

# The distributional impact of the 2010 Spending Review

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## Introduction

The spending cuts package announced by the UK Government in its October 2010 Spending Review (SR 2010) is the largest component of the most severe period of fiscal retrenchment in Britain since the 1970s. So far, however, discussion of the impacts the cuts will have has been limited. By comparison, the UK has a well-established tradition of debate over the distributional consequence of reforms to the tax and transfer system – witness, for example, the controversy over the abolition of the 10% starting rate of income tax in 2008. However, the distributional consequences of changes to the quantity or composition of public spending are much less well studied.

The consequences of this are very serious: the value of public spending is routinely ignored, underplayed or simply forgotten in our tax and spending debates. Anti-tax campaigners, the tabloid press and right-wing critics of public services all talk about tax revenues as if they were taken and thrown into the sea. Tax cuts are touted as if they have no consequences for public services.

This lack of awareness of the value of public services has two main consequences. First, it often leads to underestimation of the value of the services people receive from public spending, which in turn can lead to discontent about the level of taxation they pay (Hedges, 2005). Second, the ‘invisibility’ of the value of public spending feeds a broader sense of disconnection in how people think about paying taxes and receiving public services, which “undermines public support for the whole purpose of government, and fuels a certain kind of ‘tax resistance’” (Fabian Commission on Taxation and Citizenship, 2000).

This article is a first attempt at a comprehensive analysis of the distributional effects of public spending – and cuts in public spending – for the UK. We use a methodology which allocates the components of public spending to a representative sample of UK households on the basis of their propensity to use these services. We then move on to looking at the distributional effects of the spending cuts in SR2010 across the income distribution. Finally we compare the distributional impact of different parts of the overall fiscal consolidation package; tax

increases, cuts in benefits and tax credits and cuts in other types of public spending.

## **Methodology**

Our model analyses public spending using the ‘expenditure-on-services’ accounting framework which HM Treasury uses for the Government’s Public Expenditure Statistical Analysis (PESA) series. This classifies spending in terms of the type of service it is spent on (health, education, etc.) In 2007-08 (the most recent year for which full data was available), public spending comprised around £140 billion of transfer payments to households (benefits and tax credits), and around around £415 billion of spending on public services (e.g. health, education, defence etc.), making a total of £555 billion.

Our analysis uses a breakdown of expenditure on services at a very fine level of detail, decomposing the ten broad categories used in the PESA framework into hundreds of smaller categories which correspond reasonably closely to ‘everyday’ categories of public services which people use. For example, the ‘health’ category is broken down into ‘GP services’, ‘dental services’, ‘in-patient treatment’ and so on.

### **Allocating public service expenditure by service use**

Having identified total government spending in each area of service provision, our model then allocates this spending to households on the basis of a range of information concerning which households receive and use particular services and how much they use them. Our main source of information on service use is household surveys conducted by the Office for National Statistics, which contain data on whether and how much households use different types of services, or variables from which service use can be inferred. For example, the General Household Survey asks people how often they use hospital or GP services; the Expenditure and Food Survey asks people how much they spend on rail travel (an indicator of how much they use rail services), on so on. Overall, we have used five different surveys as data sources for the model (shown in Table 1 below) as no one survey contains all the information we need.

**Table 1. Data sources used in the model**

<b>Name of dataset</b>	<b>Example of public services that the dataset provides information about</b>
British Crime Survey (BCS)	police
British Household Panel Survey (BHPS)	social care (except residential care for old people)
Expenditure and Food Survey (EFS)	transport
General Household Survey (GHS)	health museums and galleries
Family Resources Survey (FRS)	education housing programmes for the unemployed

For all of these surveys we use a single wave of data from 2007-08 or the nearest available year. This enables us to analyse service use for the same financial year for which we have data on government spending and household incomes.

