



IN-WORK POVERTY IN THE UK:
Problem, policy analysis and platform for action

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Final Report, May 2017

ACKNOWLEDGEMENTS

This report presents findings from a research project funded by the Nuffield Foundation (award ECO/42545). The authors thank the Nuffield Foundation for providing this funding and for providing comments and suggestions on the research design and material contained in this report.

The Nuffield Foundation is an endowed charitable trust that aims to improve social wellbeing in the widest sense. It funds research and innovation in education and social policy and also works to build capacity in education, science and social science research. The Nuffield Foundation has funded this project, but the views expressed are those of the authors and not necessarily those of the Foundation. More information is available at www.nuffieldfoundation.org

We thank Fran Bennett, Mike Brewer, Rhys Davies and Abigail McKnight, who acted as an advisory board for this project, and who provided insight and guidance, as well as comments on the material contained herein. We also thank participants at an event held at the Nuffield Foundation in January 2017, and Marco Pomati and Will Baker, of Cardiff University, for their comments and suggestions. Any oversights or errors are ours alone.



EXECUTIVE SUMMARY

- This report contains the final results of a research project examining in-work poverty in the UK, funded by the Nuffield Foundation. The project set out to answer three questions:
 1. What is the extent of in-work poverty, and who experiences it?
 2. What is the relationship between social security & tax credits and in-work poverty, and how has this changed over time?
 3. How common are entries to and exits from in-work poverty, and what events are associated with such transitions?

Our key findings include:

- The risk of poverty for adults living in working households has risen by 26.5%, from 12.4% to 15.7%, between 2004/5 and 2014/15. By the final year of this period, 60% of people of all ages living in poverty were living in working households – the highest figure yet recorded.
- We find that a key determinant of the experience of in-work poverty is having only one worker in the household. This points to the challenge for one earner households in a society where two-earnership has increasingly become the norm. People living in one-earner households face a very significantly elevated risk of in-work poverty, and account for almost six in ten people experiencing working poverty, more than double their population share. The relationship between low pay and in-work poverty, on the other hand, is weaker than is often assumed. Rather than low pay and in-work poverty being the same thing, we find that just under half of people experiencing in-work poverty have a low paid member in their household. Most low paid workers, by contrast, are not poor, because many low paid workers live in households with additional earners. Understanding in-work poverty requires us to shift from thinking about individual workers to thinking about the whole household and whether its income is adequate to meet its needs.
- The rise in in-work poverty has been concentrated amongst households in the private rented sector and in social housing. Our study finds that adults living in social housing face a greater risk of in-work poverty than those living in other tenures. However, the growing risk of in-work poverty has been most acute in the private rented sector. These changing poverty risks occur against a background where the balance of tenures has changed dramatically in the past decade, with many more people living in the private rented sector, and considerably fewer owner-occupiers. The combination of these trends means that in-work poverty is increasingly associated with private rented sector tenancy. This matters because the private rented sector is associated with high housing costs for many and its continued growth is likely to generate upwards pressures on in-work poverty in the years to come.
- Our research examined the extent to which tax credits reduce in-work poverty. We find that, for working households receiving tax credits, the risk of poverty is substantially reduced – with a reduction in the poverty gap of two-thirds for these recipient households. However, while political debate has often focussed on the aggregate cost of tax credits to the public purse, they are received only by a minority of working poor households, and by

very few such households without children. Moreover, one consequence of the need to think about the whole household when considering in-work poverty is that one must also bear in mind the impact of other elements of the social security system. We find that tax credits account for only about one-third of total social security income received by working poor households, with Child Benefit, Housing Benefit and out-of-work payments, such as Jobseeker's Allowance and Employment and Support Allowance also playing a role. Thus, changes to both in- and out-of-work payments can be expected to impact on the incomes of working poor households, not just changes to tax credits.

- Our research also examined the extent to which households moved in and out of in-work poverty, analysing data from the Understanding Society survey. Our primary finding is positive – more than half of people who experienced in-work poverty in one year had exited by the following year, and most had exited by remaining in work but exiting poverty. However, respondents who experienced in-work poverty were also more likely to transition into worklessness than those in non-poor working households and, moreover, one-quarter of respondents living in workless households who found work entered in-work poverty.
- We recommend that in-work poverty is tackled through three main policies. First, families with children need greater support to reconcile their family responsibilities and paid employment; in particular, through the greater provision of free and affordable childcare, which remains a barrier to paid employment for many families. Secondly, in-work supports in the form of tax credits, which are in the process of being subsumed into Universal Credit, need to be retained and strengthened. Our study demonstrates the effectiveness of tax credits in reducing working poverty, and thus the cuts to Universal Credit that are in the pipeline represent a worrying development for those who hope to see a reduction in in-work poverty. Thirdly, our study highlights the link between housing tenure and in-work poverty. The UK is in the midst of a shift in the balance of tenures towards the private rented sector, and this is a sector with high housing costs and high poverty rates. In absence of a more active housing policy that seeks to bring housing costs down, politicians may find that gains made elsewhere (e.g. in terms of the proposed increases in the minimum wage) will be eaten up by high housing costs, and may find themselves needing to do more (e.g. spend more on the housing element of Universal Credit, or on social security generally) just to stand still in terms of poverty rates.

Part One: Introduction

The problem of poverty amongst working families has been the subject of increasing attention in recent years. The latest *Monitoring Poverty and Social Exclusion* report finds that 55% of families living in poverty have someone in work, the highest proportion on record (Tinson *et al.*, 2016: 9). One reason why this is problematic is because a mantra of all recent governments has been that *work is the best route out of poverty*. This core belief has inspired labour market and social security reforms over the past two decades – from the introduction of the minimum wage and the increased spending on tax credits (in the case of the Labour Party) to the increased minimum wage (now labelled the National Living Wage) and amalgamation of six means-tested benefits into Universal Credit (in the case of the Coalition and Conservative governments in office since 2010).

At a time when attitudes to those who are out of work and are reliant on social security appear to be hardening (McKay, 2014; Deeming, 2014), there appears to remain strong support for the idea that working families should not experience poverty: a survey commissioned by the Social Mobility and Child Poverty Commission found that 75% of respondents believed that the government should top up the income of households which have someone in work, but are living in poverty (Gregg *et al.*, 2013).

This report presents results from an in-depth study of in-work poverty in the UK, and is comprised of three parts. This first part details the background and aims of the present study; what we know from the existing literature on in-work poverty, and the methodology employed in this study. The second part contains the analysis, which is again divided into three sections – a longer first section detailing the extent of in-work poverty and exploring its relationship to low pay and a range of socio-economic characteristics, and two shorter sections summarising findings from an analysis of tax credits and in-work poverty, and an analysis of in-work poverty transitions. The third part of the report looks at the policy options available to those seeking to reduce in-work poverty and identifies policy recommendations to this end.

What in-work poverty is and why it matters

In-work poverty is often equated in public discussion with *low pay*. A useful starting point, then, is to explain how and why the relationship between low pay and in-work poverty is far from straightforward (on this issue, see Bennett, 2014, Marx *et al.*, 2012). Measures of low pay consider only the earnings of an individual worker – typically defined as where a worker receives less than two-thirds of median hourly earnings. In contrast, in-work poverty is based on an evaluation of the total circumstances of a working household, considering not only earnings from employment but income from all sources, minus taxes, with income ‘equivalised’ to take account of the differences in needs that different household types have, and with all household members classified as poor or non-poor.

In-work poverty occurs when a working household’s total net income is insufficient to meet their needs. Thus, low pay is one possible reason for in-work poverty occurring, but we must consider the circumstances of the whole household and not just the person in paid employment (Gardiner and Millar, 2006). Indeed, because in-work poverty is about total household resources and whether these are sufficient to meet their household’s needs, the possible policy responses to tackle in-work poverty are more varied than it may, at first glance, appear. Effective responses to in-work poverty might include increasing earnings, hours of work, the number of workers in a household, or supports for low-paid workers (e.g. Working Tax Credit), but might also include reforming supports for larger families (e.g. through Child Tax Credit or Child Benefit) or even out-of-work payments for non-employed household members. This requires us to take a closer look at the

nature of in-work poverty; its relationship to low pay; the extent to which state support, in the form of tax credits, succeeds in reducing it, and how people move in and out of in-work poverty.

Aims of this study & research questions

The aims of this project were to provide a robust analysis of the nature of in-work poverty in the UK, the events which explain why people enter and exit in-work poverty, and the contribution which policy can and does make to alleviating poverty amongst working households. This project sought to generate new evidence about in-work poverty in the UK by answering three research questions:

- 1) What is the extent of in-work poverty, and who experiences it?
- 2) What is the relationship between social security & tax credits and in-work poverty, and how has this changed over time?
- 3) How common are entries to and exits from in-work poverty, and what events are associated with such transitions?

The responses to these questions forms the basis of the analysis in the three sections of Part Two of this report.

Three things we know from the existing literature on in-work poverty

There are three key themes that emerge from the literature on in-work poverty which are particularly relevant for our study. The first, and the one we have already addressed, is that low pay and in-work poverty are far from being the same thing (Horemans *et al.*, 2015; Hallerod *et al.*, 2015: 2). Marx *et al.* (2012: 24) argue that:

‘It is essential to understand that low-paid work and in-work poverty are largely separate phenomena. Various studies have demonstrated that the overlap between low pay and poverty is weak – in the order to 5 to 10 per cent in most industrialised economies (Nolan and Marx, 2000). This is because poor households generally do not contain an employee, whether low paid or not, while most low-paid workers live in households with more than one earner. A crucial influence is the extent to which the household relies on the earnings of this low-paid worker.’

However, while analysts agree that low pay and in-work poverty are not the same thing, finding the right balance in describing the relationship between the two has proved to be more difficult. Marx *et al.* (2012: 24) suggest that low pay and in-work poverty are ‘largely separate phenomena’. Hallerod *et al.* (2015: 2), similarly, argue that ‘the correlation between low wage and in-work poverty is surprisingly weak’, but then suggest that living on a ‘low wage is in most cases *a necessary condition* for in-work poverty, but most low wage workers are not poor’ (emphasis added). Crettaz and Bonoli (2011: 66) argue that ‘It is indisputable that working poverty’ is ‘not merely a matter of low earnings’. However, they also suggest that ‘it seems to be a very important factor that should not be downplayed by social policy analysis’. Thus describing in positive terms the relationship between low pay and in-work poverty has proven to be more difficult than explaining that the association between them is weaker than is often believed.

Second, and relatedly, the existing literature recognises that there are a multiplicity of reasons why families experience in-work poverty. In an important contribution, Goerne (2011: 15) argues that there are three mechanisms that explain in-work poverty: (i) job quality (remuneration levels), (ii) job quantity (labour market participation of household members, and (iii) household expenditures (cost of dependents). This broad trichotomy has been adopted in many other studies (e.g. Crettaz and Bonoli, 2011; McKnight *et al.*, *inter alia*) and we return to it in the conclusion of this report.

