and adults age 66 and over.

In examining the effects of the recession, we focused on persistent poverty in order to take advantage of the longitudinal nature of the data. Since deprivation provided a better picture of the changing living circumstances of families in the recession, we will focus the discussion here on deprivation. Persistent deprivation increased substantially for all groups, apart from older adults, in the recession. The increase was most marked in the late recession, with some groups (such as lone parent and large families) experiencing their lowest rates in the early recession years. The timing of the main increase in deprivation coincides with the point after 2010 where social protection and child benefit were cut – affecting mainly working age adults and their children, with an even larger impact on young unemployed people (under age 25). This increase in persistent deprivation in this period, and its continuation at a high level into recovery, is likely to reflect both the impact of cuts in social protection

and the fact that the duration of the recession led to a further erosion of resources such as savings or an accumulation of debt.

5.5 Limitations and future research

Our analysis of the pattern of extent and pattern of attrition over the life of the SILC panel indicated that attrition substantially reduced the number of cases available for analysis and that there is a higher rate of attrition among younger adults and those with higher levels of education. The impact is greater on both the number of cases and on the structure of the sample as we increase the number of waves over which the individuals are observed. As noted by Jenkins and Van Kerm (2017) across a number of European countries, the longitudinal weights only partially adjust for attrition based on observable characteristics.

Apart from the differences we could observe between those who were followed and the full first wave sample, it seems likely that those experiencing a transition (such as into or out of employment, from school to work, family formation or dissolution) are more likely to be lost. Since these transitions are likely to be associated with changes in economic circumstances, attrition is likely to lead to an underestimate of the extent of movement into and out of income poverty and deprivation. This means that the already high levels of movement we report here may well be a lower-bound estimate.

Following the analysis in the present report we have begun a follow-up project to compare income poverty and deprivation dynamics of social risk groups across selected European countries, drawing on EU-SILC for key pairs of years between 2005 and 2014. This will allow us to examine the relative success of different regimes in protecting vulnerable social risk groups from income poverty.

5.6 Relevance to policy

Although this was primarily a technical report designed to assess the feasibility of using SILC to examine income poverty and deprivation transitions of social risk groups, there were a number of findings of relevance to poverty policy. These

include the relatively high rates of mobility into and out of poverty, the lag between falling unemployment rates and falling deprivation rates, the significance of lone parenthood and large family size in accounting for the poverty gap between adults and children and the sharply different circumstances of older couples and older single, widowed, divorced or separated adults.

The relatively high level of movement into and out of income poverty and deprivation mean that the proportion of people affected is much higher than the level of income poverty and deprivation at a given point in time. It does not make sense to speak of the 'poor' or 'deprived' as if they were a static group. Instead, income poverty and deprivation are consequences of low market power or barriers to market access which must be addressed by policy.

A second policy point, which is also evident when we examine deprivation at a point in time, is that there is clearly a lag between the improvement in the economy based on indicators such as the employment rate and improvements for those affected by poverty and deprivation. Part of this lag is undoubtedly due to factors such as the erosion of resources and accumulation of debt over the recession. It is also evident, however, that the rate of persistent deprivation is still very high for the most vulnerable groups (lone parent families and those affected by disability) in the recovery period up to 2015. This suggests a need for special supports for these groups to enable them to take advantage of the benefits of economic recovery.

Lone parenthood and family size are very important in accounting for the higher deprivation rate of children than of adults. Policies that benefit these families will be most effective in narrowing the income poverty gap between children and adults. Disability in the working years is another important risk factor for income poverty and deprivation. It affects more adults than children – but a similar proportion of both groups – and accounts for some of the higher risk among working-age than among older adults.

Although older adults tend to be portrayed as a relatively advantaged group with a lower risk of income poverty and deprivation, the analysis here indicated that this immunity is specific to older couples. Further analysis is needed to investigate why

this is the case. It may be related differences between couples and unpartnered older people in health status, differences in resources accumulated over time, differences in the support networks available or some combination of these.

Appendices: Additional Tables and Figures

Appendix Table A2.1: Sample structure of longitudinal cases in first Wave and subsequent waves in SILC, with initial waves from 2004 to 2014.

