HM Treasury

Impact on households:
distributional analysis to accompany Spring Statement 2022

March 2022

HM Treasury

Impact on households:

distributional analysis to accompany Spring Statement 2022

March 2022

This publication is available at: www.gov.uk/official-documents.

Any enquiries regarding this publication should be sent to us at public.enquiries@hmtreasury.gov.uk

ISBN: 978-1-911686-28-6

PU: 3159

Contents

Chapter 1

Distributional analysis of tax, welfare and public service spending decisions since Spending Round 2019

1.1 This document sets out the estimated impact of tax, welfare and public service spending changes announced since Spending Round 2019 (SR19) that carry a direct, quantifiable impact on households. It also presents estimates of the overall level of tax paid and public spending received by households in 2024-25.

1.2 This analysis shows:

- government policy continues to be highly redistributive; in 2024-25, on average, households in the lowest income decile will receive over £4 in public spending for every £1 they pay in tax
- also in 2024-25, the poorest 60% of households will receive more in public spending than they contribute in tax
- the impact of government policy since SR19 on households in the bottom four deciles is expected to be worth more than £1,000 a year, while there will have been a net benefit on average for the poorest 80% of households
- on average, the combined impact of personal tax and welfare decisions made since SR19 is progressive, placing the largest burden on higher-income households as a proportion of income.

1.3 Because the analysis here focuses on the impact of government policy in 2024-25, it does not include temporary measures like the February 2022 energy package, the extension of the Household Support Fund, and support for households in response to the COVID-19 pandemic.

1.4 The modelling in this chapter is on a static basis and shows the effects of tax and spending policy in isolation, and before households' behavioural responses are taken into account. For this reason, it only illustrates some of the factors which will drive households' living standards in 2024-25, and importantly does not take into account changes in the labour market or the wider economic impacts of government policy. The inflation forecast impacts the modelling indirectly via its impact on certain policies, but its direct impact is not represented because the same forecast is used in the policy scenario we model and in the counterfactual. The analysis also presents average effects on households within each income decile, but there will be variation around this average.

Box 1.A: Measuring household incomes

The analysis in this chapter uses household income as the measure of a household's standard of living. While this is the standard measure, some households experience periods of low income temporarily, or finance their standard of living using wealth rather than income. Therefore, income may not always best represent their general standard of living. Such individuals are often students, the temporarily unemployed, or the self-employed. The most recent analysis by the Department for Work and Pensions has shown that, of those surveyed in 2018-19, 56% of those in the bottom quintile in 2010-11 were in a higher income quintile in 2018-19.

Alternative approaches have used household expenditure to approximate a household's standard of living. Approximately 20% of those in the bottom income decile are in the top half of the distribution when households are ranked by their total expenditure. Due to limitations in the data, an expenditure-based approach is not used here, but the impacts of government decisions on low-income households should be considered in the context of these methodological choices.

Many of the charts included in this document are presented by household equivalised net income decile. This means that a household's net income (income after taxes and benefits) is adjusted to take account of the size and composition of the household. Households are then ranked from lowest to highest equivalised net income and divided into 10 equally sized groups.

To help understand where different households sit in the income distribution, Chapter 2 includes the median gross income for each decile, as well as a more detailed explanation of the data sources, methodology, and the equivalisation process.

1.5 Charts 1.A to 1.C include the impact of measures and spending settlements announced since Spending Round 2019. This includes measures introduced since the Autumn Budget and Spending Review 2021:

- National Insurance: increase annual Primary Threshold and Lower Profits Limit to £12,570 from July 2022
- National Insurance: reduce Class 2 NICs payments to nil between the Small Profits Threshold and Lower Profits Limit
- Income Tax: reduce basic rate from 20% to 19% from April 2024[1]
- Additional council tax referendum principles announced since Autumn Budget and Spending Review 2021
- Student finance: changes to fee caps, loan terms and eligible courses.

[1] Non-dividend income.

