



## **Estimates of poverty in the UK adjusted for expenditure on tobacco – 2021 update**

Howard Reed, Landman Economics

July 2021

## 1 Introduction

Landman Economics has been commissioned by Action on Smoking and Health (ASH) to analyse the impact of tobacco expenditure on poverty rates in the UK. This report aims to answer the following questions:

1. if tobacco expenditure is subtracted from household expenditure, how many more households would be in poverty under the official UK government definition of poverty (below 60 percent of median household net income, adjusted for family size?)
2. Within these households, how many extra adults and children are in poverty, taking into account household tobacco expenditure?
3. What is the specific poverty rate for households with positive expenditure on tobacco (i.e. households containing smokers?) How much higher is poverty among households containing smokers than the overall average poverty rate?
4. What is the specific impact of tobacco expenditure on poverty rates adjusted for tobacco expenditure among households with smokers in them?
5. What is the impact of tobacco expenditure on poverty rates when the population is broken down by other variables (e.g. housing tenure, region, employment status)?

This report is an updated version of research carried out for ASH in 2015<sup>1</sup> and 2019.<sup>2</sup>

## 2 Choice of dataset

The official measure of poverty in the UK is published each summer by the UK Department for Work and Pensions's [DWP]'s *Households Below Average Income* statistics [HBAI], with the most recent data available at the time of writing (May 2021) being the 2018/19 tax year.<sup>3</sup> Since 1994 the HBAI publication has used the Family Resources Survey (FRS) as its data source. FRS is the most detailed and accurate source of household survey data on incomes in the UK, with a sample size of approximately 20,000 households per year.

It is not possible to use the FRS to calculate poverty rates adjusted for tobacco expenditure because the FRS does not include any data on household spending. Instead, it is necessary to use the Living Costs and Food Survey (LCF) for this analysis. LCF includes data on household expenditure (including expenditure on

---

<sup>1</sup> H Reed (2015), "Estimates of poverty in the UK adjusted for expenditure on tobacco"

<sup>2</sup> ASH (2019) "The quitting dividend for landlords and tenants".

<sup>3</sup> See <https://www.gov.uk/government/statistics/households-below-average-income-199495-to-201819>

tobacco products) as well as detailed data on household incomes. The LCF has two drawbacks compared to the FRS for modelling poverty rates:

1. The sample size of the LCF is much smaller – only around 5,000 to 5,500 households per year, which is less than a third the sample size of the FRS.
2. The income data in the LCF is not quite as detailed as the data in the FRS (although it is still detailed enough to produce reasonably accurate poverty estimates, and indeed before the FRS was established in 1994 the Family Expenditure Survey, which was the forerunner of the LCF, was the main source of household data on the distribution of income in the UK).

The analysis in this report overcomes the first of these drawbacks (small sample size) by combining three consecutive years of LCF (2016/17, 2017/18 and 2018/19) into a pooled sample of around 16,000 households – approaching the same level of accuracy as one year of FRS. This is the same approach that is taken by HM Treasury in their microsimulation model of the tax-benefit system (which uses LCF rather than FRS), so we are confident that this technique has credibility among government researchers. To check that the second drawback (lower quality income data) is not a serious problem for the analysis, this report compares estimated household poverty rates for the 2016-19 LCF sample with the estimated household poverty rate in the 2018/19 FRS and shows that the overall poverty rates are reasonably similar (see Table 1 below).

### 3 Definition of net income and poverty

The poverty measure used in this report is the Before Housing Costs relative poverty measure. This is calculated for the FRS in the HBAI report by calculating net incomes for each household in the FRS controlling for family size (equivalisation), taking the median net income in the sample, and then classifying all households below 60% median income as poor. The FRS net income measure is calculated as follows (see DWP (2020), *HBAI Quality and Methodology Information Report 2018/19*, pp18-19<sup>4</sup>):

*The income measure used in HBAI is weekly net (disposable) equivalised household income. This comprises total income from all sources of all household members including dependants.*

*Income is adjusted for household size and composition by means of **equivalence scales**, which reflect the extent to which households of different size and composition require a different level of income to achieve the same standard of living. This adjusted income is referred to as **equivalised income**.*

