



HM Treasury

# Impact on households:

distributional analysis to accompany  
Budget 2014

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March 2014





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# Contents

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		Page
Chapter 1	Introduction	3
Chapter 2	Impact on households	7
Chapter 3	Data sources and methodology	17



# 1

## Introduction

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**1.1** The government has published regular distributional analysis of the impact on households of its reforms to tax, tax credits, benefits and public service spending. This document updates the distributional analysis that was published at Autumn Statement 2013. It analyses the effects of the government's policies on a cumulative basis, which means that it includes measures from all fiscal events since June Budget 2010, up to and including Budget 2014. It also includes changes that were announced before June Budget 2010 that have been implemented by the government.

**1.2** As at Autumn Statement 2013, this analysis is being published online as a supplementary document to Budget 2014.

### Measuring distributional impacts

**1.3** The government uses a wide range of modelling tools and data to assess the impact of individual measures on households. Considering the impact of these measures on a combined basis presents a trade-off between how accurately a single source of analysis can show the cumulative impact of policy changes and how complete a picture it can provide. This document recognises this trade-off by presenting two levels of analysis:

- broad analysis of changes to public service spending, taxes, tax credits and benefits that directly affect households, on a **quintile** basis
- where a finer level of detail is possible, more precise – though less comprehensive – analysis of changes to taxes, tax credits and benefits that directly affect households, on a **decile** basis

**1.4** The decile analysis in Chapter 2 is presented on the basis of both **household income** and **household expenditure**. Grouping households by their income is recognised as the standard approach to distributional analysis, as income provides a good indication of households' standard of living, but can be complemented by also grouping households according to their expenditure. Analysis on an expenditure basis is useful as some households lower down the income distribution have low incomes only temporarily, for example those containing students, self-employed or unemployed individuals. During periods of temporarily low income such households may maintain their standard of living by funding their expenditure from savings or borrowing, thereby smoothing their lifetime consumption. In the context of distributional analysis, a low-income household's expenditure may therefore be a better indicator of its standard of living.<sup>1</sup>

**1.5** To create deciles, households are ordered by their net income, or alternatively their expenditure, and then divided into 10 equally sized groups. The first decile contains the poorest (or lowest spending) tenth of households while the top decile contains the richest (or highest spending) tenth. Analysis by income quintiles is on the same basis but divides households into 5 rather than 10 groups.

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<sup>1</sup> For example, see 'Least well-off in society better identified by low spending than low income', Institute for Fiscal Studies Press Release, March 2011, which states that "[t]hose with the lowest reported income are not those with the lowest spending or those living in the most severe forms of deprivation."

**1.6** In both approaches, a standard process called equivalisation is used to ensure that households of different sizes are compared on a consistent basis. The effects of changes on these groups are presented in both cash and percentage terms.

**1.7** Explanations of the data sources, methodologies and equivalisation process used to produce this analysis can be found in Chapter 3 of this document. Chapter 3 also sets out the average gross income within each decile.

**1.8** The analysis focuses on the impact of changes to government tax and spending policies and does not take into account the level of household assets or changes in the wider economy that have affected household incomes. It is therefore important to put these tax and spending decisions in the context of the wider economy, and to do this Chart 2.A shows how household incomes before benefits and taxes have been impacted by inflation and earnings growth between 2007-08 and 2011-12.

**1.9** Although regulatory measures do sometimes affect household incomes, they have no direct effect on the public finances and are therefore out of scope for this analysis. Therefore, the distributional analysis presented here shows the impact of changes in government fiscal policy with a direct impact on households, but not of all government decisions. Presenting only the impact of changes to tax and government spending allows the fairness of changes to tax and spending policy to be assessed independently of changes to regulatory measures and the wider economy.

## Methodological developments

**1.10** HM Treasury continues to update and develop its distributional analysis to allow for a more accurate and complete estimate of the distributional impact of the government's decisions across households.

**1.11** As part of this programme, we have for the first time included the Support for Mortgage Interest (SMI) element of Jobseeker's Allowance, Employment and Support Allowance and Pension Credit in both the decile and quintile analysis. As at previous fiscal events we have also updated the analysis to incorporate the latest round of Office for Budget Responsibility (OBR) economic assumptions. This update includes a revision to the OBR's methodology for calculating the GDP deflator, bringing it in line with the changes to the underlying Office for National Statistics (ONS) methodology introduced from February 2014.<sup>2</sup>

**1.12** Other methodological developments at recent fiscal events have included:

- capturing measures in the quintile analysis aimed at reducing tax avoidance where there is a substantive change in tax policy (Autumn Statement 2013)
- improved modelling estimates of the recipients of income-related benefits and tax credits in the decile and quintile analysis, and improved estimates of the recipients of Resource Departmental Expenditure Limits (RDEL) spending in the quintile analysis (Autumn Statement 2013)
- presenting the analysis on the assumption of incomplete take-up of benefits and tax credits (Spending Round 2013)

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<sup>2</sup> For a fuller description of this change, see 'Introducing a new method for deriving rental data in the calculation of Household Final Consumption Expenditure in the National Accounts', Office for National Statistics, February 2014



## The counterfactual

**1.13** To analyse the effect of the government's measures, assumptions have to be made about what would have happened in their absence. These assumptions are known as 'the counterfactual'. In this document, the effects of the government's measures are assessed against a counterfactual assumption that the previous government's policies would have continued into the future without any further fiscal consolidation. This includes the indexation of tax thresholds, tax credits and benefits.

**1.14** In line with this approach, analysis presented in this document shows the impact on households of the government's uprating policy compared to the uprating policy of the previous government. In many cases the previous government's policy was to link benefit rates and tax thresholds to the Retail Prices Index (RPI). However, the UK Statistics Authority announced in March 2013 that the formula used to produce the RPI does not meet international standards and as such it will no longer be designated a National Statistic.<sup>3</sup> In the absence of knowing how the previous government would have responded to this announcement it is assumed the RPI would have continued to be used, which has implications for the modelled household impacts in this analysis.

**1.15** Chart 1.A below illustrates the cumulative changes in the RPI, Consumer Prices Index (CPI) and new RPIJ index between September 2009 and September 2013.<sup>4</sup> RPIJ is an improved variant of the RPI calculated using formulae that meet international standards. The chart shows that, at September 2013, the RPI was 2.5% higher than RPIJ and 2.9% higher than the CPI. This means that the impact of the government's changes to benefits uprating policy appear bigger in this analysis than it would had the RPI been calculated in line with the new ONS indices.

**1.16** The UK Statistics Authority has launched a review of the changes needed to the range of consumer price statistics produced for the UK to best meet current and future user needs.<sup>5</sup> This is due to report by summer 2014 and so this issue will be kept under review for future publications.

