

# Child and Working-Age Poverty from 2010 to 2013

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## Executive Summary

This Briefing Note presents projections of relative and absolute income poverty among children and working-age adults for each year between 2010–11 and 2013–14, using a static microsimulation model augmented with forecasts of key economic and demographic characteristics. We do this under current tax and benefit policies, and we explore the impact of tax and benefit reforms announced by the coalition government.

This exercise is necessarily subject to uncertainties and limitations. Macroeconomic forecasts such as those we make use of here are always highly uncertain, and this is probably especially true at present; we cannot fully account for the impacts of behavioural changes that result from tax and benefit reforms; and the underlying survey data used are, of course, subject to sampling error.

All numbers referred to in this Executive Summary are for poverty with incomes measured before housing costs have been deducted. Qualitative conclusions are very similar for poverty with incomes measured after housing costs have been deducted. Results for both measures are included in this Briefing Note.

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### **Incomes and poverty under current policies**

Consistent with previous analysis by IFS researchers, we predict that relative poverty in 2010–11, the current financial year, will be about 300,000 lower among both children and working-age parents than it was in 2008–09, the latest year of household income data available. This is driven largely by the fact that we forecast median net income to fall in real terms over those two years, which reduces the relative poverty line. Absolute poverty is forecast to remain stable among families with children over this period.

We expect absolute poverty among working-age adults without children to be about 400,000 higher in 2010–11 than it was in 2008–09. Relative poverty is also expected to rise by about 100,000 over this period for this group, despite the fact that median incomes are projected to fall. The difference between the expected poverty trends for families with and without children between 2008–09 and 2010–11 is partly due to the above-indexation increases in the per-child element of the Child Tax Credit in April 2009 and April 2010.

In the two years between 2010–11 and 2012–13, poverty rates are forecast to be relatively stable for families with children, but to continue rising for working-age adults without children, by about 300,000 and 200,000 for absolute and relative poverty respectively.

In 2013–14, we expect relative poverty to rise by about 200,000 children, 100,000 working-age parents and 200,000 working-age adults without children, and absolute poverty to rise by about 100,000 children, 100,000 working-age parents and 100,000 working-age adults without children.

The Child Poverty Act commits current and future governments to reducing the rate of relative child poverty to 10% by 2020–21. According to our projections, under current policies this would require a reduction in the child poverty rate of 10.5 percentage points in the seven years after 2013–14 (an average reduction of around 1.5 percentage points per year over seven years). A reduction of this magnitude has not been achieved over *any* period since the current consistent series began in 1961.

Among all children and working-age individuals, we forecast a rise in relative poverty of about 800,000 and a rise in absolute poverty of about 900,000 between 2010–11 and 2013–14.

### **The impact of the current government's reforms on poverty**

Our results suggest that the coalition government's reforms have no discernible impact on absolute and relative child poverty in 2011–12. Taking all children and working-age individuals together, they slightly increase relative poverty, by about 100,000.

In 2012–13, we estimate that the coalition government's reforms act to increase relative poverty by about 100,000 children, 100,000 working-age parents and 100,000 working-age adults without children; and they act to increase absolute poverty by about 200,000 children, 100,000 working-age parents and 100,000 working-age adults without children. This conclusion is at odds with the coalition government's claim that its reforms will not have a 'measurable' impact on child poverty in 2012–13, although it should be noted that a difference of 100,000 is the smallest that would be measured in the official poverty figures. The discrepancy is entirely accounted for by the fact that we have modelled the government's planned reforms to Local Housing Allowance, whereas the Treasury did not.

In 2013–14, we estimate that coalition reforms act to increase absolute poverty by about 300,000 children, 200,000 working-age parents and 300,000 working-age adults without children, and relative poverty by about 200,000 children, 200,000 working-age parents and 200,000 working-age adults without children. The reason that coalition reforms do more to increase absolute than relative poverty in 2013–14 is that they reduce median income, and hence the relative poverty line, in 2013–14.

We have no way of knowing precisely how a different, hypothetical government would have chosen to rebalance the public finances had it won the 2010 general election. We have simply attempted to quantify the effect of the coalition government's reforms relative to the situation where it had continued with the tax and benefit plans it inherited from the previous administration. Therefore, to say that coalition reforms are poverty-increasing in 2013–14 is not to say that poverty in 2013–14 would necessarily have been lower under a different government. We have also taken as given the expected macroeconomic environment. If the coalition government's reforms affect macroeconomic variables such as earnings and employment, then that could affect poverty rates.

In the longer term, the government's planned Universal Credit has the potential to affect substantially the outlook for poverty through various channels, such as financial work incentives, take-up rates of means-tested benefits and the direct impact on benefit entitlements. Future analysis by IFS researchers will look in detail at the prospects for poverty beyond 2013–14, and how they relate to the proposed phase-in of the Universal Credit which begins in October 2013.

## 1. Introduction

This Briefing Note provides projections of income poverty among children and working-age adults in the UK under current tax and benefit policies. We also estimate the direct impact on poverty of tax and benefit reforms announced by the coalition government. Projections are produced for each year between 2010–11 and 2013–14.<sup>1</sup>

We produce these projections using 2008<sup>2</sup> data on household incomes from the Family Resources Survey (FRS), the large-scale household survey from which official poverty statistics are derived; the IFS static tax and benefit microsimulation model, TAXBEN;<sup>3</sup> and projections of demographic and macroeconomic variables.

There are several reasons why microsimulation techniques are well suited to poverty modelling. Such models allow for explicit simulation of the entire income distribution, which enables precise quantification of the effect on relative poverty of rises in the relative poverty line caused by rises in the median income; and such models enable us to estimate precisely the impact of direct tax and benefit changes (including often complicated interactions between them) on household incomes. This paper follows Brewer, Browne and Sutherland (2006) and Brewer, Browne, Joyce and Sutherland (2009) in applying such techniques to forecast poverty in the UK. Unlike those papers, here we project poverty among the working-age population as well as among children.

We use two definitions of income poverty, both of which are set out in the Child Poverty Act (2010). An individual is in relative income poverty in a particular year if their household income is less than 60% of the national median household income in that year. An individual is in absolute income

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<sup>1</sup> These relatively short-run projections will be supplemented by projections beyond 2013–14 to be published in a future report, after the government has announced further details of the Universal Credit (the phase-in of which is due to begin in October 2013) in its Welfare Reform Bill.

<sup>2</sup> Henceforth, years refer to financial years, because the Family Resources Survey (the survey of household incomes on which official poverty statistics are based) covers financial years.

<sup>3</sup> For a description of TAXBEN, see Giles and McCrae (1995). The basic structure of the model has not changed since then.

poverty in a particular year if their household income in that year is less than 60% of the 2010–11 national median (in real terms).<sup>4</sup> Household incomes are measured net of taxes and inclusive of benefits and tax credits, and equivalised using the modified OECD equivalence scale. Incomes are measured both before and after housing costs have been deducted (though note that the Child Poverty Act refers only to incomes measured before housing costs have been deducted).

We proceed as follows. Section 2 outlines in detail the methodology we use to produce our forecasts. Section 3 presents the results of the modelling exercise, showing projections of poverty under current policies (Section 3.1) and without the reforms announced by the coalition government (Section 3.2). Readers only interested in our results should go straight to Section 3. In Section 4, we quantify the sensitivity of our results to employment and earnings assumptions. Section 5 concludes.

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<sup>4</sup> In recent years, the absolute poverty line has been defined as 60% of the 1998–99 national median, but the Child Poverty Act (2010) says that the absolute poverty line will be rebased in 2010–11. The absolute poverty line is uprated in line with the retail price index (excluding council tax) and the Rossi index for before-housing-costs and after-housing-costs incomes respectively.

## 2. Methodology

We first outline the key stages involved in producing our poverty projections (Section 2.1). We then elaborate on some particular details of the modelling (Section 2.2) and set out how we account for some of the preannounced policy changes whose effect on the distribution of incomes cannot be modelled straightforwardly using TAXBEN (Section 2.3). Finally, we outline the general limitations of this work (Section 2.4).

### 2.1 *The basic approach*

We simulate the whole distribution of household incomes in the UK in future years, using a definition of income as close as possible to that used for official measures of poverty. In doing this, we estimate the two things that define the number of individuals in relative poverty: the median household income, which determines the relative poverty line; and the number of individuals with a household income below that relative poverty line. Poverty projections are obtained directly from our simulated income distribution: we simply count the number of children or working-age adults whose household income is less than 60% of the national median. In the case of absolute poverty, we simply count the number of children or working-age adults whose simulated household income is below the absolute poverty line, which is fixed in real terms.

The methods with which we simulate the household income distribution are best understood as a number of steps, outlined below.

#### *Data*

We use data on 25,003 households in the UK from the 2008–09 Family Resources Survey (the most recent available). Crucially for our purposes, this contains information about private income sources and other characteristics that determine tax liabilities and benefit and tax credit entitlements. It is the same data set that is used to provide official poverty statistics in the UK. This is important, given that we are forecasting poverty as it is officially measured.

We use the 2008–09 FRS as our ‘base data’ on the UK distribution of household incomes, from which we project forward to future years. To project forwards, we need to take account of future changes to financial

variables (e.g. earnings), tax liabilities and benefit and tax credit receipts, and the demographic composition of the population.

### *Updating financial variables*

We update the financial variables in our 2008 'base data' to their projected levels in future years. We use actual out-turns from 2008 to the present, as measured by the Office for National Statistics. Thereafter, we use forecasts of average earnings, the retail price index (RPI) and nominal GDP from the Office for Budget Responsibility (OBR).<sup>5</sup> We then update financial variables in the following ways:

- Earnings from employment and self-employment, incomes from private pensions, housing costs, rents, water and sewerage rates, and other deductions from income (see Table A.1 in Appendix A) are updated in line with average earnings.
- Minor components of income (see Table A.3 in Appendix A) are updated in line with the RPI.
- Households' stocks of savings and investments are updated in line with nominal GDP.