The Family Resources Survey (FRS) is the dataset which is most often used to analyse the distributional effects of tax and benefit reforms. Therefore we used the FRS as the main dataset for our analysis and matched in data on the probability of using public services such as health, social care, roads and public transport from other datasets using a number of regressions with, in each case, a measure of service use as the dependent variable and household characteristics such as income decile, number and age of adults, number and age of children, region and housing tenure as the explanatory variables. This allowed us to make an estimate of the extent of each FRS household's use of (for example) health services based on information such as household income, size, age structure and region, even though the FRS itself does not contain information on use of health services. Full details are given in the technical appendix to Horton and Reed (2010).

The analysis also takes account of situations where public funding for a service is subject to income or asset-based means testing (for example, social care services) based on information on income and assets in the FRS.

In cases where it was possible to take account of differences in patterns of spending across the different nations of the UK, we have done so. For example, in Scotland local authorities provide free personal care. We have allowed for this by not means-testing personal care on households based in Scotland.

None of the surveys listed above covered people in residential care – such as local-authority-funded care homes; hence, in order to model the probability of entering residential care for adults in the Family Resources Survey, we used information on the probability of being in residential care (by characteristics such as age and gender) from research by the Personal Social Services Research Unit at the University of Kent (Darton et al, 2006).

The analysis includes both current and capital spending on public services on the assumption that the benefits of capital spending are distributed in the same way as the benefits of current spending. This is only an approximation but is the best we can do given the data available.

### **Allocating public services which are collectively consumed**

Public services like health and education are consumed individually by people (in the sense that one person's consumption of them excludes others from consuming the same quantities of services) and hence it makes sense to allocate expenditure on these services to different households on the basis of their service use.

But there is another group of goods and services provided by government that are consumed *collectively*, in the sense that one person's consumption of them does not exclude others from consuming the same services. Classic examples are national defence and environmental protection.

In this study we allocate spending on such collectively consumed goods on a flat-rate basis, since the benefits of such spending are enjoyed by all. In particular, public goods such as national defence and environmental protection are not only non-excludable, meaning no-one can be prevented from consuming them, but also unavoidable, meaning that if anyone consumes them, all must consume them. This provides a particularly strong rationale for dividing the cost of spending on them equally among the population.

### **Relation to existing work**

At present there is little analysis available of the distributional of public spending. The Office for National Statistics (ONS) conducts an annual study, *The Effects of Taxes and Benefits*, which includes an

analysis of the spending on ‘benefits in kind’ such as health and education services and housing subsidies. Though a useful study, the ONS’s allocation of spending across households is made on the basis of fairly crude formulae rather than household use of those services (for example, health spending is allocated according to age and gender of household members).

Tom Sefton (2002) has previously sought to improve on these ONS calculations by incorporating data from a wider range of surveys and apportioning spending according to households’ reported use of services. Our work builds on Sefton’s study but extends the analysis to allocate *all* public spending to households. We do this by using a wider range of service use data than has previously been attempted in the UK – for example, using data on transport service use. Together with information on the recipients of benefit and tax credit payments in the FRS, this allows us to allocate about 70% of total public spending of £555 billion (in 2007-08) on the basis of household micro-data, with only 30% allocated on a flat-rate basis.