*In detail, income includes:*

- *usual net earnings from employment;*
- *profit or loss from self-employment (losses are treated as a negative income);*
- *state support - all benefits, tax credits and Universal Credit;*
- *income from occupational and private pensions;*
- *investment income;*
- *maintenance payments, if a person receives them directly;*
- *income from educational grants and scholarships (including, for students, top-up loans and parental contributions);*
- *the cash value of certain forms of income in kind (free school meals, free school breakfast, free school milk, free school fruit and vegetables, Healthy Start vouchers and free TV licence for those aged 75 and over).*

*Income is net of the following items:*

- *income tax payments;*
- *National Insurance contributions;*
- *domestic rates / council tax;*
- *contributions to occupational pension schemes (including all additional voluntary contributions (AVCs) to occupational pension schemes, and any contributions to stakeholder and personal pensions);*

---

<sup>4</sup> See

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/875331/households-below-average-income-quality-methodology-2018-2019.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875331/households-below-average-income-quality-methodology-2018-2019.pdf)

- *all maintenance and child support payments, which are deducted from the income of the person making the payment;*
- *parental contributions to students living away from home;*
- *student loan repayments.*

When constructing a net income measure using the Living Costs and Food Survey, I replicate the methodology used for the FRS in the HBAI publication as closely as possible given the information available in the LCF data. All elements of the disposable income measure used for the FRS are available in the LCF, although in some cases (for example student loan repayments) the data are not as detailed as in the FRS. The equivalisation of income to take account of family size can be performed for the LCF in exactly the same way as for the FRS. All incomes are uprated to April 2020 prices using the Consumer Prices Index to ensure comparability across the three years of LCF being used.

Table 1 below compares the LCF data with the FRS data to check how similar the measured BHC poverty rates are in each sample. The left-hand column of Table 1 shows the measured poverty rates for the three-year LCF sample, while the middle column shows the poverty rate for just the 2018/19 year of LCF data – this is likely to be more volatile than the three-year LCF measure due to the small sample size, but is from the same time period as the 2018/19 FRS. The measured poverty rates for the 2018/19 FRS are shown in the right-hand column. Poverty rates are shown across all households (in the top row of Table 1) and for working age adults, pensioners and children in the lower rows.

Table 1 shows that measured household poverty rates are around 1 percentage point lower for the three-year LCF sample compared to the FRS, and 1 percentage point higher for the one-year LCF sample compared to the FRS. For working age adults, the poverty rate estimated from the three-year LCF sample is slightly lower than the FRS estimate, but the estimate from the 2018/19 LCF is almost identical to the FRS measure. For pensioners and children, the opposite is true: the three-year LCF poverty measure is closer to the FRS measure than the single-year 2018/19 LCF measure. In general, whether the three-year LCF sample or the one-year subsample is used, estimated poverty rates are within 2 percentage points of the relevant FRS poverty measure. The exception is measured child poverty in the 2018/19 LCF subsample, which is almost 5 percentage points above the equivalent FRS measure. This is probably explained by the fact that recording of benefit and tax credit receipt is not quite as good in the LCF as the FRS (see Reed and Portes, 2014, ch 2<sup>5</sup>) and thus the LCF may underestimate income for low-income families with children compared with the FRS.

---

<sup>5</sup> H Reed and J Portes (2014), *Cumulative Impact Assessment*, Equality and Human Rights Commission Research Report 94.  
[http://www.equalityhumanrights.com/sites/default/files/publication\\_pdf/Cumulative%20Impact%20Assessment%20full%20report%2030-07-14.pdf](http://www.equalityhumanrights.com/sites/default/files/publication_pdf/Cumulative%20Impact%20Assessment%20full%20report%2030-07-14.pdf)

This report uses the baseline poverty rates for the 2018/19 FRS and then calculates increases in poverty based on the three-year LCF sample, so that the baseline results are in line with the HBAI poverty measures.