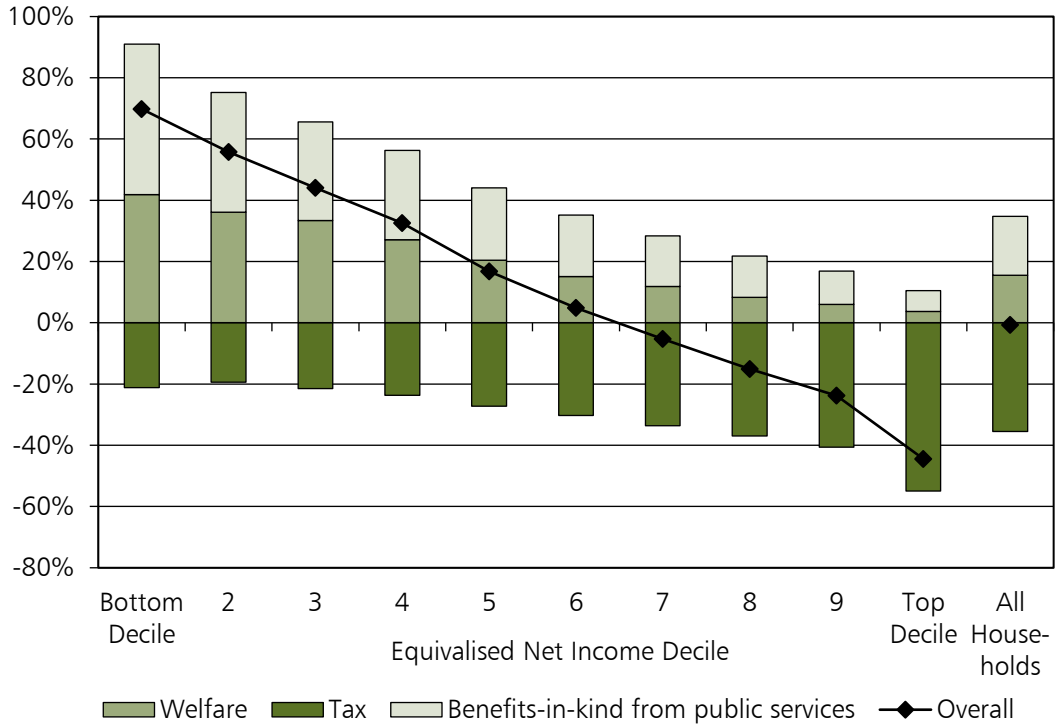
1.6 The analysis shows impacts that occur in the fiscal year 2024-25, the last year of the Spending Review period.

Overall level of tax, welfare and public service spending

1.7 Government policy continues to be highly redistributive. Chart 1.A shows the estimated overall level of public spending received, and tax paid, by households across the income distribution (the black diamonds indicate the net position). It shows that in 2024-25:

- on average, households in the lowest income decile will receive over £4 in public spending for every £1 they pay in tax
- the poorest 60% of households will receive more in public spending than they contribute in tax.

Chart 1.A: Overall level of public spending received, and tax paid, as a percentage of net income (including households' benefits-in-kind from public services), by income decile, in 2024-25



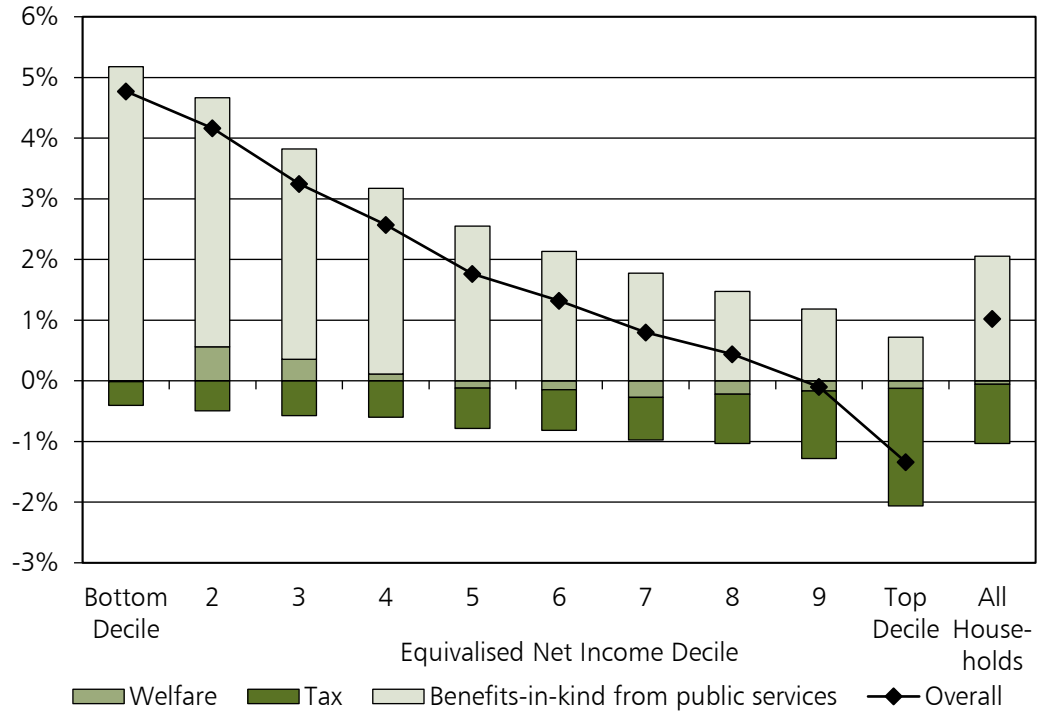
Source: HM Treasury distributional analysis model

