

Living Standards, Poverty and Inequality in the UK: 2015-16 to 2020-21

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Executive Summary

- Official data on the distribution of household incomes in the UK are available only with a significant lag: the latest statistics are for 2013–14. In this report, we use modelling techniques to provide a more up-to-date picture and to assess how things are likely to evolve in the coming years. Essentially, we estimate the implications for household incomes of policy changes already implemented since 2013–14 or planned by 2020–21, and of labour market trends already recorded from other data sources since 2013–14 or forecasted by the OBR up to 2020–21.

The current picture: what has happened to incomes since 2013–14?

- After sluggish growth in 2012–13 and 2013–14, we project that the recovery in living standards picked up pace from 2014–15. Real (CPI-adjusted) median household income is projected to have risen by 1.5% in 2014–15 and by 3.3% in 2015–16. This is primarily the result of stronger real earnings growth.
- Between 2013–14 and 2015–16, the combination of falling inflation and continued strong employment growth is projected to have reduced the percentage of people living in ‘absolute’ low-income poverty (assessed using a fixed poverty line, which we follow official statistics in defining as 60% of inflation-adjusted 2010–11 median income). Relative poverty (assessed using a moving poverty line, defined as 60% of median income in the year in question) and inequality are projected to have been roughly unchanged, as strong employment growth helped incomes at the bottom of the distribution to keep pace with those at the middle.
- In other words, incomes have grown by similar proportions across most of the income distribution over the past two years on average. Employment growth was the key factor behind increased incomes towards the bottom of the distribution, with earnings growth more important towards the top of the distribution.
- After being hit much harder by the recession, the incomes of young adults are projected to have bounced back somewhat. Between 2012–13 and 2015–16, we project total growth of 10.5% in the median income of those aged 22–30, compared with a 5.6% increase for those aged 31–59. Poverty rates are also projected to have fallen more sharply for young adults.

The future: what will happen under current policy plans if economic forecasts are correct?

- Looking beyond 2015–16, if the OBR’s macroeconomic forecasts are correct and policy plans remain the same then we project median income will grow by an average of 1.5% a year over the five years to 2020–21. Forecast real

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earnings growth is the most important factor driving this projected growth in average living standards. This is a modest rate by historical standards.

- We project that there will be no growth at all in real incomes at the bottom of the distribution over that period on average, partly as a result of planned cuts to benefits. As a consequence, absolute poverty across the population as a whole will be unchanged, despite the real growth in average income. However, projected trends in absolute poverty diverge significantly between different groups.
- Absolute pensioner poverty is projected to fall from 14.9% in 2015–16 to 10.8% in 2020–21, as labour market participation among older people increases, private pension income grows, and the state pension rises in line with earnings as a result of the ‘triple lock’. If the state pension were instead increased in line with CPI inflation, absolute pensioner poverty would still fall, but by less, to a projected 13.0% in 2020–21.
- By contrast, absolute child poverty is projected to increase from 15.1% in 2015–16 to 18.3% in 2020–21. This increase is driven entirely by a sharp rise in poverty among families with three or more children, which is itself the result of planned tax and benefit reforms.
- Because our projections suggest that incomes towards the bottom of the distribution will fail to keep pace with median income over this parliament, relative poverty is projected to increase. Again, there are sharp differences across family types: relative pensioner poverty is projected to be roughly unchanged, while relative child poverty is projected to rise from 17.8% in 2015–16 to 25.7% in 2020–21, undoing most of the falls since 1997–98.
- Household income inequality is expected to increase between 2015–16 and 2020–21: the 90:10 ratio (i.e. the ratio of income at the 90th percentile of the household income distribution to income at the 10th percentile) is projected to increase from 3.8 to 4.2. A quarter of that projected increase is attributable to tax and benefit reforms due to be introduced over the period; the other three-quarters is largely due to the fact that earnings are expected to grow in real terms and hence to outpace price-indexed benefits. However, this projected rise in inequality will only slightly more than offset falls since 2007–08.
- Although the ‘National Living Wage’ will significantly increase the incomes of some low earners, it is projected to have very little impact on official measures of poverty or household income inequality in 2020–21. This reflects both the scale of the policy and the fact that gains from the National Living Wage are focused on individuals with low hourly pay, many of whom do not have particularly low household incomes (for example, if they live with a higher earner).

1. Introduction

Household incomes fell sharply in the immediate aftermath of the Great Recession of 2008–09, and the recovery since 2011–12 has been slow – median income rose by less than 1% in each of 2012–13 and 2013–14. As a result, median income in 2013–14 (the latest data available) was still below its pre-recession (2007–08) level.

While tax and benefit changes aimed at reducing the budget deficit played a role in the fall in living standards and their weak recovery, by far the most important factor has been the unprecedented falls in real earnings seen since the recession: average gross earnings were nearly 5% lower in 2013–14 than before the recession (2007–08) in real terms, and the average fall in earnings was much larger for younger workers.

Because earnings are a more important source of income for higher-income households, this fall in real earnings led to larger reductions in income for higher-income households than for poorer ones, with the effect that inequality in 2013–14 was lower than in 2007–08 (although this pattern is weaker if one takes into account the fact that housing costs have risen more quickly for poorer households).

Given falling inequality, it is not surprising that relative poverty (defined as having household income less than 60% of the median) has fallen over recent years – median income has fallen more than the incomes of poorer households. Using a poverty line fixed in real terms at 60% of median income in 2010–11 (which is the measure of absolute poverty used by official government statistics), poverty also fell overall between 2007–08 and 2013–14. (In both cases, falls are much smaller if one takes different changes in housing costs into account.)

Those trends in poverty might sound quite benign given the severity of the Great Recession. What explains this? Perhaps the first thing to note is that, despite a number of discretionary cuts to working-age benefits, the official data through to 2013–14 do not show real (CPI-adjusted) benefit receipt falling over time. This reflects the indexation of most benefits to the RPI until 2010–11, the over-indexation of the child element of child tax credit during the recession and in 2011–12, and the large real increase in benefit rates in 2012–13 (as inflation fell). Second, although overall poverty rates have been quite stable, the nature of poverty has been changing quickly: trends in poverty among working families have been less favourable than trends in overall poverty, as real earnings have performed so poorly since the recession. Belfield et al. (2015), focusing on child poverty, show that rises in in-work poverty have been approximately offset by strong employment growth, explaining the overall stability of absolute child poverty in recent years.

Third, it is also worth noting that severe income shocks (for example, benefit sanctions) for a relatively small group of people are unlikely to have much impact

on average incomes towards the bottom of the distribution (which determine poverty rates) even though the consequences for the affected households are likely to be significant.

Fourth, changes in income poverty rates do not always capture changes in material deprivation. For example, Belfield et al. (2015) show that child material deprivation rose (slightly) between 2009–10 and 2013–14, despite the fact that there was no recorded increase in child income poverty.

Previous projections by researchers at IFS and others suggested these reductions in poverty were likely to be reversed and hence the 2020 child poverty targets were on course to be missed by a large margin.¹ These targets are now in the process of being abolished, to be replaced by a legal requirement to report the proportion of children living in workless households and educational attainment at age 16, alongside the income-based measures of child poverty.² Further announcements are expected concerning other indicators that will be tracked as part of the government's life chances strategy. It is sensible to measure a broader set of indicators than income alone but, as indicated by the continued requirement to report on income-based measures, official income statistics will rightly continue to play an important role in the assessment of trends in poverty.

An important limitation on our understanding of such trends is that the official Households Below Average Income (HBAI) data on household incomes (from which official poverty rates are calculated) are only available with a lag of over a year: official data are not yet available beyond 2013–14. Given developments in policy and in the labour market, this is inadequate for the task of understanding what is currently happening. The first objective of this report is to estimate current levels of income and poverty in the UK. By combining the data underlying the latest official measures with information on changes in employment, earnings and the tax and benefit system since then, we are able to produce projections of living standards, poverty and inequality in 2015–16. This allows us to assess, among other things:

- the impact of recent growth in employment and real earnings on the incomes of different groups;
- whether the falls in poverty we have seen in recent years of HBAI data are likely to have continued;
- whether young adults have continued to fare worse than the rest of the population or started to catch up.

As well as providing a clearer picture of where we currently stand, this report indicates likely future trends. Using official forecasts from the Office for Budget Responsibility for earnings and employment, and incorporating planned changes

¹ See Browne, Hood and Joyce (2014) and Reed and Portes (2014).

² See <http://services.parliament.uk/bills/2015-16/welfarereformandwork.html> for details.

to the tax and benefit system, we provide projections of average income, poverty and inequality through to 2020–21. Using these projections, we examine:

- the implications of the forecast sustained growth in real earnings for living standards, inequality and poverty;
- the impact of planned tax and benefit reforms on inequality and poverty;
- the effects of the ‘National Living Wage’.

It is important to be clear about the purpose and limitations of this exercise. For reasons outlined in more detail towards the end of Chapter 2, year-on-year changes are highly unlikely to be predicted with pinpoint accuracy in measures based on survey data (even before considering errors in the macroeconomic forecasts we use). Our objective is rather to indicate the likely broad trends. For that task, this report should provide the best guide we have.

Throughout our analysis, we measure income in the same way as the official HBAI statistics: at the household level, after deducting taxes and adding on state benefits and tax credits, rescaled (‘equivalised’) to take into account the fact that households of different sizes and compositions have different needs. In this report, we only consider incomes measured before housing costs are deducted (BHC); in future analysis, we plan to present poverty projections when incomes are measured after housing costs (AHC). All cash figures are given in 2015–16 prices.

The rest of this report proceeds as follows. In Chapter 2, we provide an overview of how we produce our projections, with further details available in Appendix A. Chapter 3 presents our results, first for 2015–16 and then through to 2020–21. When looking through to the end of the decade, we isolate the effects of tax and benefit reforms planned to be introduced between 2015–16 and 2020–21. Chapter 4 concludes.

2. Data and Methods

This chapter describes how we produce our projections of living standards, poverty and inequality. Essentially, we take the latest data used to produce official income and poverty statistics (the 2013–14 Family Resources Survey) and adjust these data for relevant known and forecast changes each year up to 2020–21 to create ‘synthetic’ populations for those years. The key changes that we adjust for are to demographics, the labour market, and tax and benefit policy. For 2014–15 and 2015–16, we of course have actual data rather than forecasts, and therefore have more detailed information, enabling us to make a greater number of adjustments. These adjusted data sets are then used to simulate the entire household income distribution in the years 2014–15 to 2020–21 (inclusive), allowing us to produce projections of living standards, inequality and both relative and absolute poverty. Our broad approach is similar to that of Rastrigina et al. (2015), Office for National Statistics (2015) and Corlett, Finch and Whittaker (2016).

The method is best understood as a number of steps, outlined below. Further details are given in Appendix A.

2.1 Data

We use data on 20,061 households in the UK from the 2013–14 Family Resources Survey (FRS), the most recent data available. For each household, the FRS collects detailed information on household characteristics and income sources. Since the FRS is the basis for the official HBAI statistics on incomes and poverty, it makes sense to use the FRS as our ‘base data’ when simulating the income distribution in future years, given that our objective is to project changes in incomes and poverty as officially measured.

2.2 Adjusting for changes in demographics and employment

The 2013–14 FRS is supplied with grossing weights, calculated such that in the weighted data the number of people or households with certain characteristics matches a set of control totals for the 2013–14 population. We can therefore adjust for changes in population characteristics over time by creating a new set of weights to match a set of projected control totals for the 2014–15 population, and so on.³ For example, as the total number of individuals aged 80 or over is forecast to increase over time, we increase the control total for the number of people aged 80 or over. The new weights will then be larger, on average, for individuals aged

³ The new weights are calculated using the algorithm set out in Gomulka (1992), which we have implemented in Stata using the command ‘reweight2’ (Browne, 2012).

80 or over, and so calculations using the reweighted data will incorporate the effect of this ageing of the population on incomes and poverty.

Table 2.1 details the characteristics controlled for when we calculate the new weights for simulated future years of data, along with their sources. Those characteristics with an asterisk are controlled for only up to 2015–16 inclusive.

Table 2.1. Characteristics controlled for when reweighting the data

Control	Source
Population by nation and English region	ONS population projections
Population by sex and age band (0–4, 5–9, 10–15, 16–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75–79, 80+)	ONS population projections
Household type (single person, lone parent, 2+ adults with no children, 2+ adults with 1+ children)	Projections from the four national statistical agencies
Total employment	OBR
Employment by sex and age band (16–19, 20–24, 25–29, 30–39, 40–49, 50–59, 60–64, 65–69, 70+)*	LFS
Labour market participation by sex and age band (20–24, 25–29, 30–39, 40–44, 45–49, 50–54, 55–59, 60–64, 65–69, 70–74, 75+)	OBR
Self-employment by sex*	LFS
Proportion of each household type with someone in work*	LFS
Public sector employment	ONS public sector employment statistics / OBR
Private pension entitlement by sex among those aged 65+	RetSim

* Control totals only available for 2014–15 and 2015–16.