	A. All cases	Longitudinal cases					
		B. In 2+ waves		C. In 3+ waves		D. In 4 Waves	
	%	%	B-A	%	C-A	%	D-A
Gender							
Male	49%	49%	0%	48%	0%	48%	-1%
Female	51%	51%	0%	52%	0%	52%	1%
Age group							
Age under 18	26%	27%	1%	26%	0%	26%	0%
18-29	12%	9%	-3%	8%	-4%	6%	-5%
30-39	12%	12%	0%	12%	0%	12%	0%
40-49	14%	14%	0%	14%	0%	14%	0%
50-64	18%	19%	1%	20%	2%	21%	3%
65-69	5%	6%	0%	6%	1%	6%	1%
71+	13%	14%	1%	14%	2%	15%	2%
Education (if over 16)							
Education -Lower 2nd or less	43%	45%	3%	48%	5%	49%	7%
Upper 2nd level, Technical etc.	30%	29%	-1%	28%	-2%	27%	-3%
Further /Higher Education	28%	26%	-2%	25%	-3%	24%	-4%
Social Class of Household							
Higher professional /managerial	17%	17%	0%	16%	0%	16%	-1%
Lower professional/ managerial	22%	22%	0%	21%	-1%	21%	-1%
Intermediate /technician	14%	13%	0%	13%	0%	13%	0%
Self-employed & farm	11%	12%	0%	12%	0%	13%	1%
Lower service/sales/technical	17%	17%	0%	17%	0%	17%	0%
Routine & never worked	19%	20%	0%	20%	1%	20%	1%

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Appendix Table A2.1 (*continued*)

	A. All cases	B. In 2+ waves		C. In 3+ waves		D. In 4 Waves	
		Longitudinal cases					
	%	%	B-A	%	C-A	%	D-A
Living arrangements							
Live alone	12%	13%	1%	13%	1%	14%	2%
Live with partner	18%	18%	1%	19%	1%	20%	2%
Live with own children	5%	5%	0%	5%	0%	6%	0%
Live with partner and children	26%	26%	1%	27%	1%	26%	1%
Live with parents	36%	35%	-1%	34%	-2%	32%	-4%
Live in non-family household	4%	2%	-1%	2%	-1%	2%	-1%
Household Size (number of persons)							
One person	12%	13%	1%	13%	1%	14%	2%
Two	24%	24%	1%	25%	1%	26%	2%
Three	18%	17%	-1%	17%	-1%	17%	0%
Four	22%	22%	0%	21%	-1%	21%	-2%
Five	15%	15%	0%	15%	-1%	14%	-1%
6 or more persons	9%	9%	0%	9%	0%	8%	-1%
Number of children in household							
No children	47%	47%	0%	48%	1%	48%	1%
One child	16%	15%	-1%	14%	-1%	14%	-2%
Two	19%	20%	0%	19%	0%	19%	0%
Three or more	18%	19%	1%	19%	1%	19%	1%
Income poverty Status of household							
Not income poor	83%	83%	0%	82%	-1%	81%	-2%
Income poor	17%	17%	0%	18%	1%	19%	2%
Deprivation Status of household							
Not deprived	80%	80%	0%	81%	1%	82%	1%
Basic dep	20%	20%	0%	19%	-1%	18%	-1%
Consistent Poverty Status of household							
Not consistently poor	93%	93%	0%	93%	0%	93%	0%
Consistently poor	7%	7%	0%	7%	0%	7%	0%

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Appendix Table A2.1 (*continued*)

	Wave 1	Wave 2		Wave 3		Wave 4	
	%	%	W2-W1	%	W3-W1	%	W4-W1
Social risk group (aggregated)							
Lone parent	3%	3%	0%	3%	0%	3%	0%
Child of LP	5%	5%	0%	5%	0%	6%	0%
Adult < 66, disability	9%	9%	0%	9%	1%	10%	1%
Child of adult < 66, disability	4%	4%	0%	4%	0%	4%	0%
Other children	17%	17%	1%	17%	0%	17%	0%
Other adults 18-29	10%	8%	-3%	6%	-4%	5%	-5%
Other adults 30-65	35%	35%	1%	36%	1%	36%	2%
Other adults 66+	17%	18%	1%	19%	2%	20%	3%
Social risk group (detailed)							
Never married lone parent	2%	2%	0%	2%	0%	2%	0%
Formerly married lone parent	1%	1%	0%	1%	0%	1%	0%
Child of never married lone parent	3%	3%	0%	3%	0%	3%	0%
Child of formerly married lone parent	3%	3%	0%	3%	0%	3%	0%
Adult with disability <66	9%	9%	0%	9%	1%	10%	1%
Child of adult with disability	4%	4%	0%	4%	0%	4%	0%
Other children, one child	3%	2%	0%	2%	0%	2%	0%
Other children 2 children	6%	7%	0%	6%	0%	6%	0%
Other children, 3+ children	8%	8%	0%	8%	1%	8%	0%
Other adults age 18-29, no own children	9%	7%	-3%	5%	-4%	4%	-5%
Other adults age 18-29, has own children	1%	1%	0%	1%	0%	1%	0%
Other adults age 30-65, no own children	18%	18%	0%	19%	1%	19%	1%
Other adults age 30-65, one own child	5%	5%	0%	5%	0%	5%	0%
Other adults age 30-65, two own children	7%	7%	0%	7%	0%	7%	0%
Other adults age 30-65, three+ own children	5%	5%	0%	5%	0%	5%	0%
Other adults age 66+, not a couple	8%	9%	1%	9%	1%	10%	1%
Other adults age 66+, couple	9%	9%	1%	10%	1%	10%	1%