Analysis of decisions announced since Spending Round 2019

1.8 Charts 1.B and 1.C set out the estimated impact of decisions announced since SR19 across the income distribution. Of the measures announced at the current Spring Statement, only those set out in paragraph 1.5 are included in the analysis presented here. Chart 1.B shows these impacts as a percentage of net household income (including benefits-in-kind from public services), while Chart 1.C is expressed in annual cash terms. The charts show the impacts on households in 2024-25 compared to a hypothetical world in which modelled government policies announced since SR19 were not introduced. This analysis shows that, on average, households in the poorest income deciles are gaining the most as a percentage of net income.

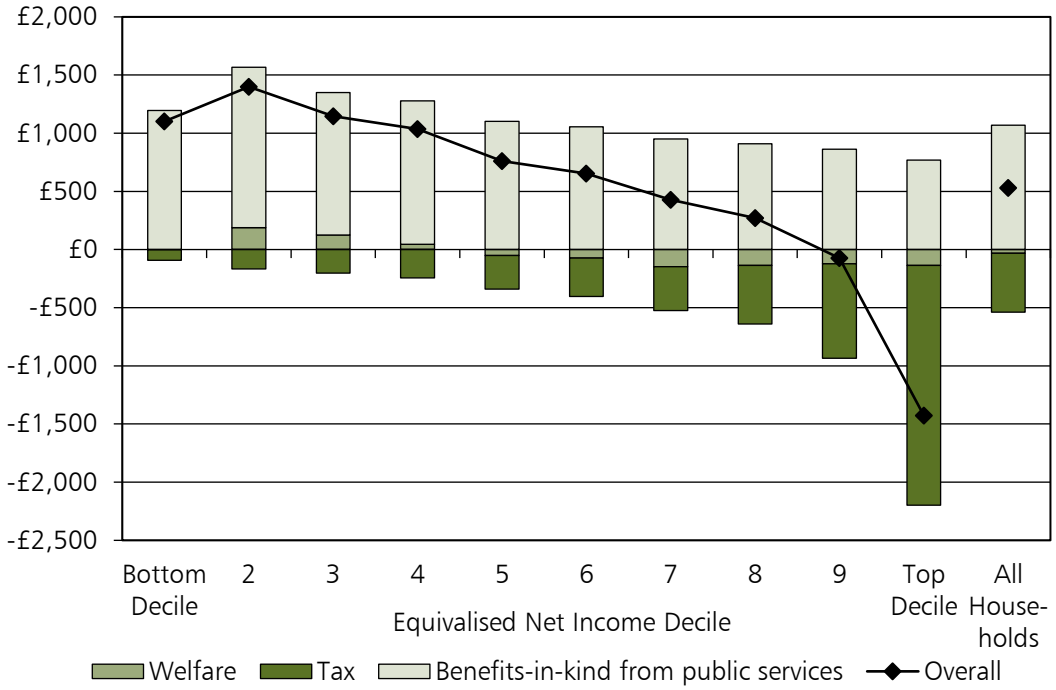
1.9 Charts 1.B and 1.C only show measures with a direct impact in 2024-25 on benefit income, taxes paid, or the benefits-in-kind received through public services by UK residents. The charts exclude the impact of business taxes, changes to regulation including the National Living Wage (NLW), the impact of government borrowing, and the impact of measures in years other than 2024-25. Further details on the methodology is set out in Chapter 2.