Third, there have been attempts to identify the relative contributions of these three mechanisms, and these have generally argued that low work intensity is the primary mechanism explaining in-work poverty. Goerne (2011: 32) finds that, in the UK, in-work poverty 'is to a large degree caused by the low labour market participation of partners'. For Hallerod *et al.* (2015), who analyse data from 22 European countries, in-work poverty is driven by intermittent participation in the labour market, as well as a being problem for the self-employed. They find that 'very few of those who are fully integrated on the labour market are poor' (2015: 485). The key point here is that not only is low pay just one of the mechanisms by which in-work poverty can occur, but it is often not considered to be the primary mechanism. Rather, the work intensity of the household has, in these previous studies, been considered to be the primary determinant of in-work poverty.

The policy context in the UK

One reason why the UK proves to be an interesting case to study in-work poverty is that it has a more long-standing and fully-developed system of tax credits than many other countries. Indeed, comparative studies of in-work supports often point to the UK as being something of an exemplar in this regard (e.g. Kenworthy, 2015; Marx and Nolan, 2014). The origins of tax credits can be traced back to the Family Income Supplement that was introduced by a Conservative government in 1971, which provided support for low income working families where at least one person worked 24 hours per week (Dilnot and McCrae, 1999). Subsequent reform under the Thatcher government reduced the minimum hours of work to 16 and renamed the scheme Family Credit, which, in turn, became Working Families' Tax Credit in 1999 under New Labour. As Brewer and Browne (2006) note, the introduction of WFTC was not simply a re-branding of FC – rather, the scheme became considerably more generous, by increasing the amounts people could receive, increasing the amount they could earn before any withdrawal occurred, and reducing the taper rate, so that people could keep more of their credit as earned income increased.

A second major reform under New Labour in 2003 divided Working Families' Tax Credit into two parts, Working Tax Credit and Child Tax Credit. For the first time, tax credit entitlement was extended to families without children (via Working Tax Credit) and to families where no-one was in work (via Child Tax Credit). Post-2003, Child Tax Credit was comprised of a family element (worth £545 per year and paid to families earning more than £50,000), and a child element (one per child, with much more generous amounts, but withdrawn at significantly lower income levels). Tax credits became a central component of Labour's attempt to eliminate child poverty and to make work pay.

The coming to office of the Coalition government in 2010 brought significant changes to policy in this area; first, a more sceptical disposition as regards tax credits, which were portrayed as having cost much but delivered little; and second, a major innovation of in-work benefits themselves through the amalgamation of Working and Child Tax Credit, as well as Housing Benefit and three out-of-work benefits into one payment, Universal Credit. Its introduction marks the latest, and arguably the most significant, step in the long evolution of supports for low income workers. However, Universal Credit is not just an administrative reform; it contains a number of important features in terms of social security provision which have been extensively discussed – for example, it removes the 'hours rules' which stipulated that claimants needed to work at least 16 hours to receive tax credits, thereby providing support to families with few hours of paid employment (Hills, 2015). More controversially, it extends conditionality to claimants who are in work (Dwyer and Wright, 2014), and to their partners. In a bid to make welfare more 'like work', it will be paid monthly, despite the disconnect between such a system and the realities of how people on low incomes manage their finances (Millar and Bennett, 2017). Crucially, Universal Credit has also been

the subject of a number of cuts – while its initial introduction was intended to increase support for claimants, the cuts to Universal Credit which have been announced mean that its introduction is now expected to generate savings (Finch, 2016; and see below).

The introduction of Universal Credit comes against a backdrop of very significant austerity that has been imposed since 2010 in an attempt, not yet successful, to eliminate the budget deficit. The Office for Budget Responsibility note that ‘the vast number of policies [in the area of social security] announced by the Coalition are estimated to have reduced spending by £19.6 billion.’ (OBR, 2016: 4). Nonetheless, while there have been many cuts since 2010, a number have either been implemented very recently, or are coming down the tracks, including the phase-in of cuts to Universal Credit. It is worth highlight some of the more important cuts here:

Working-age benefit freeze: While the current political environment is highly uncertain, it seems likely that most working-age benefits will be frozen in cash terms until at least the end of the decade. While the indexation (or, in this case, non-indexation) of social security benefits appears, on the face of it, to be a technical, and perhaps even trivial, concern, it is amongst the most consequential issues for social security due to the cumulative impact of such incremental changes. With inflation now forecast to be 2.4% in 2017, and to be at least 2% for the remainder of the decade (OBR, 2017a: 9), unless reversed, this will mean a significant reduction in the real value of most working-age payments by 2020.

Work allowances: Work allowances are the part of Universal Credit that a person can continue to receive as income increases *before* the taper rate is applied. They were a crucial component of the original design of Universal Credit and were the mechanism by which people working even a few hours were to be made better off, a key aim of Universal Credit (see Finch, 2016, for a discussion). Work allowances have been reduced, and have been removed entirely for non-disabled people without children (meaning that UC entitlement will reduce with *any* increase in earned income).

Removal of the family element of Child Tax Credit: The Summer Budget of 2015 announced that new tax credit claimants from April 2017 would not be eligible for the family element of CTC. The ‘family’ element, as we have noted, was the part of Child Tax Credit that was received even by families higher up the income distribution (once, those earning more than £50,000). It is also the bit of the CTC that came from the tax system on its creation in 2003 – thus, what was originally a tax allowance was translated into a benefit, and that benefit has now been eliminated for new claimants.

The removal of Child Tax Credit for 3rd and subsequent children. This restriction in the child element of Child Tax Credit, for new claimants only, for third and subsequent children also took effect in April 2017.

Each of these policies will hit those on lower incomes hardest. Estimates by the Resolution Foundation find that, between them, they will result in the reduction in incomes of those in the bottom two income deciles by 5% and 4.5% respectively (Finch and Whittaker, 2016: 16), of which the largest cut of the four discussed above is the freeze of working-age benefits.

One reason for highlighting these cuts, including those yet to be fully phased in, is that they form the context that we will return to when making policy recommendations at the end of our report.

Methodology

Conceptualisation and measurement of in-work poverty

It has been widely recognised in the literature on in-work poverty that the definitions of “working” and “poor” are of fundamental importance (Horemans *et al.*, 2015: 8; Thiede *et al.*, 2015). To date, however, existing studies have problematized the definition of ‘working’ to a greater extent than they have ‘poverty’. The consequence of this is that the literature is overwhelmingly dependent on the relative poverty measure, with a threshold set at 60% of median income (for an exception, see Nolan and Marx, 2000; and for a discussion of the problems arising from an exclusive reliance on this measure, see Hick, 2014a).

One of the central aims of this study has been to problematize the measurement of poverty itself, and to demonstrate the extent to which findings are (or are not) robust to the selection of other widely-accepted measures of poverty. In doing so, our aim is not to suggest that the 60% of median income measure has no value: only that it involves a number of choices by the analyst (such as the particular threshold imposed, and so forth), and that other justifiable choices can be made. Ideally, one wants research that generates policy recommendations to comprise findings which are robust to the selection of different poverty measures and thresholds. In this study, our primary measure is the 60% of median income poverty measure, but we present findings using other widely-accepted measures of poverty, too. Throughout, we adopt an After Housing Cost (AHC) measure of income, except in one analysis which is explicitly indicated, where a Before Housing Cost measure is employed. We make the ubiquitous, though problematic, assumption that income is shared within the household equally.

The definition of “in work” is also of central importance. The existing literature recognises that definitions can be more ‘encompassing’ or ‘strict’ in terms of how much work as household must have before members are recognised as “working”. Analysis at the EU level often focusses on stricter definitions of work, where a person is in paid employment for of 7 or more months of the preceding year (e.g. the official EU measure of in-work poverty; Eurofound, forthcoming; see also Goerne, 2011).

In contrast, discussion about in-work poverty in the UK has tended to adopt a more ‘encompassing’ approach, including anyone who has performed at least one hour of work in the week preceding the interview (following the ILO definition of employment). One advantage of this approach is so as ‘not to exclude from the outset any category of disadvantaged workers’ (Crettaz and Bonoli, 2011: 48; see also Crettaz, 2011; Horemans *et al.*, 2015). We adopt the latter approach here, partly for consistency with other work conducted in the UK (e.g. Tinson *et al.* 2016). In practice, the overwhelming majority of people who are currently employed have also been employed for 7 or more months of the preceding year.

Two final issues relate to the unit of analysis, which, while technical, are significant. The first is the question of whether we are interested in the poverty of workers *per se* or that of people living in working families. The debate in the UK has largely focussed on poverty amongst working families – and thus counts both the person(s) who are in employment, but also other family members who, potentially, depend on their income (see, e.g., Scottish Government, 2015; Tinson *et al.*, 2016). This is in contrast to the official EU definition of in-work poverty (Eurostat, n.d.), and to most of the European literature on this subject (e.g. Eurofound, forthcoming; Crettaz, 2011), where the focus is on only on the proportion of *workers* who live in poverty, ignoring non-employed family members. The is one good, albeit technical, reason for focussing on all working-age household members: if we only count workers in the definition of in-work poverty, then the employment and

income variables will be measured using different units of analyses, since the income variable (and thus the poverty status) considers all income sources in the household and thus all individuals. In this study, we follow the UK convention and focus on the experience of poverty for all working-age adults in households where someone is in work.

The second issue concerns the definition of ‘families’, and here we break from UK convention. Previous studies of in-work poverty in the UK use the terminology of ‘families’, but in fact focus on ‘benefit units’, which is a technical definition related to the entitlement for means-tested benefits. A benefit unit comprises an adult and their spouse (if any), and their dependent children. A household can then contain more than one benefit units including, for example, adult children. In this study, we focus on *households* and not benefit units.¹ We do this for two reasons (i) to ensure that the unit of analysis for both the poverty and employment indicators is the same (again, the income measure is constructed on a household basis and so, in our study, is the employment indicator) and (ii) we believe that households represent a better measure of families than benefit units. A more detailed explanation of this choice is provided in Appendix 1.

Part Two: Analysis and findings

Section 1. What is the extent of in-work poverty, and who experiences it?

Overview

The first part of the research sought to examine Research Question 1:

- What is the extent of in-work poverty, and who experiences it?

Data and methods

The data presented in this section are based on an analysis of Households Below Average Income for 2014/15, the most recent year for which micro-data are available, using all cases for which we have data available. The exception to this is in the analysis of absolute and underlying risks (Section 1.5), where we present an analysis of respondents with complete data in relation to all variables examined in that sub-section.

Data are weighted throughout by the cross-sectional weight for working-age adults, and findings are thus representative of this group (or, where indicated, for children). In practice, this means that pensioner households are excluded from the analysis but working-age individuals in households which also contain pensioners are included.

Findings

1.1. What recent findings on in-work poverty tell us

The recent focus on in-work poverty in the UK has stemmed in no small part from the 2013 *Monitoring Poverty and Social Exclusion* report, which found that ‘for the first time in the data series,

¹ In about 85% of households, there is only one benefit unit. In the remaining 15% or so, the household contains not only an adult or couple, but also other adults who do not meet the definition of a dependent child (see Appendix 1). Of households with more than one benefit unit, about 80% have an age gap of 20 years or more between the oldest and youngest adults. Our examination of the data leads us to believe that these are mostly adult children, and our approach treats these as representing one household. In contrast, most work in the UK has treated these cases as representing two (or more) families.

there are more people in poverty in working families than in workless and working-age and retired families combined' (McInness *et al.*, 2013: 3). This finding focusses on the *composition* of the poor (the proportion of those in poverty who live in working families), rather than the *risk* of poverty for working households (the probability of experiencing poverty for different family types), and included people of all ages in the calculation. Both the risk and the composition of people in poverty are important, as is the distinction between them.

