

Impact on households:

distributional analysis to accompany Budget 2013



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ISBN 978-1-909096-72-1 PU1462

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Introduction

Transparency

1.1 The Government has taken unprecedented steps to increase transparency and enable effective scrutiny of its policy-making. It has gone further in this regard than previous governments by publishing regular distributional analysis of the impact of its reforms, and it continues to develop and improve this analysis.

1.2 As part of this work, this document updates the analysis that was published at Autumn Statement 2012. It analyses the effects of the Government's policies on a cumulative basis, which means that the analysis includes measures not only from Budget 2013, but also from all fiscal events since June Budget 2010, including Spending Review 2010. It includes changes that were announced before June Budget 2010 that have been implemented by the Government.

1.3 Some measures can be modelled more robustly than others. For this reason, there is a tradeoff between how accurately analysis can show the 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 on a quintile basis of the Government's changes to public spending, taxes and benefits that directly affect households, and more precise and detailed – though less comprehensive – analysis on a decile basis, for those measures where such detail is possible. Explanations of the data sources and methodologies used to produce this analysis can be found in Chapter 3 of this document.

1.4 As at Autumn Statement 2012, this analysis is being published online as a supplementary document to Budget 2013.

Measuring impacts

1.5 It is possible to show the combined impact of policy changes in a number of ways, each of which has different strengths and weaknesses. For this reason, this document follows previously-published analysis in presenting a range of approaches.

1.6 Fundamentally, each of these approaches analyses the effect of the Government's decisions on groups of UK households. There are, however, different ways of grouping households; here, groups are analysed on the basis of both household income and household expenditure. These approaches are discussed below. As before, the effects of changes on these groups are presented in both cash and percentage terms.

1.7 Grouping households by **household income** is recognised as a standard approach to distributional analysis. On this basis, it is possible to present average changes in income for households at different points in the income distribution. This is particularly relevant when assessing the impacts of changes in direct taxes, tax credits and benefits, because these changes directly affect the net income of households. The gross income levels of each group are set out in Chapter 3 of this document.

1.8 This approach can be complemented by grouping by **household expenditure**. Analysis on this basis is useful as some households in the lower income deciles – typically those containing

students, self-employed or unemployed individuals – have low incomes only temporarily. During periods of temporarily-low income, such households may maintain their standard of living by funding their expenditure from savings or borrowings, smoothing their lifetime consumption. A household's expenditure may therefore be a better indicator of its standard of living.¹

1.9 In both approaches, a standard process called equivalisation is used to ensure that households of differing sizes are compared on a consistent basis. A reference to a detailed description of this process is given in Chapter 3.

1.10 The analysis does not take into account the level of household assets, or changes in the wider economy that have affected household incomes, except those changes that have directly affected the tax and welfare system. However, for context, Chart 2.G shows how household incomes before benefits and taxes changed in real terms between 2007-08 and 2010-11, which is the latest year for which data is available.

The counterfactual

1.11 In order 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 measures are assessed against a counterfactual assumption that the previous government's policies – including the indexation of tax thresholds, tax credits, and benefits – would have continued into the future without any further fiscal consolidation.

1.12 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. These consequences could have included higher future taxes, lower spending on public services, or both, due to the need to meet the costs of higher debt.

1.13 The National Statistician's announcement in January, which confirmed that the Retail Prices Index (RPI) would remain unchanged, stated that the method of calculation used in the RPI would not be chosen were the Office for National Statistics (ONS) to construct a new price index.² This has implications for the modelled household impacts in this analysis.

1.14 In line with the approach to the counterfactual described above, analysis presented in this document shows the impacts on households of the Coalition Government's uprating policy compared to the uprating policy of the previous government. In many cases this was to link benefit rates and tax thresholds to the RPI.