Chart 1.B: Impact of decisions announced since Spending Round 2019 on households in 2024-25, as a percentage of net income, by income decile



Source: HM Treasury distributional analysis model

Chart 1.C: Impact of decisions announced since Spending Round 2019 on households in 2024-25, in cash terms (£ per year), by income decile



Source: HM Treasury distributional analysis model

Chapter 2

Data sources and methodology

Data sources for charts

Chart	Source
1.A-1.C	Internal HM Treasury modelling. See 2.1 to 2.4

Data sources for statistics

Paragraph	Statistic	Source
Box 1.A	Income movements	DWP, Income Dynamics: Movements between quintiles: 2010-2019, March 2021
Box 1.A	Expenditure distribution	Internal HM Treasury modelling

Constructing Charts 1.A to 1.C

2.1 Chart 1.A shows estimates of the overall level of public spending received, and tax paid, by households in 2024-25 across the household income distribution. Charts 1.B and 1.C compare the estimated impact of changes in tax, welfare and public service spending policy against a counterfactual of no tax and welfare policy changes, and no change to real public service spending per capita, since Spending Round 2019 (SR19). Measures are only included if they have a clear first order impact on the benefit incomes, taxes paid, or the benefits-in-kind received through public services by UK residents.

2.2 The following policy impacts are out of the scope for this analysis:

- temporary measures, including the February 2022 energy package, Household Support Fund, and support for households in response to the COVID-19 pandemic
- the impact of changes to regulation, for example the National Living Wage (NLW), which are not direct changes to the distribution of tax or public spending
- Exchequer impacts resulting from reduced fraud, error or debt in the welfare system, as full compliance with the rules of the welfare system is assumed throughout the modelling
- Exchequer impacts resulting from reduced tax evasion, as full compliance with the rules of the tax system is assumed throughout the modelling.

Anti-avoidance measures are captured where they result in a change in tax liabilities in the year being analysed

- impacts of decisions made by devolved administrations
- impacts of taxes where the incidence of the tax does not fall directly on households, for example Employer NICs. We exclude such taxes from this analysis as we are unable to determine the distributional consequences of how these taxes are passed through to households
- the impact of measures without a direct impact in 2024-25.

2.3 A number of smaller tax and welfare measures are also excluded from this analysis because there is insufficient data to robustly model the distributional impact. This includes the new VAT relief for energy saving materials announced at Spring Statement 2022.

2.4 Charts 1.A to 1.C show the impact of measures in 2024-25, as this is the final year of the Spending Review period.

Defining income and ranking households

2.5 This distributional analysis uses equivalised net household income, before housing costs, as the main indicator by which to rank households from lowest income to highest income. This indicator is comprised of several components:

- Equivalised: equivalisation is a process that adjusts a household's net income to take into account the fact that larger households will require a higher net income to achieve the same standard of living as a household with fewer members. The equivalisation factors used in the analysis are the modified OECD factors (as used in DWP's Households Below Average Income publication).
- Net: household incomes are ranked after deductions from direct taxes, and after additions from welfare benefits. Deductions from indirect taxes, or additions through benefits-in-kind from public services, are not used to rank households.
- Household: incomes are assessed in aggregate at the household, not individual level. Comparing household, rather than individual, incomes reduces the subjectivity of this analysis, ensuring that no assumptions are made about how incomes or expenditure are shared between separate individuals within the household.
- Before housing costs: housing costs such as rent or the cost of servicing a mortgage are not deducted from household incomes.

2.6 The household income distribution is created by ranking households from the lowest equivalised net income to the highest equivalised net income, and then dividing this ranking into ten equally sized groups called deciles, across which the analysis is produced.

2.7 Table 2.A below shows estimated median gross incomes (pre-tax private income including earnings, private pensions, savings and investments, plus benefit income) within each decile. This gives a less precise estimate of a household's position in the income distribution than net income, but is easier to understand because many people think about their incomes or salaries in gross rather than net terms.