We can control for changes in population by region, age and sex and for changes in the distribution of household types using projections from the Office for National Statistics (ONS) and national statistical agencies. The Office for Budget Responsibility (OBR) provides forecasts of overall employment, public sector employment and labour market participation rates by sex and age band. Importantly, the forecasts for labour market participation rates take into account both relevant differences between birth cohorts and the impact of increases in the state pension age. In 2014–15 and 2015–16, we can supplement these with more detailed controls for employment by sex and age band, self-employment

rates by sex, and the proportion of each household type that are workless, based on the Labour Force Survey (LFS).⁴ We ensure that overall employment growth matches that recorded in the LFS (2014–15) or forecast by the OBR (2015–16 onwards). In addition, we control for the increase over time in the proportion of older individuals with some private pension entitlement using results from the IFS dynamic microsimulation model of pensioner incomes, RetSim. This model effectively ‘ages’ individuals currently approaching retirement, and so explicitly models the differences across cohorts in the proportion of individuals with some private pension entitlement. These differences are the product of changes in labour market participation across working life and changes in pension provision over time, and so are very difficult to account for with the static microsimulation techniques applied in this report.⁵

It is worth noting the limitations of this reweighting procedure. First, the procedure simply controls for changes in characteristics in a few key dimensions, leaving joint distributions uncontrolled (so, for example, we control for both household type and the number of households in each region, but not for the number of households of a particular type in each region). Second, we are unable to control for changes in certain important dimensions (for example, the share of employment that is part-time), due to a lack of forecasts. Third, the reweighting procedure does not capture potentially important compositional changes within population groups. For example, when the number of women aged 60–64 in work increases sharply (as a result of the increased state pension age), we do not change the characteristics of women in paid work, such as the average earnings or hours worked by that group.

2.3 Uprating financial variables

As well as adjusting the data to reflect demographic and labour market trends, we need to account for growth over time in earnings and other sources of private income.⁶ To do this, we ‘uprate’ the financial variables in our 2013–14 ‘base data’ to their projected levels in future years. For 2014–15, we are able in most cases to use out-turn data. From 2015–16 onwards, we rely mostly on forecasts from the OBR’s November 2015 *Economic and Fiscal Outlook*.⁷

Earnings

We ensure that average earnings increase in line with out-turn data from the LFS (2014–15) or the OBR’s forecast (2015–16 onwards). Unfortunately, although the

⁴ We use actual LFS data up to and including 2015Q3, and then a linear extrapolation of observed trends (based on the last six quarters of data) through to the end of 2015–16.

⁵ For further details of the model, see Browne et al. (2014).

⁶ We calculate benefit entitlements (and tax liabilities) using known (and planned) parameters of the system, as discussed in Section 2.4.

⁷ These forecasts are provided in Appendix Table A.2.

distribution of future earnings growth will have important implications for changes in inequality and poverty, we know of no forecast for earnings growth across the distribution. Instead, we attempt to account for differential earnings growth in one or two important dimensions. In 2014–15 and 2015–16, we also allow earnings growth to vary across three age groups (under 30, 31–59, and 60 or over), using data from the LFS.⁸ From 2016–17, we are not able to allow for this variation by age, but we do allow for the difference between earnings growth in the public and private sectors implied by the OBR’s latest forecasts. Additionally, we take account of the impact of the introduction of the ‘National Living Wage’, as detailed in Appendix A.

Other financial variables

Appendix Table A.1 details how we uprate other financial variables in our data. The most important of these other income sources are income from savings and investments and income from private pensions. To calculate income from savings and investments, we assume that capital rises in line with nominal GDP and that the average interest rate households receive rises in line with the OBR’s forecast for Bank Rate. We uprate private pension income using results from the RetSim model. As was the case with the proportion of individuals with some private pension income, using the results from this model allows us to incorporate important differences across cohorts in the level of private pensions (which again are the product of different labour market histories and changing pension provision).

2.4 Simulating future tax liabilities and benefit and tax credit receipts

Our simulation of tax liabilities and benefit and tax credit receipt takes place in two stages. First, we use the IFS tax and benefit microsimulation model, TAXBEN, to calculate tax liabilities and benefit and tax credit entitlements. Second, we adjust the data to reflect the fact that some individuals do not take up their benefit entitlements.

Calculating liabilities and entitlements

Using TAXBEN, we can calculate the benefits and tax credits individuals and households are entitled to, and the taxes they are liable to pay, under different tax and benefit systems. Hence, using the current default rules for annually uprating tax thresholds and benefit and tax credit amounts, and taking account of direct tax and benefit reforms that were announced in and before the 2015 Autumn Statement, we can simulate net household incomes in future years

⁸ We use LFS data up to and including 2015Q3 and then assume uniform earnings growth at the rate forecast by the OBR for the last two quarters of 2015–16. We do not extrapolate trends into the final two quarters of 2015–16 (as we do with employment) because trends in differential earnings growth are relatively volatile.

according to what the tax and benefit system will look like in those future years under current policies.⁹ One additional policy we model that has a direct impact on benefit entitlements is the 1% cut in social (council and local authority) rents in England each year from 2016–17 to 2019–20. By reducing rents, this reform reduces housing benefit entitlements and hence incomes as measured by HBAI (before housing costs). Since we are aiming to project future incomes on this measure, we include the (negative) effect on incomes of this cut to rents, despite the fact that its direct impact will be to make no tenants worse off, and some (largely middle-income tenants who are not on housing benefit) better off.¹⁰

An additional complexity dealt with in our modelling is that, over the coming years, different households will be subject to different tax and benefit rules. This is for two main reasons. First, some individuals will be receiving universal credit while others remain on the ‘legacy’ system as universal credit is gradually rolled out. Second, a number of the forthcoming benefit cuts will affect new claimants only. Appendix A describes in more detail how our modelling accounts for these changes.

Adjusting for non-take-up

Once we have calculated benefit and tax credit entitlements, an adjustment needs to be made to account for the fact that not everyone who is entitled to benefits and tax credits claims their entitlements.¹¹ Having obtained our simulated net incomes from TAXBEN, we therefore do the following. If someone is eligible for a benefit or tax credit in the 2013–14 base data, as simulated by TAXBEN, but they did not report receiving it in the FRS, then we assume that they will still not report taking up the benefit or tax credit in future years. (The implicit assumption is that the accuracy with which the FRS records benefit and tax credit receipt remains constant.) For those who were not eligible in the base data but are simulated by TAXBEN as becoming eligible in future years, we instead use administrative data on the take-up rates of different benefits and tax credits, disaggregated by various subgroups. We randomise take-up among these people, with the probability of take-up being equal to the caseload take-up rate from administrative data for that benefit or tax credit for the relevant subgroup.¹²

⁹ Appendix A provides a full list of the reforms (announced and implemented) that we include in our analysis.

¹⁰ However, by reducing the incomes of social housing providers, the reform may lead to reductions in the quality of housing enjoyed by social tenants. For further discussion of this and other issues pertaining to changes in social rent policy, see Adam et al. (2015).

¹¹ Moreover, it appears that many people who do claim benefits and tax credits do not report receiving them in the FRS data that we are attempting to simulate, as the aggregate spending on some benefits implied by the FRS data is lower than that according to administrative statistics (see appendix B of Belfield et al. (2015)).

¹² Administrative data are taken from <https://www.gov.uk/government/statistics/child-benefit-child-tax-credit-ctc-and-working-tax-credit-wtc-take-up-rates-2012-to-2013> and <https://www.gov.uk/government/statistics/income-related-benefits-estimates-of-take-up-financial-year-201314>.

When modelling take-up of universal credit, we assume that anyone claiming a means-tested benefit in the base data will claim universal credit if they are eligible. This means that the introduction of universal credit is a substantial giveaway to those households currently claiming some means-tested benefits but not others in our data, since they receive their full universal credit entitlement rather than just the element corresponding to the particular benefit(s) they are claiming. For those who we predict will be entitled to universal credit but were not entitled to any means-tested benefits and tax credits in 2013–14, we assume that the take-up rate for those with children is the same as that for working families entitled to child tax credit only and that the take-up rate for those without children is the same as that for working tax credit among those without children. We assume that those who do not take up any of their means-tested benefit entitlements continue to not claim universal credit.

2.5 Creating the official household income measure

Finally, we need to create a measure of household income that is as close as possible to the HBAI measure used when calculating official income and poverty statistics. We add together various sources of private (i.e. pre-tax-and-transfer) income, subtract estimated tax liabilities, add estimated receipt of benefits and tax credits, and then subtract various ‘deductions’ from income. Data on the deductions are partly derived from outputs from TAXBEN (for example, council tax) and partly taken from the official HBAI data set (because this is based on the FRS, we are able to merge the official HBAI data set with the data set produced by TAXBEN). We assume that this latter set of deductions (pension contributions, child support paid for non-resident children, and financial support given by parents to children who are students living away from home) increase over time in line with average earnings. We can then create a measure of household equivalised income, by summing this final measure of disposable income across all members of a household and multiplying by various factors to take account of household size and structure according to the modified OECD equivalence scale.¹³

However, as noted in Brewer et al. (2009), the income distribution simulated using the methods described is not identical to the income distribution measured officially by HBAI, even though both use the same underlying FRS data. One reason for this is that while TAXBEN estimates tax liabilities and benefit and tax credit entitlements on the basis of relevant characteristics as recorded in the FRS, the HBAI series uses self-reported figures for taxes paid and benefits and tax credits received. Any differences between estimates from TAXBEN and the self-reported figures that remain after adjusting for non-take-up of benefits will therefore lead to discrepancies. Failing to account for these discrepancies would lead to a systematic difference between our projections and future HBAI data.

¹³ See appendix A of Belfield et al. (2015) for details of this equivalence scale.

In order to avoid this, we check our TAXBEN-simulated incomes for each household in our 2013–14 base data against the 2013–14 HBAI-measured income for that household. We calculate a correction factor for each household equal to the difference between its income in 2013–14 as calculated by TAXBEN and its income recorded in the HBAI data. We then apply the same real-terms correction to each household's income when estimating its income in future years.¹⁴ The extent to which TAXBEN-simulated and HBAI-measured incomes differ may not in fact stay constant in real terms over time – it is likely, for example, that the discrepancy is a complicated function of the tax and benefit system and/or levels of earnings. But it is not clear what direction of bias (if any) this would lead to, in terms of projecting poverty rates, and it is highly likely that making an adjustment based on the discrepancy in the base year enables more accurate projections than making no adjustment at all.

2.6 Uncertainties and limitations

These projections are necessarily subject to a number of uncertainties and limitations. Most obviously, there is of course considerable uncertainty surrounding any macroeconomic forecasts (and, to a lesser extent, demographic forecasts), such as those we make use of in producing the projections. In addition, as always with survey data, there is likely to be sampling error in the FRS from year to year. It is important to note that sampling variation will affect not only the base data underlying our projections, but also the future HBAI measures of incomes and poverty we are trying to project. The year 2013–14 provided a clear example of this kind of difficulty: the increase in employment recorded by the FRS was larger than that seen in the LFS (which was used in a previous version of these projections).¹⁵

The uncertainty in our projections arising from sampling error is only one component of the total level of uncertainty in our projections, but unlike other forms of error it is quantifiable. The confidence intervals around recent changes recorded in the HBAI data provide a useful guide to the magnitude of uncertainty arising from sampling error, though these should be considered a lower bound on the total level of uncertainty around what future years of HBAI data will show. Department for Work and Pensions (2015) shows that the 95% confidence interval for changes in child poverty rates between two years of HBAI data spans approximately 1.6 percentage points (ppts) on either side of the central estimate. Thus, our projection that absolute child poverty fell between 2013–14 and 2014–15 by 1.1ppts is not a change that would be statistically significant if observed in the HBAI data. However, the projected fall in absolute child poverty between 2014–15 and 2015–16 is on the cusp of being statistically significant; that is to say, if sampling error were the only source of error in our projections, we would

¹⁴ This is the same process as used by Rastrigina, Leventi and Sutherland (2015), among others.

¹⁵ See Cribb, Hood and Joyce (2015).

be 95% confident that there would be a fall in absolute child poverty observed in the HBAI data in that year. Given this uncertainty in year-to-year changes in the HBAI data, when we present our results we focus on longer-run trends rather than our projections of year-on-year changes.

Turning to the limitations of our projections, with the techniques employed here, we cannot directly account for behavioural responses to direct tax and benefit reforms. In particular, we do not account directly for the possible impact on employment and hours worked of the tax and benefit changes due to be implemented over the course of this parliament (although we do indirectly, and somewhat crudely, account for any responses that are already incorporated in the official forecasts of variables such as employment and demographics that we use in our projections).

A further limitation is that the microsimulation methods used to produce these projections are not a robust way of projecting changes in incomes at the very top of the distribution (which are often volatile). This is because the underlying survey data on the very-highest-income individuals are known to be of lower quality, due to difficulties in adequately sampling the very rich. Therefore we do not report projections of statistics that are significantly affected by those changes (for example, mean income, the Gini coefficient and the share of income received by the highest-income 1% of the population). The quality of survey data for the very bottom of the distribution is also the subject of some concern; for example, Brewer and O'Dea (2012) present evidence that income is likely to be under-recorded for households with low resources. We do rely on these data when calculating poverty rates, as do official statistics, but it is for this reason that we do not show projected changes in incomes at the very bottom of the income distribution.

3. Results

In this chapter, we first focus on our projections for living standards, inequality and poverty up to the current financial year, before looking at projected changes up to 2020–21. These latter projections come with a greater degree of uncertainty, as they rely on macroeconomic forecasts and expected future tax and benefit systems rather than being based on macroeconomic out-turns and actual tax and benefit systems.

Throughout our analysis, we compare incomes over time after adjusting for inflation using the Consumer Prices Index (CPI). Box 3.1 gives further details of the reasons for, and implications of, this choice, but a drawback to note is that the CPI measure does not incorporate owner-occupied housing costs. As a result, using the CPI to deflate incomes gives too pessimistic an impression of the situation faced by households in 2008–09 and 2009–10 because it ignores the fact that the sharp reduction in Bank Rate drove large falls in mortgage interest rates.¹⁶ As a result, while real median income was 3.6% lower in 2013–14 (the latest year of data) than in 2007–08 (just before the recession) if one adjusts for inflation using the CPI, it was only 0.4% lower if one instead uses a CPI variant that includes owner-occupied housing costs. We cannot use that variant in this report, because there are no forecasts for it. The omission of owner-occupied housing costs is likely to make little difference between 2010–11 and 2015–16 (as mortgage interest rates remained relatively constant) but could lead us to understate inflation in future years to the extent that mortgage costs rise.