Indeed, focusing on the composition and risk of poverty jointly is useful in understanding the relationship between work and poverty. In Table 1 we present three important elements of the relationship between poverty and work – the distribution of the population by household employment status, the risk of poverty for these households, and the share of those in poverty that they account for. This first analysis alone is weighted so that it is representative of the full population – including pensioners and children.

In the column on the right ('share'), we observe that six in ten (59.9%) of people in poverty live in a household with at least one member in employment. This does not mean that people in work are *worse off* than those who are not in paid employment, however. There are many more working households than non-working households – indeed, more than half of the population live in households where all working-age adults are in employment (which includes a single earner in a one-adult household), and three quarters have at least one adult in paid employment ('distribution').

While much recent discussion has focused on the *share* of the population in poverty living in working households (that is, the composition the poor), the risk of poverty – that is, the proportion of individuals by households type that experiences poverty – is also of fundamental importance. In Table 1 we observe that the risk of poverty for people living in households where *all adults* are working is 10.1%. The risk for those living in households where some, but not all, working-age members are in employment is one-third (32.6%), while the poverty risk for workless households is just over one-third (35.1%).²

Two findings stand out. First, even when all working-age members of a household are in employment, they experience a non-zero risk of poverty. That is, work fails to provide a guarantee against poverty. Second, the work intensity of the household is clearly related to the poverty risk, with a linear increase in poverty as we move from all members, to some members, to no members in paid employment.

The risk and composition perspectives provide complementary, but different, information. We must take care to note that while most individuals in poverty live in working households, the evidence provided here shows that poverty risk clearly falls as work intensity rises. Nonetheless, given that working poverty accounts for a large share of *total* poverty, a successful attempt to reduce poverty in the UK will need to identify how this is to be achieved for working households.

² If this latter figure seems low, it is because this table considers the whole population and thus includes pensioners, who comprise a significant share of workless households. If we restrict our focus to working-age adults only, the risk of poverty for working-adults in households where no-one works is 60%.

Table 1. Distribution of the population, risk of poverty and share of poverty by household employment status, respondent of all ages

| | distribution of population | risk of poverty | share of people in poverty |
|--------------------------------------|-----------------------------------|------------------------|-----------------------------------|
| all working-age adults in employment | 53.0 | 10.1 | 25.1 |
| some, but not all, working | 22.7 | 32.6 | 34.8 |
| workless HH | 24.3 | 35.1 | 40.1 |

HBAI 2014-15. Weighted by population weight

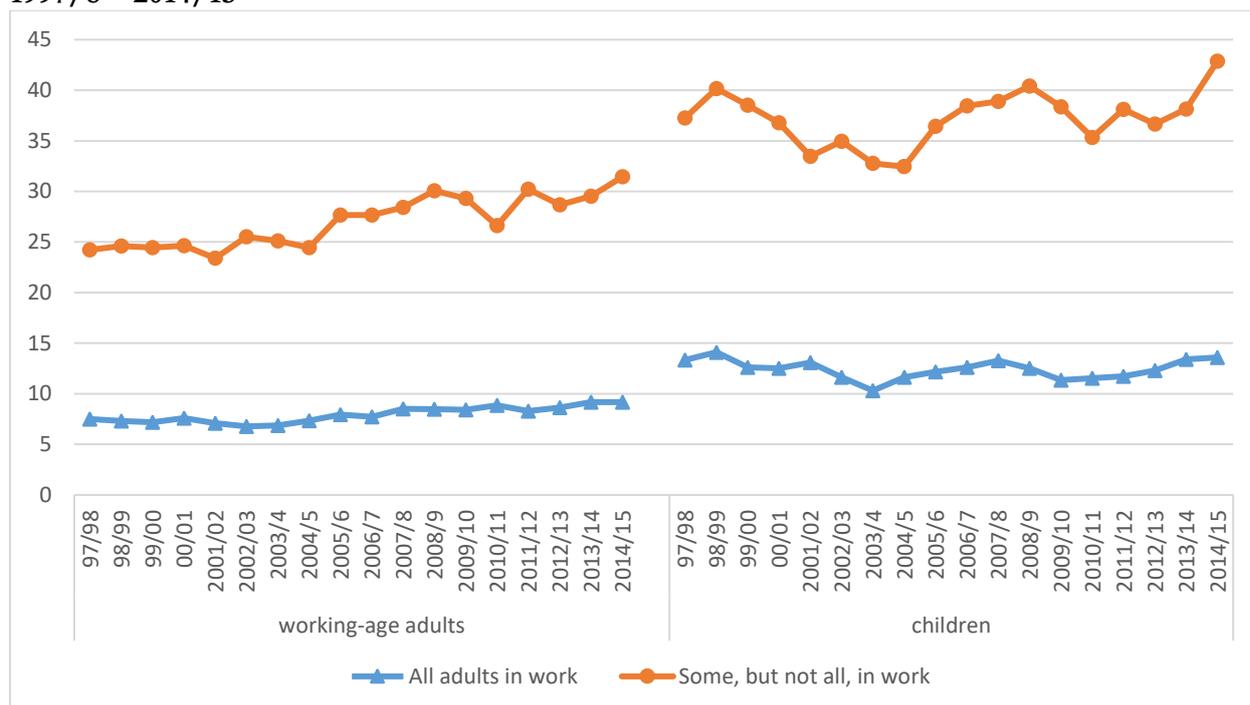
1.2. The risk of in-work poverty over time

One might then ask: is the risk of in-work poverty rising? We have noted that the most commonly cited claim about in-work poverty relates to the *composition* of people in poverty. However, pensioners have been a priority group for some time – benefitting in recent years from the ‘triple lock’ which guarantees that the State Pension rises in value over time; pensioner poverty, consequently, has been falling. Perhaps the risk of in-work poverty is not rising, but those in work nonetheless account for a growing share of people in poverty because of this fall in pensioner poverty. Thus, one might ask: *is the risk of in-work poverty increasing?*

The analysis presented here indicate it is. For working-age adults living in working households, the risk of poverty has risen from 12.4% to 15.7% - that is, by 26.5% - between 2004/5 and 2014/15. In Figure 1 below, we present trends in in-work poverty for working-age adults and children, respectively, and by the work intensity of the household (i.e. where all adults, or some but not all adults are working). In this figure we can observe that the risk of poverty for working-age adults who live in working households has been rising since 2004/5. We can see that this risk increases from 7.3% to around 9.2% for households where all working-age members are in employment, and from 24.4% to 31.4% of all working-age adults where some, but not all, members are in employment.

For children, the trend is somewhat different: a falling risk of poverty between 1998/9 and 2004/5, followed by a rise to 2008/9, followed by a further reduction and another increase. The risk of child poverty amongst working families is now the highest in the period 1997/8 - 2014/15 and the risk of poverty for children has risen by 17% and 32% for those living in households where all adults, and some but not all adults, work, respectively. Thus, for both working-age adults and children, the rise in working poverty is concentrated in the period since 2004/5.

Figure 1. In-work poverty risks for working-age adults and children by work intensity, 1997/8 – 2014/15



Source: HBAI, respective years, weighted

One aim of this study is to test the extent to which these findings are also observed when alternative, widely-accepted measures of poverty are analysed. The past decade has witnessed substantial public debate in the UK about the measurement of poverty, especially in relation to child poverty. In Table 2, we present a summary of trends in in-work poverty for working-age people, using a variety of other, widely-recognised measures of poverty.

These are (i) a before housing cost (BHC) measure of income which, unlike the main measure, does not account for changes in the cost of housing over time; (ii) alternative thresholds using the AHC measure, set at 50% and 70% of median income, so as to test the sensitivity of the analysis to the precise position of the poverty line; (iii) complex poverty measures that take account of the distance of poor households from the poverty line (FGT1 and FGT2, which focus on the poverty gap and the squared poverty gap, respectively; see Foster *et al.*, 1984).

Subsequently (iv), we use an anchored income poverty threshold set at 60% of 2010/11 median income. This measure accounts for changes in the cost of living (i.e. price inflation) over time but, unlike the main measure, the poverty threshold does not move when median income changes. Finally, to complement the analysis of poverty using an income measure, (v) we look at the trend over the same period using a measure of material deprivation, which captures the proportion of household who are unable to afford at least four out of nine deprivation items (these items are listed in Appendix 2). This measure has, in previous research been shown to demonstrate a strong association with multiple forms of deprivation, such as health and housing deprivation (e.g. Hick, 2014b), and it provides a useful complement to the income-centric analysis. In sum, we have examined the trend in in-work poverty in the UK across a wide range of poverty measures.

We can see from Table 2 that the rise of in-work poverty in the period post-2004/5 is quite consistently observed across poverty measures. Indeed, the rise in poverty amongst people living in working households in the period since 2004/5 is even *more sharp* when measures that are sensitive to the position of the poorest of the poor are employed (the FGT1 and FGT2 measure,

which measure the poverty gap and the squared poverty gap, respectively) and when we employ a measure of material deprivation in place of the income-centric measure of poverty.

The key departures from the general support for the rise are (i) the before housing cost measure, where the increase in in-work poverty post-2004/5 is about one-half of that observed using the AHC measure and (ii) when we focus on an anchored poverty measure. The former tells us that in-work poverty is rising faster when we take housing costs into consideration compared to when we do not. This points to the necessity to take housing costs into consideration in the subsequent analysis. However, these important exceptions aside, there is widespread evidence that the risk of in-work poverty is rising in the UK.

Table 2. Summary of poverty trends for working households (where either some or all adults are in paid employment)

| Measure | 1997/8 – 2014/15 | 2004/5 – 2014/5 | 2010/11 - 2014/15 |
|----------------------|------------------|-----------------|-------------------|
| Main AHC measure | ↑↑ | ↑↑ | = |
| BHC | ↑ | ↑ | = |
| AHC 70% | ↑↑ | ↑↑ | = |
| AHC 50% | ↑↑ | ↑↑↑ | = |
| FGT1 | ↑↑↑ | ↑↑↑↑ | ↑ |
| FGT2 | ↑↑↑↑↑ | ↑↑↑↑ | ↑ |
| Anchor of 2010/11 | ↓↓ | ↑ | = |
| Material deprivation | n/a | ↑↑↑ | = |

↑ indicates an increase of more than 10%, but less than 20%; ↑↑ an increase of more than 20% but less than 30%, and so on; = indicates no change or an increase of less than 10%

1.3. Are the working poor a better-off subset of the people in poverty?

There is then the question of how the working poor fare with respect to people in poverty who are not working. In this section and thereafter, the analysis is limited to working-age adults only. Previous research by Watson *et al.* (2012: iv) found, analysing data from Ireland, that ‘the in-work poor do not emerge as a particularly disadvantaged group’, pointing to the fact that they were less likely to be economically vulnerable or deprived than the non-working poor.