We also need to make an assumption about interest rates, as these affect income from savings and investments (although the effect on poverty is negligible, because few individuals in the bottom half of the income distribution have much investment income). We assume that the base rate follows market expectations up to the third quarter of 2013 (as set out in the Bank of England's November Inflation Report<sup>6</sup>), and thereafter continues to rise at the same pace until the end of 2013–14.

### *Accounting for socio-demographic change*

The FRS data are weighted to adjust for differential non-response to the survey. These weights are calculated such that, in the weighted data, the number of people or households with certain characteristics matches a set of control totals for the population.<sup>7</sup> To take account of expected changes in these control totals when projecting poverty in future years (for

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<sup>5</sup> Office for Budget Responsibility, 2010.

<sup>6</sup> Bank of England, 2010.

<sup>7</sup> See Department for Work and Pensions (2005).



example, changes in the number of lone parents), we reweight the data so that, in the newly weighted data, the number of people or households with certain characteristics matches a set of projected control totals for the future population. In combination with the uprating of financial variables described above, this enables us to produce 'synthetic' populations for future years.

The full set of characteristics we use to form our control totals is given in Table A.2 in Appendix A. The sources of the control totals that we use for future years are the Office for National Statistics (2009a and 2010),<sup>8</sup> the Northern Ireland Statistics and Research Agency (2008), Department for Communities and Local Government (2009), Welsh Assembly Government (2009), General Register Office for Scotland (2008), and internal Department for Work and Pensions (DWP) modelling of the number of lone parents and couples with children in Great Britain, which was kindly made available to us. Finally, employment is one of the control totals we use. Hence, it is through the reweighting process that we account for expected changes in employment over time. We use employment projections from the Office for Budget Responsibility (2010).

The weights were calculated using the algorithm set out in Gomulka (1992), which we have implemented in Stata. This is the same method that was used in Brewer, Browne and Sutherland (2006) and Brewer, Browne, Joyce and Sutherland (2009), and is subject to the same limitations as outlined in those papers, reproduced below:

The re-weighting method simply controls for characteristics in a few dimensions, leaving joint distributions uncontrolled (e.g. typically we can get the number of lone parents and the number of children in each age group to match control totals, but the ages of children in lone-parent families are not directly controlled for). Other relevant dimensions on which we have inadequate information for predictions are entirely uncontrolled (e.g. receipt of child support or hours of work). Furthermore, with a given sample size the number of dimensions that can be controlled for at once is limited. If the number of constraints becomes large it can become

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<sup>8</sup> Note that these population projections are for the UK as a whole, whereas the Family Resources Survey on which official poverty statistics are based is a survey of the household population only. We therefore adjust the official population projections downwards to account for non-household membership, by assuming that the rate of non-household membership in each region remains the same as it was in 2008.

impossible to satisfy them, or some households have extremely high weights, making the policy simulation results unstable.

Finally, the greater the difference between the world represented by the FRS data and the world that the re-weighting using projected control totals attempts to sketch out, the more difficult it is to find weights to satisfy many controls simultaneously.

In practice, the set of grossing weights derived is sensitive to the particular characteristics that are chosen to form the set of control totals. Not all of the characteristics used as control totals by DWP in the official Households Below Average Income (HBAI) series are things for which credible forecasts exist (such as the number of households in various council tax bands). Thus, the set of control totals we use to derive grossing weights is not identical to that used for the official poverty measure. In principle, this could affect the extent to which our projections of HBAI-measured poverty are accurate. But we have checked our ‘projections’ of poverty rates in 2008 (the base data) when using the official weights and our own weights derived using our own set of control totals, and the results are virtually identical. The assumption is that this remains the case in future years.

### *Simulating future tax liabilities and benefit and tax credit receipts*

Using the IFS microsimulation model, TAXBEN, we can calculate the benefits and tax credits individuals and households are entitled to, and the taxes they are liable to pay, under hypothetical tax and benefit systems. Hence, using the current default rules for annually uprating tax thresholds and benefit and tax credit amounts (the uprating rules we use are given in Table A.3 in Appendix A; we use the November 2010 OBR forecasts of CPI inflation, RPI inflation and average earnings growth), and taking account of preannounced direct tax and benefit reforms that are due to be implemented, we can simulate net household incomes in future years according to what the tax and benefit system will look like in those future years under current policies.

However, an adjustment needs to be made to account for the fact that not everyone who is entitled to benefits and tax credits will claim them. Some households may be unaware of their entitlement, or find it too time-consuming to claim, or find claiming means-tested benefits stigmatising, or dislike the uncertainty around over- or under-payments that surrounds tax credit receipt.

We could use take-up rates based on administrative data to withdraw means-tested benefits and tax credits randomly from the appropriate fraction of eligible recipients. However, estimates of the take-up rates of benefits and tax credits from the FRS tend to be *lower* than those based on administrative data, even when allowance is made for the less-than-full coverage of the FRS (i.e. it omits people not in private households).<sup>9</sup> This suggests that there is misreporting of means-tested benefit and tax credit income in the FRS (specifically, under-reporting). Since we are forecasting poverty as it is officially measured (i.e. using the FRS), we want to account for this.

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 2008 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. The latest take-up data for benefits come from DWP and are for 2008–09;<sup>10</sup> the latest take-up data for tax credits come from HMRC and are for 2007–08.<sup>11</sup>

Note that Child Benefit will effectively become means-tested in January 2013, as the government plans to remove it from families containing a higher-rate taxpayer. However, this ‘means test’ will operate through the tax system: higher-rate taxpayers will be expected to declare the fact that they are higher-rate taxpayers so that their family does not receive Child Benefit. Hence, this reform has no impact on our assumption about the

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<sup>9</sup> See appendix C in Brewer, Muriel, Phillips and Sibieta (2008).

<sup>10</sup> See Department for Work and Pensions (2010b).

<sup>11</sup> See HM Revenue and Customs (2010).

take-up of Child Benefit among those entitled (we continue to assume full take-up).

The poor are more likely to be eligible for substantial amounts of such benefits, so one might expect that they lose the most from lower take-up. Hence, absolute poverty projections will tend to be biased upwards if take-up is under-estimated, and vice versa. For relative poverty projections, the direction of bias from under- or over-estimating take-up is ambiguous because those with the lowest entitlements may be the most likely not to claim, and these are more likely to be households with an income around the median. Hence, lower take-up can in principle reduce relative poverty by reducing the median income (and hence the poverty line) by more than it reduces the incomes of low-income families.

For the benefit of analysts and modellers (or anyone interested in the extent to which non-take-up hinders efforts to reduce poverty), we provide the results obtained (for 2013) under a full take-up scenario in Appendix C.

### *Creating the HBAI definition of income*

Finally, we need to create a measure of disposable income that is as close as possible to that used when calculating official poverty statistics (the precise definition is given in Department for Work and Pensions (2010a)). To construct something broadly equivalent to this, we add together various sources of private (i.e. pre-transfer) income, subtract estimated tax liabilities, add estimated receipt of benefits and tax credits, and then subtract various 'deductions' from income. Table A.1 in Appendix A gives details of the various components of income.

Data on the deductions are partly derived from outputs from TAXBEN (e.g. council tax and contributions to a private pension) 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 (housing costs, 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.<sup>12</sup>

## *2.2 Further modelling details*

### *Harmonising TAXBEN-simulated incomes with HBAI-measured incomes*

As noted in Brewer, Browne, Joyce and Sutherland (2009), the income distribution simulated by TAXBEN is not identical to the income distribution measured officially by HBAI, even though both use the same underlying FRS data. With no kind of adjustment to account for this, it is therefore likely that projections of future income distributions using TAXBEN would not accord with the actual income distribution in those future years as measured by HBAI (even if all our assumptions about policy, demographics and the macroeconomy turned out to be correct).

It is not surprising that there is some discrepancy between TAXBEN-simulated incomes and HBAI-measured incomes, for the following reasons:

- TAXBEN estimates income tax and National Insurance (NI) liabilities on the basis of relevant characteristics as measured by the FRS, whereas the HBAI series uses self-reported payments of direct taxes in the FRS. Inaccuracies in estimating income tax and NI liabilities, or inaccuracies in the information in the FRS on income tax and NI actually paid, will therefore lead to discrepancies.
- Similarly, TAXBEN estimates entitlements to means-tested benefits and tax credits, whereas the HBAI series uses self-reported receipts. Although, as described in Section 2.1, we adjust for non-take-up, this adjustment cannot perfectly harmonise benefit and tax credit receipt in our simulated income distribution and the HBAI-measured distribution. Any inaccuracies in the FRS on the amounts of means-tested benefits and tax credits actually received among those who say that they receive some, or inaccuracies in estimating entitlements to means-tested benefits and tax credits in TAXBEN, will lead to discrepancies.

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<sup>12</sup> See appendix 2 of Department for Work and Pensions (2010a) for details of this equivalence scale.

To account for these discrepancies, we check our TAXBEN-simulated incomes for each household in our 2008 base data against the 2008 HBAI-measured income for that household. We derive an additive correction term for each household such that, after the correction is applied, its 2008 TAXBEN-simulated income is identical to the income recorded in HBAI. We then use the same real-terms corrections for each household when projecting poverty in future years. Clearly, the extent to which TAXBEN-simulated and HBAI-measured incomes differ may not 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. For the benefit of analysts and modellers, we provide the results obtained (for 2013) without applying any such correction in Appendix C.

### *Modelling rises in the state pension age*

Between April 2010 and March 2016, the age at which women become entitled to the State Pension is rising by one month every two months from its pre-2010 level of 60. This changes the sample of people who are of working age, which is clearly important when forecasting working-age poverty. But it also has implications for household incomes.