2.8 Table 2.A 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 £23,700 per year between them, there is a high likelihood that this household will be found in the third income decile. However, this is not guaranteed, as 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 for which benefits the household qualifies.

Table 2.A: Median gross income for each decile (£ per year, 2021-22) for different household compositions[2]

Median gross income of households in decile	1 adult	1 adult and 1 child	2 adults	2 adults and 1 child	2 adults and 2 children
Top decile	69,700	-	104,100	142,500	174,300
Ninth decile	46,500	-	68,900	90,400	112,100
Eighth decile	37,700	-	55,100	73,000	90,300
Seventh decile	31,300	43,400	45,900	59,500	74,500
Sixth decile	26,600	36,200	39,000	52,100	61,400
Fifth decile	22,200	29,300	32,900	44,200	52,200
Fourth decile	18,500	23,700	28,100	36,700	44,700
Third decile	15,600	21,000	23,700	31,500	36,200
Second decile	12,700	17,100	19,700	25,100	29,100
Bottom decile	9,500	12,600	14,500	17,400	20,600

Source: HM Treasury distributional analysis model

Analysis of tax and welfare measures

2.9 Where possible, tax and welfare policy changes are analysed using HM Treasury's Intra-Governmental Tax and Benefit Microsimulation model (IGOTM), which is underpinned by data from the ONS's Living Costs and Food (LCF) survey. The sample size of the LCF means that in order to produce robust analysis three years of data have been pooled together, specifically 2015-16 to 2017-18. This data is then projected forward to reflect the

[2] Categories with insufficient underlying sample sizes have been left blank.

financial year being modelled, using historical Annual Survey of Hours and Earnings data on earnings growth at different points across the income distribution as well as the latest OBR average earnings and inflation forecasts. The model makes no changes to the underlying demographics, employment levels or expenditure patterns in the base data.

2.10 For Charts 1.B and 1.C, the counterfactual for tax and welfare decisions is a hypothetical scenario in which policy changes announced at or after SR19 were not implemented.

2.11 Not all households take up all the benefits to which they are entitled. HM Treasury's microsimulation modelling takes this into account when calculating the effects of policy changes by using information on the take-up of benefits in the underlying survey data. A policy which will lead to an increase in take-up will therefore be modelled as an increase in household income. This methodology provides a more accurate estimate of the impact on households.

2.12 Modelling of tax and welfare measures in IGOTM takes into account the devolution of decisions in some areas from the UK government to devolved administrations. UK government decisions are modelled as applying only to households directly affected by the measure, while decisions taken by the devolved administrations are not included as policy impacts.

2.13 Within the tax system, the main taxes microsimulated in this analysis are: Income Tax, employee and self-employed National Insurance contributions, the Health and Social Care Levy (employee and self-employed elements only), Council Tax, VAT, Insurance Premium Tax, Fuel Duty, Alcohol Duty, Tobacco Duty, Stamp Duty Land Tax, and Air Passenger Duty.

2.14 Within the welfare system, the most significant welfare benefits microsimulated in this analysis are: the State Pension, Pension Credit, Winter Fuel Payments, Attendance Allowance, Jobseeker's Allowance, Employment and Support Allowance, Housing Benefit, Universal Credit, Child Benefit, Disability Living Allowance, Personal Independence Payment and Tax-Free Childcare.

2.15 All charts in Chapter 1 assume for simplicity that Universal Credit has been fully rolled out and claimants are no longer claiming benefits under the older legacy system.

2.16 Not all measures can be reliably modelled using IGOTM due to data and/or modelling constraints. Tax and welfare changes that cannot be modelled using microsimulation modelling are, where possible, apportioned to household equivalised income deciles. This is done according to the Exchequer impacts or savings from the measures, based on assumptions about where the impacts are likely to fall.

Analysis of public service spending

2.17 The analysis of public service spending only includes spending on frontline public services with a direct benefit to households. This covers services

provided by the Department of Health and Social Care, the Department for Education, the Department for Work and Pensions, the Department for Transport, the Ministry of Justice, the Department for Digital, Culture, Media and Sport, and some services delivered by local government in England.

2.18 The analysis excludes:

- administrative spending
- capital spending, and the depreciation of capital assets
- spending funded through the Reserve
- spending on public goods where it is not possible to identify the direct benefits from these areas of spending for specific households.