In Table 3 below, we present material deprivation, economic stress and income data by the household’s status with respect to their work and poverty status. The material deprivation measure captures the average number of deprivation items that respondents claim that their household go without because of a lack of resources (out of a maximum 9; further information about this index is presented in Appendix 2). The income values are average incomes for each group, expressed in equivalised pounds per week, in 2014/15 prices. The measure of economic stress is a subjective, self-reported question which asks respondents ‘How satisfied are you with the financial situation of your household?’ Responses are coded so that 0 is ‘completely satisfied’ while 10 is ‘not at all satisfied’. Because this measure does not appear in the 2014/15 version of the Family Resources Survey, the data for this comparison only are taken from the 2013/14 wave of the FRS.

In Table 3, we observe that there is a clear ordering of performance on all three measures, whereby households in poverty perform worse than those who do not experience poverty and, amongst people experiencing poverty, those in workless households fare worse than those in working poor households (differences for the latter comparison are statistically significant for all three measures). Thus, the in-work poor are, on average, a better-off subset of people who experience poverty.

Table 3. Material deprivation, average income and economic stress by work and poverty status, working-age adults only

| | | mean | CI | | n |
|-----------------------------|--------------------------------|--------|-----------------|--|-------|
| material deprivation | neither in work nor in poverty | 2.95 | 2.70 - 3.20 | | 12192 |
| | in poverty, but not in work | 5.02 | 4.83 - 5.21 | | |
| | in work, but not in poverty | 1.10 | 1.05 - 1.14 | | |
| | in-work poverty | 3.06 | 2.91 - 3.21 | | |
| income (AHC) | neither in work nor in poverty | 428.30 | 385.86 - 470.75 | | 16803 |
| | in poverty, but not in work | 126.53 | 121.91 - 131.15 | | |
| | in work, but not in poverty | 646.66 | 628.44 - 664.88 | | |
| | in-work poverty | 155.10 | 151.17 - 159.00 | | |
| economic stress* | neither in work nor in poverty | 5.49 | 5.23 - 5.76 | | 14815 |
| | in poverty, but not in work | 7.40 | 7.23 - 7.58 | | |
| | in work, but not in poverty | 4.66 | 4.61 - 4.72 | | |
| | in-work poverty | 6.38 | 6.24 - 6.52 | | |

**Note: data for economic stress analysis conducted using 2013-14 wave of HBAI/FRS. Robust standard errors have been used to account for clustering of individuals within households when computing the confidence intervals.*

1.4. Low pay and in-work poverty

In this sub-section, we explore the relationship between in-work poverty and low pay. In Table 4, we focus on the most common measure of low pay – namely, using a threshold of less than two-thirds of gross median hourly earnings (see, for example, Nolan and Marx, 2000). However, because our analysis considers not only workers, but other working-age members of the household – we focus on working-age adults with a low paid member in the household rather than just these low paid workers. We can observe in Table 4 that just 22.2% of working-age adults living in households with a low paid member experience in-work poverty. This seems to support the findings from previous literature, which has emphasised the distinctive nature of low pay and in-work poverty. However, if we approach the comparison from the opposite direction; namely, looking at individuals living in in-work poverty, we observe that almost half of these live in households where someone is low paid (48.3%).

Table 4. Incidence of, and relationship between, low pay and in-work poverty, working-age adults only

| Measure | % | sample size |
|--|------|-------------|
| Individuals living in HH with low paid member | 30.2 | 16,803 |
| In-work poverty rate | 13.9 | 16,803 |
| Indiv with low paid HH member who experience in-work poverty | 22.2 | 16,803 |
| in-work poverty who live in HH with low paid member | 48.3 | 16,803 |

Source HBAI 2014/15, weighted

One of the reasons why the overlaps are so different is that the size of the low pay and in-work poverty groups differs. Low pay is a larger problem than in-work poverty – indeed twice the number of people live in a household with a low paid member as live in a household which has work but is poor. But of significance is that almost half of those experiencing in-work poverty live in households where someone is low paid.

Another way to think about the relationship between low pay and in-work poverty – beyond the numbers affected – is to consider the extent to which they are spread across the income distribution. In Table 5 below, we plot working-age adults with a low paid member in their households and those experiencing in-work poverty respectively across the income distribution (top two rows).³ In the top row, we can observe that working-age adults living in households with a low paid member are reasonably spread throughout the income distribution and, indeed, if anything are concentrated in the middle of the distribution (in deciles 4-6). In contrast, and by definition, people living in working poor households are concentrated at the bottom three deciles of the income distribution (see second row). Thus, low pay and in-work poverty are related, but quite distinct, problems.

Table 5. Measures of low pay and in-work poverty across the income distribution, working-age adults only

| measure | bottom decile | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | top decile | % | sample size |
|---|---------------|------|------|------|------|------|------|------|-----|------------|-----|-------------|
| Indiv in HH with low paid member (hourly) | 10.3 | 10.4 | 10.4 | 12.9 | 11.5 | 11.4 | 10.6 | 11.5 | 6.4 | 4.7 | 100 | 16,803 |
| in-work poverty | 47.8 | 45.9 | 6.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 16,803 |
| low paid worker (hourly) | 11.6 | 12.5 | 11.8 | 14.4 | 12.8 | 11.3 | 8.8 | 9.0 | 4.3 | 3.7 | 100 | 10,236 |
| Indiv in HH with low paid member (weekly) | 9.9 | 10.0 | 10.2 | 12.5 | 12.4 | 11.7 | 10.7 | 10.3 | 6.9 | 5.5 | 100 | 16,803 |
| in-work deprivation | 18.5 | 18.3 | 17.7 | 13.2 | 11.1 | 8.0 | 6.2 | 4.4 | 1.3 | 1.3 | 100 | 12,192 |

Source: HBAI 2014/15, weighted

In the third row, we present the distribution of low paid workers themselves (which reduces the sample size, since only workers are included) rather than adults living in households with a low-paid worker; row four reverts to the measure capturing individuals living in a household with a low paid member, but presents the distribution based on a measure of low pay which reflects earnings falling below two-thirds of gross *weekly* earnings; while row five presents the distribution of in-work deprivation, being the joint experience of being in a household where at least one person is in work, but which also experiences material deprivation.

When low pay is measured on the basis of low-paid *workers* (as opposed to individuals living in a household with a low paid member), we see slightly greater concentration towards the lower end

³ The income deciles are constructed on the basis of the income distribution of the full, weighted sample and not just people of working-age.

of the income distribution (though the overwhelming majority remain non-poor); when measured at the household level using low weekly earnings, the slight concentration towards the middle of the income distribution is again observed. In all cases, these measures of low pay and their relationship across the income distribution stand in stark contrast to the measure of in-work poverty, which is (by definition) restricted to those at the lower end of the income distribution. Finally, if we turn to the in-work deprivation measure in row 5, the concentration becomes less precise – nonetheless, however, more than three-quarters of people experiencing in-work deprivation are found in the bottom half of the income distribution.

The analysis above shows that while low pay and in-work poverty are manifestly not the “same problem”, nearly half of people who experience in-work poverty live in households with at least one low paid member. What this shows is that boosting the incomes of low paid workers may be one way to combat in-work poverty. However, the extent to which increasing the pay of such workers would reduce in-work poverty also depends not only on the presence of low paid workers within working poor households, but also *how far* below the poverty line such households are, and on the extent of increases to such families (how significant increases in the minimum wage are, for example). Since families with a low paid worker are reasonably spread throughout of the income distribution, however, the ‘limitation’ is arguably that this mechanism would have substantial ‘spill-over’ effects since most of those who would gain would not be poor.

1.5. Who experiences in-work poverty?

In this sub-section, we examine who it is that experiences in-work poverty. To do this, we present data on both absolute and underlying risks of in-work poverty for different groups. By ‘absolute’ risks we mean the simple proportion of particular groups who experience in-work poverty, while ‘underlying’ risks refers to the differential probability of experiencing in-work poverty after controlling for a range of other factors in a statistical model. We present analysis of absolute and underlying risks for both the main measure of in-work poverty, using a threshold set at 60% of median income, as well as using a measure of in-work deprivation, to complement the income-based analysis. The samples for the descriptive and regression-based analyses are the same.⁴

As previously, the in-work poverty measure is constructed using a low income poverty line set at 60% of median income (using the AHC measure of income), while the in-work deprivation measure is created using a deprivation threshold of 4 or more of the 9 deprivation items. Thirteen variables are considered in this analysis: the number of workers in the household, household composition, the number of children in the household,⁵ whether there are pensioners in the household, whether there is a self-employed household member, socio-economic class, standard industrial classification of employment, educational attainment, housing tenure, sex, whether respondents live in a female-headed household, are migrants or are native born, and age group.

Absolute risks of in-work poverty

The results from the analysis of absolute risks of in-work poverty can be categorised into three sets of groups. The first set of groups comprises sub-groups that exhibit a high *risk* of in-work

⁴ More precisely, the number of cases for the regression-based analysis and the bivariate analysis is identical for the income-centric and deprivation analysis, respectively. That is, the number of cases for the in-work poverty measure is 21,696, while there are 17,000 cases analysed in the deprivation analysis.

⁵ Note that we select number of children rather than the ratio of children to working-age adults, as suggested by Crettaz and Bonoli (2011), as this provides marginally greater discrimination in terms of in-work poverty and deprivation, and is the more intuitive measure.

poverty or deprivation, while at the same time accounting for a substantial proportion of the *composition* of those experiencing in-work poverty. A key variable of interest here is the number of workers in the household. For both the in-work poverty and in-work deprivation measures, one of the highest risks of in-work poverty/deprivation for any of the sub-groups considered here is for households with only one person in employment (33.8% and 28.6% for the income and deprivation measures, respectively). In both cases, such households represent a substantial proportion of those experiencing in-work poverty/deprivation (60% in the case of the income measure, 49% in the case of the deprivation measure).

A second sub-group who also experience both a very high *risk* of in-work poverty while at the same time accounting for a large share of its composition are individuals living in rented accommodation. The risk of in-work poverty is 34% and 27% for social and private rented sector tenants respectively on the income measure; and 47% and 25% of such tenants on the deprivation measure. Tenants in social and private rented sector account for about six in ten people in in-work poverty, but only about three in ten of people of working age. A final, albeit weaker, case of a sub-group with a high risk of in-work poverty while also accounting for a large share of the in-work poor is in relation to service sector employment, where there is a pronounced risk of in-work poverty (19% on the income measure, 20% on the deprivation measure, comprising about 45% of the composition on both measures).

There are, then, a second set of groups that display pronounced *risks* of in-work poverty on both income and deprivation measures, but which account for a small proportion of those experiencing in-work poverty. Being a migrant and living in a household with 3 or more children, or a single parent, raises the risk of in-work poverty/deprivation, but in most cases account for less than 30% (sometimes considerably so) of the share of individuals in in-work poverty. Indeed, it is non-migrants, households with either no or one child, and with two or more adults who make up the overwhelming majority of those experiencing in-work poverty.

A third set of groups are those for whom the income and deprivation measures provide partially conflicting information about the risks of in-work poverty that these groups face. The risk of in-work poverty for households with a self-employed member is substantial on the income measure, which is consistent with previous research in this area (e.g. Hallerod *et al.*, 2015). However, this risk is *lower* than those with no self-employed members when we look at the deprivation measure (see also Hick, 2016). Having a pensioner in the household reduces in-work poverty on the income, but not the deprivation, measure, reflecting, perhaps, the fact that their income will be assumed to be shared in the income-centric analysis, irrespective of whether this, in fact, happens.

