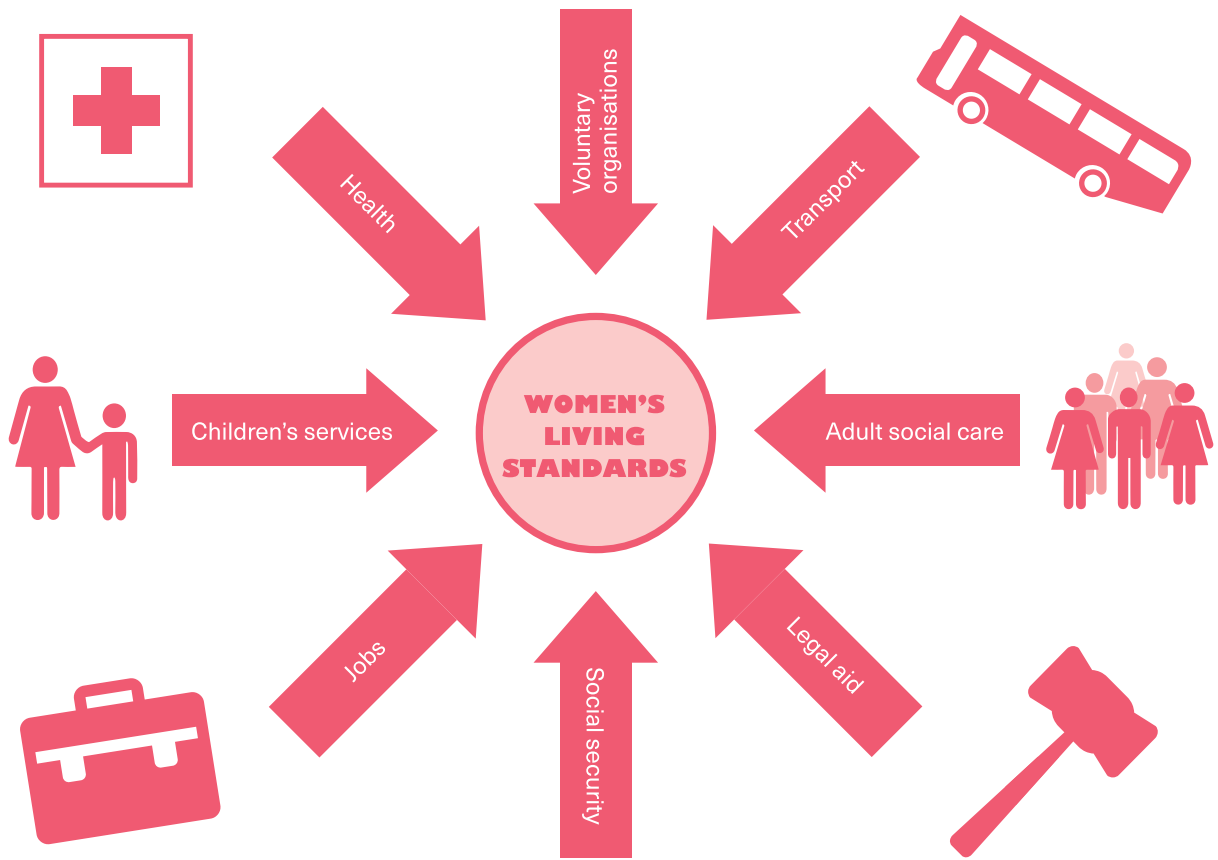


## CASE STUDY 4: CUMULATIVE IMPACT ANALYSIS

Cumulative impact analysis shows how different groups of people are affected by a range of different changes or cuts to public services.



In the UK, **as a result of cuts** to tax, benefits and public services since 2010, by 2020

### Single mothers

will experience an

**18%** drop  
in living standards  
equivalent to

**£8,800**



### Black households

in the lowest fifth of incomes  
will experience a

**19.2%** drop  
in living standards  
equivalent to

**£8,400**



### Asian households

in the lowest fifth of incomes  
will experience a

**20.1%** drop  
in living standards  
equivalent to

**£11,600**



a year in lost benefits and services

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## CASE STUDY 4: CUMULATIVE IMPACT ANALYSIS

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### WHY DO A CUMULATIVE ANALYSIS?