¹⁶ This is true even though the flip side – that lower interest rates meant less income for savers – is captured because the income measure includes savings interest income.

Box 3.1. Adjusting for inflation

When comparing household incomes in real terms over time, we need inflation forecasts as well as out-turns in order to compare future projected incomes with those in earlier years. The Office for Budget Responsibility forecasts four measures of inflation: three RPI-based ones (RPI, RPIX and ROSSI) and the CPI. We use the CPI to adjust for inflation throughout our analysis. This is in contrast to the official HBAI statistics, which continue to use the RPI to adjust for price changes despite it being known to significantly and systematically overstate inflation.^a

There is, however, one important disadvantage associated with using the CPI to adjust for inflation: it does not incorporate changes in owner-occupied housing costs. In Belfield et al. (2015), the authors circumvent this issue by using a variant of the CPI that includes mortgage interest costs.^b However, it is not possible to create this variant for future years from available forecasts.

Measured changes in living standards will clearly be affected by the measure of inflation used, as discussed in the main text. Figures for inequality and relative poverty are unaffected by the choice of inflation measure. Changes in absolute poverty depend on the measure of inflation used to uprate the poverty line, as we wish to adjust it to take account of changes in the general price level over time. For the same reasons given above, we increase the absolute poverty line in line with CPI inflation. Again, this is different from official statistics (which continue to uprate the absolute poverty line using the RPI) and from Belfield et al. (who uprate the absolute poverty line using the CPI variant including mortgage interest costs).

^a See Johnson (2015) for more details.

^b The use of this CPI variant to adjust for inflation explains the difference between the figures presented in that publication and those presented here.

3.1 Living standards, inequality and poverty in 2015–16

Table 3.1 shows average equivalised weekly household incomes in the UK since 2007–08, including our projections for median income in 2014–15 and 2015–16 (years for which the official statistics are not yet available).¹⁷ The broad pattern is of falling incomes in the immediate aftermath of the recession (from 2009–10 to 2011–12) followed by a slow recovery, with median income growing by less than 1% in each of 2012–13 and 2013–14. As discussed in Cribb, Hood and Joyce (2015) and Belfield et al. (2015), it is the sluggish recovery in incomes, rather than the size of the fall, that is remarkable by historical standards.

¹⁷ We do not provide projections of mean income, as the mean can be significantly affected by changes at the very top of the income distribution, which cannot be accurately predicted using the methodology employed in this analysis.

Table 3.1. Average incomes in the UK: 2007–08 to 2015–16

	<i>£ per week in 2015–16 prices (equivalents for childless couple)</i>		<i>Growth since previous year</i>	
	Median	Mean	Median	Mean
2007–08	£476	£591	1.9%	3.0%
2008–09	£477	£592	0.0%	0.2%
2009–10	£471	£590	–1.2%	–0.4%
2010–11	£464	£566	–1.5%	–4.2%
2011–12	£454	£560	–2.1%	–1.0%
2012–13	£456	£555	0.4%	–1.0%
2013–14	£459	£568	0.7%	2.5%
2014–15	£466		1.5%	
2015–16	£481		3.3%	

Note: Incomes measured before housing costs have been deducted.

Source: Authors’ calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

Our projections suggest, however, that the recovery in household incomes has accelerated over the last two years. After growth of 0.7% in 2013–14, we project that median income rose by 1.5% in 2014–15 and 3.3% in 2015–16, a cumulative increase of almost 5% over the last two years. The primary causes of this strengthening recovery in household incomes are the recovery in real earnings and continued increases in employment. After falling slightly in 2012–13 and 2013–14, real earnings rose by 0.3% in 2014–15 and by an estimated 2.7% in 2015–16. This increase in real earnings growth in 2015–16 reflects both higher nominal earnings growth and falling inflation: the OBR expects nominal earnings to rise by 2.9% (compared with 1.3% according to the Labour Force Survey the previous year), with prices rising by only 0.2% (compared with 1.0% the previous year). At the same time, employment is expected to increase by 1.0 million between 2013–14 and 2015–16, providing a further boost to incomes.

Given the fact that households towards the top of the distribution are likely to benefit from increasing real earnings to a greater extent than those towards the bottom of the distribution, one might expect to see the projected strengthening of the recovery in household incomes accompanied by an increase in income inequality. However, Figure 3.1 shows that our projections suggest little change in income inequality. Looking at cumulative income growth between 2013–14 and 2015–16 at different percentile points of the distribution, incomes grew by 4.1% at the 10th percentile, 4.9% at the median (50th percentile) and 3.2% at the 90th percentile. There are two main reasons why income growth is projected to have been equally strong towards the bottom of the distribution, despite the smaller impact of real earnings growth. First, falling inflation meant that 1% nominal increases in most working-age benefit rates in these two years represented either no real change (2014–15) or a 0.8% increase (2015–16) in real terms. Allied with an easing-off in other cuts to benefits relative to earlier years in the last parliament, this removed a significant downward pressure on incomes towards the bottom of the distribution.

Figure 3.1. Change in real household income by percentile point: 2007–08 to 2015–16



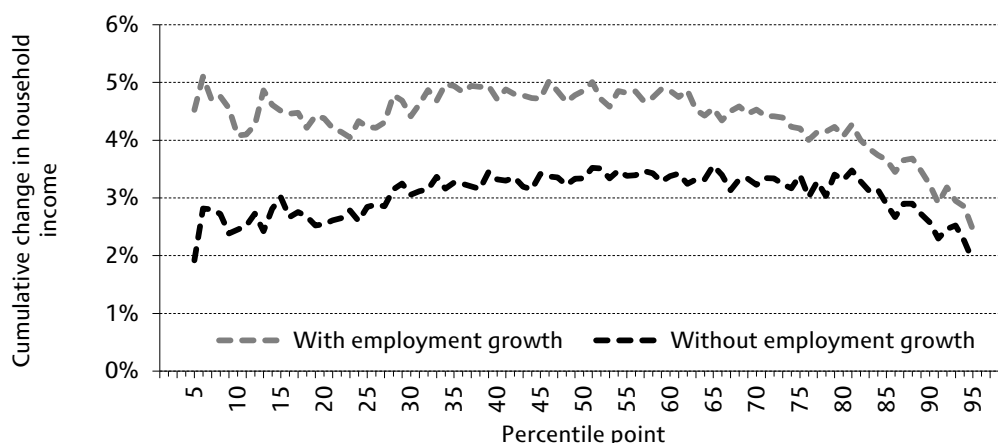
Note: Incomes measured before housing costs have been deducted. Percentiles 1–4 and 96–99 are excluded due to high levels of statistical and modelling uncertainty.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

Second, as mentioned above, employment growth was extremely strong over the period, with an estimated 1 million jobs added between 2013–14 and 2015–16. Figure 3.2 shows the projected impact of employment growth across the income distribution for high- and low-income households. The impact is projected to be inequality-reducing: employment growth between 2013–14 and 2015–16 boosted incomes by around 2% towards the bottom of the distribution but by less than 1% towards the top. Employment growth does not always reduce inequality (or poverty) – for example, if most of the additional workers are second earners, it can act to increase inequality in household incomes. The inequality-reducing pattern shown in Figure 3.2 reflects the fact that most of the additional workers in the last two years have been first earners; in other words, the proportion of households with no one in work has been falling sharply. For example, the proportion of lone parents who are workless has fallen from 37% in 2013–14 to a projected 34% in 2015–16 according to the Labour Force Survey. This continues falls in the number of workless households recorded in recent years of the HBAI data.¹⁸

¹⁸ See chapter 4 of Belfield et al. (2015) for details.

Figure 3.2. The effect of employment growth on household income growth between 2013–14 to 2015–16, by percentile point



Note: Incomes measured before housing costs have been deducted. Percentiles 1–4 and 96–99 are excluded due to high levels of statistical and modelling uncertainty.

Source: Authors' calculations using Family Resources Survey, 2013–14, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

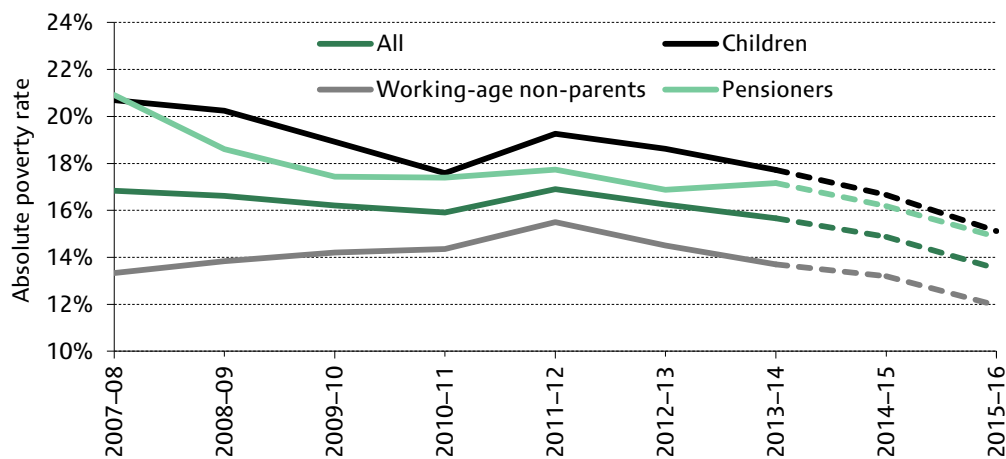
As discussed in Chapter 1, incomes fell across much of the distribution between 2007–08 and 2013–14 while incomes towards the bottom of the distribution actually rose, reducing inequality overall. Since inequality is projected to be roughly unchanged between 2013–14 and 2015–16, this inequality-reducing pattern of income changes is preserved when one looks at the whole period up to 2015–16. Over the period from 2007–08 to 2015–16, real incomes are projected to have grown by 8% at the 10th percentile and 1% at the median and to have fallen by 2.6% at the 90th percentile. Because the economy did not develop in the way the OBR had forecasted, this picture is markedly different from that given by previous projections from IFS researchers,¹⁹ which suggested that rises in inequality between 2011–12 and 2015–16 would roughly cancel out falls between 2007–08 and 2011–12. The difference between those projections and the inequality-reducing pattern shown in Figure 3.1 is explained by the fact that earnings growth has proved much weaker, employment growth much stronger and inflation much lower than the OBR was forecasting at the time these previous projections were made. While strong earnings growth tends to increase income inequality, strong employment growth has acted to reduce income inequality (as discussed above). Furthermore, sharp falls in inflation have meant that the real value of benefit rates is higher now than was previously expected: the 1% nominal increases in most working-age benefit rates in the three years from 2013–14 to 2015–16 (inclusive) have turned out to be a smaller real reduction in the value of these benefits than had been expected at the time previous projections were produced, when the OBR was forecasting significantly higher inflation than ultimately materialised.

¹⁹ For example, Brewer et al. (2013).

However, the fall in inequality now projected to have occurred between 2007–08 and 2015–16 comes with an important caveat. As previous work by IFS researchers has shown,²⁰ low-income households have faced higher inflation over this period than those further up the distribution, largely because they were less likely to benefit from large falls in mortgage interest costs. Once this differential inflation is taken into account, the falls in inequality over the period look much smaller.

Figures 3.3 and 3.4 show the impact of these changes in the household income distribution on absolute and relative poverty rates (numbers of individuals in poverty are given in Appendix B). Throughout, we measure and project absolute and relative poverty as in the official HBAI statistics: an individual is in relative poverty if their equivalised household income is less than 60% of the current median and in absolute poverty if their equivalised household income is less than 60% of the 2010–11 median in real terms.²¹

Figure 3.3. Absolute poverty rates: 2007–08 to 2015–16

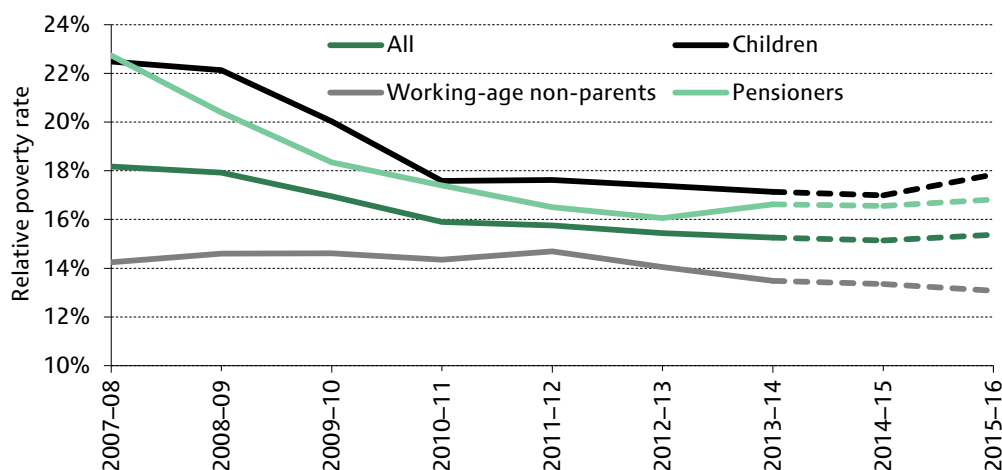


Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Pensioners are those aged 65 or over.
Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

²⁰ Adams, Hood and Levell, 2014; Cribb, Hood and Joyce, 2015.