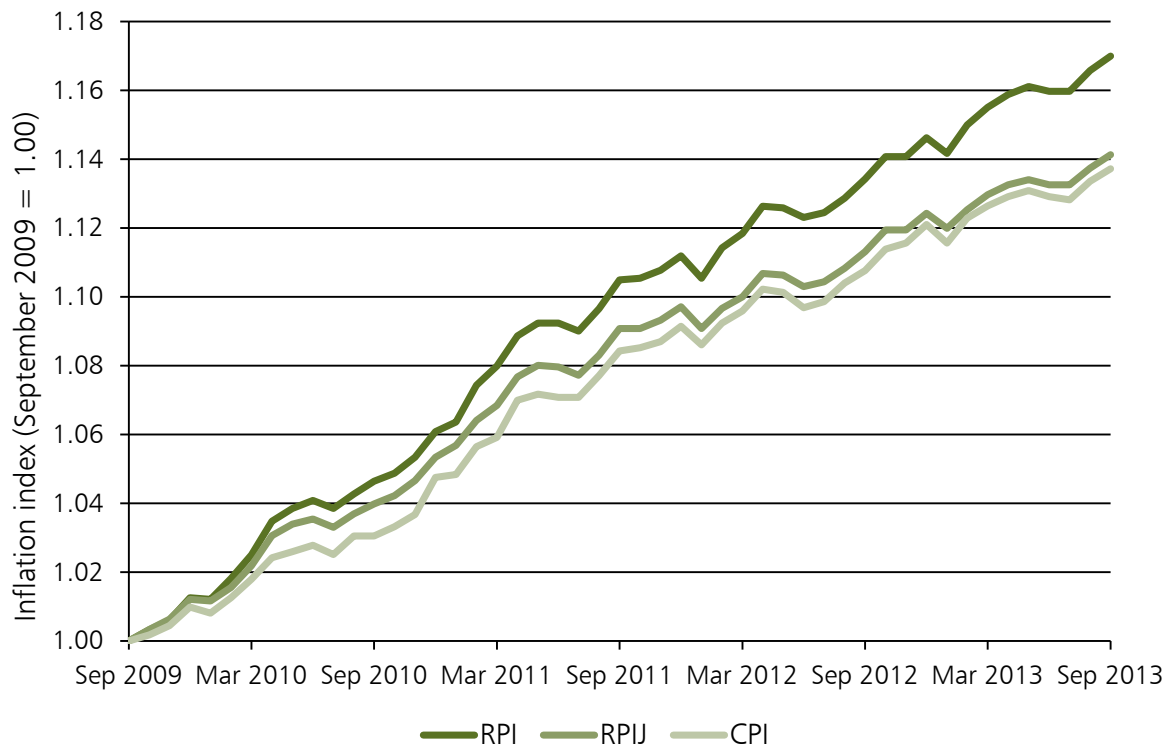
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<sup>3</sup> See 'Assessment Report 246 – The Retail Prices Index', UK Statistics Authority, March 2013

<sup>4</sup> The September 2009 RPI index was used to uprate many benefit rates and tax thresholds, where these rates would have increased in April 2010. At the June Budget 2010, the government took the decision to increase benefits in line with CPI, rather than RPI, meaning that the CPI index from September 2010 was used to increase benefit rates in April 2011. Therefore, this chart shows cumulative changes in these inflation indices since September 2009, as that was the last data point used by the previous government in uprating policy.

<sup>5</sup> See 'Review of Range of Prices Statistics Terms of Reference', UK Statistics Authority, May 2013

**Chart 1.A: Cumulative changes in RPI, CPI, and RPIJ measures of inflation between September 2009 and September 2013**



Source: Office for National Statistics

**1.17** Government debt would have been higher if the government had not taken action to control the unsustainable deficit that it inherited. The analysis in this document does not show what the consequences for households would have been had the government not taken action to reduce the structural deficit. To meet the costs of higher debt these consequences could have included higher future taxes, lower spending on public services or benefits, or a combination of all three.

# 2

## Impact on households

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### Wider economy

**2.1** As set out above, most of the analysis in this chapter (Charts 2.B to 2.I) focuses on the impact of government tax and spending policy and does not take into account the level of household assets or changes in the wider economy that have also affected household incomes. It is therefore important to consider these tax and spending decisions within the wider economic context, and to do this Chart 2.A shows how household incomes before benefits and taxes have been impacted by inflation and earnings growth between 2007-08 and 2011-12.<sup>1</sup> Economic data between 2011-12 and 2013-14 is not currently available by decile, but this earlier story of real household incomes provides the backdrop for the government's tax and spending decisions presented in the rest of this document.

**2.2** The data source used to produce Chart 2.A is different from those used elsewhere in this document. For this reason, the population within each decile group will not be identical to the population in the corresponding decile in the other charts in this document.

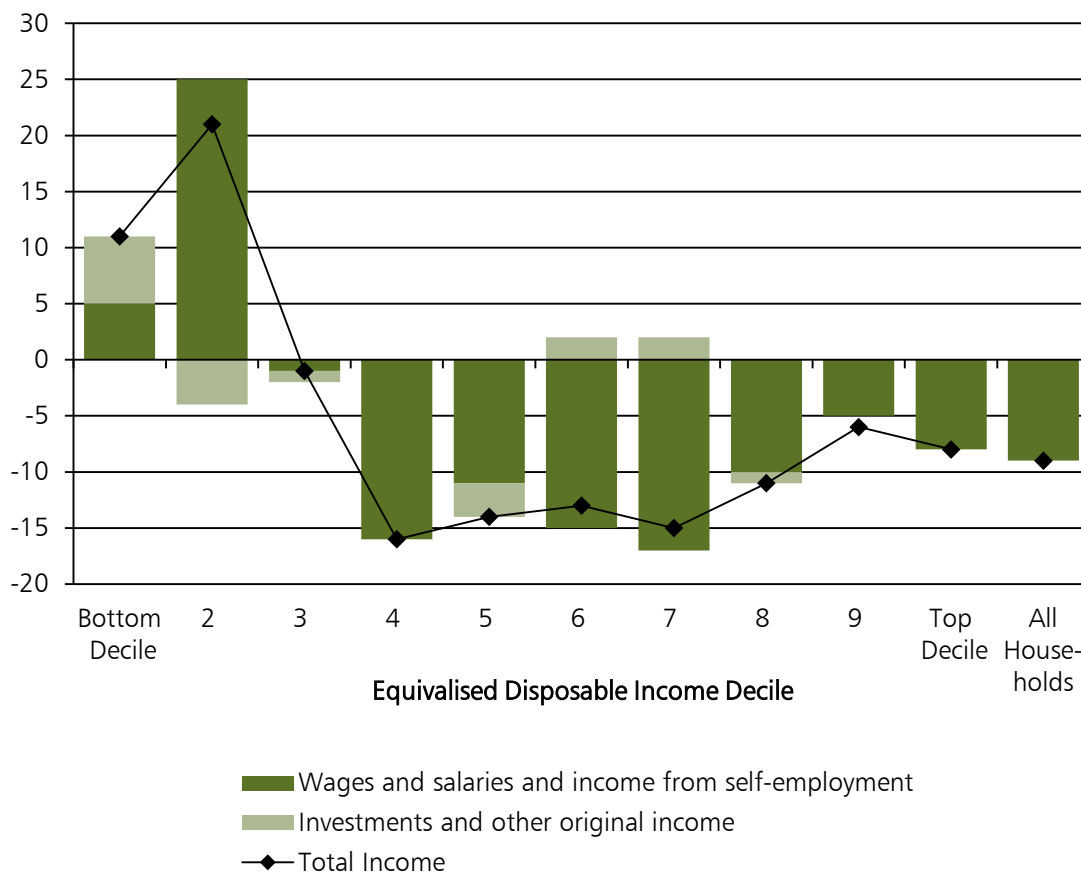
**2.3** Chart 2.A shows that:

- on average, households in the middle of the income distribution saw the largest reductions in real income between 2007-08 and 2011-12
- on average, households in the bottom two deciles saw their incomes protected against the effects of inflation

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<sup>1</sup> In line with Office for National Statistics analysis, figures in this chart are adjusted using the implied household deflator for all deciles to adjust to real-terms.

**Chart 2.A: Contributions to real-term changes in original income before benefits and taxes, 2007-08 to 2011-12, as a percentage of 2007-08 original income**