It is straightforward to model the direct impact on incomes of increasing the state pension age (SPA) in TAXBEN. But a couple of other issues remain. First, the maximum age at which individuals can receive Incapacity Benefit or Employment and Support Allowance (IB/ESA) is being raised as well, so that it remains in line with the SPA.<sup>13</sup> We only observe entitlement to IB/ESA in the 2008 base data for those who were of eligible age in that year (i.e. women aged under 60 or men aged under 65). Thus, we have to estimate the probability of entitlement in future years for women aged 60 and 61 (since women of these ages will be working-age by the end of 2013–14). We estimate these probabilities from the sample of 58- and 59-year-old women (593 women) in the base data by probit

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<sup>13</sup> Similarly, the minimum age at which women can claim Attendance Allowance is rising. The direct impact of this is straightforward to model, by removing entitlement to Attendance Allowance from all women of the relevant age.

regression.<sup>14</sup> The predictors we use are education, council tax band, region, housing tenure, partnership status, employment status of the partner (if applicable) and local authority disability status. We use these to generate predicted entitlement probabilities, and we randomise entitlements for the relevant individuals using those probabilities (the probabilities average about 10% for the relevant women).

A second issue is that households that include 60- and 61-year-old women in the future may look different from the corresponding households in 2008 (our base data), because these individuals (or other members of their household) may respond to whether or not they are entitled to the State Pension by changing their labour supply. Indeed, the age profile of employment probabilities exhibits a clear discontinuity at the SPA.<sup>15</sup> Ignoring this issue would be very likely to lead to under-estimates of the incomes of those affected.

We estimate an equation linking work status (employed/not employed) for women aged 51 to 65 to a number of predictors by probit regression. The predictors are education, region, housing tenure, council tax band, local authority disability status, entitlement to Disability Living Allowance, a cubic in age, and an indicator variable for being below the SPA. We do this separately for single women and for women in couples (for those in couples, we also include an indicator variable for whether or not the partner works). Having estimated this equation, we generate predicted employment probabilities for those not below SPA in the scenario where they *are* below SPA. Aggregating these predicted probabilities gives the predicted proportion of those directly affected by the SPA change who will be in work after that change. We then identify those affected individuals who are not working in the base data who have the highest predicted probabilities of being in work when below SPA (the most 'marginal' individuals), with the number we identify being calibrated so as to match our aggregate employment prediction (this involves increasing the employment rate by about 8 percentage points for the affected women). We then allocate these people gross earnings and a weekly number of

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<sup>14</sup> Note that there is not a discernible age profile in entitlement probabilities for women in their mid to late fifties. Thus, it seems reasonable to estimate entitlement probabilities using these control groups.

<sup>15</sup> See, for example, figure 4.9 in Office for National Statistics (2009b).



hours worked. We do this using nearest-neighbour propensity score matching, with female workers just below SPA in the base data being the control group (again, separately for single women and for people in couples).<sup>16</sup> Propensity scores are estimated by probit regression using an equation linking SPA status (above/below SPA) to the same set of predictors as in the employment equation above (but excluding the cubic in age).

There are some implicit assumptions here. First, there are no anticipation effects or dynamic effects on employment of raising the SPA: increasing the state pension age does not affect the employment probabilities of those below the original SPA or of those above the new SPA. Second, employment responses come only through the individuals directly affected by the SPA change, rather than through other members of their household. In practice, the husbands of those affected might also respond by retiring later (Banks, Blundell and Casanova, 2007). Third, the reason why there is a discontinuity in the age profile of employment probabilities at state pension age is because of the SPA itself, rather than some other factor. If this is not true, the actual behavioural response may be smaller.

Note that the OBR's total employment forecasts, which we make use of, will already have accounted for the rise in SPA. Therefore, this adjustment does not affect our assumption about total employment: it simply affects our implicit assumption about the composition of the working population (most directly, with respect to age), because we reweight the data (see Section 2.1) after modelling this behavioural response.

Having allocated the additional IB/ESA entitlements and gross earnings, we run the modified base data through TAXBEN in the normal way.

### *2.3 Accounting for welfare reforms that are more difficult to model precisely*

The government has announced various direct tax and benefit reforms that are due to be implemented by 2013. Many of these simply involve changing the values of basic parameters of the tax and benefit system, such as the income tax personal allowance or Child Tax Credit amounts. These can be straightforwardly modelled using TAXBEN. Some of the reforms are

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<sup>16</sup> This seems reasonable as there is not a discernible age profile in earnings or hours worked among workers just below SPA.



more difficult to model precisely, because their impact on particular families will depend upon characteristics of those families that are not perfectly measured in the FRS data. For example, the impact of migrating Incapacity Benefit (IB) claimants onto Employment and Support Allowance (ESA) will depend on who fails the medical test in ESA, which we cannot predict at the individual level.

For these reasons, the Treasury has not modelled the distributional impact of 30% (in revenue terms) of the direct tax and benefit reforms due to be implemented by 2012.<sup>17</sup> Clearly, such reforms have the potential to affect significantly assessments of the likely path of poverty in the near future. Therefore, in this work, we do attempt to account for those reforms that we judge can be modelled in a reasonably precise way, such that modelling them is very likely to lead to more accurate conclusions about poverty than ignoring them entirely. Below, we outline the policy changes that we take account of even though they cannot be straightforwardly modelled using TAXBEN. Note that most of these reforms are due to be implemented in 2013: Local Housing Allowance reforms are the only ones that can have any impact on our poverty projections up to and including 2012. A full list of the future reforms that we model is provided in Appendix B.

### *Local Housing Allowance reforms*

Local Housing Allowance (LHA) is Housing Benefit for private renters. A series of reforms are planned:

- From April 2011 (for new claimants) or January to December 2012 (for existing claimants),<sup>18</sup> the maximum amount of LHA that someone can claim will be equal to their local reference rate or their rent (whichever is lower), rather than their local reference rate or their rent plus £15 per week; local reference rates will be set at the 30<sup>th</sup> percentile of local

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<sup>17</sup> See IFS evidence submitted to the Treasury Select Committee after the 2010 Spending Review at <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmtreasy/544/544pwe09.htm>.

<sup>18</sup> Existing claimants will not be affected by the changes until the anniversary of their LHA claim, when they will lose entitlement to the £15 excess, and they will not be affected by the other reforms until nine months *after* the anniversary of their claim. We can model this phase-in accurately, as we observe the date on which an LHA claim started in the FRS data.

rents rather than the median (50<sup>th</sup> percentile); reference rates in every area will be capped at the four-bedroom rate; and no local reference rates will be able to exceed certain national caps (these will be £250 per week for the shared-room rate and the one-bedroom rate, £290 for the two-bedroom rate, £340 for the three-bedroom rate and £400 for the four-bedroom rate).

- From April 2012, single people under the age of 35 will only be eligible for the shared-room rate (currently, the age threshold is 25).
- From April 2013, local reference rates will be updated annually in line with the consumer price index (CPI), rather than with local rents.

Local reference rates are set within Broad Rental Market Areas (BRMAs). In the FRS data available to us, we do not observe which BRMA people are in. However, we do observe the local authority (LA) that they are in, and we are able to map BRMAs to LAs. Since we know current reference rates in each BRMA (and we also know what those rates would currently be if they were set at the 30<sup>th</sup> percentile of local rents, as will be the case from April 2011), we are able to model very precisely the impact of LHA reforms on anyone who lives in an LA that contains a single BRMA, since we know exactly how much LHA they should currently be receiving. This applies to 36% of LAs. In cases where there is more than one BRMA falling within an LA, we take the median of the BRMA rates in that LA. Clearly, this involves some loss of precision, but there is no reason to suspect that it biases poverty forecasts in a particular direction. Our judgement is that this is likely to lead to significantly more accurate modelling than ignoring these reforms entirely (which has been the approach taken by HM Treasury analysts).

Note that we do not account for possible effects of the LHA reforms on the general level of rents, or on the housing costs of particular individuals who might move to a property with a lower level of rent as a result of the reforms. By lowering household costs, such 'second-round' effects would tend to *increase* household incomes when measured after housing costs (AHC). But they could in principle *decrease* household incomes measured before housing costs (BHC) if a household moves to a home (as a result of the reforms) with a level of rent that is less than the Housing Benefit they were receiving previously: in that case, Housing Benefit would fall to the new rent level or below.

### *Making Housing Benefit awards reflect family size for working-age tenants in social housing from April 2013*

From April 2013, those of working age in the social rented sector will have their Housing Benefit awards capped depending on their family size (rather than the size of their house). Therefore, those of working age in under-occupied social housing will lose some Housing Benefit. We can precisely identify who these people are in the data, and we know the amount the government expects to raise from this measure, so we can estimate the average loss among those who lose from the policy. We do not know the precise distribution of losses among the losers – in reality, some will lose more than the average and some less. But because we can precisely identify the people who will lose *something*, our judgement is that assuming a constant proportional loss of Housing Benefit among the losers is very likely to be preferable to ignoring the reform entirely.

### *Reform to Disability Living Allowance (DLA) in April 2013*

The government plans to change the assessment process that determines DLA eligibility, and expects 20% of claimants to lose DLA as a result. We therefore know the number of losers (20% of DLA recipients) and the number of gainers (none), and we know that those who lose will lose all of their DLA. Although we do not know which DLA recipients will lose, our judgement is that we have enough information about the distribution of losses that an attempt to model the policy will lead to more accurate conclusions than a decision to ignore it entirely. We therefore remove DLA from a random 20% subset of DLA recipients. The implicit assumption is that the probability of losing DLA entitlement as a result of these reforms is unrelated to household income.