²¹ For reasons discussed above, we uprate the absolute poverty line using CPI inflation, while official statistics uprate it in line with RPI inflation.

Figure 3.4. Relative poverty rates: 2007–08 to 2015–16



Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of median household income in the current year. Pensioners are those aged 65 or over.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

Looking at the population as a whole, the trends in poverty are as one would expect given Figure 3.1. Absolute poverty is projected to have fallen – from 15.7% in 2013–14 to 13.5% in 2015–16 – as incomes towards the bottom of the distribution rise in real terms, driven in large part by the employment growth discussed above. Relative poverty is projected to be broadly unchanged between 2013–14 and 2015–16 (at around 15%), as the incomes of those around the poverty line rise at a similar rate to median income.

Projected poverty trends for different groups within the population are relatively similar over the period up to 2015–16. If anything, trends are slightly more favourable for working-age people without children than for the rest of the population, probably reflecting the fact that this group is more dependent on employment income than other groups, and so benefits most from continued employment growth and the recovery in real earnings.

Table 3.2 shows our projections for absolute and relative poverty through to 2015–16 among non-pensioners (those under the age of 65) split by whether someone in their household is in work. Again the projected trends for the two groups are relatively similar – between 2013–14 and 2015–16, absolute poverty rates are expected to fall in both working and workless households, while relative poverty rates are projected to rise (slightly) in both groups. This comes after a period when trends among low-income workless households were much more favourable than those among low-income working households, as real benefit receipt was roughly unchanged (for reasons discussed in Chapter 1) but real earnings fell.

Table 3.2. Poverty rates by household work status: 2007–08 to 2015–16

	In working household	In workless household	All non-pensioners
Absolute poverty rate			
2007–08	9.9%	49.8%	16.1%
2008–09	10.6%	47.9%	16.3%
2009–10	9.8%	47.0%	16.0%
2010–11	10.0%	44.1%	15.6%
2011–12	11.6%	45.3%	16.7%
2012–13	10.5%	45.5%	16.1%
2013–14	10.5%	43.0%	15.4%
2014–15	10.9%	40.2%	14.6%
2015–16	9.8%	38.0%	13.2%
Relative poverty rate			
2007–08	10.8%	53.3%	17.3%
2008–09	11.4%	51.0%	17.5%
2009–10	10.3%	48.6%	16.7%
2010–11	10.0%	44.1%	15.6%
2011–12	10.8%	42.7%	15.6%
2012–13	10.0%	43.4%	15.3%
2013–14	10.2%	41.8%	15.0%
2014–15	11.1%	41.0%	14.8%
2015–16	11.1%	43.3%	15.1%

Note: Incomes measured before housing costs have been deducted. Absolute poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Relative poverty line is 60% of median household income in the current year.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

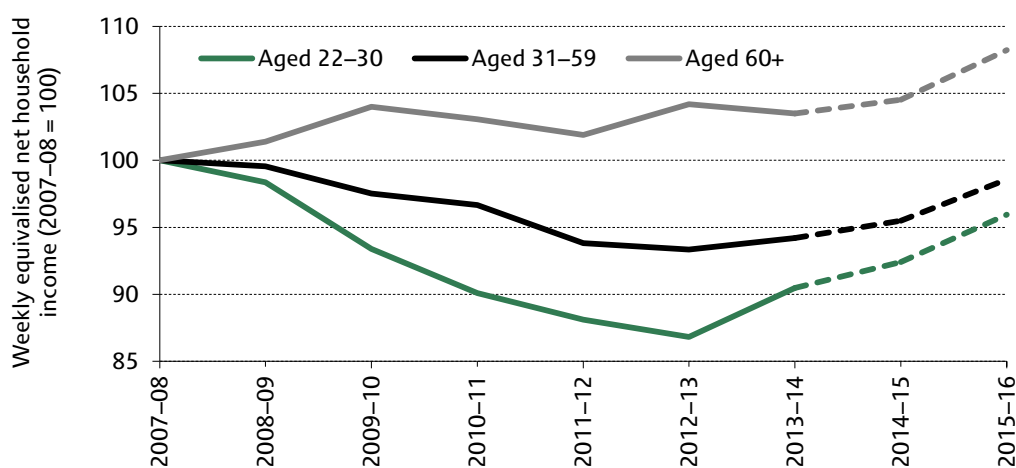
Young adults

In the immediate aftermath of the recession, the incomes of young adults fell further and faster than those of the rest of the population. Falls in employment and earnings were much larger than for older adults (as detailed in Cribb and Joyce (2015)) and this reduction in private income was not matched by an increase in benefit entitlement. This impact of the recession on young adults is of potential concern not just because of its effects on contemporaneous living standards and poverty rates, but also because of the possibility of so-called 'scarring' effects, whereby the effect of entering the labour market during a downturn has a persistent or permanent effect on earnings and employment. The extent to which the incomes of young adults are projected to have recovered by 2015–16 is therefore of particular interest.

Figure 3.5 shows the evolution of median net household income since 2007–08 for three different age groups: those aged 22–30, 31–59 and 60 or over. Incomes are indexed to their pre-crisis (2007–08) levels to make it easier to compare changes since then. The figure clearly shows the larger impact of the recession on

the incomes of young adults. By 2012–13, CPI-adjusted real median income among those aged 22–30 was more than 13% lower than its 2007–08 level, compared with a 7% fall for those aged 31–59 (and a 4% increase for those aged 60 or over). However, we also see a stronger recovery in incomes for young adults than for the population as a whole since then, driven by a stronger recovery in employment rates and earnings among this group. Median income for those aged 22–30 rose by 4.2% in 2013–14 (the latest year of data) and is projected to have risen by 2.1% in 2014–15 and 3.8% in 2015–16. This implies a cumulative increase in median income for 22- to 30-year-olds of 10.5% between 2012–13 and 2015–16, compared with a 5.6% increase for those aged 31–59 and a 3.9% increase for those aged 60 or over. Despite this faster growth in recent years, however, younger people have still fared worse than older age groups (according to our projections) over the period since 2007–08 as a whole.

Figure 3.5. Median income by age: 2007–08 to 2015–16 (2007–08 = 100)



Note: Incomes measured before housing costs have been deducted.

Source: Authors’ calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

Table 3.3 compares poverty rates for those aged 22–30 with those for older working-age adults. Here we focus on the different trends in poverty for the two groups rather than the difference in levels. This is partly because the relative level of poverty among the two groups depends on whether incomes are measured before or after housing costs are deducted (BHC or AHC), and we look only at the BHC measure as we do not project AHC incomes.²²

²² Belfield et al. (2014) provide analysis of poverty rates among young adults both before and after housing costs are deducted from income.

Table 3.3. Poverty rates by age: 2007–08 to 2015–16

	Aged 22–30	Aged 31–59	Aged 22–59
Absolute poverty rate			
2007–08	13.5%	13.7%	13.6%
2008–09	13.7%	14.1%	14.0%
2009–10	13.5%	14.3%	14.1%
2010–11	14.9%	14.0%	14.2%
2011–12	15.1%	15.2%	15.2%
2012–13	14.6%	14.6%	14.6%
2013–14	12.9%	14.2%	13.9%
2014–15	11.7%	13.5%	13.1%
2015–16	10.6%	12.4%	12.0%
Relative poverty rate			
2007–08	14.5%	14.7%	14.7%
2008–09	14.6%	15.1%	15.0%
2009–10	14.2%	14.9%	14.7%
2010–11	14.9%	14.0%	14.2%
2011–12	13.8%	14.3%	14.2%
2012–13	13.8%	14.0%	13.9%
2013–14	12.6%	13.9%	13.6%
2014–15	12.1%	13.7%	13.3%
2015–16	12.1%	13.8%	13.4%

Note: Incomes measured before housing costs have been deducted. Absolute poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Relative poverty line is 60% of median household income in the current year.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 and 2015–16 using TAXBEN and assumptions specified in the text.

Perhaps surprisingly given the trends displayed in Figure 3.5, the trends in poverty are relatively similar by age during the period of falling incomes, as Table 3.3 shows. Between 2007–08 and 2012–13, absolute poverty rose by around 1ppt for both groups, while relative poverty fell slightly for both groups. However, the stronger recovery in the living standards of young adults in recent years is clearly visible. Among those aged 22–30, absolute poverty fell by 4.1ppts between 2012–13 and 2015–16, and relative poverty fell by 1.7ppts over the same period. Among those aged 31–59, the falls in absolute and relative poverty were only 2.2ppts and 0.1ppts respectively.

3.2 Living standards, inequality and poverty in 2020–21

Table 3.4 shows our projections for median income up to 2020–21. Given the fact that the OBR is forecasting continued economic growth throughout this parliament, it is unsurprising that we project that median income will rise in every year from 2016–17 to 2020–21. In particular, the forecast 10% increase in

real earnings between 2015–16 and 2020–21 would lead to growth in median income, since earnings are the main source of income for most households. Our projections do, however, also imply that the rapid growth in median income projected for 2015–16 (3.3%) will not be sustained. Instead, we project that income growth will fall to a little below 2% in 2016–17 and 2017–18, and to around 1% in 2018–19 and 2019–20, before recovering to almost 2% in 2020–21. For the most part, this pattern is driven by forecast changes in inflation over the period. Nominal income growth is projected to be around 3% a year from 2015–16 to 2019–20, but CPI inflation is forecast to rise from almost zero in 2015–16 to 2% by the end of that period. The stronger income growth projected for 2020–21 is driven by a larger increase in nominal incomes, as the cash freeze on most working-age benefits comes to an end and the 1% cap on public sector pay increases is lifted.

Table 3.4. Average incomes in the UK: 2007–08 to 2020–21

	<i>£ per week in 2015–16 prices (equivalents for childless couple)</i>		<i>Growth since previous year</i>	
	Median	Mean	Median	Mean
2007–08	£476	£591	1.9%	3.0%
2008–09	£477	£592	0.0%	0.2%
2009–10	£471	£590	–1.2%	–0.4%
2010–11	£464	£566	–1.5%	–4.2%
2011–12	£454	£560	–2.1%	–1.0%
2012–13	£456	£555	0.4%	–1.0%
2013–14	£459	£568	0.7%	2.5%
2014–15	£466		1.5%	
2015–16	£481		3.3%	
2016–17	£491		1.9%	
2017–18	£498		1.6%	
2018–19	£503		0.9%	
2019–20	£509		1.1%	
2020–21	£518		1.9%	

Note: Incomes measured before housing costs have been deducted.

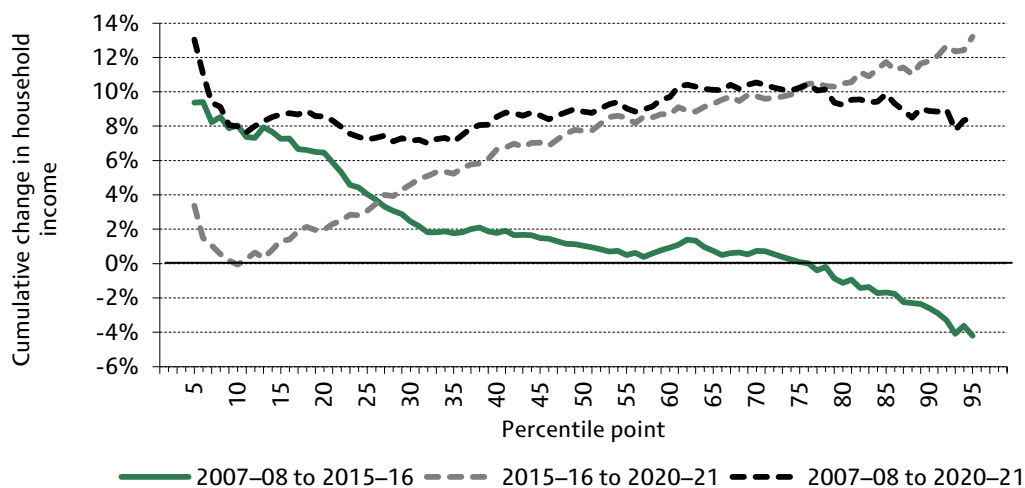
Source: Authors’ calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Overall, our projections imply that median income will grow by 1.5% a year between 2015–16 and 2020–21, a total increase of 7.7%. This is a relatively slow rate of growth by historical standards: median income grew by an average of 1.9% a year between 1961 and 2013–14.²³ Our projections also suggest that the pattern of income growth will be strongly inequality-increasing. Figure 3.6 shows the projected cumulative change in household income at each percentile point between 2015–16 and 2020–21, as well as changes since 2007–08. The

²³ Belfield et al., 2015.

difference in projected income growth between lower- and higher-income households over the current parliament is striking. While incomes at the 90th percentile are projected to rise by a cumulative 11.8% in real terms, incomes at the 10th percentile are projected to be almost unchanged. This inequality-increasing pattern is explained by two key factors. First, given the way benefits are increased over time (in most cases in line with prices), inequality will tend to increase when real earnings are growing strongly. This is because households towards the top of the distribution receive most of their income from earnings, whereas lower-income households tend to receive more of their income in benefits. Second, the Conservative government has announced a number of significant cuts to the generosity of working-age benefits, the impact of which will mostly be felt by low-income households.

Figure 3.6. Change in real household income by percentile point: 2007–08 to 2020–21



Note: Incomes measured before housing costs have been deducted. Percentiles 1–4 and 96–99 are excluded due to high levels of statistical and modelling uncertainty.