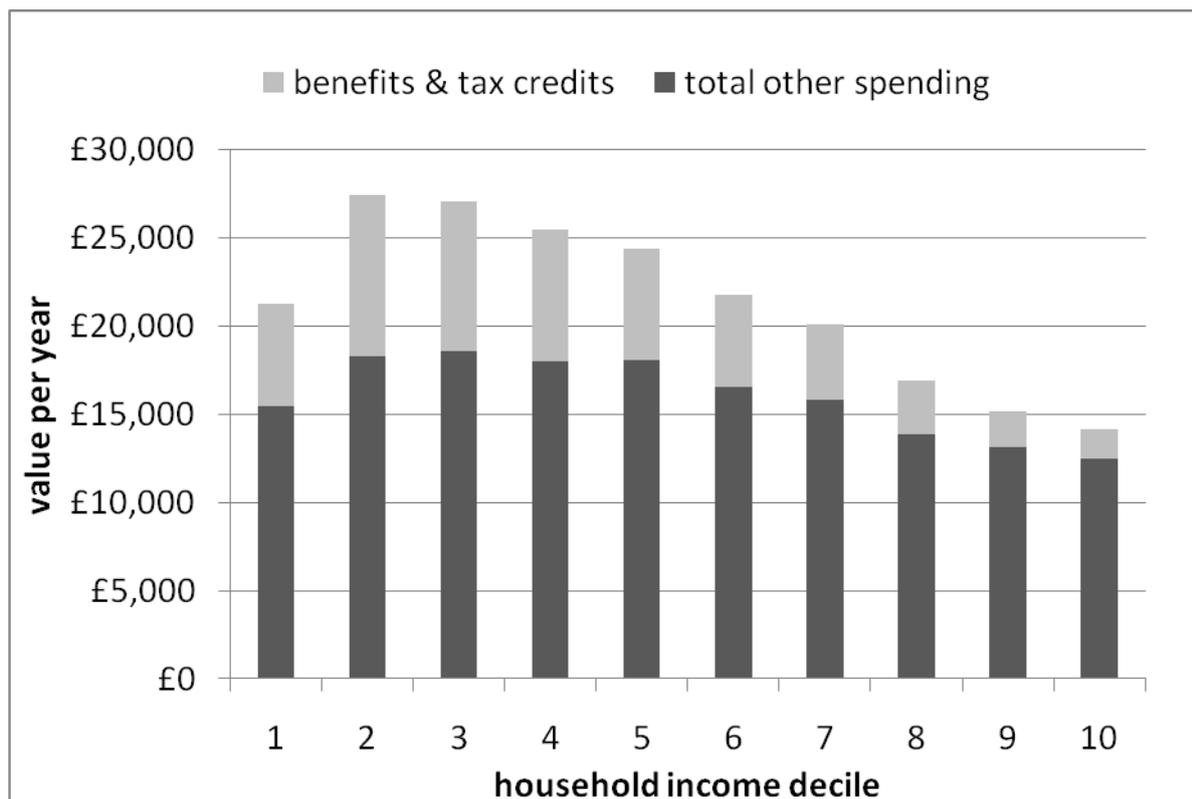
## **The overall distribution of public spending**

Using the methodology described in the previous section, the distribution of overall public spending in cash terms for 2007-08 is shown in Figure 1.

The distribution of household disposable income<sup>1</sup> is divided into ten equally-sized segments (deciles), with decile 1 being the poorest and decile 10 the richest. The figure divides public spending into benefits and tax credits on the one hand, and total other spending (including the components allocated on a ‘flat-rate’ basis and the components allocated according to service use) on the other. In cash terms, total average spending on households is highest in the second and third income deciles at over £25,000 per household, and lowest in the richest decile at less than £15,000 per household. Expressed as a proportion of net income these results are extremely progressive (as shown in Horton and Reed, 2010 in more detail); for example average total spending on the poorest decile is equivalent to 328 percent of average net incomes, whereas for the richest decile total spending is equivalent to just 19 percent of average net incomes.

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<sup>1</sup> The analysis uses the same definition of household income used in the UK Department for Work and Pension’s Households Below Average Income (HBAI) net incomes series. More precisely, we use equivalised net household income Before Housing Costs (BHC).

**Figure 1. Overall distribution of public spending by income decile**

Source: Horton and Reed (2010)

### How big are the cuts and where do they fall?

The 2010 Spending Review announced total spending cuts of £81 billion (in nominal terms) by tax year 2014-15 compared with the 2010-11 tax year. This comprises:

- A reduction of £10 billion in **debt interest payments**;
- £18 billion of cuts in **welfare payments** (reductions in benefits and tax credits);
- £48 billion of real-terms cuts to **other spending programmes** (including current and capital spending);
- A £5 billion correction for **price inflation** between 2010-11 and 2014-15 to correct the figures from nominal to real terms.