### *Reforms that we do not account for*

There are some reforms that we do not account for, because we cannot identify with any precision the groups of people affected or the distribution of losses among those who lose. These are outlined below:

- The amount by which gross income can increase within a year before tax credit entitlements are reduced is to be decreased in April 2011 and again in April 2013; from April 2012, tax credit entitlements within a year will only increase if gross income falls by more than £2,500; and, also from April 2012, tax credit payments may only be backdated by

one month (rather than three months) after a change of circumstances. The government expects to save over £1.2 billion per year from these reforms by 2013–14 (HM Treasury, 2010b). But we do not know how many losers are expected from them and, since we do not have data about within-year income fluctuations, there is no way for us to identify the likely group of affected tax credit recipients (or how much they would lose by).

- Between November 2008 and October 2011, the maximum age of youngest child at which non-working lone parents can claim Income Support rather than Jobseeker's Allowance (or Employment and Support Allowance if they have a disability or health condition) is being reduced from 16 to 5 (in several stages). The rates of Income Support and Jobseeker's Allowance are the same, but the policy means that those affected have to take steps to look for work or lose their benefit entitlement. As a result, the incomes of some lone parents with a youngest child of the relevant age may go down as a result of lost benefit income, and the incomes of others may go up as a result of labour supply responses. The latter (behavioural) effects cannot be modelled straightforwardly with static microsimulation techniques, although the expected impact on total employment will be incorporated in the OBR's employment forecast, which we make use of. Previous IFS work suggests that this is not a major issue for the purposes of poverty forecasting, because the child poverty rate is quite insensitive to the lone-parent employment rate.<sup>19</sup>
- Existing Incapacity Benefit claimants are to be migrated onto Employment and Support Allowance. There is evidence that significantly more people are passing the medical test in ESA than in IB,<sup>20</sup> and are thus not eligible for it. On the other hand, those judged severely disabled by the ESA medical test will get a slightly higher rate of ESA than the IB rate would have been. Since we have no detailed health information in the FRS, we cannot identify those affected by either of these things.<sup>21</sup>

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<sup>19</sup> See Brewer, Browne, Joyce and Sutherland (2009).

<sup>20</sup> See Harrington (2010).

<sup>21</sup> Note that this is an area of particular policy uncertainty after the publication of an independent review on the medical test in ESA: see Harrington (2010).

- From 2013–14, Council Tax Benefit (CTB) in England will be set by local authorities rather than central government. The amount of money allocated by central government for this purpose will be such that total CTB expenditure will be reduced by 10% in England: the government expects to save £485 million from this reform in 2013–14 (HM Treasury, 2010a). Clearly, this implies that CTB recipients in England will, on average, have their benefit cut. However, the way in which each local authority chooses to structure its CTB regime will affect the distribution of losses (and, indeed, some people could gain from the reform). Since we have no idea how each local authority will design its CTB regime (or even which parameters of the regime it will have discretion over), we know nothing about the distribution of losses (and gains) from this reform, so there is no credible way of modelling its impact on poverty.

Note that there are very important differences between simple distributional analyses of tax and benefit reforms and an analysis of the effect of those reforms on poverty. In the former case, all that is required is to get *average* losses correct within broadly defined subgroups (IFS researchers typically use decile groups – tenths of the population). But poverty rates are defined by the number of people whose income falls below a certain level. This means that the entire distribution of losses from a reform is of crucial importance in determining the impact on poverty. Take the reforms to gross income disregards in the tax credit system as an example. Since those individuals who receive large proportions of their income from tax credits are clustered in a few decile groups towards the bottom of the income distribution, the assumption of constant proportional losses among all tax credit recipients is likely to yield a reasonable approximation of the average loss by decile group. But the same is not true when projecting a poverty rate, because for that the entire distribution of losses matters crucially (and note that for relative poverty, effects of policies on the level of median income must be credibly taken into account).

Hence, most of the policies in the bullet points above have been modelled by IFS researchers when conducting distributional analysis by decile

group,<sup>22</sup> but we judge that they cannot be credibly modelled for the purposes of poverty forecasting.

All of the policies listed above that we are not modelling are welfare cuts. Hence, the direct impact of these reforms would be to reduce the incomes of some people on benefits. This would be likely to increase absolute poverty. The direct effect on relative poverty is ambiguous, because the cuts may also affect the level of median income and therefore the relative poverty line.

The government has announced that a new Universal Credit will be introduced to replace all existing tax credits and out-of-work benefits (except for Council Tax Benefit).<sup>23</sup> This will change benefit entitlements (and potentially the take-up rates of benefits) and financial work incentives for large numbers of people. In 2013, it is extremely likely that the effect of the Universal Credit on poverty will be very close to zero, because its phase-in will not begin until October 2013, it will only apply to *new* claimants of out-of-work benefits (not tax credits) until April 2014, and those with no earnings on out-of-work benefits will not be any better off under the Universal Credit than under the present system. Beyond that, the Universal Credit reforms have the potential to affect the income distribution significantly and in various ways. Hence, our projections of poverty after 2013 will follow in a future report so that the impact of Universal Credit can be properly accounted for once further details are published in the government's Welfare Reform Bill.

#### *2.4 Uncertainties and limitations*

This exercise is necessarily subject to much uncertainty. As always with survey data, there is likely to be sampling error in the FRS from year to year. This will affect the base data that underlie our projections and the future HBAI measures of poverty that we are trying to forecast. But there are other (probably greater) sources of uncertainty here.

First, there is naturally considerable uncertainty surrounding any demographic or macroeconomic forecasts such as those we make use of in

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<sup>22</sup> See Browne and Levell (2010) and the IFS presentation 'Distributional Analysis of Tax and Benefit Reforms' delivered by James Browne after the 2010 Spending Review (available at <http://www.ifs.org.uk/publications/5313>).

<sup>23</sup> See Department for Work and Pensions (2010c).

producing these poverty projections. The current macroeconomic situation suggests that the degree of uncertainty surrounding some assumptions (such as employment rates and real earnings growth) is greater than normal. No projections can be immune from these uncertainties, although we do quantify the sensitivity of our results to key macroeconomic assumptions (see Section 4).

In addition, with the techniques employed here, we cannot directly account for behavioural responses to direct tax and benefit reforms (although we indirectly account for some such responses if they are already incorporated in the official forecasts of variables such as employment and demographics that we make use of). Relevant kinds of behavioural responses include labour supply changes or fertility changes as a result of changes in state support for families with children (see Brewer, Ratcliffe and Smith (2008)).

Of course, our projections may turn out to differ from actual poverty rates because of new policies that are announced. The exercise here is not to predict future policy changes, but to produce our best estimate of what would happen if policy did not change.

### 3. Results

Here we first outline our poverty projections under current policies (Section 3.1) and then take a look at the impact of tax and benefit reforms announced by the coalition government on these projections (Section 3.2).

When presenting poverty levels, we round to the nearest 100,000. When comparing poverty across years, or under different tax and benefit systems, we compare unrounded poverty levels and report the differences rounded to the nearest 100,000. Therefore, due to rounding, differences between rounded poverty levels shown in the tables in this section may not equal the differences that we report in the text. This follows the convention used by the Department for Work and Pensions in the official HBAI series.

#### *3.1 The path of poverty to 2013 under current policies*

Tables 3.1 and 3.2 show our projections of relative and absolute income poverty respectively (both before and after housing costs (BHC and AHC)), under current policies. We show projected poverty rates for four subgroups: children, working-age adults, working-age parents and working-age adults without dependent children. We split working-age adults into those with and those without dependent children because recent poverty trends have differed between these groups (and, indeed, the same is true under our projections).

The tables show the following:

- Real median household incomes are forecast to fall between 2008 and 2010. By reducing the relative poverty line, this reduces relative poverty, other things being equal.
- Relative child poverty is forecast to fall markedly between 2008 and 2010, by about 300,000 (3 percentage points) for incomes measured BHC. But relative poverty among working-age adults without dependent children is expected to rise (by about 100,000 with incomes measured BHC) between 2008 and 2010, despite the fall in the relative poverty line.



**Table 3.1. Projections of relative income poverty in the UK under current policies**

	<i>Children</i>		<i>Working-age adults</i>		<i>Working-age parents</i>		<i>Working-age adults without children</i>		<i>Real annual median income growth (%)</i>
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	
<b><i>Incomes measured before deducting housing costs</i></b>									
2008 (actual)	2.8	21.8	5.8	16.0	2.4	18.2	3.4	14.7	–
2010	2.5	18.9	5.7	15.6	2.1	16.4	3.5	15.1	–1.7
2011	2.5	18.8	5.7	15.5	2.1	16.5	3.6	15.0	–0.5
2012	2.5	19.2	5.9	15.9	2.2	16.8	3.8	15.5	–0.6
2013	2.7	20.5	6.3	16.6	2.3	17.8	3.9	15.9	+0.6
<b><i>Incomes measured after deducting housing costs</i></b>									
2008 (actual)	3.9	30.3	7.8	21.5	3.3	25.6	4.4	19.1	–
2010	3.5	26.6	7.5	20.7	3.0	23.2	4.5	19.3	–3.2
2011	3.5	26.6	7.6	20.7	3.1	23.5	4.6	19.2	–0.2
2012	3.5	26.9	7.9	21.2	3.1	23.9	4.8	19.7	+0.7
2013	3.6	27.8	8.1	21.5	3.2	24.5	4.9	20.0	+1.0

*Notes: Poverty line is 60% of median income. Years refer to financial years. Real annual median income growth for 2010 is projected average annual median income growth between 2008 and 2010.*