Source: SILC 2004-2015, analysis by authors. Includes all persons, unless otherwise stated. Unweighted data.

Appendix Table A2.2: Sample Structure of Panel Cases in Full First Wave (weighted) and in two waves (W1 and W2) with Alternative weights

	All Wave 1 cases	Cases in both Wave 1 and Wave 2	
	W1 weights	W2 weights	W1 weights
Age group			
Age under 18	27%	28%	28%
18-30	16%	14%	12%
31-40	14%	14%	14%
41-50	13%	14%	14%
51-64	18%	19%	19%
65-70	4%	3%	4%
71-85	8%	7%	9%
Education (age over 16 only)			
1 Lower 2nd or less	38%	39%	41%
2 Upper 2nd Level (plus Technical or Vocational)	33%	32%	31%
3 Further or Higher Education	30%	29%	27%
Social Risk Group (detailed)			
Never married lone parent	2%	2%	2%
Formerly married lone parent	2%	2%	2%
Child of never married lone parent	3%	3%	3%
Child of formerly married lone parent	3%	3%	3%
Adult with disability <66	9%	9%	9%
Child of adult with disability	4%	4%	4%
Other children, one child	3%	3%	3%
Other children 2 children	7%	8%	7%
Other children, 3+ children	6%	7%	7%
Other adults age 18-29, no child	13%	11%	9%
Other adults age 18-29,has children	1%	2%	1%
Other adults age 30-65, no own children	18%	18%	18%
Other adults age 30-65, one own child	7%	7%	7%
Other adults age 30-65, two children	7%	8%	8%
Other adults age 30-65, three+ children	4%	4%	4%
Other adults age 66+, not a couple	5%	5%	6%
Other adults age 66+, couple	6%	5%	6%

Source: SILC 2004-2015, analysis by authors. Includes all persons, unless otherwise stated. Data are weighted as shown in column heading.

Appendix Table A2.3: Comparing longitudinal weights and second wave weights for 2011-2014

	All Wave 1 cases	Cases in both Wave 1 and Wave 2	
	W1 weights	**Longitudinal weights**	**W2 weights**
Age group			
Age under 18	27%	27%	28%
18-30	14%	12%	12%
31-40	15%	14%	15%
41-50	13%	14%	14%
51-64	18%	21%	19%
65-70	4%	4%	4%
71-85	8%	9%	8%
Education (age over 16 only)			
1 Lower 2nd or less	33%	36%	34%
2 Upper 2nd Level (plus Technical or Vocational)	31%	31%	31%
3 Further or Higher Education	35%	33%	35%
Social Risk Group (detailed)			
Never married lone parent	2%	2%	2%
Formerly married lone parent	1%	1%	2%
Child of never married lone parent	3%	3%	3%
Child of formerly married lone parent	2%	2%	2%
Adult with disability <66	8%	9%	8%
Child of adult with disability	3%	4%	4%
Other children, one child	4%	3%	3%
Other children 2 children	8%	8%	8%
Other children, 3+ children	6%	7%	7%
Other adults age 18-29, no child	11%	9%	9%
Other adults age 18-29,has children	2%	1%	2%
Other adults age 30-65, no own children	19%	20%	19%
Other adults age 30-65, one own child	7%	7%	7%
Other adults age 30-65, two children	8%	8%	8%
Other adults age 30-65, three+ children	4%	4%	4%
Other adults age 66+, not a couple	5%	5%	5%
Other adults age 66+, couple	6%	7%	6%

Source: SILC 2004-2015, analysis by authors. Includes all persons, unless otherwise stated. Data are weighted as shown in column heading.

Appendix Table A2.4: Comparing longitudinal and wave 2 cross-sectional weights for analysis of income poverty / deprivation across pairs of waves, 2012-2015.