A cumulative analysis means looking at the combined impact of a number of measures. The effect of some individual measures may be small, but taken together the cumulative impact may be substantial. For example, in the 2010 Emergency Budget the government announced a series of cuts and changes to spending on social security and public services.

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### WHAT WBG DID

The Women's Budget Group knew that women would be disproportionately affected by these cuts, but we wanted to find out by how much, and specifically how much different groups of women and men would be losing. We carried out a series of cumulative impact analyses of the distributional impact of all cuts and changes to social security, spending on public services and tax policies from 2010 when cuts were first introduced, projected forward to 2020. Looking at the impact of policies over a period of time allowed us to account for the impact of policy reforms that are introduced in stages.

Our analysis is 'distributional' in that it examines the impact of policy changes on the *disposable (net) incomes/living standards* of women and men and their households with different characteristics, rather than on other gender inequalities, such as the employment gap. It looks at the impact of changes to taxes, social security benefits (state cash transfers, sometimes known as welfare benefits) and public services on the disposable income and living standards of individuals and their households.

Analysis at both household and individual levels is important because there is gender inequality both between households and between individuals. Women tend to live in particular types of households, for example, single parents and single pensioners are more likely to be women in many countries, while working-age singles without children are more likely to be men. But there is also gender inequality between individuals, including between those who live in the same household, and this can only be captured at the individual level.

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### A NOTE ON METHODOLOGY

The Women's Budget Group partnered with Landman Economics, an economic research consultancy, on a series of projects to assess the cumulative distributional impact of changes to personal taxes, social security benefits and spending on public services between 2010 and 2020. Initially these projects focused on impact at a household level. Our most recent projects have also examined impact at an individual level.

These used data from several different large-scale government household surveys to give us a representative sample of households of varying composition (by age, gender, disability and ethnicity) as well as information on the incomes of household members, their spending and use of public services.

This information was used to estimate a household or individual entitlement to certain social security benefits, liability to personal income tax, indirect taxes, and the use by the household of various public services. We could then allocate the impact of spending cuts and tax changes to each individual or household, and thus perform a distributional analysis of the impact of different policy changes. Our most recent analysis has also included the impact of increases to the National Living Wage (the government's term for the UK minimum wage for those aged 25 or older).

We constructed a 'baseline' for each person and household of the net income that they would have at the end of the period, in our case April 2020, taking account of inflation if the policy changes announced over the period (since June 2010) had not taken place. That is, as if the policies that had existed at its beginning had continued as planned, taking account of inflation. The 'reform' scenario estimates the income of people and households at the end of the same period after all the policy changes have been put in place, also taking account of inflation. The difference between the two incomes at the end of the period represents the cumulative impact of policy changes over that period for that person or household.

Here's an example. If an individual has a net income of £10,000 a year in April 2010, and the system stays the same, assuming inflation runs at 2% a year they would have an equivalent net income of £12,190 in April 2020. This is what we call that person's 'baseline income'.

Let's say a tax change in 2013 gives them £200 a year (at 2020 prices) and another change in 2015 cuts their social security by £1200 per annum (in 2020 prices). Their net income after these policy changes would be:

$$£12,190 + £200 - £1200 = £11,190$$

This is their 'reform' income.

That's a net cut of £1000 a year. Relative to their baseline income, this is a cut of 8.2%.

Making such comparisons allowed us to simulate the impact of a number of different policy changes. We could then look at the average impact for different groups of individuals and households, divided by gender, income, race and disability or a combination of these characteristics.

Allocating the impact of changes to households is relatively straightforward since it is clear to which households cash transfers are paid. When looking at impacts on individuals, cash transfers that are paid jointly need to be allocated to individuals in multi-adult households. We have assumed equal splitting of jointly received benefits. Research has shown that while households do share some resources they are not always equally shared, but neither are incomes individually retained by each adult member. However, we do individual-level distributional analysis to focus on changes to income receipt, rather than what happens to the income after it is received. This gives some measure of financial autonomy – how much access individuals have to money of their own.

For cuts to public services we calculated the impact on 'household living standards', which we defined as the value of household disposable income plus the use-value of public services as measured by the cost of delivery of those public services. Since public services tend to benefit other members of a household as well as the direct recipient (for example, childcare services benefit parents as well as children), we do not allocate public services to individuals and therefore examine the impact on living standards only at the household level.