*Source: Authors' calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

**Table 3.2. Projections of absolute income poverty in the UK under current policies**

	<i>Children</i>		<i>Working-age adults</i>		<i>Working-age parents</i>		<i>Working-age adults without children</i>	
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>
	<b><i>Incomes measured before deducting housing costs</i></b>							
2008 (actual)	2.5	19.6	5.3	14.8	2.2	16.6	3.2	13.7
2010	2.5	18.9	5.7	15.6	2.1	16.4	3.5	15.1
2011	2.5	19.2	5.8	15.7	2.2	16.7	3.6	15.1
2012	2.6	19.9	6.1	16.3	2.3	17.4	3.8	15.8
2013	2.7	20.9	6.3	16.7	2.4	18.0	4.0	16.0
	<b><i>Incomes measured after deducting housing costs</i></b>							
2008 (actual)	3.4	26.3	7.0	19.5	3.0	22.7	4.1	17.6
2010	3.5	26.6	7.5	20.7	3.0	23.2	4.5	19.3
2011	3.5	26.7	7.6	20.7	3.1	23.5	4.6	19.2
2012	3.5	26.5	7.8	21.0	3.1	23.6	4.8	19.6
2013	3.6	27.2	8.0	21.1	3.1	24.0	4.8	19.6

*Notes: Poverty line is 60% of the real 2010–11 median income (hence, relative and absolute poverty in 2010–11 are identical). Years refer to financial years.*

*Source: Authors' calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

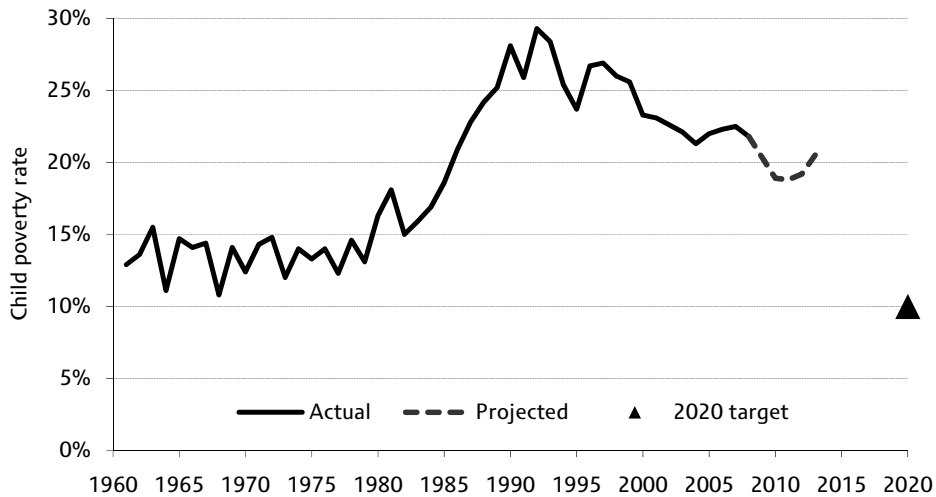
- Absolute poverty is forecast to stay relatively stable among families with dependent children, but to increase among working-age adults without dependent children (by about 400,000 or 1 percentage point BHC), between 2008 and 2010. The fact that absolute poverty among families with dependent children is not forecast to have risen as the UK was emerging from recession is likely to be (at least partly) due to the previous government's above-indexation Child Tax Credit increases over this period.<sup>24</sup>
- Between 2010 and 2012, real median income (and hence the relative poverty line) is forecast to fall by about 1%; relative child poverty is forecast to be stable, and absolute child poverty is forecast to rise by about 100,000; and relative and absolute poverty among working-age adults without dependent children are forecast to continue rising, by about 200,000 and 300,000 respectively (BHC).
- In 2013, real median income is forecast to grow slightly and both relative and absolute poverty are forecast to rise. With incomes measured BHC, relative poverty is forecast to rise by about 200,000 children and 200,000 working-age adults without dependent children, and absolute poverty is forecast to rise by about 100,000 children and 100,000 working-age adults without dependent children.

The Child Poverty Act (2010) commits current and future governments to reducing relative BHC income child poverty to 10%, and absolute BHC income child poverty to 5%, by 2020. Under current policies, according to our projections this would require a 10.5 percentage point reduction in relative child poverty, and a 15.9 percentage point reduction in absolute child poverty, in the seven years after 2013. The required reduction in relative child poverty has not been achieved over a period of *any* length since the current consistent series began in 1961, as shown in Figure 3.1.

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<sup>24</sup> See Brewer, Browne, Joyce and Sutherland (2009) and Brewer, Browne, Joyce and Sibieta (2010).

**Figure 3.1. Relative BHC income child poverty since 1961**



*Notes: Years up to 1992 are calendar years; thereafter, years refer to financial years. Incomes are measured before housing costs have been deducted (BHC) and equivalised using the modified OECD equivalence scale. Figures before 2001 are for Great Britain; figures from 2002 onwards are for the whole United Kingdom (Northern Ireland was first included in the official HBAI series in 2002–03). Data point for 2009–10 is simply a linear interpolation between 2008–09 and 2010–11. Sources: Figures for 1961 to 2008 are from the Family Expenditure Survey (1961–93) and the Family Resources Survey (1994–2008). Projections are authors’ calculations using Family Resources Survey 2008–09, TAXBEN and assumptions specified in the text.*

### 3.2 The direct impact on poverty of the coalition government’s tax and benefit reforms

Here we repeat the simulations presented in Section 3.1, except that the assumed tax and benefit systems are those that would have been in place if the coalition government had simply implemented the plans for the tax and benefit system that it inherited from the previous government. By comparing the results of these simulations with those in the previous section, we can quantify the direct impact of those reforms on poverty between 2010 and 2013.

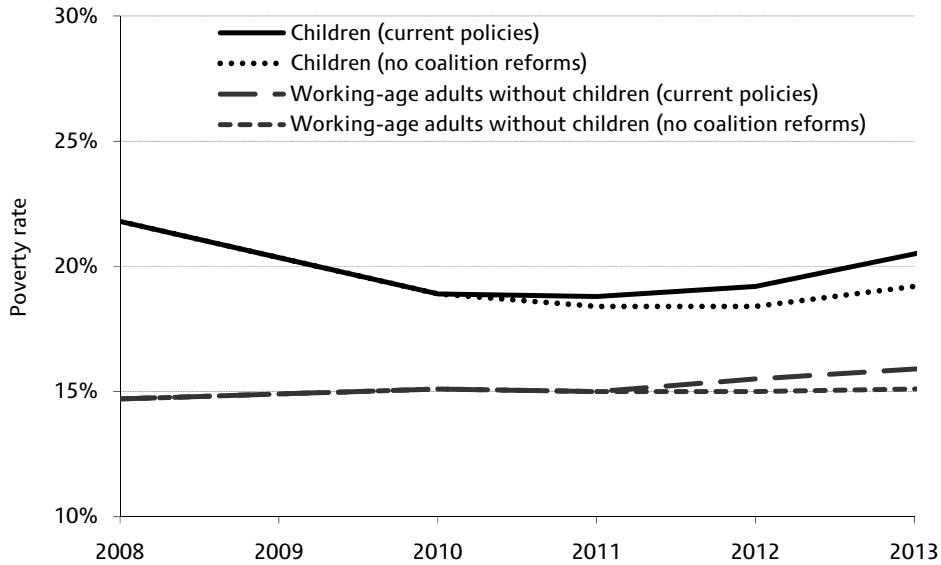
It is very important to recognise what this exercise does and does not reveal. The tax and benefit systems that would have been in place if the coalition government had not made any reforms are *not* necessarily the same as the systems that would have been in place if the previous government had remained in office. Given the UK’s fiscal position, it is highly likely that any incoming government would have made tax and

benefit reforms beyond those that had been announced before the 2010 general election. Thus, just as the title of this section suggests, we are quantifying the direct impact of the coalition government's reforms; we are *not* comparing the coalition's reforms with the reforms of a hypothetical Labour administration (and, indeed, there is no way we could credibly do so, since we do not know what those reforms would have been).

Note also that these simulations take as given the expected macroeconomic environment, according to the November 2010 official forecasts produced by the Office for Budget Responsibility. If the coalition government's tax and benefit reforms have (positive or negative) impacts on macroeconomic variables such as employment and earnings between 2010 and 2013, then in reality that will have an impact on poverty (though the nature of that impact, particularly on relative poverty, would depend on the *distribution* of employment and earnings effects). The nature of these macroeconomic effects is unclear, so we ignore these possibilities here. However, we do explore the sensitivity of our poverty forecasts to assumptions about earnings and employment in Section 4. A related point is that the VAT rise in January 2011 could lead to higher benefit rates in 2012 than would otherwise have been the case, because the uprating of most benefits in April 2012 will be based on CPI inflation in September 2011. On the other hand, the Bank of England has a 2% CPI inflation target: predicting the effect of the VAT rise on benefit rates would involve predicting the monetary policy response. We would also expect increases in the prices of goods to be accompanied by increases in nominal earnings and thus median income, so the net effect on relative poverty is ambiguous; and an increase in the general price level would also raise the absolute poverty line (because it is fixed in real terms), so again the net effect of a VAT rise on absolute poverty is ambiguous.

Figures 3.2 to 3.5 show the results, comparing them with the projections obtained under current policies. We focus here on poverty among children and working-age adults without dependent children. The numbers underlying these figures, as well as the corresponding numbers for working-age parents and all working-age adults, can be found in Appendix D.