	Any Deprivation (in either of two waves)				
	W2 Weights		Longitudinal weights		Differ-ence
	Rate	M.E.	Rate	M.E.	
Child of NM Lone parent	77%	5%	74%	6%	3%
NM lone parent	72%	6%	70%	6%	2%
Child of form. mar Lone par	50%	9%	50%	9%	0%
Form. mar. lone par	52%	9%	52%	9%	0%
Child of adult <66 with disability	62%	6%	62%	6%	0%
Adult <66 with disability	57%	4%	56%	4%	1%
Other children, 3+ children	40%	6%	41%	6%	-1%
Other parents <66, 3+ children	41%	6%	42%	5%	-1%
Other adults age 18-29, no child	37%	4%	37%	4%	0%
Other children, 1-2 children	33%	4%	33%	4%	0%
Other adults <66, 0-2 children	27%	2%	28%	2%	0%
Other adults age 66+, not a couple	27%	3%	27%	4%	0%
Other adults age 66+, couple	14%	3%	14%	3%	0%
	Persistent Deprivation (both waves)				
	W2 Weights		Longitudinal weights		Differ-ence
	Rate	M.E.	Rate	M.E.	
Child of NM Lone parent	50%	7%	50%	7%	0%
NM lone parent	46%	6%	46%	6%	0%
Child of form. mar Lone par	35%	9%	35%	8%	0%
Form. mar. lone par	36%	9%	35%	8%	1%
Child of adult <66 with disability	33%	6%	36%	6%	-2%
Adult <66 with disability	35%	4%	34%	4%	1%
Other children, 3+ children	21%	4%	22%	4%	-1%
Other parents <66, 3+ children	21%	4%	22%	4%	-1%
Other adults age 18-29, no child	19%	3%	20%	4%	-1%
Other children, 1-2 children	15%	3%	15%	3%	0%
Other adults <66, 0-2 children	12%	1%	13%	2%	0%
Other adults age 66+, not a couple	12%	3%	12%	3%	0%
Other adults age 66+, couple	5%	2%	5%	2%	0%

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Appendix Table A2.4 (continued)

	Any Income poverty (in either of two waves)				
	W2 Weights		Longitudinal weights		Differ-ence
	Rate	M.E.	Rate	M.E.	
Child of NM Lone parent	48%	7%	49%	7%	-1%
NM lone parent	41%	6%	43%	6%	-1%
Child of form. mar Lone par	44%	9%	45%	8%	-1%
Form. mar. lone par	43%	9%	43%	8%	1%
Child of adult <66 with disability	33%	6%	33%	6%	0%
Adult <66 with disability	32%	3%	32%	3%	0%
Other children, 3+ children	25%	5%	24%	5%	1%
Other parents <66, 3+ children	25%	5%	24%	5%	1%
Other adults age 18-29, no child	26%	4%	28%	4%	-1%
Other children, 1-2 children	17%	3%	18%	3%	-1%
Other adults <66, 0-2 children	17%	2%	19%	2%	-1%
Other adults age 66+, not a couple	18%	3%	18%	3%	0%
Other adults age 66+, couple	14%	3%	15%	3%	-1%
	Persistent Income poverty (both waves)				
	W2 Weights		Longitudinal weights		Differ-ence
	Rate	M.E.	Rate	M.E.	
Child of NM Lone parent	26%	6%	25%	6%	0%
NM lone parent	21%	5%	22%	5%	0%
Child of form. mar Lone par	21%	7%	24%	7%	-3%
Form. mar. lone par	21%	7%	22%	7%	-1%
Child of adult <66 with disability	16%	5%	16%	4%	0%
Adult <66 with disability	13%	2%	13%	2%	0%
Other children, 3+ children	13%	3%	13%	4%	0%
Other parents <66, 3+ children	13%	4%	13%	4%	0%
Other adults age 18-29, no child	12%	3%	13%	3%	-1%
Other children, 1-2 children	7%	2%	8%	2%	-1%
Other adults <66, 0-2 children	7%	1%	8%	1%	-1%
Other adults age 66+, not a couple	6%	2%	5%	1%	0%
Other adults age 66+, couple	3%	1%	4%	2%	-1%

Source: SILC 2012-2015, transitions over pairs of waves, selecting the period for which longitudinal weights were provided by the CSO. Analysis by authors. "M.E" = margin of error

Table A3.1: Overlap between basic deprivation and income poverty (% of population)

Any wave (either wave)	Income poverty		Total
	Not income poor	**Income poor**	
Not deprived	61%	11%	72%
Deprived	16%	12%	28%
Total	77%	23%	100%
Persistent (both waves)			
Not deprived	80%	7%	86%
Deprived	10%	4%	14%
Total	90%	10%	100%

Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Population aged 16 and over on whom we have data from a direct interview (N=5760).