Our results below model the £48 billion of cuts to spending programmes (excluding welfare), which we also combine with an analysis from the Institute for Fiscal Studies (IFS) of the £18 billion of welfare cuts. We do not include debt interest payments in the analysis. Our figures are presented in 2010-11 prices.

SR 2010 presented the spending cuts in terms of cuts to expenditure by individual departments, whereas our methodology analyses

spending by function. Hence, we need to make some assumptions about the extent of cuts (in percentage cuts) to each of the spending functions that we include in our model. Table 2 presents our assumptions on the extent of the spending cuts. For some functions (such as health and transport) service expenditure maps reasonably neatly onto a government department and the calculation is straightforward. In other cases (for example school-level education) the government provides additional information in the SR 2010 document which enables us to provide an exact figure. For other categories we face the problem that departmental spending does not map neatly onto service function (e.g. higher education), and/or that local authorities are partially responsible for the funding allocation decisions (e.g. social care, social housing). Thus, the values given in Table 3 for the extent of cuts in social care, social housing, and non-school education should be viewed as approximations only.

**Table 3. Assumed size of cuts to different service areas by 2014-15**

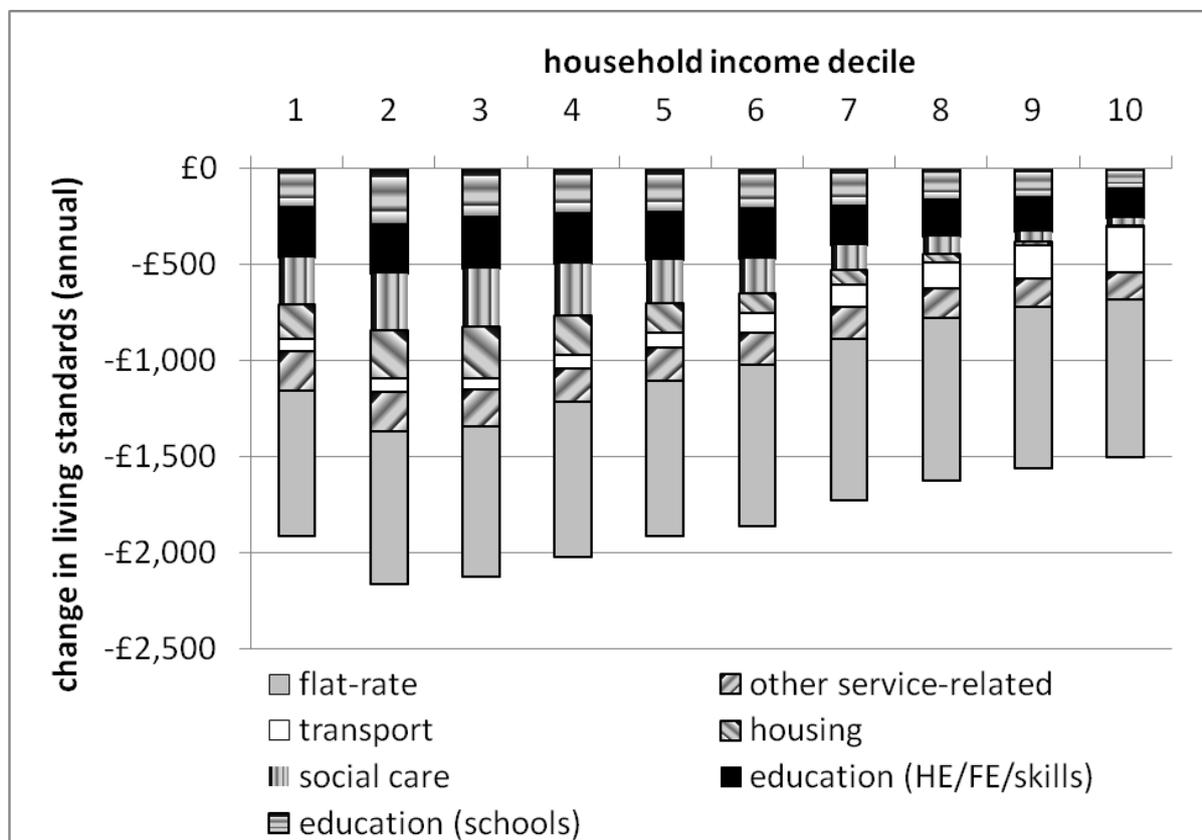
<b>Service</b>	<b>Change in real terms spending by 2014-15 (%)</b>
Health	0
Education (schools)	-10
Education (higher, further, adult skills)	-27
Social care	-20
Social housing	-24
Transport	-15
Policing	-20
Other categories where we allocate according to service use (average)	-18
Defence	-8
Other collectively provided services (average)	-18