In terms of some of the other key findings, lower levels of education are associated with a raised risk of in-work poverty, especially on the deprivation measure. The risk of in-work poverty is greatest amongst younger respondents – again, the effect is slightly stronger when the deprivation measure is employed (though this may be an artefact of the deprivation measure; there have been suggestions that material deprivation measures may under-state true levels of deprivation amongst older respondents, see Hick, 2013). Women experience slightly greater rates of in-work poverty than men on both measures, though the gendered effect of in-work poverty is more pronounced when we focus on female-headed households rather than sex per se. Of course, the gendered effect of in-work poverty is obscured by the assumption of equal sharing of resources within households. Some studies have sought to create measures of ‘individual’ in-work poverty (e.g. Pena-Casas and Ghailani, 2011; Ponthieux, 2010) – that is, relying *only* on the income received by an individual worker: such studies show that ‘women appear to be much more exposed to poverty as individuals rather than as household members’ (Pena-Casas and Ghailani, 2011: 213).

Table 6. Risk and composition of in-work poverty, working-age adults only

| | RISK OF POVERTY | | | | COMPOSITION OF POVERTY | | |
|---|-----------------|-----------------|-------|---|------------------------|-----------------|-------|
| | non-poor | in-work poverty | total | | non-poor | in-work poverty | total |
| <i>Number of workers in HH</i> | | | | <i>Number of workers in HH</i> | | | |
| 1 | 66.3 | 33.8 | 100 | 1 | 21.0 | 59.7 | 26.9 |
| 2 | 90.7 | 9.3 | 100 | 2 | 61.4 | 35.3 | 57.4 |
| 3 or more | 95.1 | 4.9 | 100 | 3 or more | 17.6 | 5.1 | 15.7 |
| <i>Household composition</i> | | | | <i>Household composition</i> | | | |
| single person HH | 80.1 | 19.9 | 100 | single person HH | 4.6 | 6.4 | 4.9 |
| single parent HH | 71.3 | 28.7 | 100 | single parent HH | 1.3 | 2.9 | 1.6 |
| couple, no children | 90.1 | 9.9 | 100 | couple, no children | 33.7 | 20.6 | 31.7 |
| couple, children | 80.4 | 19.6 | 100 | couple, children | 33.1 | 45.1 | 35.0 |
| other family, no children | 90.2 | 9.8 | 100 | other family, no children | 18.7 | 11.3 | 17.6 |
| other family, children | 77.7 | 22.3 | 100 | other family, children | 8.5 | 13.6 | 9.3 |
| <i>children in HH</i> | | | | <i>children in HH</i> | | | |
| 0 | 89.2 | 10.8 | 100 | 0 | 57.1 | 38.4 | 54.2 |
| 1 | 82.1 | 17.9 | 100 | 1 | 21.1 | 25.6 | 21.8 |
| 2 | 78.9 | 21.1 | 100 | 2 | 16.9 | 25.2 | 18.1 |
| 3+ children | 71.8 | 28.2 | 100 | 3+ children | 4.9 | 10.8 | 5.8 |
| <i>pensioners in HH</i> | | | | <i>pensioners in HH</i> | | | |
| none | 84.6 | 15.4 | 100 | none | 95.7 | 97.2 | 95.9 |
| 1 or more | 89.6 | 10.4 | 100 | 1 or more | 4.3 | 2.8 | 4.1 |
| no self-employed member | 86.3 | 13.7 | 100 | no self-employed member | 81.2 | 71.9 | 79.8 |
| self-employed HH member | 78.9 | 21.1 | 100 | self-employed HH member | 18.8 | 28.1 | 20.2 |
| <i>Standard Occupational Classification</i> | | | | <i>Standard Occupational Classification</i> | | | |
| Managers, Prof, Assoc Prof, Technicians | 91.8 | 8.2 | 100 | Managers, Prof, Assoc Prof, Technicians | 45.5 | 22.7 | 42.0 |
| Intermediate (trades, secretarial, care) | 85.0 | 15.0 | 100 | Intermediate (trades, secretarial, care) | 30.2 | 29.7 | 30.1 |
| Less skilled (sales, machine ops, etc.) | 76.9 | 23.1 | 100 | Less skilled (sales, machine ops, etc.) | 21.9 | 36.7 | 24.1 |
| Undefined | 55.2 | 44.8 | 100 | Undefined | 2.4 | 10.9 | 3.7 |
| <i>Standard Industrial Classification</i> | | | | <i>Standard Industrial Classification</i> | | | |
| Manufacturing | 86.8 | 13.2 | 100 | Manufacturing | 10.3 | 8.7 | 10.0 |
| Engineering, construction, science, etc | 86.7 | 13.3 | 100 | Engineering, construction, science, etc | 15.9 | 13.6 | 15.6 |
| Financial services and real estate | 92.1 | 7.9 | 100 | Financial services and real estate | 5.6 | 2.7 | 5.2 |
| Public service | 90.0 | 10.0 | 100 | Public service | 30.8 | 19.0 | 29.0 |
| Other services and the arts | 81.2 | 18.8 | 100 | Other services and the arts | 34.8 | 44.8 | 36.3 |
| Undefined | 56.9 | 43.1 | 100 | Undefined | 2.7 | 11.2 | 4.0 |
| degree or higher | 90.4 | 9.6 | 100 | degree or higher | 31.2 | 18.4 | 29.2 |
| some further education | 88.0 | 12.0 | 100 | some further education | 13.8 | 10.5 | 13.3 |
| A-level or equivalent | 86.5 | 13.5 | 100 | A-level or equivalent | 18.1 | 15.8 | 17.8 |
| GCSE or equivalent | 81.1 | 18.9 | 100 | GCSE or equivalent | 22.8 | 29.6 | 23.8 |
| other quals | 80.7 | 19.3 | 100 | other quals | 5.6 | 7.4 | 5.9 |
| no quals | 72.1 | 27.9 | 100 | no quals | 8.5 | 18.4 | 10.0 |
| owns outright | 92.2 | 7.8 | 100 | owns outright | 21.0 | 9.9 | 19.3 |
| owns w/ mortgage | 91.1 | 8.9 | 100 | owns w/ mortgage | 51.9 | 28.3 | 48.3 |
| social rented | 66.1 | 33.9 | 100 | social rented | 8.1 | 23.2 | 10.4 |
| private rented | 72.7 | 27.3 | 100 | private rented | 18.3 | 38.3 | 21.3 |
| other | 94.9 | 5.1 | 100 | other | 0.8 | 0.2 | 0.7 |
| Male | 85.2 | 14.8 | 100 | Male | 50.9 | 49.2 | 50.6 |
| Female | 84.4 | 15.6 | 100 | Female | 49.2 | 50.8 | 49.4 |
| male headed HH | 85.8 | 14.2 | 100 | male headed HH | 69.8 | 64.5 | 69.0 |
| female headed HH | 82.6 | 17.4 | 100 | female headed HH | 30.2 | 35.5 | 31.0 |
| non-migrant | 87.2 | 12.8 | 100 | non-migrant | 83.8 | 68.8 | 81.5 |
| migrant | 74.3 | 25.7 | 100 | migrant | 16.2 | 31.3 | 18.5 |
| <i>Age</i> | | | | <i>Age</i> | | | |
| 16 to 29 | 82.3 | 17.7 | 100 | 16 to 29 | 20.6 | 24.7 | 21.2 |
| 30 to 44 | 83.5 | 16.5 | 100 | 30 to 44 | 36.3 | 39.9 | 36.8 |
| 45 to 59 | 87.1 | 12.9 | 100 | 45 to 59 | 36.7 | 30.3 | 35.7 |
| 60 to 64 | 87.6 | 12.4 | 100 | 60 to 64 | 6.5 | 5.2 | 6.3 |