Appendix Table A3.2: Models for persistent deprivation 2004-2015 (odds ratios from logit model)

	Base	Add Lone parent-hood	Add large family	Add working-age dis-ability	Add young adult	Add older couple
Child vs. working-age	1.40***	1.18***	1.06	1.03	1.09*	1.09*
Over 66 vs. working-age	0.41***	0.44***	0.46***	0.56***	0.60***	0.88
Social risk factors						
Lone parent HH		3.31***	3.26***	3.94***	3.96***	3.95***
Large family			1.51***	1.58***	1.61***	1.61***
Working-age disability				2.53***	2.59***	2.59***
Young adult					1.29***	1.29***
Couple over 66						0.39***
Constant	0.15***	0.14***	0.14***	0.11***	0.11***	0.11***
N cases	73368	73,368	73,368	73,368	73,368	73,368

Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Model is a logit model, run in Stata using the survey analysis procedure to adjust standard errors for weighting and clustering (at the household level). *** $p<0.001$, ** $p<0.01$, * $p<0.05$

Appendix Table A3.3: Adjusted persistent deprivation rate, 2004-15

	Base	Lone-parenthood	Large family	Disability	Young adult	Couple 66+
Child	18%	16%	15%	15%	15%	15%
Working-age adult	13%	14%	14%	14%	14%	14%
Older adult	6%	7%	7%	9%	9%	12%

Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Adjusted persistent deprivation rate is the rate we would expect from the models in Table A3.2 with each successive set of social risk factors taken into account.

Appendix Table A4.1: Models for persistent deprivation with period interactions (Odds ratios from logit model)

|	Main effect (boom)	Interactions		
		Early recession	Late recession	Recovery
Social Risk group				
Lone parent family	11.00***	0.52	0.39**	0.45**
Working age disability family	4.13***	1.36	0.63	0.89
Large family (3+ children)	3.13***	0.31*	0.55	0.61
Young adult	1.56	1.1	0.92	1.01
Others under age 66	Ref.	Ref.	Ref.	Ref.
Age 66+	1.13	1.04	0.51*	0.46**
Period				
Boom	Ref.			
Early recession	1.11			
Late recession	2.69***			
Recovery	3.87***			
Constant	0.04***			
N cases	73,368			

Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Model is a logit model, run in Stata using the survey analysis procedure to adjust standard errors for weighting and clustering (at the household level). *** $p<0.001$, ** $p<0.01$, * $p<0.05$

Appendix Table A4.2: Models for persistent income poverty with period interactions (odds ratios from logit model)

|	Main effect (boom)	Interactions		
		Early recession	Late recession	Recovery
Social Risk group				
Lone parent family	6.45***	0.80	0.55	0.60
Working age disability family	4.71***	0.36**	0.45**	0.45***
Large family (3+ children)	2.35***	0.76	0.80	0.78
Young adult	1.39	0.57	1.02	1.24
Others under age 66	Ref.	Ref.	Ref.	Ref.
Age 66+	1.58***	0.42***	0.49**	0.32***
Period				
Boom	Ref.			
Early recession	0.93			
Late recession	0.86			
Recovery	1.18			
Constant	0.07***			
N cases	73368			

Source: SILC 2004-2015, persons present in two consecutive waves analysis by authors. Model is a logit model, run in Stata using the survey analysis procedure to adjust standard errors for weighting and clustering (at the household level). *** $p<0.001$, ** $p<0.01$, * $p<0.05$