**Table 1: Baseline poverty rates in the 2016/17-2018/19 LCF, the 2018/19 LCF subsample and the 2018/19 FRS**

Poverty measure	Percentage in poverty:		
	LCF 2016/17-2018/19	LCF 2018/19 subsample	FRS 2018/19
Households	16.8	18.7	17.9
Working-age adults	13.5	15.1	15.3
Pensioners	17.4	19.1	17.8
Children	20.7	24.8	20.1

Source: Landman Economics analysis of LCF and FRS data

#### 4 Calculating an 'after tobacco expenditure' measure of poverty

The 'after tobacco expenditure' measure of poverty is calculated by subtracting tobacco expenditure for each household from net income (adjusting for family size) and then calculating how many extra households fall below the poverty line after tobacco expenditure is subtracted. Across the 2016-19 FRS, average expenditure on tobacco products (including cigarettes, cigars and hand rolling tobacco), uprated to January 2020 prices using the Consumer Price Index, is £11.15 per week across all households, and £66.21 per week across the subgroup of households with any expenditure on tobacco at all during the two-week period for which households in the LCF sample complete expenditure diaries. (16.7 percent of households in the LCF survey report positive expenditure on tobacco over the 2016-19 period).

However, the LCF suffers from a problem common to household expenditure surveys – the households in the LCF under-report their tobacco expenditure on average<sup>6</sup>, meaning that estimated total tobacco expenditure in the UK using FRS is considerably lower than estimated overall tobacco expenditure when derived from HM Revenue and Custom's figures for duty receipts. Analysis of data for 2018-19 suggests that grossed-up tobacco expenditure in the LCF (in nominal terms) was £5.52 billion, whereas aggregate tobacco expenditure estimated from a combination of HMRC duty receipts (for legally purchased tobacco) and HMRC projections of the size of the illicit tobacco market combined with survey evidence on the prices paid for illicit cigarettes and hand rolling tobacco, was £15.6 billion (see the Appendix to

<sup>6</sup> See Appendix C of H Reed (2011), *Tobacco Taxation, Smuggling and Smoking in Ireland*, Irish Heart Foundation, for a detailed analysis of the extent of under-reporting of tobacco expenditure in various household expenditure surveys for different countries.

this paper for details of the methodology for estimating tobacco expenditure from HMRC statistics on tobacco duty receipts). Therefore this analysis multiplies tobacco expenditure in the LCF 2016-19 sample by a factor of 2.83 to correct the under-reporting in the survey and reconcile the estimates with HMRC data.

It should be noted that the estimate of aggregate tobacco expenditure used in this update of the report is bigger than the estimates used in previous versions of the report, which only included legally purchased tobacco. The inclusion of an estimate for illicit tobacco purchases increases total estimated UK tobacco expenditure by just under 10 per cent.

## **5 Results**

### **5.1 Households in poverty**

Table 2 shows the impact of tobacco expenditure on household poverty. Before taking tobacco expenditure into account, the overall household poverty rate is 17.9% of households – just under 5 million households in poverty. After taking tobacco expenditure into account, the number of households in poverty increases to 19.8% - just under 5.5 million households. The inclusion of tobacco costs moves an extra half a million households into poverty.

Looking at the subsample of households with positive tobacco expenditure, the poverty rate before tobacco spending is taken into account is 21.2% - higher than the rate for households as a whole. This rises by over 11 percentage points, to 32.4%, once tobacco spending is taken into account.

**Table 2. Household poverty rates before and after tobacco expenditure is taken into account**

	<b>Whole sample</b>	<b>Households with positive tobacco expenditure only</b>
<b>Proportion of households in poverty</b>	%	%
Before tobacco expenditure	17.9	21.2
After tobacco expenditure	19.8	32.4
Percentage point increase in poverty rate once tobacco expenditure is taken into account	1.9	11.2
<b>Number of households in poverty (1000s)</b>		
Before tobacco expenditure	4975	995
After tobacco expenditure	5501	1521
Increase in poverty rate once tobacco expenditure is taken into account	526	526

Source: Landman Economics analysis of LCF data

## 5.2 Working age adults, pensioners and children

Tables 3, 4 and 5 show the corresponding figures for the number of working age adults living in poverty (Table 3), the number of pensioners living in poverty (Table 4) and the number of children living in poverty (Table 5) before and tobacco spending is taken into account, calculated using the LCF data. Table 3 shows that subtracting tobacco expenditure from household income increases the working age adult poverty rate by 1.9 percentage points, from 15.3% to 17.2% - an extra 740,000 working age adults in poverty. For the subsample of households with positive tobacco expenditure only, poverty increases from 17.4% to 26.5%.