Source: HBAI/FRS, 2014/15, weighted

Table 7. Risk and composition of in-work deprivation, working-age adults only

| RISK OF DEPRIVATION | | | | COMPOSITION OF DEPRIVATION | | | |
|---|--------------|-----------------|-------|---|--------------|-----------------|-------|
| | non-deprived | in-work poverty | total | | non-deprived | in-work poverty | total |
| <i>Number of workers in HH</i> | | | | <i>Number of workers in HH</i> | | | |
| 1 | 71.4 | 28.6 | 100 | 1 | 22.2 | 48.8 | 26.3 |
| 2 | 89.5 | 10.5 | 100 | 2 | 65.1 | 42.0 | 61.5 |
| 3 or more | 88.4 | 11.6 | 100 | 3 or more | 12.8 | 9.2 | 12.2 |
| <i>Household composition</i> | | | | <i>Household composition</i> | | | |
| single person HH | 82.6 | 17.4 | 100 | single person HH | 5.0 | 5.8 | 5.1 |
| single parent HH | 56.0 | 44.0 | 100 | single parent HH | 1.2 | 5.1 | 1.8 |
| couple, no children | 91.0 | 9.0 | 100 | couple, no children | 34.7 | 18.8 | 32.3 |
| couple, children | 82.1 | 17.9 | 100 | couple, children | 38.7 | 46.3 | 39.8 |
| other family, no children | 88.3 | 11.7 | 100 | other family, no children | 13.4 | 9.8 | 12.9 |
| other family, children | 73.2 | 26.8 | 100 | other family, children | 7.1 | 14.3 | 8.2 |
| <i>children in HH</i> | | | | <i>children in HH</i> | | | |
| 0 | 89.5 | 10.5 | 100 | 0 | 53.1 | 34.4 | 50.2 |
| 1 | 80.8 | 19.2 | 100 | 1 | 21.9 | 28.6 | 22.9 |
| 2 | 81.5 | 18.5 | 100 | 2 | 19.5 | 24.4 | 20.3 |
| 3+ children | 70.7 | 29.3 | 100 | 3+ children | 5.6 | 12.7 | 6.7 |
| <i>pensioners in HH</i> | | | | <i>pensioners in HH</i> | | | |
| none | 84.7 | 15.3 | 100 | none | 98.6 | 98.3 | 98.5 |
| 1 or more | 82.1 | 17.9 | 100 | 1 or more | 1.4 | 1.7 | 1.5 |
| no self-employed member | 84.4 | 15.6 | 100 | no self-employed member | 79.9 | 81.3 | 80.2 |
| self-employed HH member | 85.6 | 14.5 | 100 | self-employed HH member | 20.1 | 18.7 | 19.8 |
| <i>Standard Occupational Classification</i> | | | | <i>Standard Occupational Classification</i> | | | |
| Managers, Prof, Assoc Prof, Technicians | 93.7 | 6.4 | 100 | Managers, Prof, Assoc Prof, Technicians | 49.7 | 18.6 | 44.9 |
| Intermediate (trades, secretarial, care) | 82.7 | 17.3 | 100 | Intermediate (trades, secretarial, care) | 29.9 | 34.4 | 30.6 |
| Less skilled (sales, machine ops, etc.) | 71.7 | 28.3 | 100 | Less skilled (sales, machine ops, etc.) | 19.1 | 41.5 | 22.5 |
| Undefined | 56.3 | 43.7 | 100 | Undefined | 1.3 | 5.6 | 2.0 |
| <i>Standard Industrial Classification</i> | | | | <i>Standard Industrial Classification</i> | | | |
| Manufacturing | 85.7 | 14.3 | 100 | Manufacturing | 10.8 | 9.9 | 10.7 |
| Engineering, construction, science, etc | 89.3 | 10.7 | 100 | Engineering, construction, science, etc | 16.8 | 11.1 | 15.9 |
| Financial services and real estate | 92.6 | 7.4 | 100 | Financial services and real estate | 6.0 | 2.6 | 5.4 |
| Public service | 87.8 | 12.2 | 100 | Public service | 32.1 | 24.5 | 31.0 |
| Other services and the arts | 79.7 | 20.3 | 100 | Other services and the arts | 32.7 | 46.0 | 34.8 |
| Undefined | 60.1 | 39.9 | 100 | Undefined | 1.6 | 5.8 | 2.2 |
| degree or higher | 93.4 | 6.6 | 100 | degree or higher | 32.8 | 12.7 | 29.7 |
| some further education | 88.9 | 11.1 | 100 | some further education | 14.7 | 10.1 | 14.0 |
| A-level or equivalent | 85.6 | 14.4 | 100 | A-level or equivalent | 16.7 | 15.5 | 16.5 |
| GCSE or equivalent | 79.8 | 20.2 | 100 | GCSE or equivalent | 22.7 | 31.7 | 24.1 |
| other quals | 76.1 | 23.9 | 100 | other quals | 5.4 | 9.3 | 6.0 |
| no quals | 67.5 | 32.5 | 100 | no quals | 7.8 | 20.7 | 9.8 |
| owns outright | 94.6 | 5.4 | 100 | owns outright | 20.3 | 6.4 | 18.2 |
| owns w/ mortgage | 90.4 | 9.7 | 100 | owns w/ mortgage | 57.0 | 33.5 | 53.4 |
| social rented | 53.2 | 46.8 | 100 | social rented | 6.4 | 30.9 | 10.2 |
| private rented | 75.2 | 24.8 | 100 | private rented | 15.5 | 28.3 | 17.5 |
| other | 81.6 | 18.4 | 100 | other | 0.8 | 0.9 | 0.8 |
| Male | 85.8 | 14.2 | 100 | Male | 50.4 | 45.8 | 49.7 |
| Female | 83.4 | 16.6 | 100 | Female | 49.6 | 54.2 | 50.3 |
| male headed HH | 86.3 | 13.7 | 100 | male headed HH | 71.6 | 62.6 | 70.2 |
| female headed HH | 80.7 | 19.3 | 100 | female headed HH | 28.4 | 37.4 | 29.8 |
| non-migrant | 86.2 | 13.8 | 100 | non-migrant | 84.6 | 74.7 | 83.1 |
| migrant | 77.0 | 23.0 | 100 | migrant | 15.4 | 25.3 | 16.9 |
| <i>Age</i> | | | | <i>Age</i> | | | |
| 16 to 29 | 81.8 | 18.2 | 100 | 16 to 29 | 13.1 | 16.1 | 13.6 |
| 30 to 44 | 83.5 | 16.5 | 100 | 30 to 44 | 39.7 | 43.2 | 40.2 |
| 45 to 59 | 85.8 | 14.2 | 100 | 45 to 59 | 41.5 | 37.9 | 40.9 |
| 60 to 64 | 91.7 | 8.3 | 100 | 60 to 64 | 5.8 | 2.9 | 5.3 |

Source: HBAI/FRS, 2014/15, weighted

Underlying risks of in-work poverty

We also explore the underlying risks of in-work poverty, again focussing on both income and deprivation measures of that concept. By ‘underlying risk’, we mean the probability that different groups exhibit in terms of experiencing in-work poverty once we control for other characteristics. The statistical model is a logistic regression model, which is appropriate for binary dependent variables. The results are presented in odds ratios, which do not have an intuitive interpretation, but they capture the odds of experiencing in-work poverty (or in-work deprivation) for one group compared to a reference category (the reference categories are identified in the table), after controlling for the other independent variables. Values above 1 indicate a greater probability of experiencing in-work poverty than the reference category, while values below 1 indicate a lower probability of experiencing in-work poverty relative to the reference category.

In-work poverty is strongly associated with the number of workers in the household, as has been identified in previous research (e.g. Gutiérrez *et al.*, 2011). The effect size for having three or more workers is both substantial and highly significant, though, interestingly, somewhat smaller for the deprivation model than the income model. In-work poverty is also associated with living in private or social rented accommodation, having greater numbers of adults and children in the household (relative to being a single person household), having low educational attainment, working in service sector employment, having a lower socio-economic class position, and living in a female-headed household.

There are, then, groups that have a pronounced effect for one model but not the other: having a self-employed person in the household significantly increases the risk of in-work on the income model, but exhibits no effect whatsoever when the deprivation measure is employed. Similarly, being a migrant is associated with a significantly raised rate of in-work poverty on the income model (and is a common finding in studies in this area; see Alvarez-Miranda, 2011; Horemans *et al.*, 2015), but displays a weak and insignificant effect on the deprivation model. In contrast, being between 45 and 59 increases the likelihood of in-work poverty using the deprivation, but not the income, model.

The effects for the income model were stronger for variables which would have a more direct relationship with amount of earnings and type of income coming into the household (i.e. number in employment, the number of pensioners), all else being equal. The number of children in the household is perhaps an exception. Differences in the number of children in a household results in an automatic adjustment on the income measure due a change in the equivalence scale in a way that does not happen for the deprivation measure, yet the income and deprivation models produced similar results. The deprivation model, in contrast, suggests that in-work poverty is more concentrated on some “at risk” groups – the effect sizes are greater for low levels of education, lower socio-economic class and, to a lesser extent, the respondents living in female-headed households. The results are thus broadly consistent with those of the descriptive analyses presented above.

While the two models are broadly congruent, considering them jointly does help to bring out some important nuances in the experience of in-work poverty for certain groups, and can help to inform the groups most in need of policy attention.

Table 8. Logistic regression model (odds ratios), working-age adults only

| | In-work poverty | In-work deprivation | In-work poverty§ |
|---|-----------------|---------------------|------------------|
| <i>Number in employment</i> | | | |
| One (ref) | . | . | . |
| Two | 0.190*** | 0.412*** | 0.171*** |
| Three or more | 0.0508*** | 0.274*** | 0.0418*** |
| <i>Household Composition</i> | | | |
| Single person HH (ref) | . | . | . |
| Single parent HH | 1.023 | 2.108*** | 0.95 |
| Couple, no children | 1.483*** | 1.077 | 1.495*** |
| Couple, children | 2.391*** | 1.878*** | 2.446*** |
| Other family, no children | 2.985*** | 1.616** | 3.301*** |
| Other family, children | 5.386*** | 3.527*** | 6.436*** |
| <i>Number of children</i> | | | |
| One (ref) | . | . | . |
| Two | 1.371*** | 1.135 | 1.311** |
| Three or more | 1.338** | 1.530*** | 1.303* |
| <i>Pensioner in the HH (ref: none)</i> | | | |
| | 0.455*** | 1.149 | 0.442*** |
| <i>Self-employed HH member (ref: none)</i> | | | |
| | 2.550*** | 1.048 | 2.954*** |
| <i>Standard occupational classification</i> | | | |
| Managers, Professionals, Assoc Profs, Technicians (ref) | . | . | . |
| Intermediate occupations (trades, secretarial work, care) | 1.428*** | 1.934*** | 1.400*** |
| Less skilled occupations (sales, machine operators, etc) | 1.817*** | 2.627*** | 1.856*** |
| Undefined | 1.689 | 2.933** | 1.655 |
| <i>Standard Industrial classification</i> | | | |
| Manufacturing (ref) | . | . | . |
| Engineering, construc | 1.087 | 0.973 | 1.152 |
| Financial services an | 0.899 | 0.916 | 0.939 |
| Public service | 1.037 | 1.383** | 1.016 |
| Other services and th | 1.306** | 1.347** | 1.325** |
| Undefined | 1.594 | 0.998 | 1.582 |
| <i>Highest educational qualification</i> | | | |
| degree or higher (ref) | . | . | . |
| some further education | 1.206* | 1.431*** | 1.206 |
| A-level or equivalent | 1.104 | 1.621*** | 1.224* |
| GCSE or equivalent | 1.542*** | 1.979*** | 1.586*** |
| other quals | 1.279* | 2.296*** | 1.317* |
| no quals | 1.581*** | 2.690*** | 1.661*** |
| <i>Housing tenure</i> | | | |
| owns outright (ref) | . | . | . |
| owns w/ mortgage | 1.376*** | 2.169*** | 1.317** |
| social rented | 3.390*** | 7.691*** | 3.297*** |
| private rented | 4.115*** | 5.120*** | 3.982*** |
| other | 0.879 | 5.164*** | 0.896 |
| <i>sex (ref: male)</i> | | | |
| female headed HH (ref: male) | 1.267*** | 1.345*** | 1.299*** |
| migrant (ref: non-migrant) | 1.396*** | 1.152 | 1.382*** |
| <i>Age (in categories)</i> | | | |
| 16 to 29 (ref) | . | . | . |
| 30 to 44 | 0.946 | 1.106 | 0.882 |
| 45 to 59 | 1.088 | 1.325** | 0.963 |
| 60 to 64 | 1.094 | 0.721 | 1.039 |
| N | 21696 | 17000 | 17000 |

Source: HBAI/FRS, 2014/15. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. § = using the same sample as the deprivation analysis

1.6. What explains the rise in in-work poverty?

We might also want to know what explains the rise in in-work poverty. Again, it can be worth distinguishing between composition and risk perspectives here. In Table 9, we present *change* in poverty between 2004/5 and 2014/15 using both the risk and composition perspectives (in the left and right side of table, respectively).

In terms of the risk perspective, we can see that the risk of poverty has increased for people living in private rented and social rented accommodation (by 5 and 3.5 ppts, respectively). Turning to the composition perspective, we see that the one group whose contribution to in-work poverty has grown has been private rented sector tenants. The reason such a sharp change in the composition of those in in-work poverty is because there has been a 10 percentage-point shift from mortgage-holders to private tenants over the period. That is, the underlying composition of tenancy changes, as well as the increasing risk for private rented sector tenants, has driven the dramatic shift in the composition of people experiencing in-work poverty. In their *Monitoring Poverty and Social Exclusion 2016* report, Tinson *et al.* (2016: 10) describe the private rented sector as ‘in many ways reflects the front line of poverty’. The decomposition here shows why this so – firstly, the transfer from owner occupation to private rented sector amongst the general population, and secondly the increasing risk of in-work poverty for this group.