Figure A4.1: Cross-sectional deprivation by social risk group by year
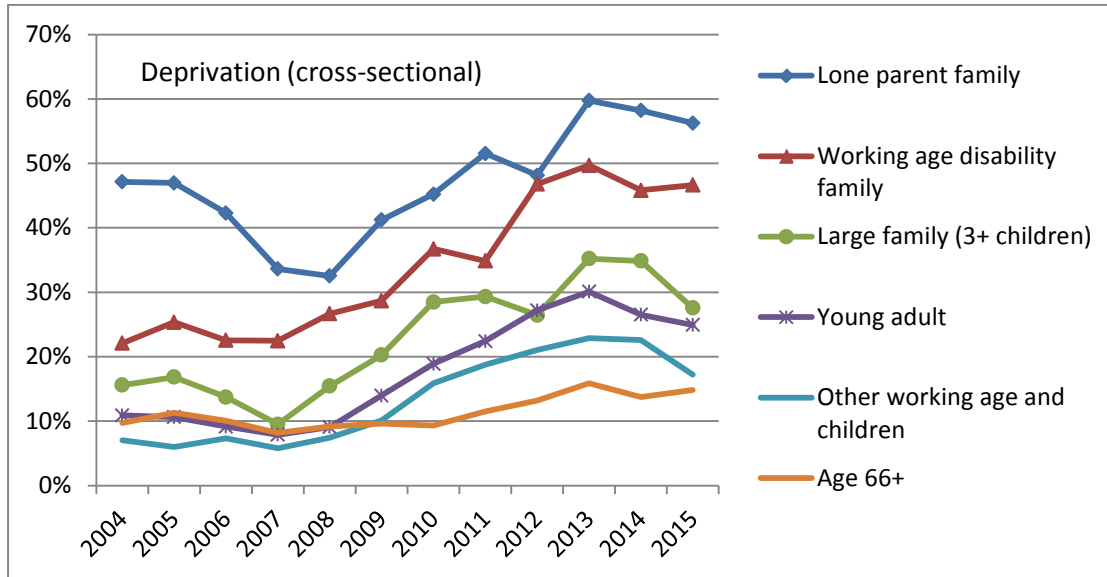
Source: SILC 2004-2015, cross-sectional samples, analysis by authors.

Figure A4.2: Cross-sectional income poverty by social risk group by year
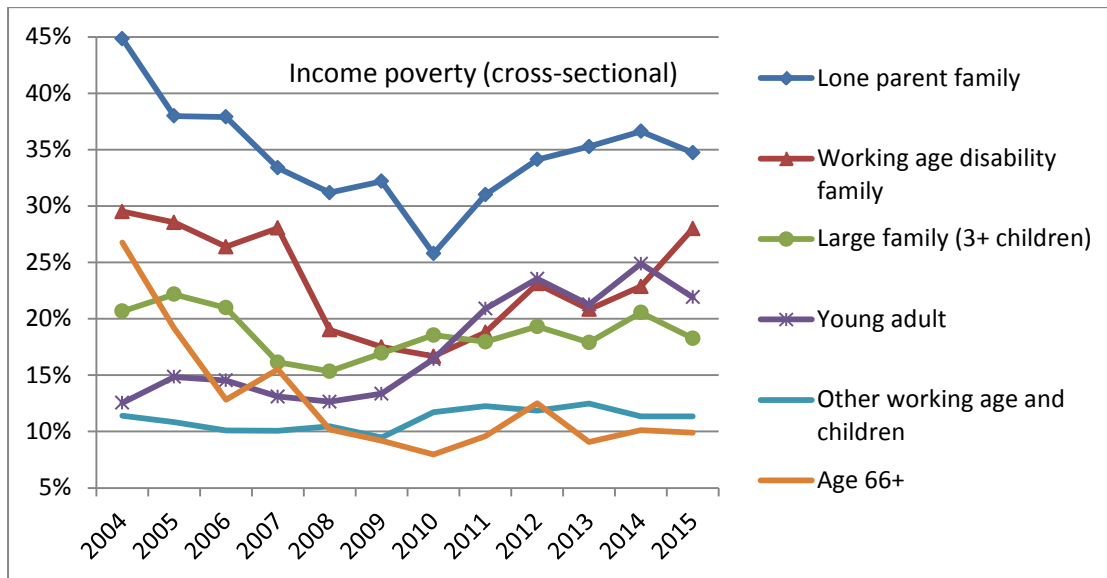
Source: SILC 2004-2015, cross-sectional samples, analysis by authors.

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Glossary

Adjusted Head Count Ratio: Alkire and Foster (2007, 2011a and b) developed this approach to examine differences between groups in the level and pattern of multidimensional disadvantage. In other words, it goes beyond statements about whether one group has a greater overall level of disadvantage than another, to identify the particular aspects of life – access to material resources, social relationships, health and so on – on which different groups may be challenged.

At-risk-of-income poverty thresholds: income thresholds derived as proportions of median income. These are based on the household income adjusted for household size and composition (referred to as equivalised income). A household at-risk-of-income poverty has an adjusted (or equivalised) income below 60% of the median adjusted household income. The at-risk-of-income poverty rate takes account of household income from all sources, number of adults and number of children in the household. There are some minor differences in the income concept and the equivalence scale between the Irish and EU measures of at-risk-of-income poverty.

At-risk-of-income poverty: a term used at EU level to denote whether a household's income falls below the 60% of median income threshold. It is also known as income poverty.