### **The distributional impact of the spending cuts**

Figure 2 shows the distributional impact of the cuts to spending on services (excluding welfare measures) in cash terms by household income decile. The cuts have been split into a ‘flat-rate’ component

(collectively consumed services which the model allocates according to household size) and services which are allocated on the basis of service use, which are split into size different categories in Figure 2. Note that health does not feature in the graph because the health budget is being approximately maintained in real terms.

**Figure 2. Distributional impact of spending cuts, cash terms**

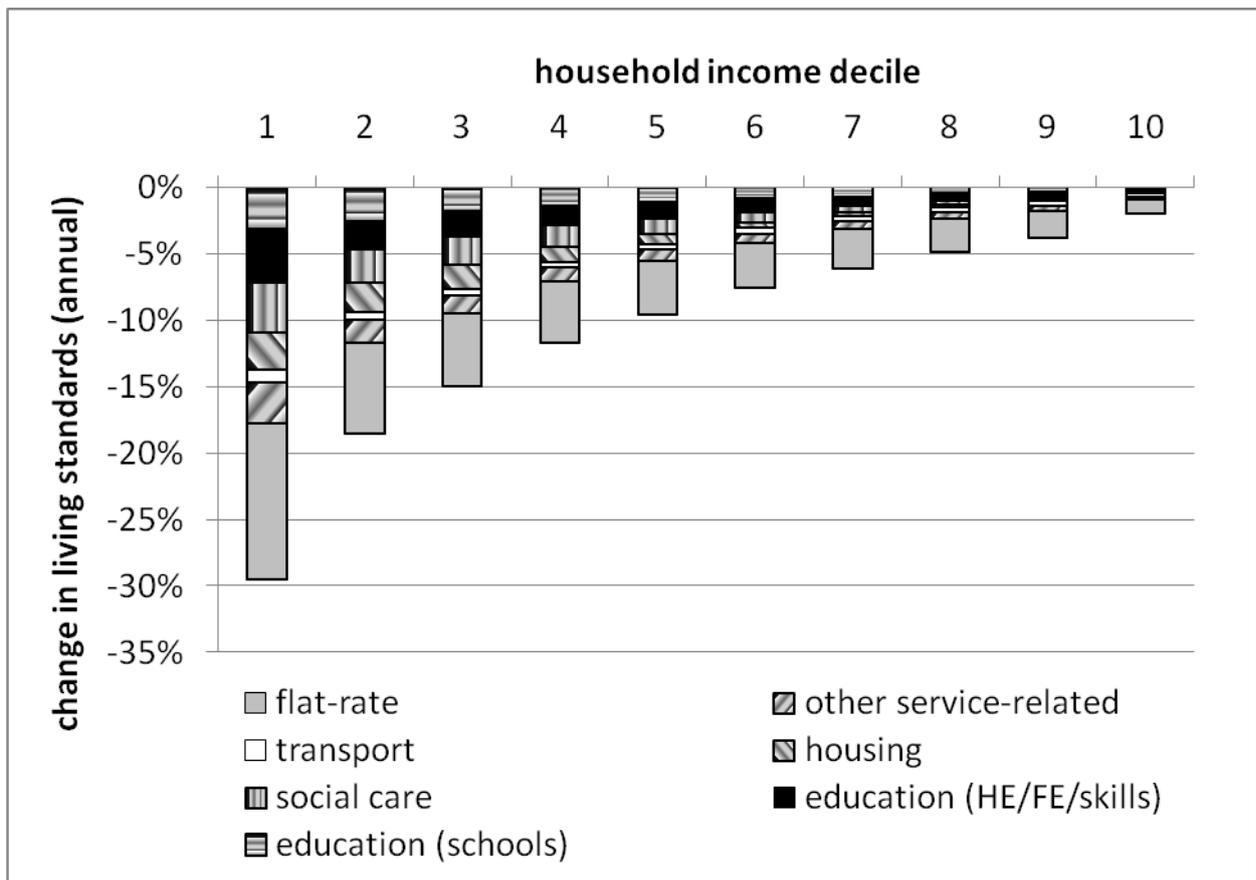


Source: authors' own calculations using Horton and Reed (2010) and information from CSR

Figure 2 shows that cuts to educational services (both schools and HE, FE and adult skills) affect poorer households more than richer households in cash terms. Cuts in social care and social housing spending have a big impact on the poor but little or no impact on the richest households, reflecting the means-testing of social care payments and the