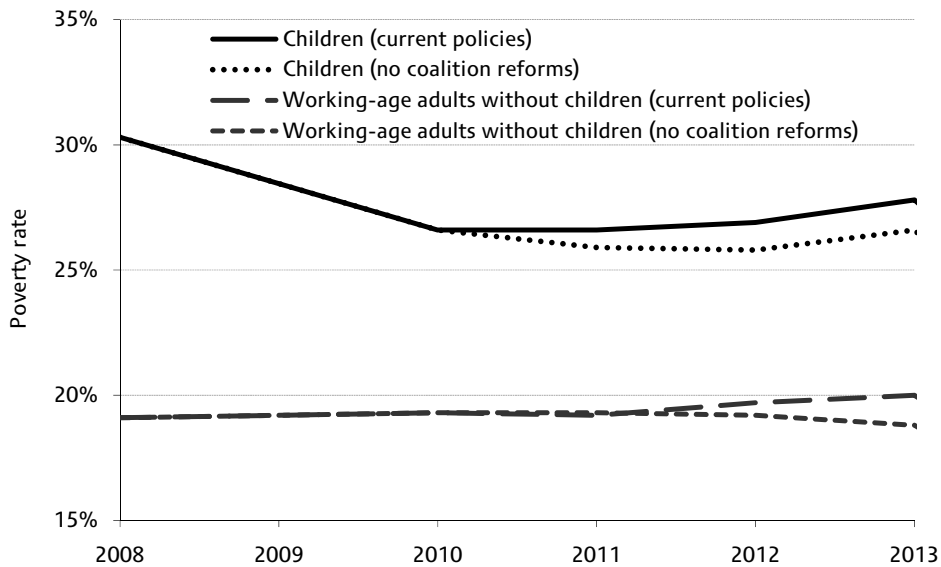
**Figure 3.2. Projected relative BHC income poverty rates under current policies and without the coalition government's tax and benefit reforms**



*Notes: Years refer to financial years. Poverty line is 60% of median income. 2008–09 poverty rates are actual out-turns. Data points for 2009–10 are simply linear interpolations between 2008–09 and 2010–11.*

*Source: Authors' calculations using Family Resources Survey 2008–09, TAXBEN and assumptions specified in the text.*

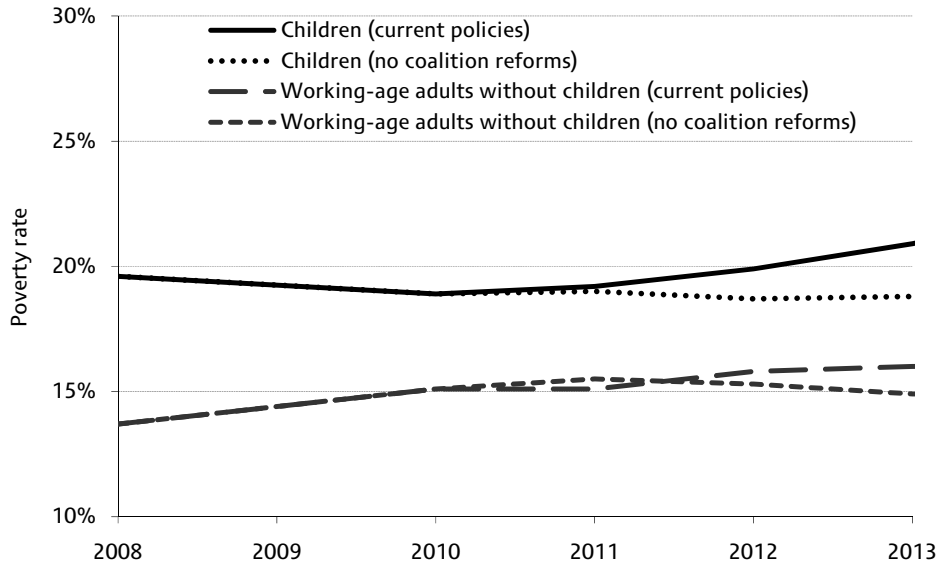
**Figure 3.3. Projected relative AHC income poverty rates under current policies and without the coalition government's tax and benefit reforms**



*Notes: As Figure 3.2.*

*Source: As Figure 3.2.*

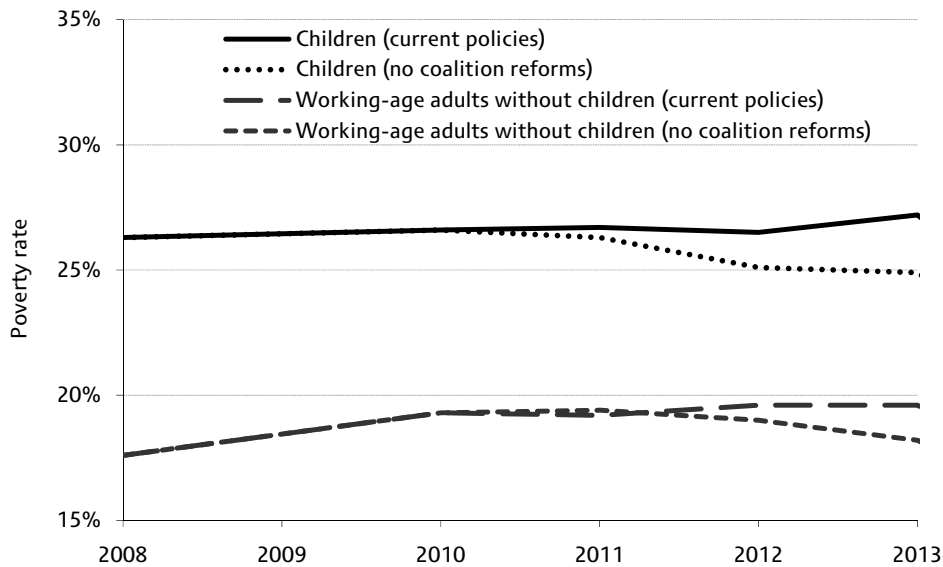
**Figure 3.4. Projected absolute BHC income poverty rates under current policies and without the coalition government's tax and benefit reforms**



*Notes: Years refer to financial years. Poverty line is 60% of the real 2010 median income. 2008–09 poverty rates are actual out-turns. Data points for 2009–10 are simply linear interpolations between 2008–09 and 2010–11.*

*Source: Authors' calculations using Family Resources Survey 2008–09, TAXBEN and assumptions specified in the text.*

**Figure 3.5. Projected absolute AHC income poverty rates under current policies and without the coalition government's tax and benefit reforms**



*Notes: As Figure 3.4.*

*Source: As Figure 3.4.*

The figures show the following:

- The coalition government's reforms have a negligible net impact on relative and absolute child poverty in 2011. They slightly reduce absolute poverty among those of working-age without children, by about 100,000. Taking all children and working-age individuals together, coalition reforms have no net impact on absolute poverty in 2011, and they act to increase relative poverty by about 100,000.
- The coalition government's reforms act to increase poverty slightly in 2012. Those reforms increase relative child poverty by about 100,000, absolute child poverty by about 200,000, and both absolute and relative poverty among working-age adults without dependent children by about 100,000 (on a BHC basis).
- In 2013, our projections suggest that coalition reforms increase absolute poverty by about 300,000 children and 300,000 working-age adults without dependent children (on a BHC basis). The reforms explain all of the predicted rise in absolute poverty between 2012 and 2013. We find that those reforms also increase relative poverty in 2013, but the estimated impacts are a little smaller, at about 200,000 children and 200,000 working-age adults without dependent children (on a BHC basis). The reason for this is that coalition reforms reduce median income in 2013 (see Tables D.1 and D.2 in Appendix D), and this reduces the relative poverty line. Likely explanations for why coalition reforms reduce median income in 2013 include the reforms to Child Benefit and Disability Living Allowance (see Section 2).

The coalition government has claimed that 'there is no measurable impact on child poverty from all modelled Budget and Spending Review changes to 2012–13'.<sup>25</sup> If true, this would suggest that the impact of the coalition's above-indexation increases to the per-child element of the Child Tax Credit in 2011–12 and 2012–13 offset the impact on child poverty of other welfare cuts. Our analysis suggests that, although the coalition government's reforms have no discernible impact on child poverty in 2011–12, they do act to increase child poverty slightly in 2012–13, by about 100,000 and 200,000 children for relative and absolute poverty respectively. This estimated impact on relative child poverty in 2012–13 is

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<sup>25</sup> HM Treasury, 2010a, p. 99.



small and it is entirely accounted for by the Local Housing Allowance reforms which we model and the Treasury does not.<sup>26</sup> But the official series used to measure poverty in the UK rounds poverty statistics to the nearest 100,000, so an impact of 100,000 would be ‘measured’ in that series if it occurred, although it would be the smallest possible change to be measured.

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<sup>26</sup> Note, however, that our analysis is not strictly comparable to that of the Treasury. Though the methods used and assumptions made are extremely similar, they are not identical. For example, the Treasury does not account for non-take-up of benefits and tax credits, and the macroeconomic forecasts that we use here – from the Office for Budget Responsibility and published on 29 November 2010 – were not available to the Treasury at the time of the October Spending Review (although we have checked that using the most recent macroeconomic forecasts available to the Treasury at that time makes little difference).

## 4. Sensitivities

Here we investigate the sensitivity of our poverty projections to alternative scenarios for total employment and average earnings growth to those outlined in the Office for Budget Responsibility's forecasts, in an attempt to reflect the macroeconomic uncertainty that clearly exists. We also consider the impact of changing our assumption about the *distribution* of earnings growth: projections in Section 3 were obtained under the assumption that all earnings grow at the forecasted rate of *average* earnings growth.

### *Total employment and average earnings*

We consider 'optimistic' and 'pessimistic' macroeconomic scenarios, where both total employment and average earnings are higher and lower (respectively) in relation to the OBR's forecasts. In the 'optimistic' scenario, we assume that employment is 200,000 higher and that average earnings are 2% higher in 2013 than the OBR expects. In the 'pessimistic' scenario, we assume that employment is 200,000 lower and that average earnings are 2% lower in 2013 than the OBR expects.<sup>27</sup>

### *Differential earnings growth*

We also consider what would happen if the rate of average earnings growth were as the OBR expects, but earnings growth across the distribution were not uniform. In other words, we assume that earnings in 2013 are lower in some earnings decile groups, and higher in others, than they would be if they grew at the rate of average earnings; and we do this such that average earnings remain the same as under our central assumptions. We consider both progressive and regressive patterns of earnings growth. For each decile group of the earnings distribution, the assumed percentage deviations from the level of earnings implied by our central assumptions are given in Table 4.1.<sup>28</sup>

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<sup>27</sup> The OBR's forecast for total employment in 2013 is 29.6 million.