At risk of income poverty or exclusion: this EU measure combines the number of people who experience at-risk-of-income poverty or severe material deprivation or low work intensity. This measure is the basis for the Europe 2020 income poverty target. In cases where people experience more than one of these indicators, they are counted only once. The Irish version of this measure is the combination of at-risk-of-income poverty and basic deprivation.

Basic deprivation: people who are denied – through lack of income – at least *two items or activities on this index / list of 11* are regarded as experiencing relative deprivation. This is enforced deprivation as distinct from the personal choice not to have the items. Eleven basic items are used to construct the deprivation index:

- unable to afford two pairs of strong shoes

- unable to afford a warm waterproof overcoat

- unable to afford new (not second-hand) clothes

- Unable to afford a meal with meat, chicken or fish (vegetarian equivalent) every second day

- unable to afford a roast joint or its equivalent once a week

- without heating at some stage in the last year through lack of money

- unable to afford to keep the home adequately warm

- unable to afford to buy presents for family or friends at least once a year

- unable to afford to replace any worn out furniture

- unable to afford to have family or friends for a drink or meal once a month

- unable to afford a morning, afternoon or evening out in the last fortnight for entertainment.

The indicator **of basic deprivation** was developed by the Economic and Social Research Institute using data from the *Survey on Income and Living Conditions*. See Maître B., Nolan B. and Whelan C. (2006) *Reconfiguring the Measurement of Deprivation and Consistent Income poverty in Ireland*, Dublin: ESRI, for further information on the indicator.

Censoring the matrix: people who experience less than the 3+ QoL problems (the threshold) are regarded as not experiencing multidimensional QoL problems and the score on the individual component dimensions is set back to zero. Dimension scores above 0 then relate only to those who are above the threshold.

Consistent income poverty: this is a measure of income poverty used in the *National Action Plan for Social Inclusion 2007-2016* (*NAPinclusion*) that takes account of the household's living standards as well as the household size, composition and total income. A household is consistently poor if the household income is below the at-risk-of-income poverty threshold (see above) and the household members are deprived of **at least 2 out of the 11 items** on the basic deprivation list.

Correlation: a correlation between two variables refers to a statistical relationship of dependence between these two variables. This relationship of dependence can be measured by a correlation coefficient and there are many of them. There are many correlation coefficients and the most known is the Pearson correlation coefficient which measures the strength of the linear relationship between two variables.

Deprivation: see definition for basic deprivation above for measure of deprivation used in the *NAPinclusion*.

Economic vulnerability: a measure of the economic situation of a household based on whether it is at-risk-of-income poverty, experiences enforced basic deprivation and has difficulty making ends meet.

Employment rate: the employment rate is the proportion of the working-age population that is employed. The International Labour Organisation (ILO) definition of employed persons are those aged 15 years and over who have worked for payment or profit in the reference week (usually the week preceding the survey) or who had a job from which they were temporarily absent for reasons such as holidays, maternity leave or sick leave.

Equivalence scales: a set of relativities between the needs of households of differing size and composition, used to adjust household income to take into account the greater needs of larger households. In Ireland the national scale attributes a weight of one to the first adult (aged 14+) and 0.66 to each subsequent adult and a weight of 0.33 to each child. International comparisons such as the one done by Eurostat uses the modified OECD scale which attributes a weight of one to the first adult (aged 14+) and 0.5 to each subsequent adult and a weight of 0.3 to each child.

Equivalised Income: This refers to household income from all sources adjusted for differences in household size and composition (number of adults and children). It is calculated by dividing total disposable (i.e. after tax) household income by the equivalence scale value. It can be interpreted as income per adult-equivalent.

EU-SILC: *European Union Statistics on Income and Living Conditions*; this is a voluntary household survey carried out annually in a number of EU Member States allowing comparable statistics on income and living conditions to be compiled. In Ireland, the Central Statistics Office (CSO) have been conducting the survey since 2003. The results are reported in the Survey on Income and Living Conditions (SILC). Any data as compiled by Eurostat and any reference to the questions or questionnaire in the household survey is here referred to as 'EU-SILC'.

European Socio-Economic Classification (ESeC): the ESeC is an occupationally based classification but has rules to provide coverage of the whole adult population. The information required to create ESeC is:

- occupation coded to the minor groups (i.e. 3-digit groups) of EU variant of the International Standard Classification of Occupations 1988 (ISCO88 (COM))

- details of employment status, i.e. whether an employer, self-employed or employee

- number of employees at the workplace

- whether a worker is a supervisor

- economic sector (agriculture or other industries).