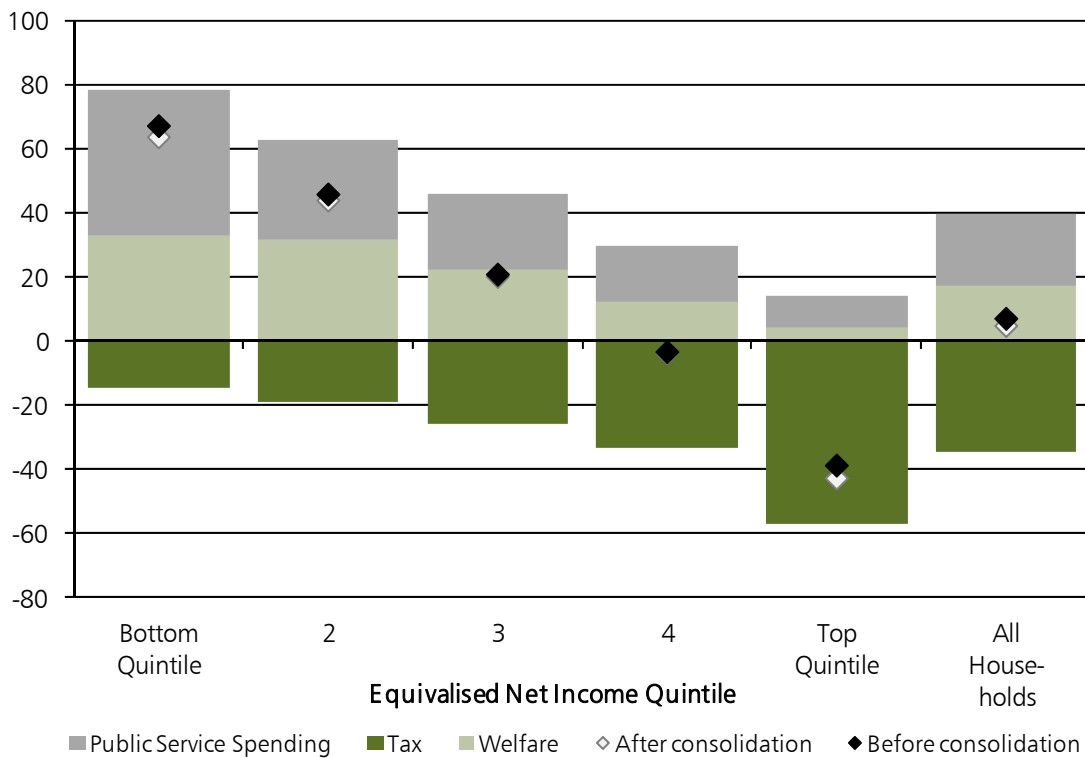
Source: Office for National Statistics, *The Effects of Taxes and Benefits on Household Income (2007-08 to 2011-12)*

## Overall level of taxation and public spending

2.4 To illustrate how the effects of government intervention and redistribution differ across the income distribution, Chart 2.B shows the overall level of households' receipt of benefits, tax credits, and public service spending, after tax, before and after the government's fiscal consolidation measures. The chart shows that:

- on average, the poorest 20% of households receive over five times as much support from public spending as they contribute in tax
- before consolidation, the richest 20% contributed around three and a half times as much in tax as they received from public spending – this has now increased to around four times as much
- on average, only the richest 20% of households contribute significantly more to the state than they consume in public spending
- the profile across the quintiles at this stage of consolidation remains similar to the profile before consolidation

**Chart 2.B: Overall level of benefits, tax credits and public spending receipt, after tax, of households in 2015-16 as a percentage of 2010-11 net income (including households' benefits in kind from public services), before and after consolidation**



Source: HM Treasury estimates based on a range of models and data sources

## Distributional impact on households of taxation, welfare and public service spending changes

### Impact of modelled tax and benefit changes

**2.5** This section presents detailed distributional analysis of those changes to the tax and benefit system that are possible to model in detail at a household level within HM Treasury's tax and benefit microsimulation model. Analysis is presented by both income and expenditure decile. The average gross income for each income decile is set out in Chapter 3.

**2.6** To model changes in welfare spending, direct taxes and indirect taxes on a consistent basis, and to present analysis on the basis of household expenditure, this analysis uses the Living Costs and Food Survey (LCF) produced by the ONS. The LCF is a cross-sectional survey which takes a snapshot of households' incomes and expenditure at a moment in time.

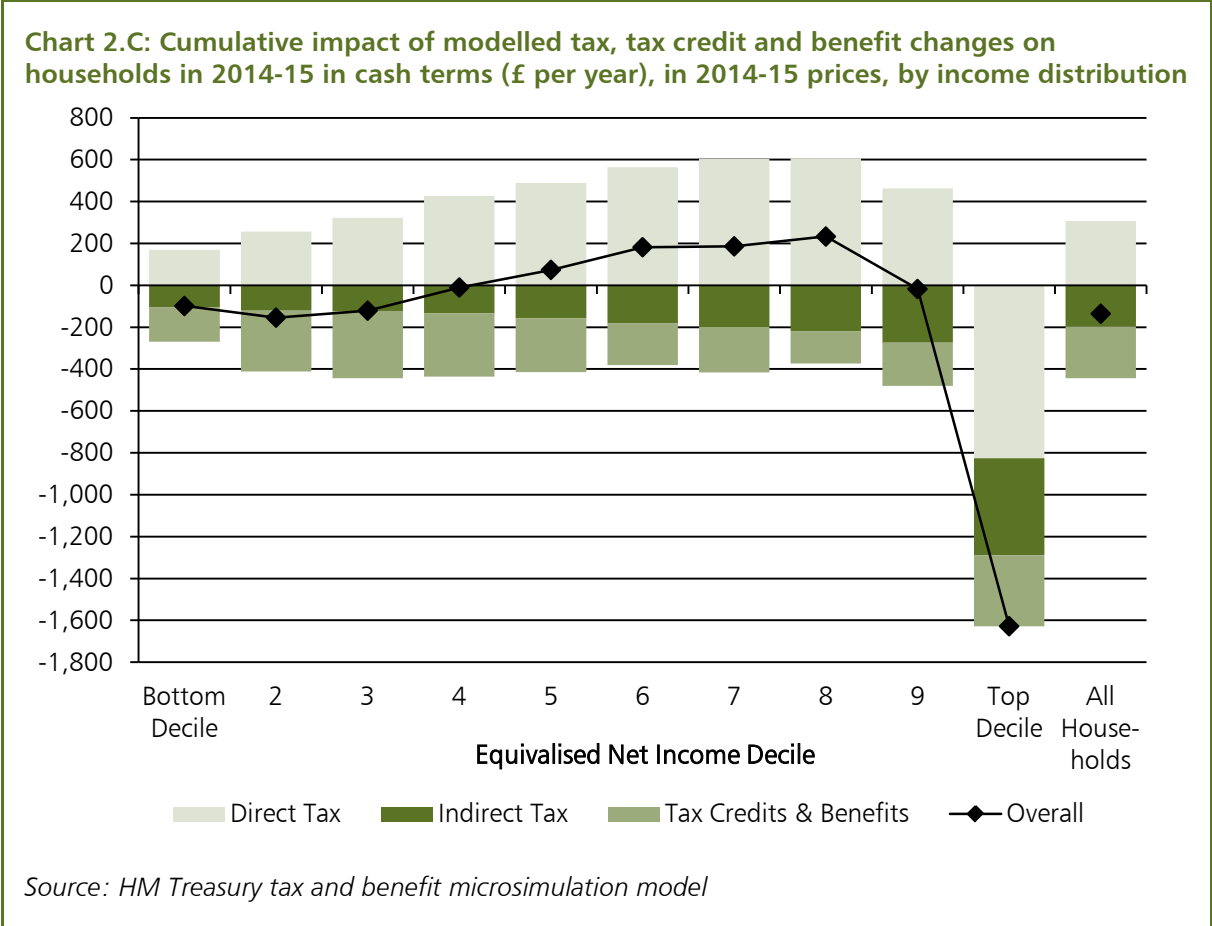
**2.7** As at Autumn Statement 2013, the analysis presented is for the year 2014-15. The distributional impacts shown in Charts 2.C to 2.F are driven mainly by the impacts on households in 2014-15 of policy changes made since 2010, including those announced at Budget 2014. The Budget measures captured in the decile charts include 1p off the price of beer, freeze to spirits and cider duties, and abolition of the wine escalator in 2014-15. However, these charts are not directly comparable to their equivalents at Autumn Statement 2013 due to the methodological developments outlined in paragraph 1.11 and updates to the underlying OBR economic assumptions. As such, comparisons do not show the impact of Budget 2014 decisions alone.