**Table 3. Working age adult poverty rates before and after tobacco expenditure is taken into account**

	<b>Whole sample</b>	<b>Households with positive tobacco expenditure only</b>
<b>Proportion of working age adults in poverty</b>	%	%
Before tobacco expenditure	15.3	17.4
After tobacco expenditure	17.2	26.5
Percentage point increase in poverty rate once tobacco expenditure is taken into account	1.9	9.0
<b>Number of working age adults in poverty (1000s)</b>		
Before tobacco expenditure	6093	1432
After tobacco expenditure	6836	2175
Increase in poverty rate once tobacco expenditure is taken into account	743	743

Source: Landman Economics analysis of LCF data

Table 4 shows that subtracting tobacco expenditure from household income increases the pensioner poverty rate by 1.5 percentage points, from 17.8% to 19.3% - an extra 180,000 pensioners in poverty. For the subsample of households with positive tobacco expenditure only, pensioner poverty increases from 19.0% to 35.0% - a 16 percentage point increase.

**Table 4. Pensioner poverty rates before and after tobacco expenditure is taken into account**

	<b>Whole sample</b>	<b>Households with positive tobacco expenditure only</b>
<b>Proportion of pensioners in poverty</b>	%	%
Before tobacco expenditure	17.8	19.0
After tobacco expenditure	19.3	35.1
Percentage point increase in poverty rate once tobacco expenditure is taken into account	1.5	16.1
<b>Number of pensioners in poverty (1000s)</b>		
Before tobacco expenditure	2102	215
After tobacco expenditure	2285	398
Increase in poverty rate once tobacco expenditure is taken into account	183	183

Source: Landman Economics analysis of LCF data

Table 5 shows that subtracting tobacco expenditure from household income increases the child poverty rate by 2.4 percentage points, from 20.1% to 22.5% - an extra 330,000 children in poverty. For the subsample of households with positive tobacco expenditure only, child poverty increases from 26.6% to 39.2% when tobacco expenditure is included in the poverty calculation.

**Table 5. Child poverty rates before and after tobacco expenditure is taken into account**

	<b>Whole sample</b>	<b>Households with positive tobacco expenditure only</b>
<b>Proportion of children in poverty</b>	%	%
Before tobacco expenditure	20.1	26.6
After tobacco expenditure	22.5	39.2
Percentage point increase in poverty rate once tobacco expenditure is taken into account	2.4	12.6
<b>Number of children in poverty (1000s)</b>		
Before tobacco expenditure	2799	698
After tobacco expenditure	3131	1029
Increase in poverty rate once tobacco expenditure is taken into account	331	331

Source: Landman Economics analysis of LCF data

### 5.3 Regional and country analysis

Tables 6a and 6b show an analysis of poverty by region (nine English regions plus Scotland, Wales and Northern Ireland). Before tobacco expenditure is taken into account, poverty rates range from 15% in the South East of England to 22.7% in Wales. Once tobacco expenditure is taken into account, the poverty rate increases by between 1.0 and 3.6 percentage points in each region. The highest regional poverty rate after taking tobacco costs into account is Wales, at 25.2%; the lowest is the East of England, at 16.4%. Among the subsample of households with positive tobacco expenditure, poverty rates (before taking tobacco expenditure into account) vary widely, from 9.7% in London to 32.3% in North East England. Including tobacco expenditure in the poverty calculations increases poverty rates for households with positive tobacco expenditure by between 7.0 and 15.1 percentage points, with the smallest increases in London and the East of England, and the largest increases in Northern Ireland, Scotland and South East England.

In terms of number of additional households in poverty, the biggest regional increases due to tobacco expenditure is for North West England, South East England and Scotland, with around 70,000 extra households in poverty in each case.