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## WHAT WE FOUND

Our initial cumulative analysis focused on the living standards of households, looking at how the impact of changes in taxes, benefits and public services varied by household income and by 'gendered household type'. Gendered household type classified households by gender, age and composition into: working age adults in couples, with or without children, working age single female and single male adults without children, working age female and male lone parents, retired couples, retired single females and single males. This allowed us to compare the impact of policy between couples and singles, and between single women and single men. It showed that female lone parents lost more of their disposable income and female lone pensioners more through cuts in public services than other household types.<sup>32</sup>

In 2016, in partnership with the Runnymede Trust, a race equality think tank, we secured funding from the Barrow Cadbury Trust, a charitable foundation, which allowed us to extend our analysis of tax and social security changes to the impact on individuals as well as on households. It allowed us to consider the impact of cuts and changes not only by household income and gender, but also by race. There was substantial qualitative evidence that social security and spending cuts were hitting Black and Minority Ethnic (BME) women particularly badly and WBG felt that our analysis should also make this visible.

This quantitative analysis – the first to analyse austerity by income, gender and race – was accompanied by in-depth interviews with Black and Minority Ethnic women in two cities in order to bring to life the statistics. Below we set out some of the findings of the report.<sup>33</sup>

**There was substantial qualitative evidence that social security and spending cuts were hitting Black and Minority Ethnic (BME) women particularly badly and WBG felt that our analysis should also make this visible.**

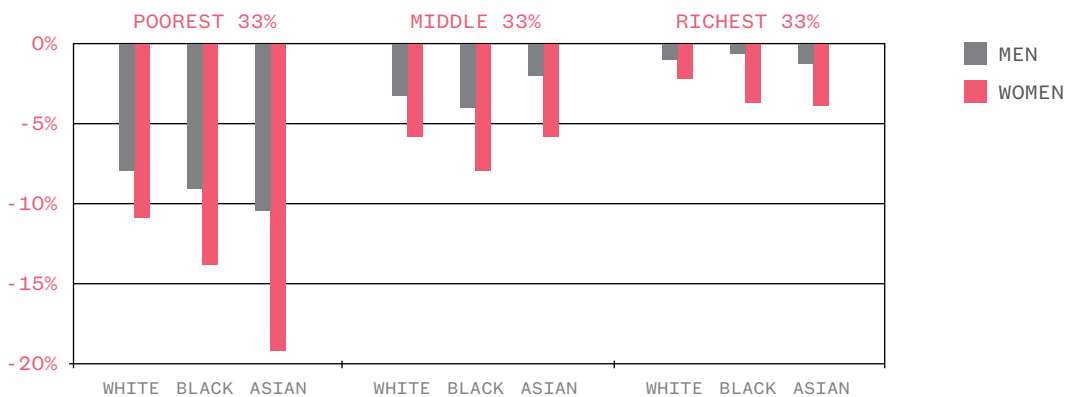
### SOCIAL SECURITY BENEFITS AND PERSONAL TAXES

We looked at the cumulative impact of changes to personal taxes and social security benefits from 2010 by 2020 as a proportion of net individual income before the changes, by gender, household income level and ethnic background of individuals.

This showed how gender, race, poverty and income intersected, in particular that Black and Asian women in the poorest third of households stood to lose the highest proportion of their incomes. Figure 1 shows that Asian women in the poorest 33% of households stood to lose the most (19% of their individual net income or £2247 per year) and that black men in the richest households would lose the least (less than 1% of their net income or £315 a year).

The figure also shows that women stood to lose more than men as a proportion of their individual income, regardless of income and ethnicity.