### Impact analysis by income distribution

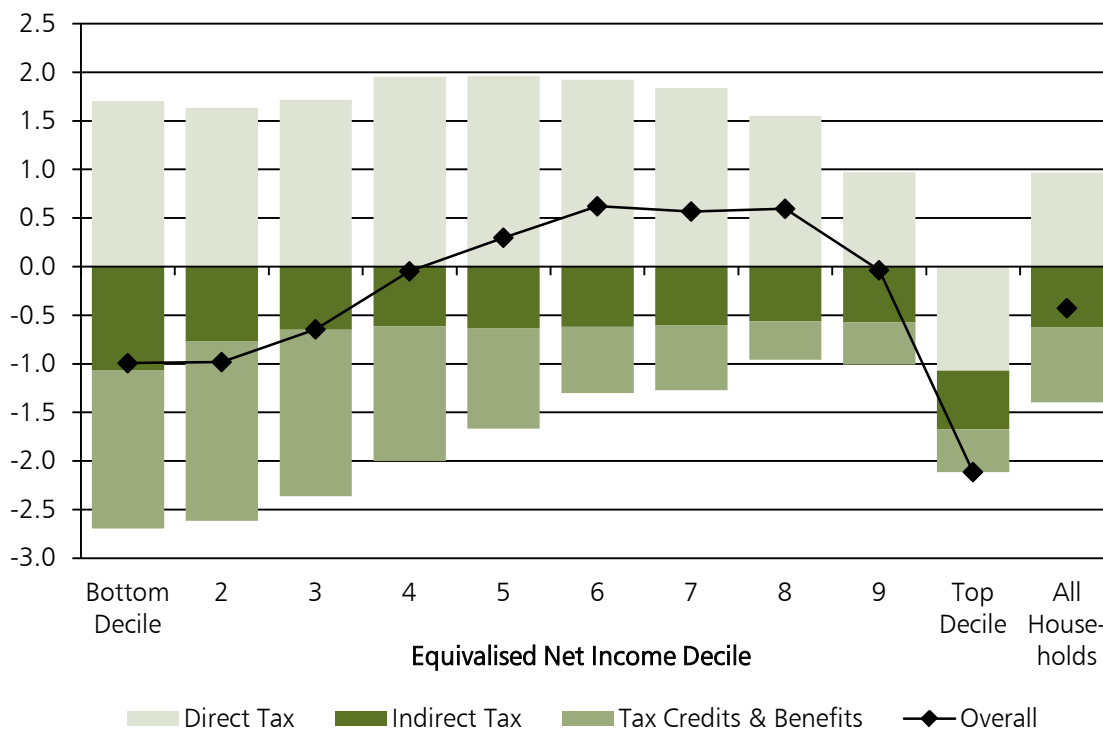
**2.8** Charts 2.C and 2.D show the impact of modelled tax, tax credit, and benefit changes since

June Budget 2010, including measures announced at Budget 2014, across the income distribution. Chart 2.C shows the impact in cash terms and Chart 2.D shows it as a percentage of net equivalised household income. The net impact for each decile is given by the black line, and the bars show how this net impact is composed of changes to direct tax, indirect tax, and tax credit and benefit changes separately.

2.9 The charts show that, as at previous fiscal events, households in the top income decile make the greatest contribution towards reducing the deficit, both in cash terms and as a percentage of their income.



**Chart 2.D: Cumulative impact of modelled tax, tax credit and benefit changes on households in 2014-15 as a percentage of 2014-15 net income, by income distribution**



Source: HM Treasury tax and benefit microsimulation model

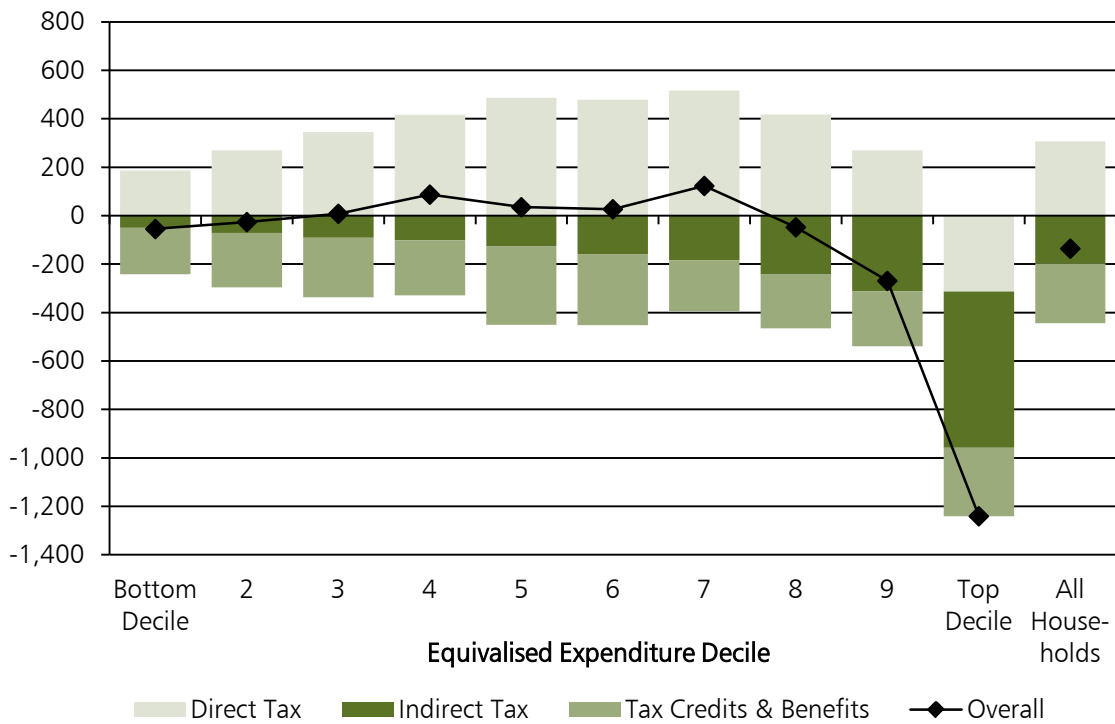
### Impact analysis by expenditure distribution

2.10 Charts 2.E and 2.F show the impact of modelled tax, tax credit, and benefit changes since June Budget 2010, including measures announced at Budget 2014, across the expenditure distribution. The net impact for each decile is given by the black line and the bars show how this net impact is composed of changes to tax, tax credits and benefits separately.

2.11 As detailed above, grouping households according to their expenditure can be a useful complement to grouping households by their income. Analysis on an expenditure basis is useful as some households lower down the income distribution have low incomes only temporarily, for example those containing students, self-employed or unemployed individuals. During periods of temporarily low income such households may maintain their standard of living by funding their expenditure from savings or borrowing, thereby smoothing their lifetime consumption. For distributional analysis, a low income household's expenditure may therefore be a better indicator of its standard of living.

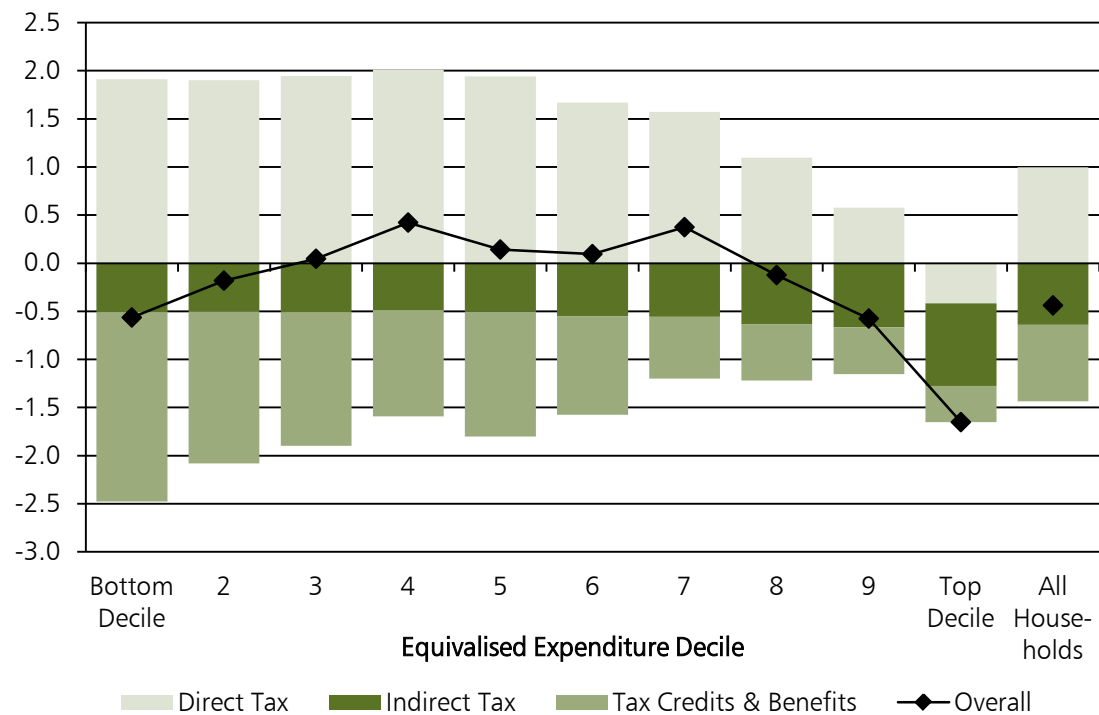
2.12 Chart 2.E shows the impact in cash terms, and Chart 2.F shows it as a percentage of equivalised household expenditure. The charts show that, as at previous fiscal events, households in the top expenditure decile make the greatest contribution towards reducing the deficit, both in cash terms and as a percentage of their expenditure.