**Table 6a: Percentage and number of households in poverty by region and country – whole sample**

	<b>England:</b>									<b>Wales</b>	<b>Scotland</b>	<b>N Ireland</b>
	<b>North East</b>	<b>North West</b>	<b>Yorks &amp; Humber</b>	<b>East Midlands</b>	<b>West Midlands</b>	<b>East of England</b>	<b>London</b>	<b>South East</b>	<b>South West</b>			
<b>Proportion of households in poverty (%)</b>												
Before tobacco expenditure	20.9	19.4	21.3	16.2	20.0	15.2	16.7	15.0	16.6	22.7	18.1	18.1
After tobacco expenditure	23.2	21.6	23.7	17.8	21.6	16.4	17.6	16.8	18.3	25.2	20.9	21.7
Percentage point increase in poverty rate once tobacco expenditure is taken into account	2.3	2.1	2.4	1.7	1.6	1.2	1.0	1.9	1.6	2.4	2.8	3.6
<b>Number of households in poverty (1000s)</b>												
Before tobacco expenditure	243	607	491	323	479	392	586	565	399	308	450	133
After tobacco expenditure	269	674	546	357	518	423	620	635	438	341	519	160
Increase in poverty rate once tobacco expenditure is taken into account	27	67	55	34	39	32	34	71	39	33	69	27

Source: Landman Economics analysis of LCF data

**Table 6b: Percentage and number of households in poverty by region – households with positive tobacco expenditure only**

	<b>England:</b>									<b>Wales</b>	<b>Scotland</b>	<b>N Ireland</b>
	<b>North East</b>	<b>North West</b>	<b>Yorks &amp; Humber</b>	<b>East Midlands</b>	<b>West Midlands</b>	<b>East of England</b>	<b>London</b>	<b>South East</b>	<b>South West</b>			
<b>Proportion of households in poverty (%)</b>												
Before tobacco expenditure	32.3	26.1	21.8	22.4	27.6	17.6	9.7	12.0	19.6	18.9	29.1	23.8
After tobacco expenditure	42.4	38.5	34.6	31.7	37.7	25.6	16.7	25.8	30.3	31.4	43.0	38.9
Percentage point increase in poverty rate once tobacco expenditure is taken into account	10.1	12.4	12.8	9.2	10.0	7.9	7.0	13.8	10.7	12.5	13.9	15.1
<b>Number of households in poverty (1000s)</b>												
Before tobacco expenditure	85	141	93	81	107	71	48	62	71	50	144	42
After tobacco expenditure	112	208	148	115	146	103	82	133	110	83	213	68
Increase in poverty rate once tobacco expenditure is taken into account	27	67	55	34	39	32	34	71	39	33	69	27

Source: Landman Economics analysis of LCF data

## 5.4 Housing tenure analysis

Tables 7a and 7b show an analysis of poverty by housing tenure, broken down into three groups:

- Social renters – local authority and housing association tenants;
- Private renters;
- Homeowners – households who own their home outright or are buying with a mortgage.

Before tobacco expenditure is taken into account, poverty rates are 15.6% for homeowners, 17.1% for private renters and 27.2% for social renters. Once tobacco expenditure is taken into account, the poverty rate increases by 5.3 percentage points for social renters, with smaller increases for private renters (2.1 percentage points) and homeowners (1 percentage point). In other words, including tobacco costs in the poverty calculations leads to a wider discrepancy between the poverty rates for different housing tenure types, with social renters much more likely to be in poverty than other tenure types. Looking only at households with positive tobacco expenditure, the measured poverty rate for social renter households increases from 35% to over 52% when tobacco costs are included. This means that social renter households are almost twice as likely to be in poverty as private renter households, and around two-and-a-half times as likely to be in poverty compared to homeowner households.