<sup>28</sup> Note that in previous work (Brewer, Browne, Joyce and Sutherland, 2009), when testing the sensitivity of our results to differential earnings growth, we used the actual pattern of differential earnings growth observed between 2001 and 2006. However, given recent macroeconomic events, there is reason to suspect that past patterns will be a poor guide to the near future. Therefore, here we simply choose markedly progressive and regressive scenarios to document the sensitivity.

**Table 4.1. Differential earnings growth scenarios**

<i>Scenario</i>	<i>Assumed % deviation in earnings relative to our central assumptions, by decile group of the earnings distribution</i>									
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
Progressive	+6.5	+5.5	+4.5	+3.5	+2.5	+1.5	+0.5	-0.5	-1.5	-2.5
Regressive	-6.5	-5.5	-4.5	-3.5	-2.5	-1.5	-0.5	+0.5	+1.5	+2.5

**Table 4.2. Projections of relative BHC income poverty in 2013: sensitivity analysis**

<i>Scenario</i>	<i>Children</i>		<i>Working-age adults without children</i>		<i>Median income (2010 prices)</i>
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	
Baseline	2.7	20.5	3.9	15.9	£407 p.w.
High employment and earnings	2.8	21.2	3.9	15.9	£413 p.w.
Low employment and earnings	2.6	19.9	4.0	16.0	£401 p.w.
Progressive earnings growth	2.8	21.0	3.9	15.7	£411 p.w.
Regressive earnings growth	2.7	20.4	4.0	16.1	£404 p.w.

*Note: The 'scenarios' are defined in the text.*

*Source: Authors' calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

**Table 4.3. Projections of absolute BHC income poverty in 2013: sensitivity analysis**

<i>Scenario</i>	<i>Children</i>		<i>Working-age adults without children</i>	
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>
Baseline	2.7	20.9	4.0	16.0
High employment and earnings	2.7	20.5	3.8	15.5
Low employment and earnings	2.8	21.3	4.1	16.6
Progressive earnings growth	2.7	20.6	3.9	15.7
Regressive earnings growth	2.8	21.2	4.1	16.5

*Note: As Table 4.2.*

*Source: As Table 4.2.*

Tables 4.2 and 4.3 show the results of these sensitivity tests for the cases of relative and absolute BHC income poverty in 2013, comparing them with the results obtained under our central assumptions (see Section 3.1). The tables show the following:

- Higher employment and average earnings act to *increase* relative poverty slightly among families with dependent children, and have no discernible impact on relative poverty among working-age adults without dependent children. The former finding is consistent with that in Brewer, Browne, Joyce and Sutherland (2009), and is explained by the fact that higher employment and average earnings tend to raise the median income (and hence the relative poverty line) by more than they raise the incomes of low-income families with dependent children. Note that, by controlling for employment by reweighting the data, we have effectively assumed that the demographic composition of the employed population remains constant when total employment changes. Clearly, if employment changes by more among particular groups, this could have different implications for poverty.
- For both children and working age adults without children, there is roughly a 1 percentage point reduction in absolute poverty for a 4% increase in average earnings and an increase in employment of 400,000 (comparing the second and third rows of Table 4.3).
- The ‘progressive’ and ‘regressive’ earnings growth scenarios have counterintuitive implications for relative child poverty, with the ‘regressive’ scenario resulting in a lower relative child poverty rate than the ‘progressive’ scenario. This highlights very acutely the importance for relative poverty of factors affecting the median income. Under the progressive earnings growth scenario, median income increases, which acts to increase relative child poverty (other things being equal); and this more than offsets the impact of higher earnings for low-income working parents. The intuition behind this result is that the median-income household is in the bottom half of the earnings distribution, because there are fewer workers in the bottom half of the income distribution than in the top half. Therefore, the median household gains a lot under a progressive pattern of earnings growth, whereas households lower down the income distribution (who are less likely to be working) gain less.

- The 'progressive' and 'regressive' earnings growth scenarios have the expected effects on absolute poverty, with a progressive pattern acting to lower absolute poverty and vice versa. The effects are small, however. Again, this is because many people around the poverty line are not in work, so they are unaffected by patterns of earnings growth.

## 5. Conclusion

In this Briefing Note, we have produced projections of relative and absolute income poverty among children and working-age adults between 2010 and 2013.

Our results<sup>29</sup> suggest that relative poverty in 2010, the current financial year, will be about 300,000 lower for children than it was in 2008 (the latest year of data), but about 100,000 higher for working-age adults without dependent children. The fall in relative child poverty is primarily due to projected real falls in median income (and hence the relative poverty line) over those two years: absolute poverty – using 60% of the 2010 median income as a fixed real poverty line – is forecast to be relatively stable among families with dependent children, and to increase by about 400,000 among working-age adults without children, between 2008 and 2010. The difference between projected poverty trends for families with and without dependent children over this period is likely to be (at least partly) due to above-indexation Child Tax Credit increases implemented in April 2009 and April 2010 by the previous government.

Between 2010 and 2012, we predict a fall in real median income of about 1%; stability in relative child poverty and a rise in absolute child poverty of about 100,000; and rises in poverty among working-age adults without children of about 300,000 and 200,000 for absolute and relative poverty respectively. In 2013, the last year of our forecast horizon, we predict a rise in relative poverty of about 200,000 children and 200,000 working-age adults without children, and a rise in absolute poverty of about 100,000 children and 100,000 working-age adults without children, when measuring incomes before housing costs.

If current policies remain in place, we project a relative BHC income child poverty rate of 20.5%, and an absolute BHC income child poverty rate of 20.9%, in 2013. This would leave the government needing to reduce these measures of child poverty by 10.5 and 15.9 percentage points respectively in seven years in order to meet the 2020 child poverty targets set out in

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<sup>29</sup> Figures mentioned in this Conclusion are for poverty with incomes measured before housing costs have been deducted. Results for poverty with incomes measured after housing costs have been deducted are included in Section 3 and Appendix D. Qualitative conclusions are very similar for both measures.

the Child Poverty Act. That reduction in relative child poverty has not been achieved over *any* period since the current consistent series began in 1961.

We find small impacts on poverty over the next two years of the coalition government's reforms. In 2012, the reforms act to increase relative child poverty by about 100,000, absolute child poverty by about 200,000, and both absolute and relative poverty among working-age adults without children by about 100,000. This conclusion is at odds with the coalition government's claim that its reforms will not have a 'measurable' impact on child poverty in 2012–13, although it should be noted that a difference of 100,000 is the smallest that would be measured in the official poverty figures. The apparent discrepancy between our result and that of the Treasury is accounted for by the Local Housing Allowance reforms which we model and the Treasury did not.

According to our projections, the coalition government's reforms act to increase absolute poverty in 2013, by about 300,000 children and 300,000 working-age adults without children (over 1 percentage point) on a before-housing-costs (BHC) basis. The estimated impact on relative poverty is smaller, at about 200,000 children and about 200,000 working-age adults without children. The reason why the coalition government's reforms act to increase absolute poverty by more than relative poverty in 2013 is that those reforms act to reduce median income in 2013, and this reduces the relative poverty line.

In the longer term, the government's introduction of the Universal Credit has the potential to affect substantially the distribution of household incomes, through the direct impact on benefit entitlements and financial work incentives and a likely effect on the take-up rates of means-tested benefits. Therefore, future analysis by IFS researchers will look in detail at the prospects for poverty beyond 2013, given the introduction of the Universal Credit and the various channels through which it may affect household incomes.

## Appendix A. Details of assumptions and procedures

**Table A.1. Creating the HBAI definition of income from TAXBEN**

These are added together:	Gross employment income Gross self-employment income Imputed income from company cars and other benefits in kind Free school meals Savings income Pensions income Income from property Any other unearned income Maintenance payments from absent spouse Benefits
These are subtracted:	Expenses incurred in the course of employment Self-employment net losses Direct taxes Council tax Contributions to personal pensions Maintenance payments made Parental contributions to students

**Table A.2. Control totals used to derive grossing weights**

<i>Dimension</i>	<i>Categories</i>
Total population	n/a
Number of individuals by region	12 standard regions of Great Britain
Number of households by region	Scotland, London, whole of UK
Household size	One person
Age and gender (jointly)	Males and females split into the following age categories: 0–9, 10–15, 16–19 (dependent child), 16–19 (non-dependent), 20–24, 25–29, 30–44, 45–59, 60+
Number employed	n/a
Ethnicity	Asian (Great Britain only)
Lone-parent families	n/a
Two-parent families by country	England, Scotland, Wales, whole of UK
Housing tenure	Owner, tenant (social), tenant (private)



**Table A.3. Default uprating rules under current policies**

<i>Rule</i>	<i>What it's used to uprate</i>
In line with RPI	War pensions Scholarship income Income from government training schemes Allowances paid other than from spouse Council tax
In line with nominal earnings	Water and sewerage rates Private pensions income Employment income Self-employment income Maintenance payments Allowances from absent spouse
In line with nominal GDP	Imputed capital from savings, annuities, property, stocks and shares, and bonds
In line with RPI to previous September, rounded to nearest £5	National Insurance upper earnings limit
In line with RPI to previous September, increase rounded up to nearest £10	Income tax personal allowances Income tax married couple's allowances
In line with RPI to previous September, increase rounded up to nearest £100	Income tax bands Threshold for withdrawal of older person's income tax allowances
In line with CPI to previous September, rounded to nearest 5p	Child Benefit Severely disabled premiums on Income Support and Housing Benefit Incapacity Benefit Carer's Allowance Disability Living Allowance Attendance Allowance Severe Disablement Allowance Local Housing Allowance rates (from April 2013) <sup>a</sup> Most Income Support rates Most Housing Benefit applicable amounts Non-dependent deductions for Income Support, Housing Benefit and Second Adult Council Tax Rebate
In line with CPI to previous September, rounded to nearest £5	Per-child element of Child Tax Credit Disabled and severely disabled elements of Child Tax Credit First tax credit threshold for those not entitled to Working Tax Credit All Working Tax Credit amounts
In line with CPI to previous September, rounded to nearest £1	Thresholds for non-dependant deductions for Income Support, Housing Benefit and Second Adult Council Tax Rebate