**Fig. 1 Cumulative impact in April 2020 of changes to taxes and benefits announced between June 2010 and March 2016 by income, gender and ethnicity as a proportion of net individual income (UK)**



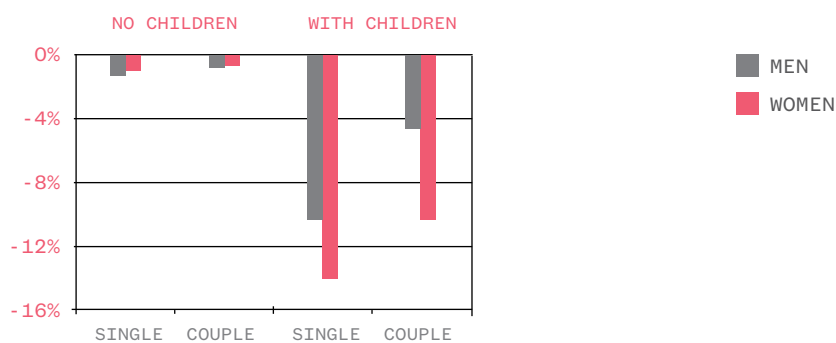
SOURCE: WBG CALCULATIONS USING THE LANDMAN ECONOMICS TAX-BENEFIT MODEL.

Gender impact analysis is also useful on individuals within household types. Figure 2 (below) shows the relative impact of tax and benefit changes on net individual incomes of men and women by the type of household they live in, namely by partnership status, presence of dependent children and whether they are of working-age or retired.

Women with children bear the brunt of the changes. They stand to lose more than 10% of their net income, whether in a couple or single. Interestingly, men in couples with children stand to lose only about 4% of their net individual income by April 2020, whereas women in those same couples would lose more than 10% of their net income.

By contrast, working-age adults without children on average will lose virtually nothing, and this holds for both men and women. For pensioners, single male pensioners stand to lose more than single female ones, as a result of changes to the pension age.

**Fig. 2 Cumulative impact on individual net incomes of working age people by April 2020 of changes to taxes and benefits announced between June 2010 and March 2016 as a proportion of net individual income (UK)**



SOURCE: WBG CALCULATIONS USING THE LANDMAN ECONOMICS TAX-BENEFIT MODEL.

## PUBLIC SERVICES

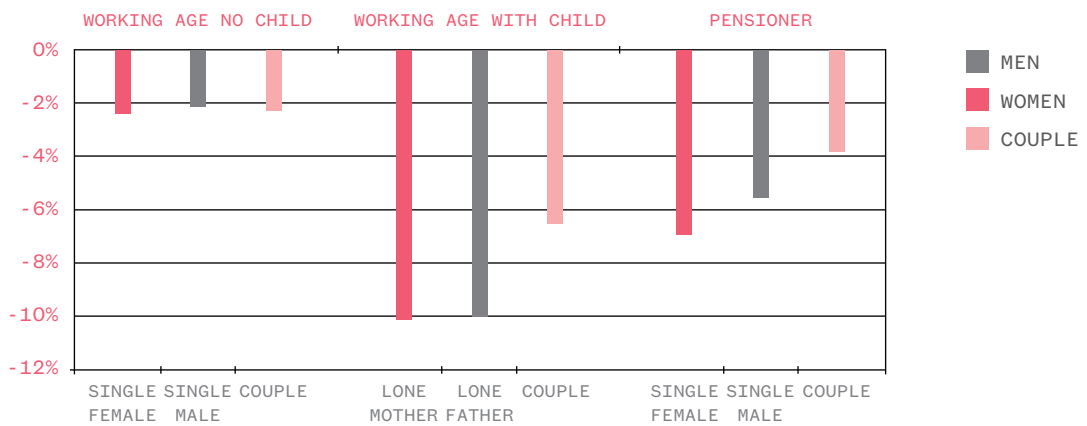
We also looked at the impact of cuts to public services. In this case we did our analysis at the household level because the level of public services impacts on the whole household as well as the direct recipient.

Figure 3 shows that households with children stand to lose most from cuts to public services both in cash terms and as a percentage of their living standards, mainly due to cuts to education services. Lone mothers account for 92% of all lone parents and they will see living standard fall by 10.2%. Couples with children experience a decline of 6.5%. Single female pensioners experience a 7.1% fall in living standards, mainly because of cuts to social care.