**Chart 2.E: Cumulative impact of modelled tax, tax credit and benefit changes on households in 2014-15 in cash terms (£ per year), in 2014-15 prices, by expenditure distribution**



Source: HM Treasury tax and benefit microsimulation model

**Chart 2.F: Cumulative impact of modelled tax, tax credit and benefit changes on households in 2014-15 as a percentage of 2014-15 expenditure, by expenditure distribution**



Source: HM Treasury tax and benefit microsimulation model



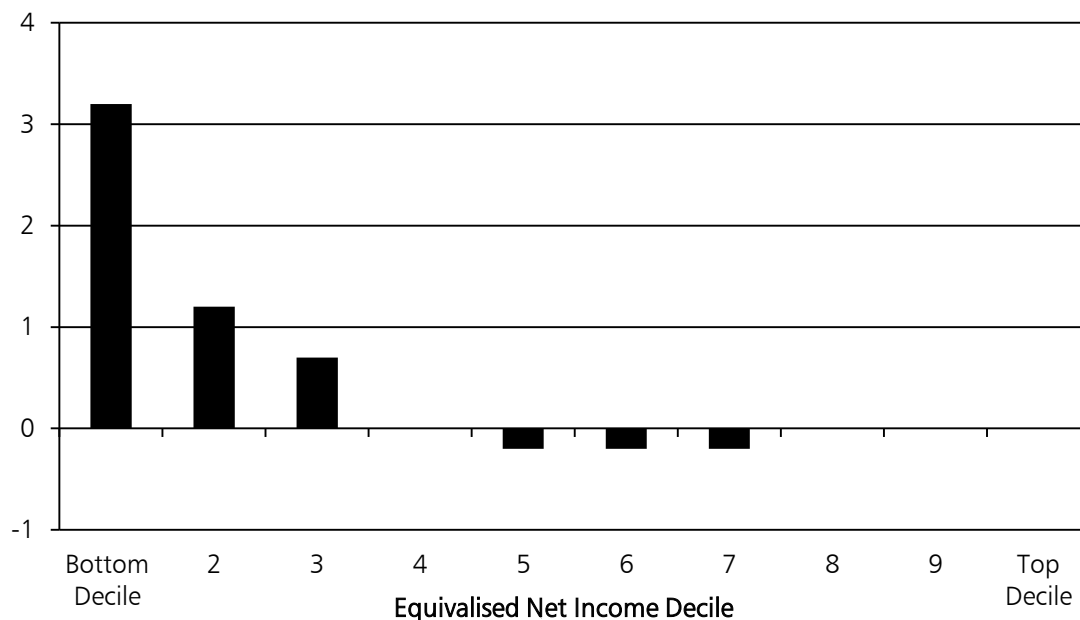
## Universal Credit

**2.13** As at Autumn Statement 2013, the impacts of Universal Credit are not included in the decile analysis above. Universal Credit will be rolled out gradually and will have only a small impact on households across the UK as a whole in 2014-15. For this reason, coupled with the methodological complexities of modelling the period of transition from the existing system, we do not include any of the impacts of Universal Credit in the detailed decile analysis above. The distributional impacts of the transition from the legacy system to Universal Credit are instead captured in the broader quintile analysis, where it is possible to make carefully considered assumptions about where the impacts of Universal Credit will fall.

**2.14** The government's current planning assumption is that the Universal Credit service will be fully available in each part of Great Britain during 2016, having closed down new claims to the legacy benefits it replaced, with the majority of the remaining legacy caseload moving to Universal Credit during 2016 and 2017. However, given the methodological complexities of modelling the benefits system in future years and of modelling the period of transition from the existing system, the impact of a fully rolled out 'steady state' Universal Credit has been modelled in the year 2014-15. This is shown in Chart 2.G.

**2.15** The chart shows that most Universal Credit gains accrue to low income households. Those with the lowest incomes benefit the most on average while relatively higher income households see, on average, either no change or a reduction in their net income. Transitional protection is in place so there will be no cash losers at the point someone moves onto Universal Credit where their circumstances remain the same.

**Chart 2.G: Average impact of Universal Credit in 'steady state' by income distribution (modelled in 2014-15), as a percentage of net income**



*Source: Department for Work and Pensions Policy Simulation Model. This reflects key entitlement changes and expected increases in take-up, but excludes anticipated reductions in the levels of fraud, error and overpayments.*

## Combined impact on households of taxation, welfare and public service spending changes

**2.16** Charts 2.H and 2.I are based on income quintiles and show the combined impact on households of changes to public service spending and tax, tax credits and benefits since June Budget 2010, including measures announced at Budget 2014. Chart 2.H shows the impact in cash terms and Chart 2.I shows it as a percentage of net equivalised household income, including benefits in kind from public services (RDEL). The net impact for each quintile is given by the black line, and the bars show how this net impact is composed of changes to tax, tax credit and benefits, and public service spending separately.

**2.17** This analysis is broader than the decile analysis presented above. It includes benefits in kind from public services, such as health and education, and therefore provides the fullest assessment of the effects of all government interventions that have a direct impact on households.

**2.18** In order to be as comprehensive as possible, this analysis makes some carefully considered assumptions where there is limited data on the effects of measures. This applies to large tax and AME measures with a scorecard impact of more than £300 million which directly affect households but where the precise impact on individual households cannot be microsimulated. For these measures we instead apportion the Exchequer impact by quintile, where it is possible to make reasonable assumptions about how households in different quintiles will be affected. Those tax and AME measures which cannot be microsimulated and have a scorecard impact of less than £300 million are not included in the analysis.

**2.19** This approach allows for the broad impact throughout the income distribution to be demonstrated, but does not allow for the more precise assessment of the effects of the government's policies that is shown in charts 2.C to 2.F. Chapter 3 of this document provides further background on the methodology and assumptions used to produce this analysis.

**2.20** As at Spending Round 2013 and Autumn Statement 2013, the quintile analysis is presented for the year 2015-16, as the Spending Round set departmental budgets for 2015-16, building on the programme of reforms which this government began in 2010. It is presented in 2010-11 prices because this is the baseline used since HM Treasury first published distributional analysis in 2010.

**2.21** Charts 2.H and 2.I show that, as at previous fiscal events, households in the top quintile make the greatest contribution towards reducing the deficit, both in cash terms and as a percentage of their income and benefits in kind from public services. They also make the biggest contribution overall to funding public spending as shown in Chart 2.B. The cash figures in Chart 2.H bring together the cash impact of changes to tax and benefits with the cash equivalent value of the public services that households use.