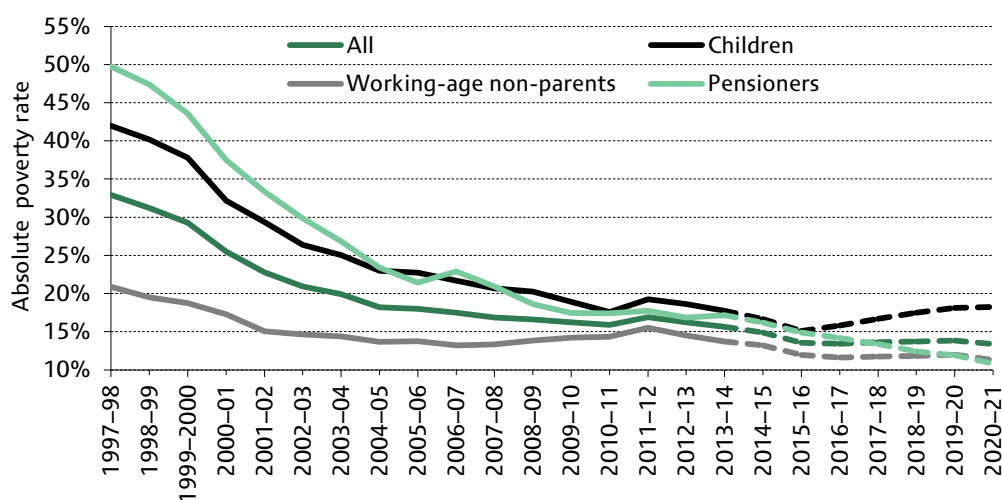
Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Despite this large projected increase in inequality over the current parliament, Figure 3.6 shows that, taking the period from 2007–08 to 2020–21 as a whole, changes in household income are relatively similar across the income distribution: CPI-adjusted incomes are projected to be 8.0% higher at the 10th percentile in 2020–21 than in 2007–08, with 8.9% cumulative increases at both the median and the 90th percentile. In other words, the falls in inequality seen between 2007–08 and 2015–16 are projected to be (slightly more than) offset by increases over the next five years: the 90:10 ratio (i.e. the ratio of the 90th percentile of household incomes to the 10th percentile) is expected to have fallen from 4.2 to 3.8 between 2007–08 and 2015–16 but then to increase back up to 4.2 by 2020–21. The increases in real incomes towards the bottom of the distribution over this 13-year period may be surprising but, as Figure 3.6 shows, they are driven entirely by increases up to 2015–16. As discussed in the previous section, those increases are themselves a product of strong employment growth

(particularly between 2013–14 and 2015–16) and stable (or slightly increasing) real-terms benefit receipt (the reasons for which are discussed in Chapter 1).

Figure 3.7 shows our projections of what these changes in incomes across the distribution imply for absolute poverty rates. We show these projections of poverty rates out to 2020–21 in their longer-term context of changes since 1997–98. As the figure indicates, absolute poverty rates normally fall over time as real incomes rise. However, the absolute poverty rate in the population as a whole is projected to remain relatively constant between 2015–16 and 2020–21, at around 13.5%. This constant rate for the overall population masks different projected trends for different groups. While absolute poverty among working-age adults without children is relatively constant, the absolute poverty rate for pensioners (defined as those aged 65 or over) is projected to fall sharply, from 14.9% in 2015–16 to 10.8% in 2020–21. The ‘triple lock’ on the basic state pension, which will see it rise in line with average earnings over the forecast period, is one important driver of this, but not the only one. If the basic state pension were instead increased only in line with prices (CPI), we project the absolute pensioner poverty rate would fall to 13.0% by 2020–21. In other words, around half of the projected fall in pensioner poverty is explained by other factors, in particular higher forecast labour force participation rates at older ages (which result at least in part from increases in the state pension age) and higher private pension entitlements among younger cohorts of pensioners.

Figure 3.7. Absolute poverty rates: 1997–98 to 2020–21



Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Pensioners are those aged 65 or over.

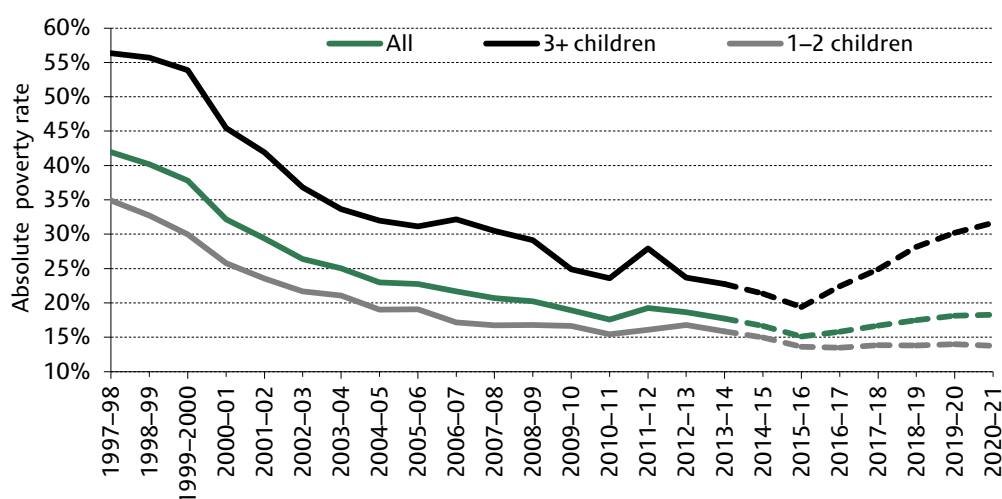
Source: Authors’ calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

In contrast with the projected trend for pensioners, the absolute poverty rate for children is projected to rise sharply, from 15.1% in 2015–16 to 18.3% in 2020–21. Figure 3.8 shows that this increase can be fully explained by an increase in the poverty rate among families with three or more children: among smaller families, absolute poverty is unchanged between 2015–16 and 2020–21 at around 13½%.

The absolute poverty rate among large families, by contrast, is projected to increase sharply, from 19.4% in 2015–16 to 31.6% in 2020–21. This rise is driven by planned tax and benefit changes, including – but not limited to – the decision to limit child tax credit (for new births) and universal credit (for new claims and new births) to two children from April 2017 (something discussed in more detail in the next subsection). Note, however, that the projected absolute poverty rate for large families in 2020–21 is still below its 2006–07 level, and around 25ppts below its 1997–98 level, having fallen rapidly during the 2000s.

Table B.4 in Appendix B also shows that the increase in absolute child poverty rates is much larger in lone-parent families than in couple families. This is similarly the result of tax and benefit changes, which affect lone parents more than couple families mainly because lone-parent families are more reliant on benefits.

Figure 3.8. Absolute child poverty by family size: 1997–98 to 2020–21



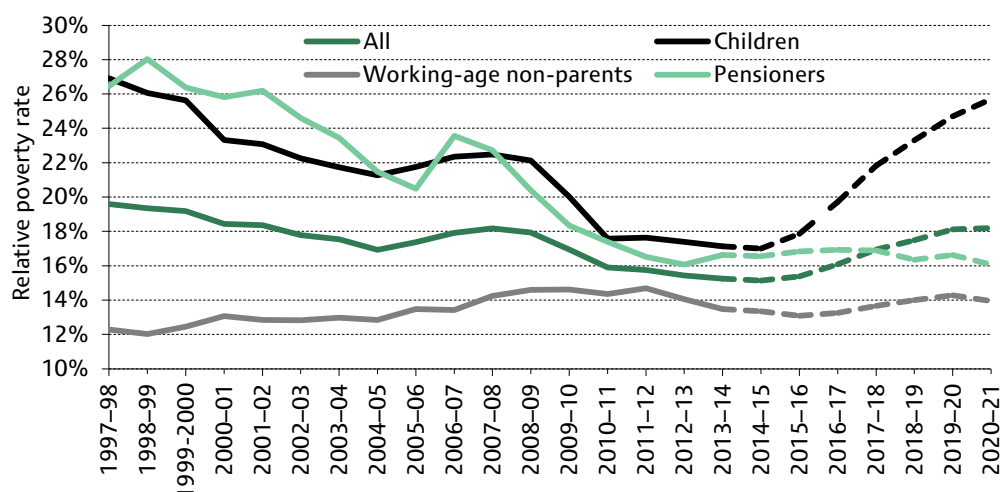
Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Figure 3.9 shows our projections for relative poverty rates. Looking first at the population as a whole, relative poverty is projected to rise from 15.4% in 2015–16 to 18.2% in 2020–21, reflecting the fact that median income is projected to rise faster than incomes towards the bottom of the distribution. Again, however, there are significant differences in the projected poverty trends for different groups. Relative pensioner poverty is projected to fall slightly (by 0.8ppts) between 2015–16 and 2020–21, relative poverty among working-age non-parents is projected to increase slightly (by 0.9ppts) and relative child poverty is projected to rise by 7.8ppts, from 17.8% in 2015–16 to 25.7% in 2020–21. The reasons for these different projected trends are the same as those driving the changes in absolute poverty: more income from employment and state and private pensions ensure the incomes of low-income pensioners keep pace with the median in our projections, whereas benefit cuts mean the incomes of low-

income families with children are expected to fall behind. However, relative child poverty is still projected to be slightly lower in 2020–21 than it was in 1997–98; the projected increases over the next few years simply reverse the large falls seen under Labour.²⁴ By contrast, our projections imply that working-age adults without children will be more likely to be in relative poverty in 2020–21 than they were back in 1997–98.

Figure 3.9. Relative poverty rates: 1997–98 to 2020–21



Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of median household income in the current year. Pensioners are those aged 65 or over.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Table 3.5 shows that among non-pensioners, workless households will see their absolute poverty rates increase and those with someone in work will see their absolute poverty rates fall. Between 2015–16 and 2020–21, the absolute poverty rate among those in workless households is projected to rise from by 11.7ppts (from 38.0% to 49.7%), while the absolute poverty rate among those in working households is projected to fall slightly (from 9.8% to 9.1%). Relative poverty among working households is projected to rise by 1.9ppts, from 11.1% in 2015–16 to 13.0% in 2020–21, but this is a much smaller rise than the 17.6ppt increase projected for those in workless households. These patterns reflect two things. First, real cuts to benefits hit workless households much harder on average, while real earnings growth only benefits working households. Second, low-income working households receive more of their income from benefits than households at the median (explaining the rise in relative poverty among that group).

²⁴ This is not true for child poverty rates among families with three or more children. The relative poverty rate among that group is projected to reach 43.6% by 2020–21, compared with 39.9% in 1997–98.

Table 3.5. Poverty rates by household work status: 2007–08 to 2020–21

	In working household	In workless household	All non-pensioners
Absolute poverty rate			
2007–08	9.9%	49.8%	16.1%
2008–09	10.6%	47.9%	16.3%
2009–10	9.8%	47.0%	16.0%
2010–11	10.0%	44.1%	15.6%
2011–12	11.6%	45.3%	16.7%
2012–13	10.5%	45.5%	16.1%
2013–14	10.5%	43.0%	15.4%
2014–15	10.9%	40.2%	14.6%
2015–16	9.8%	38.0%	13.2%
2016–17	9.3%	42.4%	13.3%
2017–18	9.4%	45.3%	13.7%
2018–19	9.1%	49.9%	14.0%
2019–20	9.3%	50.7%	14.3%
2020–21	9.1%	49.7%	13.9%
Relative poverty rate			
2007–08	10.8%	53.3%	17.3%
2008–09	11.4%	51.0%	17.5%
2009–10	10.3%	48.6%	16.7%
2010–11	10.0%	44.1%	15.6%
2011–12	10.8%	42.7%	15.6%
2012–13	10.0%	43.4%	15.3%
2013–14	10.2%	41.8%	15.0%
2014–15	11.1%	41.0%	14.8%
2015–16	11.1%	43.3%	15.1%
2016–17	11.4%	49.1%	15.9%
2017–18	11.9%	54.5%	17.0%
2018–19	12.2%	58.9%	17.7%
2019–20	12.6%	60.4%	18.4%
2020–21	13.0%	60.9%	18.7%

Note: Incomes measured before housing costs have been deducted. Absolute poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Relative poverty line is 60% of median household income in the current year.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

The effect of government reforms from 2016–17 onwards

The key determinant of changes in living standards over the next five years will be the performance of the labour market, since earnings are the main source of income for most of the population. However, the direct impact on household incomes of changes in government policy is also important, particularly for those on lower incomes. The Conservative government has announced a number of

changes to the direct tax and benefit system over the coming years, as part of its plan to eliminate the budget deficit by 2019–20. The projections discussed so far have incorporated these changes (a full list of those included is given in Appendix A). In this section, we compare those results with projected trends in inequality and poverty assuming instead that the tax and benefit system is uprated in line with default indexation rules until 2020–21. The difference between the projections then shows the direct impact of these planned changes.