allocation of social housing to poorer families respectively. Cuts in transport spending have a greater cash impact on richer households because richer households are more likely to use roads (for private motoring) and rail services; bus services are more pro-poor in terms of spending patterns but are a relatively small proportion of transport spending. Cuts to other public spending allocated in proportion to service use have a slightly bigger overall impact on poorer than richer households.

Figure 3 shows the same results as Figure 2 but expressed as a proportion of average household disposable income rather than in cash terms. Expressed like this, the effect of the public spending cuts is extremely regressive. Households in the poorest income decile are losing services equivalent to almost 30% of their income on average), whereas for households in the richest decile the services are worth only just over 2%.

**Figure 3. Distributional impact of spending cuts, percentage of net income**



Source: as Figure 2

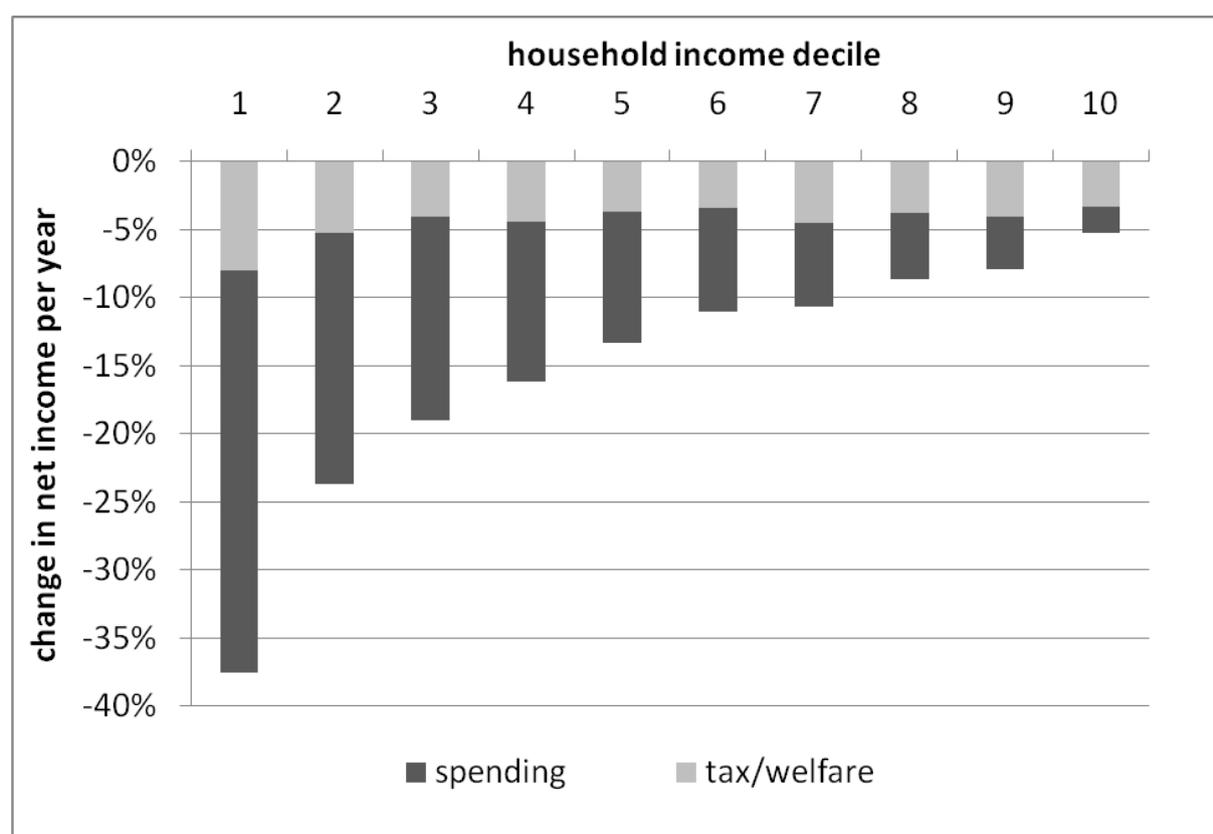
### The impact of spending cuts and tax and welfare measures combined