2.19 To align with the definition of income used in DWP's Households Below Average Income publication, the analysis of spending on public services also includes financial transactions through student loans. To account for this source of income, estimates of student loan outlay in a given financial year are counted as household income from public spending. Likewise, estimates of student loan repayments in that same financial year are reflected as a loss to households, again through the public spending bars.

2.20 For Charts 1.B and 1.C, the analysis of RDEL spending compares forecast spending in 2024-25 to a baseline of actual spending in 2019-20, projected to 2024-25 in line with both the GDP deflator and population growth (to account for both price and population pressures on real per capita spend received). Therefore, the RDEL impacts presented in Charts 1.B and 1.C reflect the impact on households of all RDEL measures since Spending Round 2019.

2.21 Charts are on a UK basis, though any RDEL spending that is the responsibility of the devolved administrations in Scotland, Wales, and Northern Ireland is not reflected in this analysis. This has two effects. First, any changes to devolved spending – whether positive or negative – have no impacts in this analysis. Second, where change is expressed as a proportion of household income, it is expressed as a proportion of household income minus the part of it that comes from public spending devolved to Scotland, Wales, and Northern Ireland.

2.22 The analysis of the benefits-in-kind provided by public service spending is, like with tax and welfare measures, derived initially from HM Treasury's IGOTM model. However, the modelling approach taken for public services is slightly different. Where the use of a public service is reported in the LCF, no additional data is required and the approach is similar to that used for most tax and welfare modelling. The spending on a particular public service is allocated between all those households who are expected to use this public service, in proportion to each household's expected use of the service.

2.23 Where the LCF does not contain information about the use of a service, additional data sources are required. This additional data is used to identify characteristics associated with the use of the service and then used to derive probabilities of service use conditional on these characteristics. The cash value spent on public services is converted into an identical cash gain to

households and distributed to households based on the probability that any given household uses the service.

2.24 As an example, the likelihood of an individual using a service, such as the NHS, will be influenced by factors such as the individual's age, sex, and so on. Through analysis of NHS allocations models, it is possible to estimate the relative use of the NHS by individuals of different characteristics over a given timeframe. This analysis shows, for example, that the older an adult is, the more likely he or she is to use the NHS. This analysis is then applied to the LCF data that underpins the rest of HM Treasury's distributional analysis modelling. The adjusted LCF data, therefore, then contains estimates of each individual's likelihood of using this particular public service.

2.25 Spending (both actual and for the baseline) is then allocated according to each household's relative likelihood of using the service, where the relative likelihood of use acts as a weight to allocate total spending to each household. Therefore, the spending will be skewed to those individuals and households who are most likely to use a public service over a given time period. In the example of using the NHS, above, the total public spending on this service will be skewed (but not allocated entirely) to those individuals who are estimated to be most likely to use this service over a given timeframe. The cash value spent on public services is converted into an identical cash gain to households. Impacts of changes in RDEL spending are calculated alongside tax and welfare and presented across the income distribution.

Continuous improvements to modelling and analysis

2.26 The modelling underpinning our analysis of tax, welfare and public service spending is under continuous improvement, to enable us to provide the best estimate (subject to time, resource, and data constraints) of how households are impacted by the cumulative tax, welfare and public service spending decisions made by the government. We also aim to capture the most comprehensive and up-to-date record of where government spending is directed to inform these analyses, noting these will continue to evolve as departments decide on final budget allocations. As such, the charts in Chapter 1 represent our best estimates of cumulative impacts at the time of publishing. However, while we expect these updates to refine our estimates slightly, we do not expect the distributional impacts to be materially different.

2.27 Finally, the analysis shown in our charts is based on the latest available Office for Budget Responsibility (OBR) forecast which is updated at every fiscal event. For these reasons, as well as those set out above, charts published at consecutive fiscal events are not directly comparable.

HM Treasury contacts

This document can be downloaded from www.gov.uk

If you require this information in an alternative format or have general enquiries about HM Treasury and its work, contact:

Correspondence Team
HM Treasury
1 Horse Guards Road
London
SW1A 2HQ

Tel: 020 7270 5000

Email: public.enquiries@hmtreasury.gov.uk