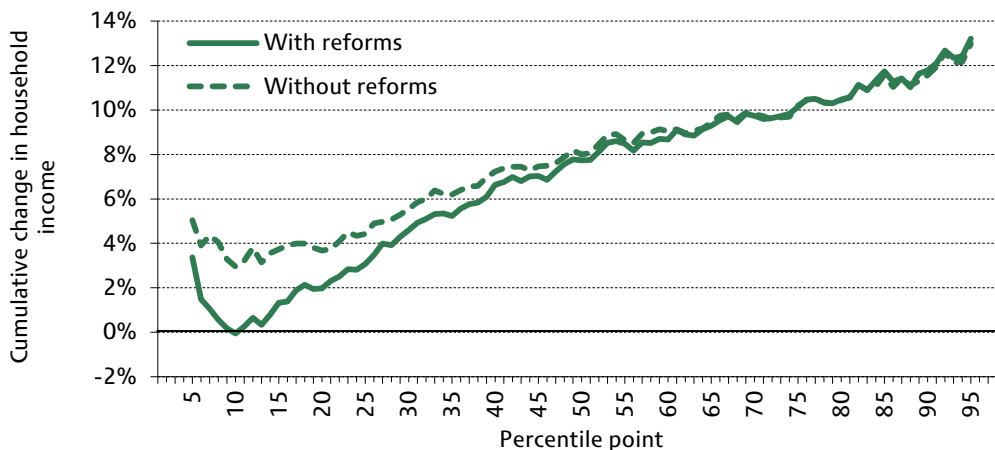
It is important to note that we look only at the direct effects of policy changes on incomes, not including any knock-on effects on the macroeconomy or the behaviour of individuals.²⁵ One respect in which this limitation might be important is that we do not account for individuals responding to the government's proposed changes to the benefits system, including the introduction of universal credit, by moving into work or increasing their hours of work. However, Browne (2015) shows that the impact of planned changes on financial work incentives is relatively small on average, largely because cuts are planned to in-work support as well as out-of-work benefits.²⁶

Figure 3.10 shows the projected cumulative increase in household income at each percentile point of the distribution with and without the tax and benefit reforms planned by the Conservative government. The first thing to note is that our projections suggest income inequality would still have risen substantially in the absence of any tax and benefit reforms. In our central projection, the 90:10 ratio rises from 3.8 in 2015–16 to 4.2 in 2020–21. Without reforms, our projection is for a rise to 4.1 in 2020–21. On that measure of inequality, only a quarter of the projected increase over the course of the parliament is attributable to the government's planned reforms: the 'no reform' baseline, by including price-uprating of benefits at a time when earnings are expected to be increasing in real terms, itself involves a significant increase in inequality.

²⁵ The exception to this is our separate analysis of the 'National Living Wage', where we incorporate the effects on earnings, employment and prices forecast by the OBR.

²⁶ In fact, behavioural responses to planned tax and benefit changes are crudely incorporated in our central results, to the extent that they are reflected in OBR macroeconomic forecasts. Since the impact of tax and benefit reforms on those forecasts is not available, we are unable to remove behavioural responses when looking at this counterfactual scenario.

Figure 3.10. The effect of planned tax and benefit reforms on household income growth between 2015–16 and 2020–21, by percentile point



Note: Incomes measured before housing costs have been deducted. Percentiles 1–4 and 96–99 are excluded due to high levels of statistical and modelling uncertainty.

Source: Authors' calculations using 2013–14 Family Resources Survey, TAXBEN and assumptions specified in the text.

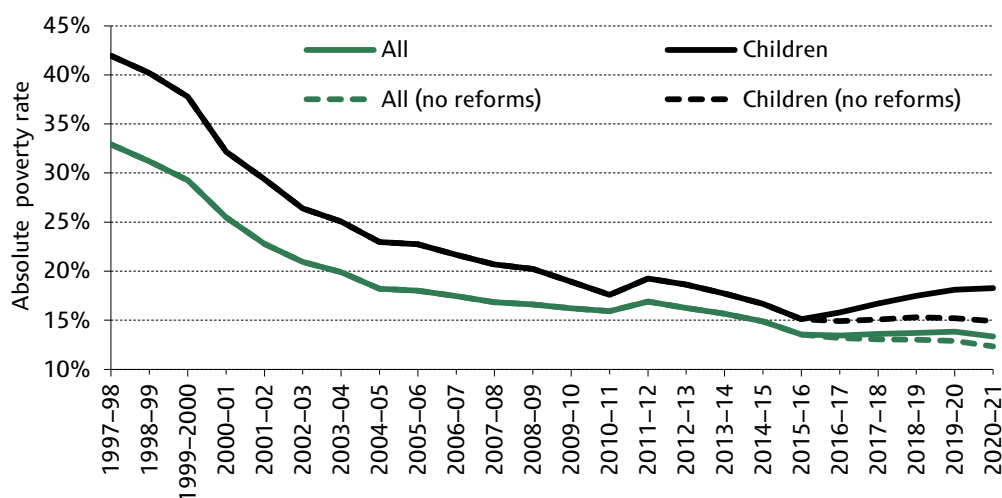
However, it is also clear that the direct impact of reforms will be to increase inequality. As one would expect, the cuts to benefits are projected to have impacts largely towards the bottom of the distribution. We project that planned reforms will reduce incomes at the 10th percentile by 3.0% in 2020–21: in the absence of reforms, household incomes at the 10th percentile would have risen by around 3% between 2015–16 and 2020–21, rather than being roughly unchanged. Indeed, household incomes are noticeably lower as a result of planned tax and benefit reforms below about the median, above which point they are broadly unaffected on average.

Figure 3.11 shows the impact of planned tax and benefit reforms on absolute poverty for the population as a whole and among children. Planned reforms are projected to increase overall absolute poverty in 2020–21 by 1.0ppt:²⁷ without them, absolute poverty would have fallen by 1.2ppts between 2015–16 and 2020–21, rather than being roughly unchanged over the period. Planned tax and benefit reforms have a larger impact on projected trends in absolute child poverty, explaining all of the projected 3.2ppt increase.²⁸

²⁷ This is a projected impact of an additional 0.7 million individuals in absolute poverty as a result of planned tax and benefit reforms.

²⁸ This is a projected impact of an additional 0.5 million children in absolute poverty as a result of planned tax and benefit reforms.

Figure 3.11. Absolute poverty rates with and without planned tax and benefit reforms: 1997–98 to 2020–21



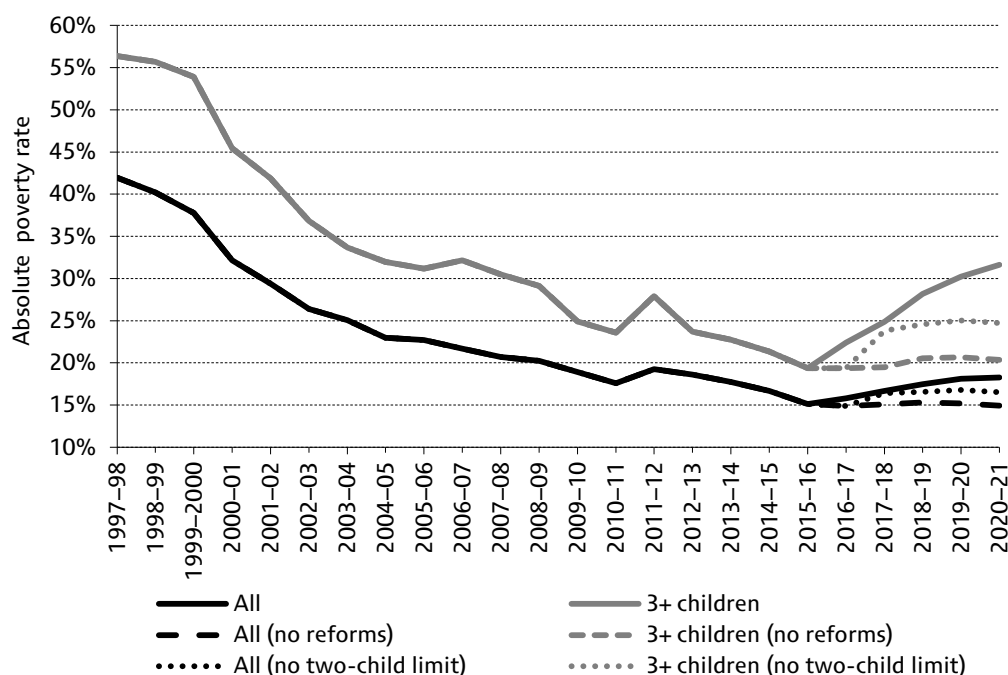
Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

As noted in the previous subsection, all of the projected increase in absolute child poverty rates is concentrated among large families (those with three or more children). Figure 3.12 shows the impact of planned tax and benefit reforms on child poverty among this group, alongside the impact on overall absolute child poverty. In addition, we separate out the effect of the decision to limit child tax credit (for new births) and universal credit (for new claims and new births) to two children from April 2017, a policy which exclusively affects large families. The increase in absolute child poverty in large families is completely explained by planned tax and benefit reforms, though less than half of that projected increase is due to the two-child limit in tax credits and universal credit.²⁹ The rest of the increase reflects the fact that cuts to benefits that affect all families with children have a bigger effect on large families, in part because benefits make up a larger share of household income for those families on average.

²⁹ The projected impact of the two-child limit is an additional 0.2 million children in absolute and relative poverty. To the extent that individuals responded to this policy change by having fewer children, the impact on child poverty would be smaller. Brewer, Ratcliffe and Smith (2008) provide evidence that fertility decisions do respond to benefit changes, but are unable to distinguish between timing effects and an impact on the total number of children.

Figure 3.12. Absolute child poverty by family size with and without planned tax and benefit reforms: 1997–98 to 2020–21



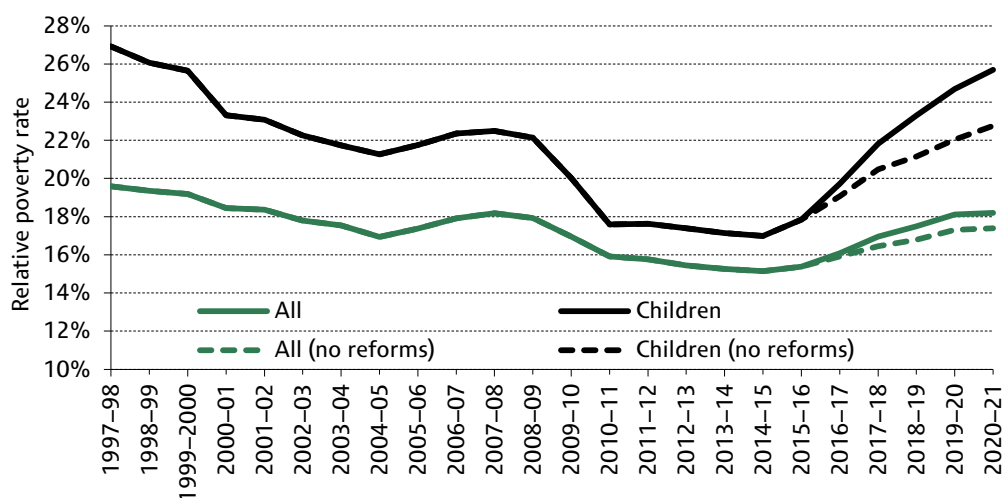
Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Figure 3.13 shows that planned tax and benefit reforms also act to increase projected relative poverty, both for the population as a whole and among children. However, it is worth noting that relative poverty would still have risen in the absence of reforms – by 2.0ppts overall and by 4.9ppts among children – between 2015–16 and 2020–21. In other words, less than a third (0.8ppts) of the projected 2.8ppt increase in overall relative poverty, and around 40% (2.9ppts) of the 7.8ppt increase in relative child poverty, is attributable to planned reforms.³⁰ Again, this reflects the fact that under the 'no reform' baseline, real earnings growth combined with most working-age benefit rates increasing in line with CPI inflation would have led to larger increases in incomes around the median than towards the bottom of the income distribution, and hence an increase in relative poverty.

³⁰ These figures imply a projected impact of an additional 0.5 million individuals (0.4 million children) in relative poverty as a result of planned tax and benefit reforms.

Figure 3.13. Relative poverty rates with and without planned tax and benefit reforms: 1997–98 to 2020–21



Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of median household income in the current year.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

The effect of the 'National Living Wage'

In the analysis above, we isolated the impact of planned tax and benefit changes on household incomes in 2020–21. In this subsection, we isolate the impact of another policy announced by the Conservative government that will have an impact on household incomes – the introduction of a higher national minimum wage for those aged 25 or over, labelled by the government as a 'National Living Wage' (NLW). On introduction in April 2016, it is to be set at £7.20 an hour (50p above the standard minimum wage), and it is to rise to 60% of median earnings by April 2020, which would be a rate of £9.30 an hour given current OBR forecasts, compared with around £8 an hour if the minimum wage simply rose in line with forecast average earnings growth.

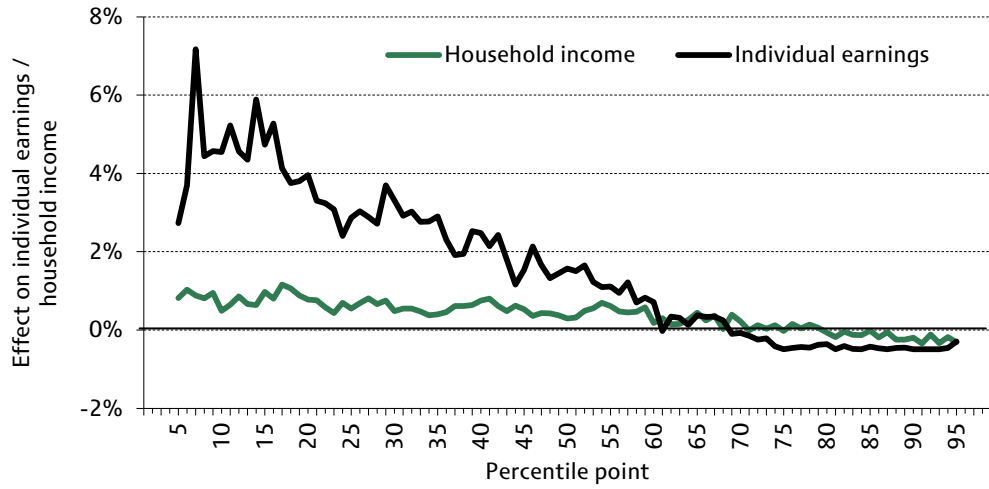
As well as increasing the earnings of some low-paid individuals, the NLW is forecast to have other indirect effects on the economy. In particular, the OBR expects firms to respond by reducing employment slightly (a reduction of around 60,000 jobs in 2020–21) and by increasing prices slightly (raising the overall price level in 2020–21 by 0.1%). In the following analysis of the impact of the NLW, we take these indirect effects into account: we compare our central projection for 2020–21 with results from a simulation without the NLW, but with slightly higher total employment and a slightly lower average price level.³¹

³¹ Note, however, that we simply assume a uniform effect of price changes and lower employment across the distribution. In fact, the employment effect is likely to be concentrated among individuals previously paid less than the National Living Wage and the price effect may be different for different goods and hence different kinds of households.