1.15 Chart 1.A, below, illustrates the cumulative difference between the RPI, Consumer Prices Index (CPI) and new RPIJ indices between September 2009 and September 2012.³ RPIJ is an improved variant of the RPI. The chart shows that the RPI is 1.9 per cent higher than RPIJ and 2.4 per cent higher than the CPI at the end of this period. This means that the impact of the Government's changes to benefits uprating policy appear bigger in this analysis than they would had the RPI been calculated in line with the new ONS indices. This issue will be kept under review for future publications.

¹ 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." ² See *National Statistician announces outcome of consultation on RPI*, Office for National Statistics News Release, 10 January 2013

³ The September 2009 RPI index was used to uprate many benefit rates and tax thresholds, where these rates will 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.



2

Overall impact of taxation and public spending

2.1 The broadest analysis that the Government undertakes assesses the combined effect on households of tax, tax credits and benefits, and other public spending, and is shown in charts 2.A to 2.C. 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.

2.2 In order to be as comprehensive as possible, this analysis makes some assumptions where there is limited data on the effects of measures. This applies to measures that directly affect households, but where the precise impact on individual households cannot be simulated. Chapter 3 of this document provides further background on the methodology and assumptions used to produce this analysis.

2.3 The analysis divides all households into five equally-sized groups called quintiles. This approach allows for the broad impact throughout the income distribution to be demonstrated, but does not allow the more precise assessment of the effects of the Government's policies that is shown in charts 2.E, 2.F, 2.H and 2.I.

2.4 As at previous fiscal events, this analysis is presented for the year 2014-15, as this is the last year of the Spending Review 2010 period. It is presented in 2010-11 prices, because this is the baseline used for analysis of changes to Resource Departmental Expenditure Limits (RDEL) spending over the Spending Review 2010 period. Charts in this section have now been updated to include the impact of the reduction to RDEL of two per cent in 2014-15 announced at Autumn Statement 2012, since the Treasury now has details of how this will be implemented by departments.

2.5 Charts 2.A to 2.C do not include the impact of the additional reduction in RDEL of one per cent in 2014-15 announced at Budget 2013. The Treasury intends to include this measure in distributional analysis when data on implementation, to the level of detail required, is available.

2.6 Building on analysis that was published for the first time at Autumn Statement 2012, Chart 2.A shows the overall level of receipt of benefits, tax credits, and public spending, after tax, before and after the Government's fiscal consolidation measures.



2.7 Chart 2.A shows that, taking into account benefits, tax credits, and public spending receipt, after tax:

- the lower three household quintiles are net beneficiaries of government intervention, and the top two household quintiles are net contributors; and
- the profile across the quintiles after consolidation remains similar to the profile before consolidation.

2.8 Chart 2.B presents the impact on households of changes to public spending and tax, tax credit and benefit measures in cash terms. For public spending, the cash reduction represents the reduction in spending on services that households use, which is a measure of the benefit in kind (rather than a cash gain or loss) received by households.

2.9 Chart 2.C shows the change after the Government's consolidation measures as a per cent of net equivalised household income, including benefits in kind from public services.

2.10 Charts 2.B and 2.C 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 per cent of their income and benefits in kind from public services.





Universal Credit

2.11 Universal Credit will be phased in over a number of years (beginning with a pathfinder in April 2013) to simplify the means-tested benefit and tax credit system, improve work incentives, and ensure that it always pays to be in work. It will be available to claimants who are both in and out of work, and will include additional elements to support costs in respect of housing, disability and children.

2.12 Universal Credit is expected to be fully in place by the end of 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.D.

2.13 Unlike other analysis in this document, Chart 2.D does not assume 100 per cent take-up of income-related benefits and tax credits. The modelled impact therefore includes the effect of higher take-up of claimants' entitlements expected under Universal Credit, due to its relative simplicity and integrated nature. Details of the modelling approach are laid out in Chapter 3 of this document.



2.14 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.