32. See for example WBG, (2016), The impact on women of the 2016 Budget: Women paying for the Chancellor's tax cuts, available online at [https://wbg.org.uk/wp-content/uploads/2016/03/WBG\\_2016Budget\\_FINAL\\_Apr16.pdf](https://wbg.org.uk/wp-content/uploads/2016/03/WBG_2016Budget_FINAL_Apr16.pdf)

33. WBG, (2017), Intersecting Inequalities: the impact of austerity on BME women, WBG and Runnymede, available online at <https://www.intersecting-inequalities.com/>

**Fig. 3 Cumulative real-term impact of spending cuts to services as a % of living standards between 2010 and 2020 by gendered household type (UK)**



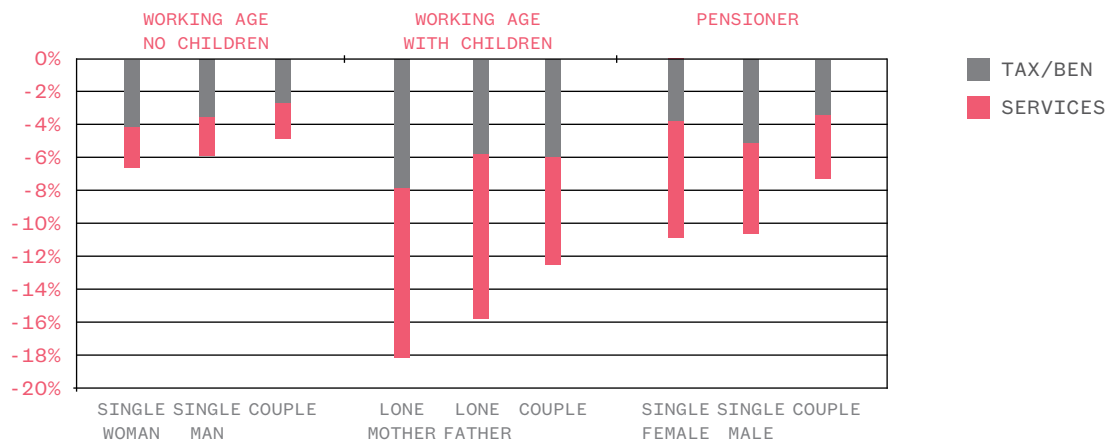
SOURCE: WBG CALCULATIONS USING THE LANDMAN ECONOMICS PUBLIC SPENDING MODEL

### PUTTING IT TOGETHER

Finally, we looked at what happened when cuts to public services were added to the impact of cuts to tax and social security.

Figure 4 below shows what happens to the living standards (disposable income plus the value of free public services) of households by gendered characteristics. There is a loss of 18% in average living standards for lone mothers and 12% for couples by 2020. Single pensioners are badly affected by the cuts to services and stand to lose more than 10% of their living standards. For households with children and for pensioners, cuts to public services will have a larger impact than tax-benefit changes.

**Fig. 4 Cumulative impact in April 2020 of changes to taxes, benefits and public spending on services announced between June 2010 and March 2016 by household type as a proportion of household living standards (UK)**



SOURCE: WBG CALCULATIONS USING THE LANDMAN ECONOMICS TAX-BENEFIT MODEL.

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## REFLECTIONS AND LESSONS LEARNED

The main lesson from this exercise is that performing such impact analysis is possible in countries where data is available. Household level analysis can show impact on different types of households, and by gendered household type. It can give a measure of what is happening to standards of living. Individual analysis can be harder to do if the data isn't available because it requires making assumptions about how income is shared within households. Individual analysis does not give a measure of standards of living, because it excludes public services, but it does give some measure of financial autonomy, associated with how much access individuals have to money of their own.

Such distributional analysis looks only at impact on the distribution of current income, or of living standards. Other inequalities that may be as important over a life course require different forms of analysis described elsewhere in this casebook.

This work received widespread media coverage and has been widely cited in the UK parliament. *See the section of this casebook, Communicating the Analysis, for more information.* This shows that analysis of this type can be important for communicating the gender impact of policy to a wider audience.

The UK government has been reluctant to publish such analysis by gender and other protected characteristics. However, the publically funded Equality and Human Rights Commission has published distributional impact analysis using the same model as WBG and has called on the government to carry out their own analysis.<sup>34</sup>

34. EHRC, (2018), The cumulative impact of tax and welfare reforms, available online at <https://www.equalityhumanrights.com/en/publication-download/cumulative-impact-tax-and-welfare-reforms>