**2.22** The distributional impacts shown in the charts are driven mainly by policy changes made since June Budget 2010, including those announced at Budget 2014. In addition to those in the decile charts above, the Budget measures captured in the quintile charts include:

- the increase in the Income Tax personal allowance to £10,500 in April 2015, with equal cash gains to higher rate taxpayers
- extension of the transferable tax allowance for married couples to £1,050
- abolition of the 10% rate of tax on savings, and extension of the 0% band to the first £5,000 of savings above the personal allowance
- extension of the 2% escalator on tobacco from 2015-16

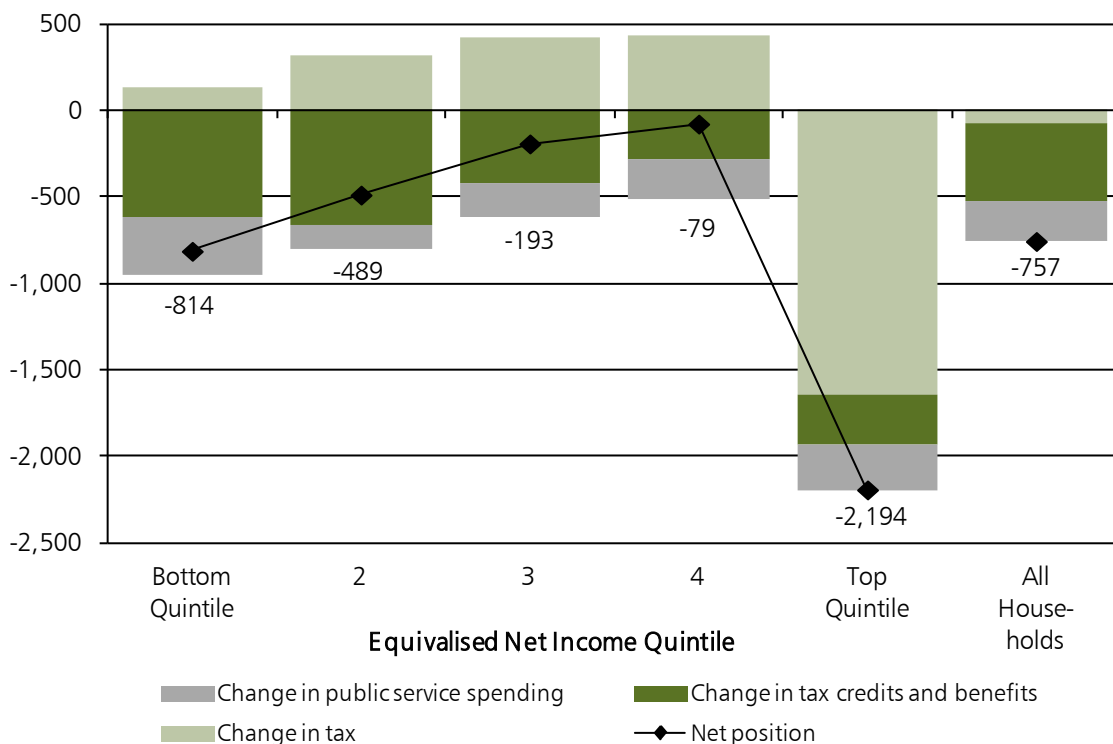
- an offer of free and impartial face-to-face guidance for those nearing retirement with a defined contribution pension
- additional funding for degree level and masters level apprenticeships
- an early years pupil premium targeted at disadvantaged 3 and 4 year olds

**2.23** However, Charts 2.H and 2.I are not directly comparable to their equivalents at Autumn Statement 2013, due to the methodological developments outlined in paragraph 1.11 and updated departmental spending plans and, as such, comparisons do not show the impacts of Budget 2014 decisions alone. In addition, the impact of the OBR's revision to its methodology for calculating the GDP deflator is that public spending reductions have less of an impact on households for every quintile, particularly the bottom quintile, than they did at Autumn Statement 2013.

**2.24** The distributional impact of accelerated tax payments in avoidance cases is not included in either the decile or quintile analysis presented above. The analysis in this document is calculated on a tax liabilities basis, and so it is assumed that all individuals pay the full amount of tax to which they are liable. Therefore, including the accelerated payments measure would, in effect, double-count the tax paid by the individuals affected by this measure.

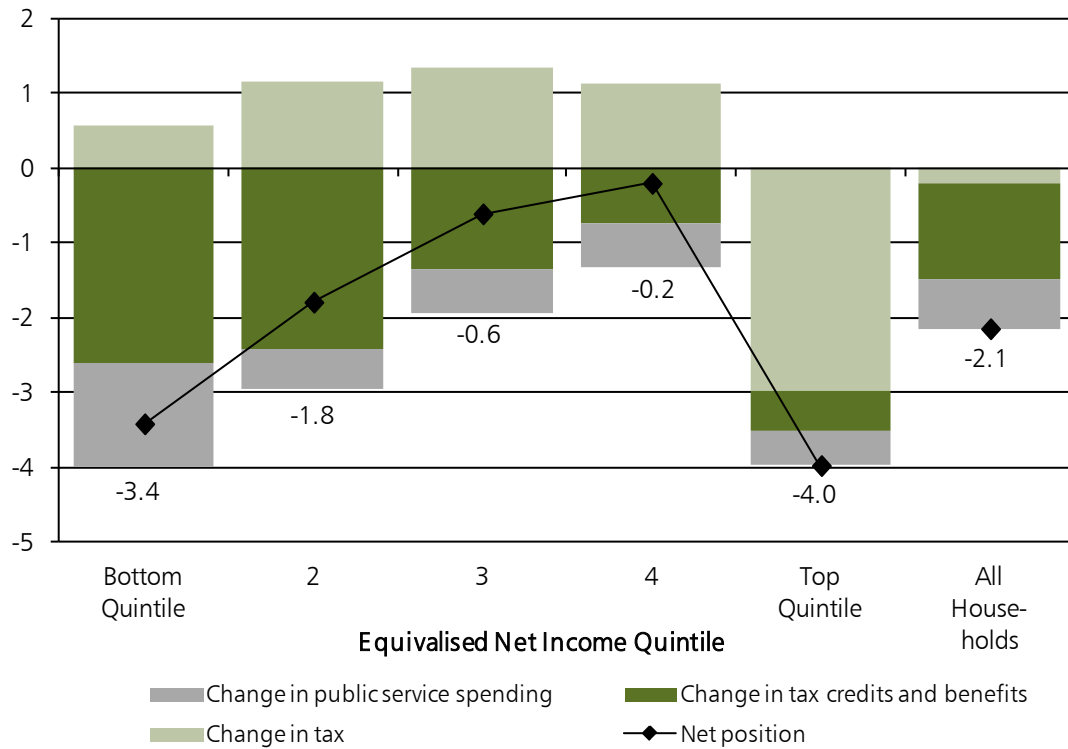
**2.25** The impact of reducing the withdrawal tax rate for defined contribution pensions during retirement from 55% to an individual's marginal rate of income tax has also been excluded from the analysis, as the single year static analysis presented here cannot adequately capture the behavioural consequences of this change across an individual's lifetime. This is also in line with rules for inclusion previously applied to other policies, such as the addition of a new class of voluntary National Insurance contributions announced at Autumn Statement 2013.

**Chart 2.H: Cumulative overall impact of public service spending, tax, tax credit, and benefit changes on households in 2015-16 in cash terms (£ per year), in 2010-11 prices, by income distribution**



Source: HM Treasury estimates based on a range of models and data sources

**Chart 2.1: Cumulative overall impact of public service spending, tax, tax credit and benefit changes on households in 2015-16 as a percentage of 2010-11 net income (including households' benefits in kind from public services), by income distribution**



Source: HM Treasury estimates based on a range of models and data sources

2.26 Analysis presented above and in Chart 2.A suggests that the combined impact on households of changes in real incomes and government policy is relatively even across most of the income distribution; that is, the households most affected by government policy are those that have been least affected by wider economic circumstances, as far as historical data is available.<sup>2</sup> Households at the top end of the income distribution have seen relatively flat real income growth, coupled with substantial reductions in their income as a result of government policy, meaning that these households are likely to have seen the largest fall in income overall.

<sup>2</sup> The data underpinning Chart 2.A is the latest available and will be updated by the Office for National Statistics over summer 2014. However see also 'The Short- and Medium-Term Impacts of the Recession on the UK Income Distribution', Institute for Fiscal Studies, June 2013. This analysis also estimates that: "reductions in household income between 2007-08 and 2015-16 will be spread quite evenly across the income distribution."