Impact of modelled tax and benefit changes

2.15 While the quintile analysis presented above presents a broad picture of the distributional impact of public spending and tax, it employs a set of carefully-considered assumptions. The details of these assumptions are set out in Chapter 3 of this document. To complement this analysis, this section presents more-detailed distributional analysis of those changes to the tax and benefit system that it is possible to model robustly at a household level. It has been produced using HM Treasury's tax and benefit microsimulation model. The average gross income for each decile is laid out in Chapter 3.

2.16 To model welfare, 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 Office for National Statistics. The LCF is a cross-sectional survey which takes a snapshot of households' incomes and expenditure at a moment in time.

2.17 Given the challenges of modelling Universal Credit described above, it is not currently possible to integrate the distributional effects of Universal Credit into the following analysis robustly. This analysis is therefore presented for the year 2013-14, before Universal Credit begins to have a significant impact. It is presented in 2013-14 price terms.

Impact analysis by income distribution

2.18 Chart 2.E presents the impact of tax, tax credit, and benefit changes in cash terms, and shows that, in absolute terms, the top decile sees the largest reduction in income. Chart 2.F shows the impact of these changes relative to net income. It shows that on this basis too, the greatest net losses are in the top decile.





Other effects on household income

2.19 The charts presented above show the effects on households of changes to government policy, rather than of changes in the economy over time. For context, Chart 2.G shows how household original incomes before benefits and taxes¹ changed in real terms between 2007-08 and 2010-11. 2010-11 is the most recent year for which data is available.²

2.20 The data source used to produce Chart 2.G 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.



08 to 2010-11)

2.21 Chart 2.G shows that:

- on average, households in the middle of the income distribution saw the largest reductions in real income between 2007-08 and 2010-11; and
- on average, households in the bottom two deciles saw their incomes protected against the effects of inflation.

¹ 'Original income' is income before benefits and taxes. It includes wages and salaries, imputed income from private-sector benefits in kind, selfemployment income, private pensions, annuities, investment income, and other income.

² In line with Office for National Statistics analysis, figures in this chart are adjusted using the implied expenditure deflator.

Impact analysis by expenditure distribution

2.22 Charts 2.H and 2.I provide estimates of the impacts of measures by expenditure deciles. Like charts 2.E and 2.F, this analysis uses the Living Costs and Food Survey produced by the Office for National Statistics, and is presented for the year 2013-14, in 2013-14 price terms.

2.23 The charts show that:

- as when ranked by income, when ranked by household expenditure households at the top are contributing more, on average, to deficit reduction than households at the bottom; and
- on average, households in the middle of the expenditure distribution have seen little impact as a result of the Government's policies.





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.

Section	Details
Paragraph 1.9	The methodology behind the equivalisation process is set out in detail in the Budget 2012 data sources document available on the HM Treasury website: www.hm-treasury.gov.uk
Chart 1.A	Source: Office for National Statistics. Data available online at: www.ons.gov.uk
Paragraph 2.2	The quintile charts include around 90 per cent of tax, tax credits and benefits changes that will have an impact on households in 2014-15.
	Public service spending distributional analysis was first undertaken at Spending Review 2010. This analysis captures the impact of Resource Departmental Expenditure Limits (RDEL) spending on households. Broadly, this is public spending by departments on service provision, as opposed to on transfer payments or on capital programmes. The analysis is based on information provided by departments from surveys of public service usage. It includes services which households consume directly, as these best correspond to the experience people have of government spending. As at Spending Review 2010, it includes only services which are differentially used by households, and not those where it is not possible to identify end-users because they benefit the population as a whole. For this reason it does not include central government administration costs. In addition, since it is not possible to assess the beneficiaries of capital projects within this analysis because they have geographically specific and multi-generational benefits, capital investment has also not been included. The analysis does not include expenditure by the Devolved Administrations because decisions on the allocation of the Devolved Block Budgets are matters for the Devolved Administrations.
	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, as well as the Spending Review 2010 data sources document, both available on the HM Treasury website.
	At this fiscal event, in addition to updating the public spending analysis with the latest Office for Budget Responsibility (OBR) economic assumptions, HM Treasury commissioned an update to the underlying RDEL data. Departments provided their latest information on expected programme spending in 2014- 15 and its distributional impact, and included the impact of the two per cent reduction in RDEL announced at Autumn Statement 2012. Data on the distribution of impacts across income quintiles have also been updated where more information is available about how the policies are being implemented.