**Table 7a: Percentage and number of households in poverty by housing tenure – whole sample**

	<b>Social renters</b>	<b>Private renters</b>	<b>Homeowners</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	27.2	17.1	15.6
After tobacco expenditure	32.5	19.2	16.6
Percentage point increase in poverty rate once tobacco expenditure is taken into account	5.3	2.1	1.0
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	1301	917	2756
After tobacco expenditure	1547	1027	2926
Increase in poverty rate once tobacco expenditure is taken into account	246	110	170

Source: Landman Economics analysis of LCF data



**Table 7b: Percentage and number of households in poverty by housing tenure – households with positive tobacco expenditure only**

	<b>Social renters</b>	<b>Private renters</b>	<b>Homeowners</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	35.1	18.4	13.4
After tobacco expenditure	52.2	27.2	21.9
Percentage point increase in poverty rate once tobacco expenditure is taken into account	17.1	8.8	8.5
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	519	238	274
After tobacco expenditure	765	348	444
Increase in poverty rate once tobacco expenditure is taken into account	245	110	170

Source: Landman Economics analysis of LCF data

## 5.5 Analysis by household employment patterns

Tables 8a and 8b show an analysis of poverty for working age households (households where all the adults in household are below the state pension age of 66) according to the number of people in work in the household. Households are divided into those with no earners, those with one earner and those with two or more earners.

Before tobacco expenditure is taken into account, poverty rates in the LCF sample are 46.6% for households with no earner, 20.2% for households with one earner and 5.9% for households with two or more earners. This pattern reflects the fact that working-age households with earnings from work are less likely to be in poverty (on average) than households with no earnings. Similarly, two-earner households are less likely to be in poverty than one-earner households. Including tobacco expenditure in the calculations, measured poverty increases by 4.9 percentage points for no-earner households, 2.4 per cent for one-earner households and 0.9 per cent for households with two or more earners. As with the results by housing tenure analysed above, including tobacco costs in the poverty calculation widens the discrepancy between the poverty rates of different groups of households.

Looking only at households with positive tobacco expenditure, the measured poverty rate for no-earner households increases from 57 per cent to over 74 per cent when tobacco costs are included. This means that almost three quarters of working age households with positive tobacco expenditure and no one in work are in poverty when tobacco expenditure is taken into consideration. This figure is almost twice as high as the poverty rate for one-earner households with positive tobacco expenditure, and almost ten times higher than for households with two or more earners.

**Table 8a: Percentage and number of households in poverty by number of people in employment – working age households**

	<b>No earner</b>	<b>One earner</b>	<b>Two or more earners</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	46.6	20.2	5.9
After tobacco expenditure	51.4	22.7	6.8
Percentage point increase in poverty rate once tobacco expenditure is taken into account	4.9	2.4	0.9
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	1452	1336	582
After tobacco expenditure	1598	1492	672
Increase in poverty rate once tobacco expenditure is taken into account	146	155	90

Source: Landman Economics analysis of LCF data

**Table 8b: Percentage and number of households in poverty by number of people in employment – households with positive tobacco expenditure only**

	<b>No earner</b>	<b>One earner</b>	<b>Two or more earners</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	57.0	23.4	5.5
After tobacco expenditure	74.1	37.3	10.5
Percentage point increase in poverty rate once tobacco expenditure is taken into account	17.1	13.9	5.0
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	506	269	103
After tobacco expenditure	652	425	192
Increase in poverty rate once tobacco expenditure is taken into account	147	155	90

Source: Landman Economics analysis of LCF data

## 5.6 Analysis by NS-SEC classification of head of household

It is useful to analyse poverty statistics according to the characteristics of workers, such as industry or occupation. Unfortunately, the LCF does not collect information on the industry or occupation of employed people in the survey. However, it does collect data on the National Statistics Socio-Economic Classification (NS-SEC) which is an index designed to measure the employment conditions and employment relations of occupations. The NS-SEC statistic is collected only from the “household respondent person” (HRP), which is the person in each household who answers the questions for the main LCF questionnaire. Therefore, the results in this section are presented at household, rather than individual, level (as with the results for region, housing tenure and number of people in work in each household).

The NS-SEC classification used in the LCF contains eight classifications for working people: these are listed in the left-hand column of Table 9. To make the results easier to read I have combined the eight categories into three broader classifications: managerial and professional, intermediate and technical and semi-routine and routine. These are shown in the right-hand column of Table 9.