<i>Rule</i>	<i>What it's used to uprate</i>
Increased by the maximum of average earnings index growth to previous September, CPI inflation to previous September, and 2.5%, rounded to nearest 5p <sup>b</sup>	Basic State Pension Pension Credit guarantee amounts
Frozen	Winter Fuel Payments to pensioners Income Support and Housing Benefit disregards Family element of Child Tax Credit First tax credit threshold National Local Housing Allowance caps

*a. Before April 2013, Local Housing Allowance rates will continue to rise in line with rents.*

*b. In April 2011, the Basic State Pension will instead rise in line with RPI inflation in the year to September 2010, which is 4.6%.*

## **Appendix B. List of modelled coalition reforms**

### *Benefits and tax credits*

- Uprate all benefits and tax credits with CPI from April 2011.
- Increase the child element of Child Tax Credit by £180 above indexation in April 2011 and £110 above indexation in April 2012.
- Increase the first and second tax credit taper rates to 41% in April 2011.
- Remove the baby element of Child Tax Credit in April 2011.
- Cancel the planned Child Tax Credit supplement for children aged 1 and 2 in April 2012.
- Taper the family element of Child Tax Credit immediately after the child element is withdrawn from April 2012.
- Remove the 50-plus element of Working Tax Credit in April 2012.
- Increase the Working Tax Credit working hours requirement for couples with children from 16 to 24 hours in April 2012.
- Reduce the proportion of costs covered by the childcare element of Working Tax Credit from 80% to 70% in April 2011.
- Freeze the basic and 30-hour elements of Working Tax Credit at 2010–11 rates from 2011–12 to 2013–14 inclusive.

- Freeze Child Benefit at 2010–11 rates from 2011–12 to 2013–14 inclusive.
- Remove Child Benefit from families containing a higher-rate taxpayer in January 2013.
- Uprate the Basic State Pension by the maximum of CPI inflation, earnings growth and 2.5% from April 2012, and uprate with RPI inflation in April 2011.
- Increase minimum guarantee for Pension Credit by the cash increase in Basic State Pension in April 2011.
- Freeze maximum award of Savings Credit at 2010–11 rates from 2011–12 to 2014–15 inclusive.
- Time-limit contributory Employment and Support Allowance to one year from April 2012.
- Local Housing Allowance: remove the £15 excess that can be claimed above rent, set local reference rates at the 30<sup>th</sup> percentile of local rents rather than the median, cap all rates at the four-bedroom rate, and introduce national caps on all local reference rates in April 2011 (new claimants) or January to December 2012 (existing claimants); increase the age below which single people can only claim the shared-room rate from 25 to 35 in April 2012; and change annual uprating of local reference rates to CPI from April 2013.
- Housing Benefit deductions for non-dependants uprated with CPI from April 2011 (previously frozen in nominal terms).
- Reduce Housing Benefit awards by 10% for those on Jobseeker's Allowance for 12 months (excluding lone parents with youngest child aged under 5, pensioners and those on disability benefits) from April 2013.
- Reduce Housing Benefit awards for those of working age under-occupying social housing from April 2013.
- Reform eligibility assessment for Disability Living Allowance in April 2013.
- Cap total household benefit payments at the level of average earnings for working households from April 2013.

### *Personal taxes*

- £1,000 cash increase to the personal allowance in April 2011.
- £2,500 reduction in basic-rate limit, upper earnings limit and upper profits limit in April 2011.
- Freeze higher-rate threshold in 2012–13 and keep upper earnings limit and upper profits limit aligned with higher-rate threshold.
- Increase primary threshold in 2011–12 by £21 above alignment with where the personal allowance would have been under previous government's plans.
- Increase all National Insurance rates by 1 percentage point in April 2011.

### *Other*

- Cancel extension of free school meals to primary-school children with parents in receipt of Working Tax Credit with a gross income lower than the first tax credit threshold for those not entitled to Working Tax Credit from September 2010.
- Abolish Sure Start Maternity Grant for second and subsequent children in April 2011.
- Freeze council tax in England in 2011–12.

### **Appendix C. Poverty projections under full take-up and without applying any 'correction' to simulated incomes**

The purpose of the results shown here is primarily to illustrate the importance, when modelling poverty, of accounting for non-take-up of means-tested benefits and tax credits (see Section 2.1) and of making some adjustment for the fact that tax and benefit microsimulation output does not perfectly replicate the survey data on which it is based (see Section 2.2). These adjustments are not included in the sensitivity analysis in Section 4, since in no circumstances do we think that ignoring non-take-up or the discrepancy between TAXBEN and HBAI-measured poverty approximates a realistic alternative 'scenario' for the path of poverty. Rather, this is intended mostly for the benefit of analysts and modellers.

Tables C.1 and C.2 reiterate our 2013–14 projections of relative and absolute BHC income poverty under current policies, and compare them with the projections obtained when:

- a. applying no ‘correction’ to simulated incomes;
- b. assuming full take-up and applying no ‘correction’ to simulated incomes.

Note that it makes little sense to consider the case where full take-up is assumed but the ‘correction’ to simulated incomes continues to be applied. This is because the necessary correction would itself be changed by the fact that full take-up is assumed (since this would change the discrepancies between TAXBEN-simulated income and HBAI-measured incomes in 2008–09, the base year), obscuring the effect of assuming full take-up.

**Table C.1. Projections of relative BHC income poverty in 2013 when applying no corrections to simulated income and under full take-up**

	<i>Children</i>		<i>Working-age adults without children</i>		<i>Median income (2010 prices)</i>
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	
Baseline	2.7	20.5	3.9	15.9	£407 p.w.
a. No income correction	2.4	18.1	3.9	15.9	£413 p.w.
b. Full take-up and no income correction	1.7	13.3	3.4	13.7	£421 p.w.

*Source: Authors’ calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

**Table C.2. Projections of absolute BHC income poverty in 2013 when applying no corrections to simulated income and under full take-up**

	<i>Children</i>		<i>Working-age adults without children</i>	
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>
Baseline	2.7	20.9	4.0	16.0
a. No income correction	2.3	17.2	3.9	15.6
b. Full take-up and no income correction	1.5	11.1	3.2	12.9

*Source: Authors’ calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

## Appendix D. Poverty projections without the coalition government's tax and benefit reforms

Table D.1. Projections of relative income poverty in the UK without coalition government's tax and benefit reforms

	<i>Children</i>		<i>Working-age adults</i>		<i>Working-age parents</i>		<i>Working-age adults without children</i>		<i>Real annual median income growth (%)</i>
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	
<b><i>Incomes measured before deducting housing costs</i></b>									
2008 (actual)	2.8	21.8	5.8	16.0	2.4	18.2	3.4	14.7	–
2010	2.5	18.9	5.7	15.6	2.1	16.4	3.5	15.1	–1.7
2011	2.4	18.4	5.7	15.4	2.1	16.1	3.6	15.0	–1.0
2012	2.4	18.4	5.7	15.4	2.1	16.1	3.6	15.0	+0.5
2013	2.5	19.2	5.9	15.6	2.2	16.6	3.7	15.1	+1.3
<b><i>Incomes measured after deducting housing costs</i></b>									
2008 (actual)	3.9	30.3	7.8	21.5	3.3	25.6	4.4	19.1	–
2010	3.5	26.6	7.5	20.7	3.0	23.2	4.5	19.3	–3.2
2011	3.4	25.9	7.6	20.5	3.0	22.8	4.6	19.3	–0.8
2012	3.4	25.8	7.6	20.4	3.0	22.8	4.6	19.2	+1.6
2013	3.5	26.6	7.7	20.3	3.0	23.3	4.6	18.8	+2.1

Notes: Poverty line is 60% of median income. Years refer to financial years. Real annual median income growth for 2010 is projected average annual median income growth between 2008 and 2010.

Source: Authors' calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.

**Table D.2. Projections of absolute income poverty in the UK without coalition government's tax and benefit reforms**

	<i>Children</i>		<i>Working-age adults</i>		<i>Working-age parents</i>		<i>Working-age adults without children</i>	
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>
	<b><i>Incomes measured before deducting housing costs</i></b>							
2008 (actual)	2.5	19.6	5.3	14.8	2.2	16.6	3.2	13.7
2010	2.5	18.9	5.7	15.6	2.1	16.4	3.5	15.1
2011	2.5	19.0	5.8	15.8	2.2	16.5	3.7	15.5
2012	2.4	18.7	5.8	15.6	2.1	16.3	3.7	15.3
2013	2.5	18.8	5.8	15.4	2.1	16.3	3.7	14.9
	<b><i>Incomes measured after deducting housing costs</i></b>							
2008 (actual)	3.4	26.3	7.0	19.5	3.0	22.7	4.1	17.6
2010	3.5	26.6	7.5	20.7	3.0	23.2	4.5	19.3
2011	3.4	26.3	7.7	20.8	3.0	23.2	4.6	19.4
2012	3.3	25.1	7.5	20.1	2.9	22.2	4.6	19.0
2013	3.3	24.9	7.3	19.5	2.9	22.0	4.5	18.2

*Notes: Poverty line is 60% of the real 2010–11 median income (hence, relative and absolute poverty in 2010–11 are identical). Years refer to financial years.*

*Source: Authors' calculations based on Family Resources Survey 2008–09 using TAXBEN and assumptions specified in the text.*

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