Table 9: Change in poverty rates (AHC) between 2004/5 and 2014/15 (ppt change), risk and composition perspectives, working-age adults only

| | % change in risk | | % change in composition |
|------------------|------------------|------------------|-------------------------|
| owns outright | -0.2 | owns outright | -2.9 |
| owns w/ mortgage | 0.6 | owns w/ mortgage | -13.0 |
| social rented | 3.5 | social rented | -0.5 |
| private rented | 5.0 | private rented | 16.7 |

Source: HBAI, respective years

There are, then, a number of points to consider here. As we have shown in Tables 6 and 7, the highest absolute risk of in-work poverty is for tenants in the social rented sector: people in this tenancy face the greatest challenge in avoiding working poverty. The risk of in-work poverty has increased for this group (by 3.5 percentage points), but it has increased even more for private rented sector tenants (by 5 percentage points). That the risk is increasing for both social and private rented housing tenants is, of course, a concern.

The composition perspective gives us a picture of the problem that society faces in a macro perspective (Jenkins, 2011: 244). The past decade has witnessed a substantial shift from owner-occupation to private rented tenancy. This matters because the composition of society is shifting from a low poverty risk group (owners with mortgages) to a higher risk group (private renters). Given that it seems likely that private rented sector tenancy will increase in the years to come, in-work poverty is likely to face significant upward pressures. This points towards two potential policy solutions: reducing the conditional risks of in-work poverty for the high-risk groups (social and private rented sector tenants), or seeking to stem the tide towards private rented tenancy, which is associated with high poverty risks.

Section Two: Tax credits and in-work poverty

Overview

The second part of the project explored the relationship between social security, and tax credits in particular, and in-work poverty. It sought to address Research Question 2:

- What is the relationship between social security & tax credits and in-work poverty, and how has this changed over time?

Data and Methods

In this analysis, we examined the relationship between tax credits, and social security more broadly, and in-work poverty using two complementary methodologies – first, by conducting an analysis of income packages of working households and, secondly, by examining the performance of social security in terms of anti-poverty outcomes in the UK. This analysis was conducted by analysing HBAI/FRS at four time points: 2004/5, 2007/8, 2010/11, and 2014/15.

The income packages framework analyses the coverage of payments, the amounts received by recipients, and the share of these payments in total household income (e.g., Skinner and Main, 2013). Then, we examined the performance of tax credits in relation to anti-poverty objectives and, in particular, examined the effectiveness of tax credits in reducing poverty amongst working households. Poverty reduction effectiveness is calculated as the proportion of working households who are in poverty *before* tax credits, but are lifted from poverty as a result of receiving tax credits. The calculation of poverty reduction effectiveness was conducted for the two tax credit payments individually, as well as for the two payments jointly. The analysis generates five main conclusions.

Findings

First, when trends in tax credit coverage were compared for working and workless households over time, we find that the cuts imposed by the Coalition government reduced coverage amongst working households while Child Tax Credit coverage remained stable amongst workless households. This meant that, by 2014/15, workless households were more likely to claim Child Tax Credit than households where someone was in work.

Secondly, Working Tax Credit and Child Tax Credit were cut in the period post-2010/11 in quite different ways. The reduction in coverage of Working Tax Credit was not as large as that of Child Tax Credit, but fell on those in in-work poverty more than working non-poor households. The reduction in WTC coverage was accompanied by a falling average award for recipient families. The reductions in coverage of CTC was greater than for WTC, but this was, at the same time, disproportionately experienced by *non-poor* families, and the average award for working poor households increased modestly post-2010/11, in contrast to the trend for WTC.

Third, tax credits were observed to be highly effective at reducing in-work poverty for households that receive them, but their capacity to reduce in-work poverty is blunted by low coverage. When we construct our measure of poverty reduction effectiveness (that is, the proportion of the pre-tax credit poverty rate that is reduced by the payment in question), we see that this is greater for CTC than for WTC (the pre-payment poverty rate for all working households was reduced by

between 15-20% for Child Tax Credit in the four years we examined, compared to about 10% for Working Tax Credit). On closer inspection, this difference is explained to a substantial extent by the greater coverage of Child Tax Credit. When we restricted our analysis to recipients only (thus controlling for differences in coverage between the two payments), we find that 35-40% of the pre-tax credit poverty rate is reduced by CTC and WTC (examined individually). Indeed, when we conducted the same analysis on the poverty *gap*, which measures the distance of the incomes of people in poverty below the poverty line, we observed that almost two-thirds of the pre-tax credit poverty gap for recipient households is reduced by these tax credits, considered jointly. The stark difference between effectiveness for recipients and for all working families can be explained, at least in part, by the relatively low coverage of tax credits overall. This is most dramatically apparent in the case of working families without children. While the 2003 reforms extended coverage of WTC to this group, the proportion who do, in fact, receive tax credits is very low (<10%), while such households make up almost forty percent of those who experience in-work poverty (see above). This is a key reason why tax credits are not more effective in reducing poverty amongst working households.

Fourth, when considering the working poor, we must be cognisant of the fact that only about one-third of the social security income received by such households comes from tax credits. Housing Benefit and Child Benefit accounts for another third, with the former accounting for a growing share of the incomes of working poor households over the past decade, while the final third is made up of other payments, including Jobseeker's Allowance and Employment and Support Allowance. That working poor households can receive such payments is possible because, as noted above, the households experiencing in-work poverty may contain adult who are out of work as well as members who are in paid employment. Household experiencing in-work poverty depend on quite a wide range of payments and thus cuts to both in- and out-of-work payments will aggravate in-work poverty.

Fifth, the tax credit cuts post-2010/11 have had different implications for different types of household. Across the four years considered, the coverage of tax credits, and their effectiveness in reducing poverty, has been greatest amongst households with fewer adults (especially lone parent families) and with greater numbers of children. The tax credit cuts post-2010/11 have concentrated tax credits on such families by reducing coverage to other family types, though the fall in poverty reduction effectiveness has been experienced across the board rather than being clearly related to household composition. The high levels of effectiveness in reducing poverty amongst larger families makes eliminating entitlement to Child Tax Credit for 3rd and subsequent children all the more problematic, if attempts to tackle both child poverty and in-work poverty are deemed important.

Section Three: Moving in and out of in-work poverty

Overview

The third part of the project explored transitions in and out of in-work poverty. It sought to address Research Question 3:

- How common are entries to and exits from in-work poverty, and what events are associated with such transitions?

Data and methods

This analysis conducted in response to this question was based on waves 2–5 of the Understanding Society survey. Understanding Society is a longitudinal survey, with a sample of about 40,000 households in its first wave. The survey is of value as it contains detailed information about income, employment and deprivation status, as well as relating to a wide range of household and personal characteristics. As such, it is the primary survey of interest in the UK for those interested in longitudinal analysis.

Two datasets were constructed. The first, spanning waves 2-5, was used to compare the experience of in-work poverty over time. As above, the measure of poverty adopted was where equivalent household income fell below 60% of median income, while the measure of working was where at least one person was in employment under the ILO definition of at least one hour of work in the last week. Data on material deprivation were used to construct a measure of in-work deprivation to test whether the results continued to be observed when shifting to a deprivation based measure of poverty. The measure of deprivation was based on the enforced lack of at least four of nine deprivation items. Data on material deprivation were only available in waves 2 and 4, however. For this reason, we constructed a second dataset using these waves only and analysed both income and deprivation measures on this reduced dataset. In this part of the analysis, the individual was selected as the unit of analysis, as households are not stable entities over time.

Findings

Findings in four key areas emerged from the analysis. First, one widely-cited finding in relation to the longitudinal analysis of poverty more broadly is that there is a great deal of mobility in and out of poverty (Jenkins, 2011). When we explore movements in and out of in-work poverty over a two-year period, we observe that there is even more mobility in terms of in-work poverty than in poverty in the working-age population generally.

If we seek to identify which groups are most at risk of in-work poverty, we can observe that, of the groups considered in our research, households with only one worker face the greatest risk of in-work poverty at some point over a two-year consecutive period. This points to the strong relationship between low work intensity and in-work poverty, which we have also observed in the cross-sectional findings.

Second, our analysis highlights the fact that in-work poverty transitions are fundamentally more complex than those for poverty more generally. This is because those leaving working poverty can do so by exiting work or by exiting poverty. Our research has identified the relative probabilities of these different trajectories, and we find that the ‘big picture’ is an optimistic one - people who experience working poverty in a given year are more likely to exit in the following year than to remain, and most exits are ‘positive’ ones (exiting poverty and still working).

However, our analysis identifies two more troubling findings: first, that those in working poverty are three times more likely to become workless than people living in non-poor working households, illustrating, perhaps, their marginal attachment to the labour market even when in work. And secondly, of respondents living in workless households who find work, 25% will only go so far as to enter working poverty. This is surely a failure of policy given the stated aim of all

political parties to ensure that work pays and given repeated exhortations that work is the best route out of poverty.

Third, we examined a series of triggers and the extent to which these co-occur with in-work poverty transitions, following the framework outlined by Jenkins (2011). We find that earned income events⁶ were observed for more than 50% of working poor families and account for the largest proportion of in-work poverty exits. This dramatically exceeds the proportion of non-poor families who receive equivalent increases (which was just one in five), which again should give cause for optimism that people can and do exit working poverty by gaining more work, or higher wages, or both.

In our analysis of working poverty entries, we find that a reduction in earnings provides for the greatest elevation in the entry rate of the triggers we considered, accounting for six in ten in-work poverty entries. About half of these cases are where households lose a worker; in the other half of cases, income from employment falls either through reduced hours or through reduced hourly pay. Considering those who enter in-work poverty from being workless, we observed that, of those families who are poor but not working, one quarter of those who gain a worker exit worklessness only to enter in-work poverty. Lone parents are over-represented in this group, as are families with three or more children, suggesting the importance of ensuring policies which facilitate the reconciliation of work and family life in order to tackle in-work poverty.

Finally, our analysis also modelled in-work poverty transitions, using a Markov model which estimates the probability of transitioning in (and, for the reverse model, out) of poverty for working households, while controlling for other confounding between covariates. This again demonstrated the significance of the number of workers in the household a prime predictor of in-work poverty, and the difficulty of maintaining an adequate standard of living in a one-earner household. Respondents working in low-skilled occupations, and those living in Northern Ireland were also more likely to enter, and less likely to exit, in-work poverty, than those in higher-skilled occupations or those living in London, respectively.

Overall, we observed a picture which is mostly positive in terms of a high likelihood of working poverty exit, and a predominance of positive transitions – that is, of exiting poverty over transitions into worklessness. Nonetheless, while working poor families are indeed working, their position is on average more vulnerable and precarious to those higher up the income distribution. Losing a worker, or working fewer hours, is something that they can scarcely afford, and these negative shocks helps to explain the transition to worklessness. On the other hand, for too many workless families, finding work does not lift them out of poverty. In both cases, policy needs to support those with a weak labour market attachment and, especially, families with children.

PART THREE: DISCUSSION AND RECOMMENDATIONS

Discussion: Tackling working poverty

We noted at the outset that the existing literature on in-work poverty has largely focussed on three policy mechanisms which might be utilised in order to reduce working poverty: increasing work intensity in households; raising levels of pay, especially at the lower end of the earnings distribution;

⁶ Defined as an increase of more than 20%, as well as more than £10 in absolute terms.

and the use of transfers to support families with additional needs, with most studies focussing on the additional costs of large families.