**Table 9: NS-SEC classification used in the Living Costs and Food Survey and the aggregated classification used in this paper**

LCF classification	Aggregated classification
Large employers and higher managerial occupations	Managerial and professional
Higher professional occupations	
Lower managerial and professional occupations	
Intermediate occupations	Intermediate and technical
Small employers and own account workers	
Lower supervisory and technical occupations	
Semi-routine occupations	Semi-routine and routine
Routine occupations	

Table 10a shows the percentage and number of working households in poverty<sup>7</sup> using the three-category NS-SEC definition for the HRP, before and after tobacco expenditure is taken into account. Before including tobacco expenditure, the poverty rate is lowest for households where the HRP has a managerial or professional job (8.3 per cent) and much higher in households where the HRP has an intermediate or

<sup>7</sup> The LCF collects NS-SEC information for working-age people who are not currently employed, based on their previous job. However, for we exclude households with no-one currently in work from the analysis in Tables 10a and 10b, so these tables are based on working households only.

technical job (20.2 per cent) and for routine or semi-routine jobs (25.9 per cent). Including tobacco expenditure in the calculations increases the measured poverty rate most for households where the HRP is in a semi-routine or routine job (an increase of 3.2 percentage points), followed by those where the HRP is in an intermediate or technical job (1.5 percentage points). The smallest increase is for the households where the HRP is in a managerial or professional job (0.7 percentage points). As with the tenure and employment status breakdowns earlier in this report, including tobacco expenditure in the poverty calculations exacerbates differences in poverty rates among households classified according to the NS-SEC status of the HRP.

**Table 10a: Percentage and number of households in poverty by aggregated NS-SEC classification of HRP – working households**

	<b>Managerial and professional</b>	<b>Intermediate and technical</b>	<b>Semi-routine and routine</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	8.3	20.2	25.9
After tobacco expenditure	9.0	21.7	29.1
Percentage point increase in poverty rate once tobacco expenditure is taken into account	0.7	1.5	3.2
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	735	1044	1200
After tobacco expenditure	792	1119	1346
Increase in poverty rate once tobacco expenditure is taken into account	57	75	146

Source: Landman Economics analysis of LCF data

Restricting the analysis to working households with positive tobacco expenditure only, Table 10b shows that once again, there is a larger increase in poverty after taking tobacco expenditure into consideration for households where the HRP is in a semi-routine and routine job (12.3 percentage points) than for households where the HRP is in an intermediate or technical job (4.3 percentage points) or managerial or professional job (4.8 percentage points). After taking tobacco expenditure into account, households where the HRP is in a semi-routine or routine job are more than three times as likely to be in poverty as households where the HRP is in a managerial or professional job. The increase in the household poverty rate due to tobacco expenditure is much bigger in numerical terms for households where the HRP is in a semi-routine or routine job (almost 150,000 extra households in poverty) than for the other two groups.

**Table 10b: Percentage and number of households in poverty by NS-SEC classification of head of household – working households with positive tobacco expenditure only**

	<b>Managerial and professional</b>	<b>Intermediate and technical</b>	<b>Semi-routine and routine</b>
<b>Proportion of households in poverty (%)</b>			
Before tobacco expenditure	7.0	17.2	23.9
After tobacco expenditure	11.8	21.4	36.2
Percentage point increase in poverty rate once tobacco expenditure is taken into account	4.8	4.3	12.3
<b>Number of households in poverty (1000s)</b>			
Before tobacco expenditure	83	301	285
After tobacco expenditure	140	376	432
Increase in poverty rate once tobacco expenditure is taken into account	57	75	146

Source: Landman Economics analysis of LCF data

## 6 Conclusions

The results in this paper show that when expenditure on tobacco is taken into account, around 500,000 extra households, comprising around 740,000 working age adults, 180,000 pensioners and 330,000 children, are classified as in poverty in the UK compared to the official Households Below Average Income figures. This shows that tobacco imposes a real and substantial cost on many low-income households. When the poverty analysis is broken down into subgroups of households, the results show that including tobacco expenditure in the poverty calculations increases the disparity in poverty rates between low-poverty and high-poverty groups. For example, the gap in poverty rates between social renter households and homeowner households, and the discrepancy in poverty rates between households with no-one in work and households with at least one person in work, are exacerbated when tobacco expenditure is taken into consideration in the poverty calculations.