Factor analysis: a statistical technique to see whether a number of variables of interest (such as deprivation items) are linearly related to a smaller number of unobservable factors (such as dimension of deprivation).

Financial strain: is a composite indicator based on five items: difficulty making ends meet, housing costs burdensome, going into debt to meet ordinary living expenses, arrears on mortgage/rent or utility bills, and inability to save.

Gini coefficient: is a measure of inequality that ranges between 0 and 100 per cent. It is the relationship between cumulative shares of the population arranged according to the level of income and the cumulative share of total income received by them. If there was perfect equality (i.e. each person receives the same income) the Gini coefficient would be 0 per cent. A Gini coefficient of 100 per cent indicates total inequality and the entire national income was in the hands of one person.

Household: a household is usually defined for statistical purposes as either a person living alone or a group of people (not necessarily related) living at the same address with common housekeeping arrangements – that is, sharing at least one meal a day or sharing a living room or sitting room.

Household equivalent (or equivalised) income: household income adjusted to take account of differences in household size and composition by means of equivalence scales.

Latent class analysis: Latent Class Analysis is a statistical technique used to identify unmeasured groups of subjects that have distinctive profiles in relation to a range of observed variables.

Lone parent: a parent who has primary custody of a dependent child and is not living with the other parent.

Material deprivation (EU): this indicator is one of the European Commission's common indicators on social protection and social inclusion. It measures the proportion of the population lacking at least three out of the following nine items:

- arrears on mortgage or rent payments, utility bills, hire purchase instalments or other loan payments

- capacity to afford paying for one week's annual holiday away from home

- capacity to afford a meal with meat, chicken, fish (or vegetarian equivalent) every second day

- capacity to face unexpected financial expenses (set amount corresponding to the monthly national at-risk-of-income poverty threshold of the previous year)

- household cannot afford a telephone (including mobile phone)

- household cannot afford a colour TV

- household cannot afford a washing machine

- household cannot afford a car

- ability of the household to pay for keeping its home adequately warm.

Mean: the average value (for example, the average income in a sample obtained via household survey).

Median: the value that divides a sample in half (e.g. the income level above and below which half the people in a sample fall).

Pearson correlation coefficient: shows the strength of the relationship between two indicators and ranges from 0 (no relationship) to 1 (perfect relationship).

Income poverty gap: the shortfall in incomes for those who fall below the at-risk-of-income poverty threshold.

Income poverty and Social Exclusion: these terms are defined broadly in the *National Action Plan for Social Inclusion 2007-2016 (NAPinclusion)* as follows:

'People are living in income poverty if their income and resources (material, cultural and social) are so inadequate as to preclude them from having a standard of living which is regarded as acceptable by Irish society generally. As a result of inadequate income and resources people may be excluded and marginalised from participating in activities which are considered the norm for other people in society.'

The two concepts are very similar when used in Irish policymaking but income poverty is sometimes used in the narrower context to refer to low income (or wealth). On the other hand, social exclusion is almost always used in the broader sense, to refer to the inability to participate in society because of a lack of resources that are normally available to the general population.

Quintile: One-fifth of a sample divided into five equal parts to show how income, for example, is spread throughout the population; each quintile represents where a person's or household's income is located, ranging from the bottom quintile (lowest fifth or 20 per cent) to the top quintile (highest fifth or 20 per cent).

Self-Organising Maps: SOMs are an artificial neural network algorithm developed by Kohonen (1982, 2001) to extract meaningful underlying patterns from complex high-dimensional dataset into a lower dimensional output.

Severe material deprivation: this EU indicator measures the proportion of the population lacking at least four of the nine items listed in the EU index of material deprivation (see definition above).

SILC: in Ireland, the Central Statistics Office (CSO) is responsible for carrying out the SILC survey. They produce analysis in accordance with Irish national income poverty targets, indicators and related issues. These results are reported in the Survey on Income and Living Conditions (SILC). Any data on Ireland that is sourced specifically from the CSO is here referred to as 'SILC'.

Social welfare transfers: cash receipts paid from various social welfare schemes received by the individual or household.

Well-being: is "a positive physical, social and mental state. It requires that basic needs are met, that individuals have a sense of purpose, that they feel able to achieve important goals, to participate in society and to live lives they value and have reason to value. Well-being is enhanced by conditions that include financial and personal security, meaningful and rewarding work, supportive personal relationships, strong and inclusive communities, good health, a healthy and attractive environment, and values of democracy and social justice" (NESC, 2009, p. 3).