Table 3.A: Data sources and methodology

	The combined impact of the model update and latest OBR economic assumptions is that public spending reductions have less of an impact for households for every quintile than they did at Autumn Statement 2012. This is due to a combination of the latest OBR economic assumptions and newer data which better reflects the Government's spending plans.				
	The latest OBR economic assumptions reduce the estimated impact of public spending reductions on households. Inflation to 2014-15 is expected to be lower than forecast at Autumn Statement 2012, increasing the real value of 2014-15 settlements in 2010-11 prices.				
	Most of the two per cent reduction in RDEL is anticipated by departments to be met through areas outside the scope of this distributional analysis, such as administrative spend, and this reduction in spend therefore has a limited impact in this analysis.				
Charts 2.A, 2.B and 2.C	Tax, tax credit and benefit changes are derived using HM Treasury's tax and benefit microsimulation model.				
	In addition to those measures modelled at Autumn Statement 2012, the charts include the following measures:				
	 Personal allowance: increase by an additional £560 to £10,000 in 2014-15 				
	Fuel Duty: cancel September 2013 increase				
	Alcohol: 1p off pint of beer and abolish escalator in 2014-15				
	The following specific additional RDEL measures have also been modelled:				
	Two per cent reduction to Resource Departmental Expenditure Limits announced at Autumn Statement 2012				
	Additional spending on mentoring and business advice for the recipients				
	of Start Up Loans. This has been apportioned to households using the				
	income distribution for Apprenticeships as a proxy, as was the case in				
	the Autumn Statement 2012 analysis, as better data on the receipt of these loans are not available at the current time.				
	Chart 2.A is constructed using the same modelling inputs and assumptions as Charts 2.B and 2.C. 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 'overall' and 'after consolidation' data points in Chart 2.A equate to the percentage changes in Chart 2.C.				
	The income denominator for Chart 2.A analysis is household income after taxes and benefits, including public spending benefits in kind. This was chosen for consistency with Charts 2.B and 2.C.				
	The overall level across all households is positive. This is in part because the chart only captures the tax taken from households, whereas transfer payments and public services are funded by all taxes.				
Chart 2.D	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.				
	The income decile modelling is carried out by combining DWP's Policy				

Simulation Model, which uses 2010-11 Family Resources Survey data, with official benefit and tax credit forecasts. The income deciles are derived within the simulation of the existing system of benefits and tax credits. For modelling purposes, it is assumed that the localised support due to replace Council Tax Benefit (CTB) will be distributed in a similar pattern to current CTB. The chart is produced by comparing the sum total of net household income in Universal Credit with the current system of benefits and tax credits, expressed as a proportion of total income pre-Universal Credit. The percentage change in income for each income decile shown in Chart 2.D is rounded to the nearest 0.1 per cent.

Given the methodological complexity of modelling the benefits system in future years, the impact of a fully rolled out 'steady state' Universal Credit has been modelled in the year 2014-15. As this is 'steady state' analysis, there is no transitional protection. It is assumed in the steady state modelling of Universal Credit that Personal Independence Payments will be fully introduced. The modelling also takes account of the full effect of the benefits uprating measures announced at Autumn Statement 2012. The distributional analysis is consistent with the modelling underpinning the latest Universal Credit cost estimates assumed within the March 2013 *Economic and fiscal outlook* of the OBR.