It is important, however, to avoid concluding from these results that a suitable policy response would be to reduce tobacco taxation to make tobacco products more affordable. Previous research shows that increases in tobacco taxation are potentially a *progressive* measure in economic and health terms because poorer smokers are more likely to quit, and young people less likely to take up smoking, when tobacco prices increase because poorer households and young people are more sensitive to price increases<sup>8</sup>. Indeed, raising tax is the only tobacco control intervention which has been proven to have a greater effect on more disadvantaged smokers at population level and so contribute to reducing health inequalities<sup>9</sup>. However, poorer smokers who do not quit are disproportionately disadvantaged in economic terms because of the negative impact of tobacco tax increases on their already small incomes.

This poses a dilemma which can be resolved by ensuring that all efforts are made to motivate and support smokers in quitting. ASH supports increasing tobacco taxation as long as at the same time the UK Government continues to provide adequate funding for measures to help smokers to quit and population level measures to reduce smoking.

---

<sup>8</sup> The World Bank, *Curbing the epidemic: governments and the economics of tobacco control*. May, 1999

<sup>9</sup> Amos A, Bauld L, Clifford D *et al*, "Tobacco control, inequalities in health and action at a local level." York: Public Health Research Consortium, 2011.



## Appendix: Estimating total consumer expenditure on tobacco in the UK

The estimate of total UK consumer expenditure on tobacco for 2018-19 used in this paper is made up of an estimate for legally purchased tobacco and an estimate for illicitly purchased tobacco, which are summed together.

### Legally purchased tobacco

HMRC provides data on total tobacco receipts by tax year which has been used to derive total consumer spending on tobacco for the tax year 2018-19 by using statistics on the average price of cigarettes and hand-rolling tobacco. The detailed calculations for 2018-19 are shown in Appendix A of this report; Table 3.2 summarises the main calculations for legally purchased tobacco. Total legal consumer tobacco expenditure for 2018-19 is estimated at around £14.3 billion.

**Table 3.2. Estimated consumer spending on legally purchased cigarettes and handrolling tobacco, 2018-19**

	£bn		
	Cigarettes	Hand-rolling tobacco	Total
Excise duties	7.748	1.144	9.192
VAT	1.893	0.491	2.385
Total spending	11.359	2.948	14.307
Tax as % of total spending	84.9%	65.6%	80.9%

Data sources:

Excise duty receipts: HMRC *Tobacco Statistics Tables*, April 2021 (<https://www.gov.uk/government/statistics/tobacco-bulletin>). VAT calculation uses calculated uses (i) data from ONS on price of 20 king size cigarettes in December 2018 (time series CZMP accessed at <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/czmp>); and (ii) Hand rolling tobacco price based on author's analysis of supermarket websites in December 2020, deflated to December 2018 using on ONS CZMP time series.

### Illicit tobacco

The estimate for the value of illicit tobacco purchased in 2018/19 is based on two sources:

- i) Estimates for the volume of illicit cigarettes and hand-rolling tobacco (HRT) are from HMRC's *Measuring Tax Gaps 2020* publication ([https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/907122/Measuring\\_tax\\_gaps\\_2020\\_edition.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907122/Measuring_tax_gaps_2020_edition.pdf)).

- ii) Estimates for the average price paid for illicit cigarettes and HRT are taken from surveys by NEMS of the price paid per pack of 20 cigarettes in Greater Manchester and West Yorkshire. These are the only surveys which asked about the unit price of illicit tobacco.

Table 3.3 shows how the overall estimate of spending on illicit tobacco of approximately £1.3 billion is arrived at. Summing expenditure on illicit tobacco and legally purchased tobacco gives a total UK consumer tobacco expenditure figure for 2018-19 of approximately £15.6 billion.

**Table 3.3. Estimated consumer spending on illicit cigarettes and handrolling tobacco, 2018-19**

	<b>Cigarettes</b>	<b>Hand-rolling tobacco</b>	<b>Total</b>
Price per unit	£4.25 per pack of 20 cigarettes	£10.50 per 50g pouch	
Volume of sales	1.25 billion sticks	3.3 million kg	
Total spending (£bn)	531.3	735.0	<b>1,266.3</b>

Data sources: Volume of sales from HMRC *Measuring Tax Gaps 2020*. Price data from surveys conducted by NEMS.