# 3

## Data sources and methodology

3.1 In line with the government’s commitment to transparency, the tables below explain in detail the data source and methodology used to produce each of the charts presented in this document. All figures in this document are calculated as economic estimates, including the effects of assumptions and results from economic analyses that have a material impact. They are therefore outside the domain of official statistics.

**Table 3.A: Data sources and methodology**

Section	Details
Paragraph 1.6 (Equivalisation methodology)	<p>Equivalisation is a process that adjusts a household’s net income to take into account the size and composition of the household. This reflects the fact that larger households will require a higher net income to achieve the same economic well-being and standard of living as a household with fewer members.</p> <p>Net incomes are adjusted in comparison to a couple with no children, whose equivalised income is normalised at the same level as their unequivalised income. To calculate the equivalised net income for a household, each person is given a factor based on the position in the household relative to the head of the household and their age. The equivalence factors used in the analysis are the modified OECD factors (as used in the Department for Work and Pension’s Households Below Average Income publication).</p> <p>These factors are shown in the table below. Each household is given an overall factor by adding the factors for each person. The net income for the household is then divided by this factor to produce the equivalised net income figure for this household.</p> <p>Equivalisation factors:</p> <ul style="list-style-type: none"> <li>Cohabiting head of household 0.67</li> <li>Partner/spouse 0.33</li> <li>Other second adult 0.33</li> <li>Third adult 0.33</li> <li>Subsequent adults 0.33</li> <li>Child aged under 14 years 0.20</li> <li>Child aged 14 years and over 0.33</li> </ul> <p>For example, a household with a combined net income of £25,000 containing a couple and two children aged 7 and 15 years old will have an equivalised net income of around £16,340. This is calculated as follows:            Factor: <math>0.67 + 0.33 + 0.20 + 0.33 = 1.53</math>            Equivalised net income: <math>£25,000 / 1.53 = £16,340</math></p>
Chart 1.A	Source: Office for National Statistics. Data available online at: <a href="http://www.ons.gov.uk">www.ons.gov.uk</a>
Chart 2.A	Source: Office for National Statistics, The Effects of Taxes and Benefits on Household Income (2007-08 to 2011-12).

Section	Details
Chart 2.C, 2.D, 2.E and 2.F (Decile charts)	<p data-bbox="491 170 1396 297">Not all measures can be reliably modelled due to data and/or modelling constraints. Tax, tax credit and benefits changes that can be modelled robustly as a household level are derived using HM Treasury's tax and benefit static microsimulation model as described below.</p> <p data-bbox="491 331 1396 741">Income quintile and decile analysis has been simulated using HM Treasury's tax and benefit static microsimulation model. The model uses data from the Living Costs and Food Survey (LCF) collected between April 2008 and March 2011. The small sample size of the LCF means that to be able to produce robust analysis three years of data have been pooled together. This data is then projected forward to reflect the tax year being modelled, using the latest round of OBR average earnings and inflation forecasts. Individual employees are assumed to be paid at least the National Minimum Wage (NMW), which has been updated in the model to reflect the Low Pay Commission's latest recommendations for October 2014 and projected in line with the OBR average earnings forecast after this. The model makes no changes to the underlying employment levels or expenditure patterns in the base data.</p> <p data-bbox="491 775 1396 965">This dataset is used to model each household's net income under a given and alternative tax and benefit system. The difference between the two results produces the change in net income for each household. Households are then allocated into quintiles/deciles and the average (mean) change in net income for all the households in each quintile/decile is calculated. The model assumes no behavioural changes affecting employment, income or spending choices.</p> <p data-bbox="491 999 1396 1155">Incomes are estimated on a before housing cost basis. For expenditure analysis, we use a measure of expenditure which includes a range of housing costs. However, we do not make any deduction in housing expenditure for households receiving housing benefit to reflect the fact that the housing benefit received is intended to cover this housing expenditure.</p> <p data-bbox="491 1189 1396 1346">The model assumes incomplete take-up of tax credits and benefits. A fuller description of the methodology for modelling incomplete take-up was set out in detail as part of HM Treasury's Spending Round 2013 analysis, in Chapter 3 of 'Impact on households: distributional analysis to accompany Spending Round 2013', available at <a href="http://www.gov.uk">www.gov.uk</a>.</p> <p data-bbox="491 1379 1396 1469">Changes in indirect tax assume that the same quantity of goods and services are purchased and that all of the increase in indirect tax is passed through to consumers.</p> <p data-bbox="491 1503 1396 1637">The following measures have been included in the analysis for Charts 2.C, 2.D, 2.E and 2.F, in addition to those modelled at Autumn Statement 2013. Only those measures with a scorecard impact in 2014-15 or earlier are included in the decile analysis:</p> <ul data-bbox="491 1671 1396 1783" style="list-style-type: none"> <li data-bbox="491 1671 1396 1704">• Alcohol duty: 1p off pint of beer and freeze cider duty</li> <li data-bbox="491 1738 1396 1771">• Alcohol duty: freeze spirits duty and abolish wine escalator</li> </ul> <p data-bbox="491 1805 1396 1995">In addition, the analysis has been updated to reflect the latest OBR economic assumptions, as well as improvements to the modelling to more accurately capture individuals' Income Tax liabilities. The scope of the analysis has also been expanded to include the Support for Mortgage Interest (SMI) element of Jobseeker's Allowance, Employment and Support Allowance and Pension Credit.</p>

Section	Details
Chart 2.G (Universal Credit)	<p>This analysis considers the impact of Universal Credit by income decile by comparing simulated incomes under Universal Credit with incomes under the current system of benefits and tax credits. The two simulations take into account all policies announced prior to this Budget that take place before and during the introduction of Universal Credit.</p> <p>Compared to the analysis published at Autumn Statement 2013, the impact of Universal Credit on net incomes (as if it were fully implemented in 2014-15) published here show small changes mainly due to policy updates and improved modelling.</p> <p>A fuller description of the methodology behind this chart was set out as part of HM Treasury's Autumn Statement 2013 analysis, in Chapter 3 of 'Impact on households: distributional analysis to accompany Autumn Statement 2013', available at <a href="http://www.gov.uk">www.gov.uk</a>.</p>
Charts 2.B, 2.H and 2.I (Quintile charts)	<p>The quintile charts include around 90% of changes to tax, tax credits and benefits that will have an impact on households in 2015-16. They include over 60% of RDEL spending in England in 2015-16, as the analysis does not include administrative spending or spending on public goods because these do not benefit specific households directly.</p> <p>Tax, tax credit and benefit changes that can be modelled robustly at a household level are derived using HM Treasury's tax and benefit static microsimulation model, as described above for Charts 2.C to 2.F.</p> <p>Other additional measures are modelled by apportioning to quintiles the Exchequer costs or savings from the measures, based on carefully considered assumptions about where the impacts are likely to fall. This applies to those tax and AME measures which have a scorecard impact of more than £300 million, and where it is possible to make reasonable assumptions about how households in different quintiles will be affected. For example, for pensions tax relief it is assumed that the impact of the reform falls only on households in the top quintile. For reforms to Employment Support Allowance and Disability Living Allowance, where changes relate primarily to eligibility, this has been done on the basis of the distribution of benefit claimants. Those tax and AME measures which cannot be microsimulated and have a scorecard impact of less than £300 million are not included in the analysis.</p> <p>The RDEL analysis is carried out using HM Treasury's RDEL model. Distributional impacts have typically been provided by departments; broadly, this is the distribution of public spending by departments on service provision rather than transfer payments or capital spending. The spending data used in this analysis has been updated ahead of Budget 2014 in order to incorporate departments' latest estimates of spending in 2015-16.</p> <p>A fuller description of the methodology for modelling the distributional impact of public service spending was set out in detail in the Spending Review 2010 document, paragraphs B.8 – B.15, available on <a href="http://www.gov.uk">www.gov.uk</a>, and in the Spending Review 2010 data sources document, available on the National Archives website, <a href="http://webarchive.nationalarchives.gov.uk">http://webarchive.nationalarchives.gov.uk</a>.</p> <p>The analysis covers many of the services delivered by the Department of Health, the Department for Education, the Department for Work and Pensions, the Department for Communities and Local Government, the Department for Business, Innovation and Skills, the Department for Transport, Local Government, the Ministry of Justice, the Department for Energy and Climate</p>