Figure 3.14 shows the projected impact of the NLW at each percentile of the distribution of individual earnings and household income in 2020–21. As one would expect, the NLW is expected to reduce inequality in individual earnings, increasing earnings at the bottom of the distribution by around 5% while having little effect on the top half of the earnings distribution.³² (Note that differences in hours worked mean those with the lowest individual earnings do not always have the lowest hourly wage and vice versa.) However, the NLW is projected to have a very small impact on incomes right across the household income distribution, with incomes being affected by less than 1% at almost all percentile points. This is partly because household incomes are larger than individual earnings in most cases, partly because some of the gains from the NLW are captured by the exchequer in higher tax payments and lower benefit entitlements, and partly because gains from the NLW are much more widely spread across the income distribution than across the individual earnings distribution, with similar gains between the 20th and 60th percentiles. This reflects that those who benefit from the NLW have low hourly pay, but not necessarily low household incomes. For example, those paid less than the NLW who have a higher-earning partner may benefit from the NLW but have a household income sufficient to be in the top half of the income distribution. The projections suggest that, if anything, the NLW will act to reduce official measures of inequality and poverty very slightly: the direct benefit from the NLW outweighs the indirect costs for households towards the bottom of the distribution (reducing absolute poverty) and those households gain slightly more on average than those further up the distribution (reducing inequality and relative poverty). However, none of these impacts is sufficiently large that it would make a statistically significant difference to the published HBAI statistics. Policymakers might, of course, also care about inequality in individual wages rather than household incomes, in which case, as the figure shows, the NLW does make a significant difference.

³² The small falls in earnings shown towards the top of the distribution are partly the result of the inflationary effects of the NLW, but also reflect the fact that we constrain the total impact of the NLW on earnings to be the same as that forecast by the OBR. Since our modelling finds a larger impact of the NLW on low-wage individuals than the OBR's, this constraint requires small falls in earnings further up the distribution.

Figure 3.14. The effect of the ‘National Living Wage’ on individual earnings and household income by percentile point: 2020–21



Note: Incomes measured before housing costs have been deducted. Percentiles 1–4 and 96–99 are excluded due to high levels of statistical and modelling uncertainty.

Source: Authors' calculations using 2013–14 Family Resources Survey, TAXBEN and assumptions specified in the text.

4. Conclusion

After a very slow start, the recovery in household incomes from the impact of the Great Recession is likely to have picked up pace over the last two years. Our projection is that median income grew by 1.5% in 2014–15 and will grow by 3.3% in 2015–16, as stronger nominal earnings growth and (especially) falling inflation combined to boost real incomes. Beyond 2015–16, if current macroeconomic forecasts are correct then real income growth will be unspectacular by historical standards: we project that median income will grow at an average of 1.5% a year out to 2020–21. If, as the OBR forecasts, the current parliament is characterised by sustained real earnings growth, households will on average be significantly better off in 2020–21 than they are now.

However, we expect income growth to be significantly weaker for lower-income households than for higher-income ones if the OBR's economic forecasts are correct. Having remained roughly unchanged over the past two years, as strong employment growth helped the bottom of the income distribution keep pace with the rest, our projection is that income inequality will rise significantly over the course of the current parliament: incomes at the 10th percentile are projected to be roughly unchanged in real terms, while incomes at the 90th percentile are projected to increase by almost 12%, between 2015–16 and 2020–21. For the most part, this is the result of income from employment growing more quickly than income from benefits: as earnings are expected to grow in real terms while benefits normally increase in line with prices, the incomes of higher-income households – for whom employment income accounts for a greater share of overall income – are projected to grow faster than those of poorer ones. In addition, around a quarter of the projected increase in inequality is the result of planned discretionary cuts to working-age benefits: we project that planned reforms will reduce incomes at the 10th percentile by 3.0% in 2020–21 (while having little or no effect on the incomes of the higher-income half of households).

This all helps to understand our projections for poverty. The combination of continued strong employment growth, recovering real earnings and falling inflation means that we expect absolute poverty to have fallen between 2013–14 and 2015–16, with relative poverty roughly unchanged: that is, low-income households have seen some income growth on average, at approximately the same rate as middle-income households. Looking forward, however, overall absolute poverty rates are projected to be roughly unchanged through to 2020–21, as the incomes of poorer households do not grow in real terms. Relative poverty is projected to rise, as the incomes of those around the poverty line fail to keep pace with median income.

These projected trends in overall poverty mask a dramatic divergence between different groups. Whereas absolute pensioner poverty is projected to fall significantly between 2015–16 and 2020–21, absolute child poverty is projected to rise sharply, from 15.1% to 18.3%. This rise is entirely explained by planned

cuts to benefits, which are projected to have a particularly large impact on child poverty rates in large families. We also project a large increase in relative child poverty, from 17.8% in 2015–16 to 25.7% in 2020–21, also driven by large families.

It is worth noting that, if our projections are correct, the government would have been on course to miss the 2020 child poverty targets specified in the 2010 Child Poverty Act by a wide margin, had these still been in place. Those targets are in fact in the process of being removed. IFS researchers have argued on various occasions that, unless the government were going to reveal a credible plan for meeting (or even getting close to) those targets, it would be more constructive to set itself new objectives that it does consider achievable and desirable and to set out how it plans to address those. We are still waiting to hear in full about the new approach to measuring and addressing child poverty. However, it is clear from draft legislation that the new approach will (sensibly) emphasise more than just income: there will be a legal requirement to report the proportion of children living in workless households and educational attainment at age 16, alongside the income-based poverty measures.

But income, although partial and imperfect, will for good reason remain a leading indicator of material living standards, including in official statistics. We hope that the projections produced in this report help to shed more light than official statistics do on how the incomes of different groups are currently evolving and how they might evolve in the years ahead.

Appendix A.

Further details on methodology

A.1 Additional tables

Table A.1. Financial variables uprated (excluding earnings)

Financial variable	Uprated with:
Scholarship income Income from government training schemes Allowances paid other than from spouse	CPI inflation
Maintenance payments Allowances from absent spouse	Average nominal earnings growth
Imputed capital from savings, annuities, property, stocks and shares, and bonds	Nominal GDP growth
Private pension income by sex and age band (65–74, 75+)	Outputs from RetSim model

Table A.2. Office for Budget Responsibility forecasts

	CPI inflation	<i>Used to uprate private income sources</i>			<i>Used to uprate tax and benefit system</i>	
		Average nominal earnings growth	Nominal GDP growth	Bank Rate	CPI inflation to previous September	Nominal earnings growth, previous July to September
2015–16	0.2%	2.9%	4.0%	0.5%	-	-
2016–17	1.3%	3.5%	4.0%	0.7%	-	-
2017–18	1.8%	3.7%	4.3%	1.0%	1.0%	3.2%
2018–19	1.9%	3.7%	4.5%	1.3%	1.8%	3.7%
2019–20	2.0%	3.7%	4.4%	1.6%	1.9%	3.6%
2020–21	2.0%	4.0%	4.5%	1.8%	2.0%	3.7%

Note: No forecasts are need to create the 2015–16 and 2016–17 tax and benefit system. Since nominal earnings growth always exceeds CPI inflation and 2.5% over this period, it determines the increase in the basic state pension.

Source: <http://budgetresponsibility.org.uk/economic-fiscal-outlook-november-2015/>.

A.2 Accounting for the ‘National Living Wage’

As discussed in Chapter 2, our projections incorporate the introduction of the National Living Wage (NLW). We increase earnings more quickly for those individuals in our FRS data who we estimate are currently paid less than the NLW. This is not as straightforward as it sounds: although the FRS data contain a measure of weekly earnings that is generally thought to be of high quality, hours worked are measured with considerable error.³³ Simply dividing reported earnings by reported hours to identify individuals with low hourly wages would therefore give an unreliable estimate of the number and types of individuals who would be affected by the NLW.

To correct for this, we supplement our FRS data with information from the Labour Force Survey (LFS). This survey contains a good measure of weekly earnings, an estimate of hours worked and – crucially for our purposes – a direct measure of hourly pay for those individuals who are paid by the hour. The methodology we employ – similar to that used in earlier work for the Low Pay Commission – is to impute the hourly wages of individuals in the FRS by matching them to ‘similar’ individuals in the LFS who report their hourly pay.³⁴ We match individuals across the two data sets using a range of characteristics – most obviously the level of weekly earnings and hours of work, but also their age, region and industry. We carry out the imputation separately by sex and three education groups (so low-educated men can only be matched with low-educated men, etc.). We only carry out this imputation for those individuals in the FRS who seem potentially able to receive a pay increase as a result of the NLW; those whose weekly earnings are already more than 70 times the NLW are assumed to be unaffected.

Once we have estimated hourly wages for each individual (or at least those who are paid 70 times the NLW or less), we increase the weekly earnings of individuals aged 25 or over who are paid below the NLW by the ratio of the forecast NLW in that particular year to their observed hourly earnings (suitably uprated). However, we do not allow anyone’s earnings to increase by more than the ratio of the National Minimum Wage to the NLW (there are a small number of individuals in our data who appear to have an hourly wage less than the National Minimum Wage when they are observed). Note that this methodology (unlike that used to produce the OBR analysis in the July 2015 Budget³⁵) does not allow for spillover effects of the NLW to those currently paid just above this level. However, in our separate analysis of the NLW, we ensure the impact of the policy on average is the same as the OBR’s forecast.

³³ See, for example, Brewer, May and Phillips (2009).

³⁴ See Brewer and De Agostini (2013) and Hood, Joyce and Phillips (2014).

³⁵ See annex B of Office for Budget Responsibility (2015a).

Our reweighting to account for employment growth and our inflation forecasts implicitly include the impact of the NLW on employment levels and prices. In our counterfactual analysis in Chapter 3, we use a different set of weights with a higher total level of employment and lower level of inflation (according to the impacts of the NLW forecast by the OBR) to calculate real incomes under the scenario without the NLW.

A.3 Reforms directly modelled in our analysis

As discussed in Chapter 2, our analysis incorporates the impact of planned changes to the tax and benefit system between April 2016 and April 2020 (the impact of which is shown separately in Chapter 3). The changes we include are:

- the introduction of the single-tier pension in April 2016;
- the extension of the benefit cap to cover Northern Ireland;
- the introduction of the personal savings allowance (£1,000 for basic-rate taxpayers, £500 for higher-rate taxpayers) in April 2016;
- the increases in the income tax personal allowance to £11,000 and £11,200 in April 2016 and April 2017 respectively;
- the increase in the higher-rate threshold to £43,000 in April 2016, and alignment of the upper earnings limit and upper profits limit;
- the abolition of contracting out from the state second pension in April 2016;
- the additional 2% flexibility on the council tax referendum threshold;³⁶
- the freeze in most working-age benefit rates until April 2020 (including local housing allowance (LHA) rates in housing benefit);
- the reduction in the benefit cap to £23,000 in London (£15,410 for single adults) and £20,000 elsewhere (£13,400 for single adults) in April 2016;
- the freeze in total pension credit entitlement for those currently receiving savings credit in April 2016;
- the abolition of the family element for new claimants of housing benefit from April 2016;
- the abolition of the family element for new claimants to tax credits from April 2017;
- limiting the child element of tax credits to two children for new claimants and new births from April 2017;
- the introduction of ‘tax-free childcare’ (20% subsidy for childcare costs up to £10,000 per child) in April 2017;
- the abolition of the work-related activity group premium in employment and support allowance in April 2017;
- the extension of LHA rates to cover social sector tenancies agreed after April 2016 from April 2018;
- the time-limiting of contributory employment and support allowance in Northern Ireland from April 2016;

³⁶ We assume this additional flexibility is used in full.

- the introduction of universal credit.

We also model the direct effect on household incomes of two other changes:

- the 1% cut in social rents each year for four years from April 2016;
- the introduction of the 'National Living Wage' in April 2016, and scheduled increases up to April 2020.

The impact of these changes is not included in our projections of the impact of planned tax and benefit reforms, although the effect of the National Living Wage is analysed separately.

A.4 Modelling the roll-out of universal credit and benefit changes that only affect certain claimants

Certain tax and benefit changes to be introduced over the course of the current parliament will not apply to all benefit recipients immediately; rather, they will only apply to new claimants or claimants who have an additional child. Moreover, from 2017, most new benefit claims will be to universal credit rather than the current legacy benefits and tax credits. It is important therefore to apply the right rules to the right numbers of people.

To assign the correct proportion of claimants as 'new' (as opposed to existing) claimants in each year, we use the July 2015 Budget costing for savings from a measure only applying to new claimants (the abolition of the family element of child tax credit) for each year from 2016–17 to 2020–21 and compare this with an estimate of the long-run saving from the policy calculated using TAXBEN. The ratio between the two is taken to be the proportion of claimants who are 'new' in the year in question. Based on the latest assumption about the roll-out of universal credit,³⁷ we further assume that just under 20% of new claims in 2017–18, and all new claims from 2018–19 onwards, are to universal credit rather than the legacy benefits.