These are indeed the immediate policy levers that one can adopt, and are well-recognised as such (e.g. Scottish Government, 2015; Crettaz 2011; Gautié and Ponthieux, 2016; Bradshaw *et al.*, 2010, *inter alia*). However, there are additional, secondary levers which might be utilised in order to improve the balance between resources and needs for working families. For example, research by Eurofound (forthcoming) emphasises the role of what they call ‘indirect measures’, such as the provision of childcare to enable people to work additional hours, improvements in people’s skills so as to enable them to secure better-paid jobs, and so forth. These indirect levers are not necessarily mutually exclusive from the primary mechanisms more frequently identified in the literature – one might seek to boost work intensity by providing additional childcare, for example. A recent evidence review of in-work poverty and low pay highlights how paid maternity leave and publicly-subsidised childcare can help to facilitate maternal employment and can contribute to poverty reduction amongst working families (McKnight *et al.*, 2016). The identification of such indirect mechanisms serves to highlight that there are many policies, big and small, which can alter the balance of working families’ resources and their needs, and which might therefore be seen to represent part of an attempt to tackle working poverty.

We have noted that the work intensity of the household is a very strong predictor of in-work poverty. Boosting employment amongst families with a weak labour market attachment is likely to positively impact on in-work poverty. There are, however, additional considerations. One is that it matters not only that employment is increasing, but also who gets the additional employment. Research by Bea Cantillon (2011) shows how improvements in employment across Europe in the years preceding the Great Recession did not significantly reduce poverty levels: she argues that this is due to much of the additional employment being generated in non-poor households. So, what matters is additional employment accruing to poor households specifically and, from a policy perspective, a shift from thinking about employment creation in the aggregate to a distribution-sensitive perspective.

At the same time, we have noted that work intensity is not the *only* thing that matters and that non-trivial proportions of households where all working-age adults are in employment remain poor. Thus, a policy approach that focusses solely on getting people into work is likely to be ineffective. Moreover, there are limits to the feasibility of an employment-centred approach to tackling in-work poverty. Analysis by Jonathan Bradshaw and Gill Main (2014) using data from HBAI 2011/12 suggests that just four in ten children who live in working poor families have adults who have additional work potential.

Increasing rates of pay at the lower end of the earnings distribution is also vital in terms of reducing in-work poverty. To this end, the introduction, and planned increases, of National Living Wage will raise earnings at the bottom of the earnings distribution, and will be of benefit to low paid workers, and is significant. The NLW is expected to reach 60 per cent of the median over-25s hourly wage by 2020 for workers aged 25 and over (D’Arcy and Kelly, 2015) – currently forecast to be £8.75 by 2020 (OBR, 2017b: 58). We have noted that nearly half of people experiencing in-work poverty live in a household with a low paid member. However, we have noted, too, that the vast majority of low paid workers live in non-poor households, and thus most of those who will benefit from the National Living Wage will not be living in poverty (see also D’Arcy *et al.*, 2015).

At proposed levels, the National Living Wage is estimated to have a positive, but modest, impact on the incomes of poor households (Finch and Whittaker, 2016: 16).

The third focus of most studies on the working poor is the performance of the welfare state. Comparative studies of in-work poverty have emphasised the important role of welfare state generosity in explaining in-work poverty rates across countries (e.g. Brady *et al.*, 2010; Lohmann, 2009). Our research has found that tax credits *are* effective in terms of reducing poverty amongst working households, reducing by two-thirds the poverty gap for tax credit recipients, but we have also emphasised the need to think about social security as a whole when considering the extent to which the welfare state can combat in-work poverty.

In the literature on in-work poverty, this triumvirate of boosting work intensity, tackling low pay and the welfare state is typically identified as the required policy solution. In practice, low pay and work intensity are intended to reflect the ‘resources’ side of the equation, while large family size is intended to capture households with additional needs. In previous studies on in-work poverty, these additional needs are often assumed to relate to large families, and the focus is then the extent to which the welfare state shares with families some of the cost of raising children. But our ability to conduct analysis on an after housing cost (AHC) measure of poverty, which many previous European studies have been unable to do, has enabled us to identify another important – indeed, an increasingly important – difference between households, namely the housing costs that they face. The ongoing trend towards private rented sector tenancy status, when combined with the high costs incurred by households in this tenancy (own analysis; see also Tinson *et al.*, 2016: 10) and restrictions on Housing Benefit, mean that housing costs are likely to play an important role in determining in-work poverty rates in the years to come. The role of housing costs as representing one of the additional needs that households face should receive greater attention in the in-work poverty literature.

For some, the rise in in-work poverty is proof that the often-claimed ‘a job is the best route out of poverty’ is mistaken. We would argue that the results suggest something different. The number of workers in a household is consistently a very strong predictor of poverty – indeed, often the strongest predictor we observe in empirical analyses, both in this research and in previous studies. Undoubtedly, working families are – on average – better off than those without a working member. But people are not averages, and work fails to lift a substantial number of families above the poverty line. Moreover, the best route out of poverty is the one that works, and this demands an approach which acknowledges the heterogeneity and complexity of families’ work and living circumstances.

Recommendations

1. Put in-work poverty on the policy agenda

Given that six in ten people in poverty live in households where someone is in work, a serious attempt to tackle poverty in the UK requires addressing in-work poverty. Yet much public discussion tends to focus on low pay rather than in-work poverty, or treats the two as synonymous. There is a need for a more explicit focus on in-work poverty in order to better understand the nature of the problem, the effectiveness of proposed solutions and, ultimately, to be able to tackle it successfully. This requires a focus on income adequacy for working households and not just on

the earnings of individual workers which, while obviously important, may be only one component of a household's total income.

2. Support for parents who wish to take up (additional) employment

We have found that as many as one-quarter of individuals in workless households who gain work only go far as to enter in-work poverty. Households with children are disproportionately represented amongst this group, with lone parents particularly over-represented. Additional supports enabling parents to balance work and family life, for those who wish to return to work, are required. The recent expansion to 30 hours of free childcare for 3 and 4 year old children will contribute to this aim. Yet, childcare remains a significant barrier to employment for many families, and it is no surprise that families with children are represented amongst those who struggle to exit poverty as they enter work. Furthermore, the intended potential of Universal Credit to support families working relatively few hours per week (i.e. working fewer than the hours required to gain eligibility under the tax credit system) risks being undercut by the search for savings within its budget (Finch, 2016). Supporting families in terms of their work-life balance and the ensuring adequacy of their supports is crucial.

3. In-work supports for low income working families should be retained and strengthened

The Conservative government have stated their desire to move towards a 'higher wage, lower tax, lower welfare society' (David Cameron, quoted in Giles *et al.*, 2015). And yet, as we show here, low pay and in-work poverty are quite different phenomena. A consequence of this is that those who lose out in terms of tax credits/Universal Credit will not necessarily be the people to gain from increases in the National Living Wage. Research by the Resolution Foundation (Finch, 2016: 17) finds that 2.5 of 4.5 million entitled families under the tax credits and/or Universal Credit systems will be worse off by the planned changes to these systems, even when proposed changes to the minimum wage (NLW) and tax thresholds are considered, with an average loss of £41 per week.

The cuts to tax credits and to Universal Credit, discussed above, will bear down most heavily on people in poverty, many of whom will be in work, and should be reversed.

Moreover, what is needed is a strategy for families *without* children, too. Almost one-half of people experiencing working poverty live in households without children, yet tax credit coverage for such families is very low (<10%). This is partly due to non-take-up of entitlements: HMRC's official estimate of Working Tax Credit take-up for families without children was just 33% in 2014-15 (HMRC, 2016: 22). Further consideration should be given to how to support families without children who experience in-work poverty. If support via the tax credit system is not the preferred choice, then an alternative strategy should be clearly identified.

4. Do more to tackle high housing costs

Policy also needs to seek to reduce housing costs for many people. Housing costs have become increasingly important in driving poverty rates and a more interventionist policy is needed to reduce housing costs. Significantly greater numbers of houses should be built each year, with a focus on ensuring that a sizeable proportion of these are affordable homes.

It is important to recognise that the continued growth of the private rented sector, with the high housing costs that that often implies, will eat up many of the gains that may be made elsewhere – for example, in terms of the increased minimum wage (National Living Wage). In absence of a more active housing policy that seeks to bring housing costs down, politicians will increasingly find themselves needing to do more (e.g. spend more on the housing element of Universal Credit, or on social security generally) just to stand still in terms of poverty rates. The worry is that rising housing costs will push up rates of in-work poverty rates further still.

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Technical appendix

1. Benefit units, families and households

The HBAI annual report (e.g. DWP, 2011: 37) and subsequent research focusses on benefit units, and often describes such units as 'families'. Dependent children are those under the age of 16 or children under the age of 19 if they are not married/in a civil partnership and if they are living with their parents and they are in full-time 'full-time non-advanced education or in unwaged government training' (DWP, 2011: 226). Benefit units are essentially an administrative definition. As the HBAI documentation notes 'The DWP groups people into Benefit Units in order to define dependency within families/households and thus eligibility for certain benefits and the amount they are entitled to receive. Many of these are means-tested, being based on income and assets.' (FRS Documentation, 2011: 37).

The analysis of household income is routinely based on adjusted (equivalised) household income, which divides total net household income to take account of the economies of scale that accrue from living in larger households. Thus, in standard analysis, the income measure is by household, while family characteristics are by benefit unit. Thus, the unit of analysis differs between income and family/employment characteristics.

It is worth pausing to reflect on what this might mean in terms of analysing in-work poverty. One typical form of analysis is to investigate how different family types have (or have not) managed to keep their families above the poverty line. In the official approach, a household may be comprised of two benefit units. One of these is working and the other is not. It may be that the worker's income *would* be sufficient to raise their benefit unit above the poverty line, but is unable to do so for the whole household. In seeking to understand that household's poverty, we suggest, it is important to know that the worker is seeking to feed, say, three adults with their income, and it is the attempt to do this which renders the household poor. In the standard perspective, the working benefit unit would be a working poor family (despite having only one or two adults to feed), and the household would also have a workless benefit unit (whose income would also entail a share of the employment income from the other benefit unit).

We think this is unhelpful and we take a different approach here. Both the family and income variables are measured at the household level (an alternative approach would be to measure both family characteristics and the income variable at the BU level; on this see Cribb, 2012: 119).

HBAI defines a household as being 'is a single person or group of people living at the same address as their only main residence, who either share one meal a day together or share the living accommodation (i.e. the living room)' (DWP., 2008: 57-58).

2. The material deprivation index

The material deprivation index in HBAI contains the nine items listed below. The material deprivation index is a simple sum-scoring of the number of items a respondent does not possess due to a lack of resources (and not because they do not want the items, or for any other reason). All items are equally weighted, and all members of the household receive the same score. The deprivation data has more missing data than the income values, which is why the sample sizes for this analysis are lower. The material deprivation index is comprised of the following nine items:

1. Ability to afford a holiday for one week a year (not staying with relatives);
2. Enough money to keep your home in a decent state of decoration;
3. Ability to afford household contents insurance;
4. Ability to make savings of £10 a month or more for rainy days or retirement;
5. Ability to replace any worn out furniture
6. Ability to replace or repair major electrical goods, when broken;
7. Ability to spend a small amount of money each week on yourself, not on your family;
8. Whether respondent keeps up with bills and regular debt repayments;
9. In winter, are you able to afford to keep your accommodation warm enough?