Section	Details
	<p data-bbox="491 170 1326 203">Change, the Department for Culture, Media and Sport, and HM Treasury.</p> <p data-bbox="491 237 1374 456">The modelling does not include spending by the Ministry of Defence, the Home Office, the Cabinet Office, the Foreign and Commonwealth Office, the Department for International Development, HM Revenue and Customs, the Department for Environment, Food and Rural Affairs, the Law Officers' Department and Independent Bodies. The nature of the services provided by these departments means it is not possible to identify specific end-users, as they benefit the population as a whole.</p> <p data-bbox="491 490 1398 553">The analysis of RDEL spending compares spending in 2010-11 and 2015-16, in real terms, adjusted using the GDP deflator.</p> <p data-bbox="491 586 1358 743">In addition to those measures modelled at Autumn Statement 2013, the quintile charts include the following tax and AME measures, which have all been modelled using HM Treasury's tax and benefit microsimulation model. Only those measures with a scorecard impact in 2015-16 or earlier are included in the quintile analysis:</p> <ul data-bbox="491 777 1386 1335" style="list-style-type: none"> <li data-bbox="491 777 1386 853">• Personal allowance: increase to £10,500 in 2015-16 with equal gains to higher rate taxpayers</li> <li data-bbox="491 887 1386 1043">• Transferable marriage allowance: increase to £1,050 and set at 10% of personal allowance. As at Autumn Statement 2013, this policy is modelled under the assumption that not all couples who are eligible to benefit from this policy choose to take up the transferable tax allowance.</li> <li data-bbox="491 1077 1299 1111">• Savings tax: abolish the 10% rate and extend 0% band to £5,000</li> <li data-bbox="491 1144 1171 1178">• Alcohol duty: 1p off pint of beer and freeze cider duty</li> <li data-bbox="491 1211 1222 1245">• Alcohol duty: freeze spirits duty and abolish wine escalator</li> <li data-bbox="491 1279 1145 1312">• Tobacco duty: continue 2% escalator from 2015-16</li> </ul> <p data-bbox="491 1346 1126 1379">The following specific RDEL measures are also included:</p> <ul data-bbox="491 1413 1398 2018" style="list-style-type: none"> <li data-bbox="491 1413 1398 1655">• RDEL spending on the financial guidance for individuals with defined contribution pensions is apportioned using HM Treasury's tax and benefit microsimulation model. Spending is allocated to those reported as paying into a private or occupational pension in the Living Costs and Food (LCF) survey, which is used as a proxy for the intended recipients, as the LCF does not contain data on the types of pensions held by individuals</li> <li data-bbox="491 1688 1398 1872">• The Exchequer cost of additional spending on Further Education Higher Apprenticeships is apportioned to households using Department for Business, Innovation and Skills best estimates of the net incomes of those taking up intermediate and advanced Apprenticeships, based on data from the 2010-11 Prior Qualifications Survey</li> <li data-bbox="491 1906 1398 2018">• RDEL spending on the early years pupil premium is apportioned to households using Department for Education estimates of the income distribution of those currently receiving the schools pupil premium</li> </ul>



Section	Details
	<p>In addition, the analysis has been updated to reflect the latest OBR economic assumptions, updated data from departments on spending plans for 2015-16, and improvements to the modelling to more accurately capture individuals' Income Tax liabilities. The scope of the analysis has also been expanded to include the Support for Mortgage Interest (SMI) element of Jobseeker's Allowance, Employment and Support Allowance and Pension Credit.</p> <p>As at Autumn Statement 2013, the quintile charts now include measures aimed at reducing tax avoidance where these measures represent a substantive change in tax policy. A fuller description of the methodology and criteria used to include these measures was set out in detail as part of HM Treasury's Autumn Statement 2013 analysis, in Chapter 3 of 'Impact on households: distributional analysis to accompany Autumn Statement 2013', available at <a href="http://www.gov.uk">www.gov.uk</a>.</p> <p>The distributional impact of accelerated tax payments in avoidance cases is not included in either the decile or quintile charts. The analysis in this document is calculated on a tax liabilities basis, and so it is assumed that all individuals pay the full amount of tax to which they are liable. Therefore, including the accelerated payments measure would, in effect, double-count the tax paid by the individuals affected by this measure.</p> <p>The impact of reducing the withdrawal tax rate for defined contribution pensions during retirement from 55% to an individual's marginal rate of income tax has also been excluded from the analysis, as the single year static analysis presented here cannot adequately capture the behavioural consequences of this change across an individual's lifetime. This is also in line with rules for inclusion previously applied to other policies, such as the addition of a new class of voluntary National Insurance contributions announced at Autumn Statement 2013.</p> <p>The Budget 2014 extension to the current Support for Mortgage Interest capital limit and waiting period has not been included in this analysis, due to concerns that this analysis would be based on a small (and therefore not statistically robust) number of sample observations. However, as outlined above, Support for Mortgage Interest is now reflected in the baseline, without any extension to the existing policy.</p> <p>Chart 2.B is constructed using the same modelling inputs and assumptions as Charts 2.H and 2.I. They include all taxes and transfer payments captured within HM Treasury's tax and benefit microsimulation model as well as the additional measures described above. By construction, the differences between the 'before consolidation' and 'after consolidation' data points in Chart 2.B equate to the percentage changes in Chart 2.I.</p> <p>The income denominator for Chart 2.B analysis is household income after taxes and benefits, including public spending benefits in kind. This was chosen for consistency with Charts 2.H and 2.I.</p> <p>The overall level across all households is positive. This is in part because the chart only captures the tax taken from households (not businesses), whereas transfer payments and public services are funded by all taxes (including those paid by businesses).</p>

3.2 Table 3.B below shows the median gross income (earnings plus benefit income) for different household types in each equivalised net income decile.

**3.3** The decile boundaries in HM Treasury’s analysis are calculated on an equivalised net income basis (after tax and benefits) to capture households’ standard of living. However, many people think about their household income, particularly annual salaries, in gross rather than net terms. The table below shows median gross (pre-tax) incomes, which gives a less precise estimation of a household’s position on the income distribution than net income, but is easier to understand. Decile boundaries on a net income basis were published as part of HM Treasury’s Autumn Statement 2012 analysis, in Chapter 2 of ‘Impact on households: distributional analysis to accompany the Autumn Statement 2012’, available at [www.gov.uk](http://www.gov.uk).

**3.4** Table 3.B should therefore be used to approximate where a household will be found in the income distribution. For example, if a household consisting of two adults earns £27,200 per year between them, there is a high likelihood that this household will be found in the fifth income decile. However, this is not guaranteed, because different gross household incomes can result in different net household incomes, depending on how many earners there are in the household, the size of the household, and which benefits the household qualifies for.

**Table 3.B: Median gross income for each decile (£ per year, 2014-15) for different household compositions**

<b>Median gross income of households in decile</b>	<b>One adult (£)</b>	<b>One adult and one child (£)</b>	<b>Two adults (£)</b>	<b>Two adults and one child (£)</b>	<b>Two adults and two children (£)</b>
Top decile	60,500	77,700	88,500	113,400	151,400
Ninth decile	39,800	49,300	58,300	74,700	91,100
Eighth decile	31,100	36,700	46,400	59,800	70,200
Seventh decile	24,800	30,900	37,900	49,200	59,900
Sixth decile	21,100	26,300	32,200	42,100	50,900
Fifth decile	17,600	24,700	27,200	35,600	44,200
Fourth decile	15,300	20,900	23,000	30,400	37,100
Third decile	13,200	17,000	19,900	26,400	32,000
Second decile	11,300	14,500	17,100	21,800	26,800
Bottom decile	8,600	10,700	13,300	15,300	19,700

*Source: HM Treasury tax and benefit microsimulation model*



## **HM Treasury contacts**

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