By combining our analysis of the distributional impact of the spending cuts with the Institute for Fiscal Studies (IFS)’s analysis of the overall impact of the changes to the personal tax system and cuts in benefits and tax credits, it is possible to derive the combined impact of all measures in SR2010 which directly affect households. We use the distributional results published by IFS in its post-Spending Review

briefing on 21 October 2010 and combine these with our results from Figure 3. The IFS analysis includes on the tax side the changes to income tax, employee and employer national insurance and VAT; cuts to housing benefit, council tax benefit, Employment and Support Allowance and Disability Living Allowance; and reductions in the generosity of Child Tax Credit and Working Tax Credit. (A full description of the changes enacted in the June Budget can be found in Browne and Levell (2010), with the additional welfare cuts in the Spending Review covered in Brewer (2010). IFS's distributional analysis of SR2010 is presented in Crawford (2010).)

Figure 4 shows the combined impact of the spending cuts (from our model) and tax and welfare measures (from IFS) Both sets of reforms are regressive but the impact of the spending measures as a proportion of net income is far larger for poorer households than for richer households. The combined impact of spending and tax/welfare measures is equivalent to around 38% of net income for households in the poorest decile, whereas the equivalent figure for households in the richest decile is only around 5%.

**Figure 4. Overall impact of fiscal consolidation: spending cuts and tax/welfare measures**



Source: spending measures – as Figure 3. Tax/welfare measures – Crawford (2010).

## Conclusion

This article presents results from the first attempt to build a comprehensive model of the distributional effects of public spending in the UK, and uses the model to analyse the distributional effects of the cuts in SR 2010. The results show very clearly that the impact of the cuts is extremely regressive: as a percentage of their net incomes, the poorest 10 percent of households are losing around 15 times as much from spending cuts as the richest 1 percent of households.

The regressive nature of SR 2010 is exacerbated by three factors. First, the Coalition government has relied more heavily on spending cuts than tax increases to address the fiscal deficit. Second, the tax and benefit changes which have been announced as part of the deficit reduction package are also regressive overall, albeit to a lesser extent than the cuts in public services. Finally, social care and social housing – which are the two areas of public services spending which are most heavily weighted towards the poorest households – have suffered particularly deep cuts, which makes the distributional effects of the overall package more regressive than if cuts had been applied more evenly across the board.

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