Identifying claimants with new births is much simpler: we can observe the age of a family's youngest child in the FRS, and apply the rules for families with new births since April 2017 to those whose youngest child is aged 0 for our 2017–18 simulations, 0 or 1 for our 2018–19 simulations, and so on. Using this procedure implies that 32% of families with more than two children entitled to means-tested benefits (universal credit) in 2020–21 are not receiving benefits for all of their children as the result of one or more child being a 'new birth', on top of the 25% affected as a result of being new claimants.

Towards the end of our projection horizon, some families will be transferred from the system of legacy benefits and tax credits to universal credit. From 2017–18 onwards, we randomly assign as many claimants to move from the legacy

³⁷ See Office for Budget Responsibility (2015b).

system to universal credit as is necessary to make the total number of universal credit claimants match the number the OBR expects in each year.³⁸ We account for the transitional protection that will apply to those families who would otherwise lose out from the introduction of universal credit at the point of transition by allowing those families in our data who are moved across to universal credit in a particular year to retain their previous level of benefit entitlement. We also apply the amount of transitional protection families receive at that point to subsequent years following their transition to universal credit. We also assume that, each year, 25% of claimants have a change of circumstances such that they lose any transitional protection they would otherwise have had.

³⁸ The OBR's forecasts of the number of universal credit claimants in each year can be found in chart 4.8 of Office for Budget Responsibility (2015b).

Appendix B. Poverty figures

Table B.1. Absolute poverty: 2007–08 to 2020–21

	<i>% in absolute poverty</i>				<i>Numbers in absolute poverty (millions)</i>			
	All	Children	Working-age non-parents	Pensioners	All	Children	Working-age non-parents	Pensioners
2007–08	16.8%	20.7%	13.3%	20.9%	10.1	2.7	3.3	1.9
2008–09	16.6%	20.2%	13.8%	18.6%	10.1	2.6	3.5	1.7
2009–10	16.2%	18.9%	14.2%	17.4%	9.9	2.5	3.5	1.7
2010–11	15.9%	17.6%	14.4%	17.4%	9.8	2.3	3.6	1.7
2011–12	16.9%	19.3%	15.5%	17.7%	10.6	2.6	3.9	1.8
2012–13	16.2%	18.6%	14.5%	16.9%	10.2	2.5	3.7	1.8
2013–14	15.7%	17.7%	13.7%	17.2%	9.9	2.4	3.4	1.8
2014–15	14.9%	16.7%	13.2%	16.2%	9.4	2.2	3.3	1.8
2015–16	13.5%	15.1%	12.0%	14.9%	8.6	2.0	3.0	1.7
2016–17	13.4%	15.8%	11.6%	14.2%	8.6	2.1	2.9	1.6
2017–18	13.6%	16.7%	11.7%	13.4%	8.8	2.3	2.9	1.6
2018–19	13.7%	17.5%	11.8%	12.4%	8.9	2.4	3.0	1.5
2019–20	13.8%	18.1%	12.0%	11.9%	9.1	2.5	3.0	1.4
2020–21	13.4%	18.3%	11.3%	10.8%	8.8	2.6	2.8	1.3

Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms. Pensioners are those aged 65 or over.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Table B.2. Relative poverty: 2007–08 to 2020–21

	<i>% in relative poverty</i>				<i>Numbers in relative poverty (millions)</i>			
	All	Children	Working-age non-parents	Pensioners	All	Children	Working-age non-parents	Pensioners
2007–08	18.2%	22.5%	14.2%	22.7%	10.9	2.9	3.6	2.1
2008–09	17.9%	22.1%	14.6%	20.4%	10.9	2.9	3.7	1.9
2009–10	17.0%	20.0%	14.6%	18.3%	10.4	2.6	3.6	1.8
2010–11	15.9%	17.6%	14.4%	17.4%	9.8	2.3	3.6	1.7
2011–12	15.8%	17.6%	14.7%	16.5%	9.8	2.3	3.7	1.7
2012–13	15.4%	17.4%	14.0%	16.1%	9.7	2.3	3.5	1.7
2013–14	15.3%	17.1%	13.5%	16.6%	9.6	2.3	3.4	1.8
2014–15	15.1%	17.0%	13.4%	16.6%	9.6	2.3	3.3	1.8
2015–16	15.4%	17.8%	13.1%	16.8%	9.8	2.4	3.3	1.9
2016–17	16.1%	19.7%	13.2%	16.9%	10.3	2.7	3.3	1.9
2017–18	16.9%	21.8%	13.7%	16.9%	11.0	3.0	3.4	2.0
2018–19	17.5%	23.3%	14.0%	16.4%	11.4	3.2	3.5	1.9
2019–20	18.1%	24.7%	14.3%	16.6%	11.9	3.4	3.6	2.0
2020–21	18.2%	25.7%	13.9%	16.1%	12.0	3.6	3.5	2.0

Note: Incomes measured before housing costs have been deducted. Poverty line is 60% of median household income in the current year. Pensioners are those aged 65 or over.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Table B.3. Poverty lines (£ per week) in 2015–16 for example families (assuming any children are under 14)

	Single individual	Childless couple	Lone parent, one child	Couple, one child	Couple, two children	Couple, three children
Relative poverty line	£193	£289	£248	£347	£404	£462
Absolute poverty line	£186	£278	£239	£333	£389	£447

Note: Incomes measured net of direct taxes, including benefits and before housing costs have been deducted.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

Table B.4. Child poverty rates by lone-parent or couple family: 2007–08 to 2020–21

	<i>% in relative poverty</i>			<i>% in absolute poverty</i>		
	All children	Children in lone-parent families	Children in couple families	All children	Children in lone-parent families	Children in couple families
2007–08	22.5%	35.6%	18.4%	20.7%	32.2%	17.2%
2008–09	22.1%	34.5%	18.3%	20.2%	30.8%	17.0%
2009–10	20.0%	27.1%	17.9%	18.9%	25.2%	17.0%
2010–11	17.6%	21.9%	16.3%	17.6%	21.9%	16.3%
2011–12	17.6%	22.5%	16.2%	19.3%	24.7%	17.6%
2012–13	17.4%	22.1%	16.0%	18.6%	23.8%	17.0%
2013–14	17.1%	19.4%	16.5%	17.7%	20.3%	16.9%
2014–15	17.0%	19.9%	16.1%	16.7%	19.6%	15.8%
2015–16	17.8%	21.5%	16.7%	15.1%	17.7%	14.3%
2016–17	19.7%	26.3%	17.6%	15.8%	20.6%	14.3%
2017–18	21.8%	31.2%	18.8%	16.7%	23.1%	14.6%
2018–19	23.3%	34.9%	19.5%	17.5%	25.5%	14.9%
2019–20	24.7%	37.6%	20.5%	18.1%	27.5%	15.0%
2020–21	25.7%	39.9%	21.0%	18.3%	28.1%	15.0%

Note: Incomes measured before housing costs have been deducted. Relative poverty line is 60% of median household income in the current year. Absolute poverty line is 60% of 2010–11 median income in (CPI-adjusted) real terms.

Source: Authors' calculations using Family Resources Survey, various years, and projections for 2014–15 onwards using TAXBEN and assumptions specified in the text.

References

- Adam, S., Chandler, D., Hood, A. and Joyce, R. (2015), *Social Rents Policy: Choices and Trade-Offs*, Report no. 108, London: Institute for Fiscal Studies, (<http://www.ifs.org.uk/publications/8036>).
- Adams, A., Hood, A. and Levell, P. (2014), 'The squeeze on incomes', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2014*, Report no 91, London: Institute for Fiscal Studies (http://www.ifs.org.uk/budgets/gb2014/gb2014_ch6.pdf).
- Belfield, C., Cribb, J., Hood, A. and Joyce, R. (2014), *Living Standards, Poverty and Inequality in the UK: 2014*, Report no. 96, London: Institute for Fiscal Studies (<http://www.ifs.org.uk/publications/7274>).
- Belfield, C., Cribb, J., Hood, A., and Joyce, R. (2015), *Living Standards, Poverty and Inequality in the UK: 2015*, Report no. 107, London: Institute for Fiscal Studies, (<http://www.ifs.org.uk/publications/7878>).
- Brewer, M., Browne, J., Joyce, R. and Sutherland, H. (2009), *Micro-Simulating Child Poverty in 2010 and 2020*, Commentary no. 108, London: Institute for Fiscal Studies (<http://www.ifs.org.uk/publications/4434>).
- Brewer, M., Browne, J., Hood, A., Joyce, R. and Sibieta, L. (2013), 'The short- and medium-term impacts of the recession on the UK income distribution', *Fiscal Studies*, vol. 34, pp. 179–201 (<http://www.ifs.org.uk/publications/6725>).
- Brewer, M. and De Agostini, P. (2013), 'The National Minimum Wage and its interaction with the tax and benefits system: a focus on Universal Credit', Institute of Social and Economic Research (<https://www.iser.essex.ac.uk/research/publications/522257>).
- Brewer, M., May, R. and Phillips, D. (2009), *Taxes, Benefits and the National Minimum Wage*, Low Pay Commission Research Report (http://webarchive.nationalarchives.gov.uk/20130708092703/http://lowpay.gov.uk/lowpay/research/pdf/FromLPC_Document_Feb.pdf).
- Brewer, M. and O'Dea, C. (2012), 'Measuring living standards with income and consumption: evidence from the UK', Institute for Fiscal Studies (IFS), Working Paper no. 12/12 (<http://www.ifs.org.uk/publications/6276>).
- Brewer, M., Ratcliffe, A. and Smith, S. (2008), 'Does welfare reform affect fertility? Evidence from the UK', Institute for Fiscal Studies (IFS), Working Paper no. 08/09 (<http://www.ifs.org.uk/publications/4345>).
- Browne, J. (2012), 'Reweight2: Stata command to reweight data to user-defined control totals' (<http://www.ifs.org.uk/publications/6270>).

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- Browne, J. (2015), *The Impact of Proposed Tax, Benefit and Minimum Wage Reforms on Household Incomes and Work Incentives*, Report no. 111, London: Institute for Fiscal Studies (<http://www.ifs.org.uk/publications/8054>).
- Browne, J., Emmerson, C., Heald, K. and Hood, A. (2014), 'Modelling work, health, care and income in the older population: the IFS retirement simulator (RetSim)', Institute for Fiscal Studies (IFS), Working Paper no. 14/12 (<http://www.ifs.org.uk/publications/7253>).
- Browne, J., Hood, A. and Joyce, R. (2014), 'Child and working-age poverty in Northern Ireland over the next decade: an update', Institute for Fiscal Studies (IFS), Briefing Note no. 154 (<http://www.ifs.org.uk/publications/7448>).
- Corlett, A., Finch, D. and Whittaker, M. (2016), *Living Standards 2016: The Experiences of Low to Middle Income Households in Downturn and Recovery*, London: Resolution Foundation (<http://www.resolutionfoundation.org/wp-content/uploads/2016/02/Audit-2016-1.pdf>).
- Cribb, J., Hood, A. and Joyce, R. (2015), 'Living standards: recent trends and future challenges', Institute for Fiscal Studies (IFS), Briefing Note no. 165 (<http://www.ifs.org.uk/publications/7615>).
- Cribb, J. and Joyce, R. (2015), 'Earnings since the recession', in C. Emmerson, P. Johnson and R. Joyce (eds), *The IFS Green Budget: February 2015*, Report no. 106, London: Institute for Fiscal Studies (http://www.ifs.org.uk/uploads/gb/gb2015/ch2_gb2015.pdf).
- Department for Work and Pensions (2015), *Households Below Average Income: An Analysis of the Income Distribution 1994/95 – 2013/14*, London (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437246/households-below-average-income-1994-95-to-2013-14.pdf).
- Gomulka, J. (1992), 'Grossing-up revisited', in R. Hancock and H. Sutherland (eds), *Microsimulation Models for Public Policy Analysis: New Frontiers*, STICERD Occasional Paper no. 17, London: London School of Economics.
- Hood, A., Joyce, R. and Phillips, D. (2014), 'Policies to help the low paid', in C. Emmerson, P. Johnson and H. Miller (eds), *The IFS Green Budget: February 2014*, Report no. 91, London: Institute for Fiscal Studies (http://www.ifs.org.uk/budgets/gb2014/gb2014_ch7.pdf).
- Johnson, P. (2015), *UK Consumer Price Statistics: A Review*, London: UK Statistics Authority (https://consultations.ons.gov.uk/uksa/measuringconsumerprices/supporting_documents/Review%20Full%20Report.pdf).
- Office for Budget Responsibility (2015a), *Economic and Fiscal Outlook: July 2015*, London (<http://budgetresponsibility.org.uk/efo/economic-fiscal-outlook-july-2015/>).

Office for Budget Responsibility (2015b), *Economic and Fiscal Outlook: November 2015*, London (<http://budgetresponsibility.org.uk/economic-fiscal-outlook-november-2015/>).

Office for National Statistics (2015), 'Nowcasting household income in the UK: financial year ending 2015', Statistical Bulletin, 28 October (http://www.ons.gov.uk/ons/dcp171778_421593.pdf).

Rastrigina, O., Leventi, C. and Sutherland H. (2015), 'Nowcasting: estimating developments in the risk of poverty and income distribution in 2013 and 2014', Institute of Social and Economic Research (ISER), EUROMOD Working Paper no. 12/15 (<https://www.iser.essex.ac.uk/research/publications/working-papers/euromod/em12-15>).

Reed, H. and Portes, J. (2014), *Understanding the Parental Employment Scenarios Necessary to Meet the 2020 Child Poverty Targets*, Research Report, London: Social Mobility and Child Poverty Commission (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/318073/3b_Poverty_Research_-_Final.pdf).