Compared to the analysis published at Autumn Statement 2012, the impact of Universal Credit on net incomes (as if it were fully implemented in 2014-15) published here shows small changes mainly due to improved understanding of the composition of households that are expected to benefit from the introduction of Universal Credit.

The equivalisation of incomes is consistent with the other distributional analysis presented within this document. The analysis does not consider dynamic effects, such as increased employment through better work incentives or through behavioural responses to the minimum income floor for the self employed.

The chart includes the key entitlement changes and expected additional takeup to Universal Credit. It excludes the effects of reduced fraud, error and overpayments — reductions are expected through the simplification of policy and delivery, and through more accurate and up-to-date earnings information.

Take-up is expected to increase due to the relative simplicity and integrated nature of Universal Credit. More specifically:

- those only partially taking up their entitlement to existing benefits and tax credits are assumed to take up their full Universal Credit entitlement;
- some claimants who currently completely fail to take up their entitlement are assumed to take up Universal Credit. The take-up assumptions made for this group of claimants vary by employment status;
- among the employed, it is assumed that 20 per cent of those currently not taking up any entitlement will take up Universal Credit; and
- among the self-employed, it is assumed that 10 per cent of those currently not taking up any entitlement will take up Universal Credit.

Charts 2.E, 2.F, 2.H and 2.I	Not all measures can be reliably modelled due to data and/or modelling constraints. The methodology for modelling the distributional impact of the tax and benefit system is set out in detail in the Budget 2012 data sources document available on the HM Treasury website: www.hm-treasury.gov.uk		
	The analysis is based on estimates derived using HM Treasury's tax and benefit microsimulation model using Living Costs and Food Survey (LCF) data collected between April 2008 and March 2011. Averages are provided for estimated changes in direct taxes, indirect taxes, and benefit and tax credits, assuming complete take-up. Income and expenditure deciles are calculated on household equivalised net incomes, using the modified OECD scale. To calculate the average change as a per cent of net income/expenditure, the average total change in net income for each decile is divided by the average total net income/expenditure for that decile before measures were introduced.		
	The following measures have been included in the analysis for charts 2.E, 2.F, 2.H and 2.I, in addition to those modelled at Autumn Statement 2012:		
	Fuel Duty: cancel September 2013 increaseAlcohol: 1p off pint of beer and abolish escalator in 2014-15		
Chart 2.G	Source: Office for National Statistics, The Effects of Taxes and Benefits on Household Income (2007-08 to 2010-11)		

3.2 Table 3.B below shows the median gross income for different household types in each income decile.

3.3 The decile boundaries in the Treasury's analysis are calculated on a 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 the Treasury's Autumn Statement 2012 analysis in Chapter 2 of *Impact on households: distributional analysis to accompany the Autumn Statement 2012*, available at www.hm-treasury.gov.uk.

3.4 Table 3.B should therefore be used to approximate where a household will be found in the income distribution. If a household consisting of two adults earns £26,800 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.

Median gross income of households in decile	One adult (£)	One adult and one child (£)	Two adults (£)	Two adults and one child (£)	Two adults and two children (£)			
Top decile	58,900	60,500	86,900	110,900	149,200			
Ninth decile	39,200	47,700	56,900	73,200	88,400			
Eighth decile	30,500	41,900	45,400	58,200	68,400			
Seventh decile	24,300	30,300	37,200	48,200	58,500			
Sixth decile	20,700	25,700	31,400	41,700	50,100			
Fifth decile	17,400	23,400	26,800	35,000	44,000			
Fourth decile	15,100	20,900	23,000	31,200	36,400			
Third decile	13,300	17,700	20,000	26,500	31,800			
Second decile	11,800	14,900	17,600	22,000	27,100			
Bottom decile	9,400	12,400	14,700	16,800	21,200			
Source: HM Treasury tax and benefit microsimulation model								

Table 3.B: Median gross income for each decile (£ per year, 2013-14) for different household compositions

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